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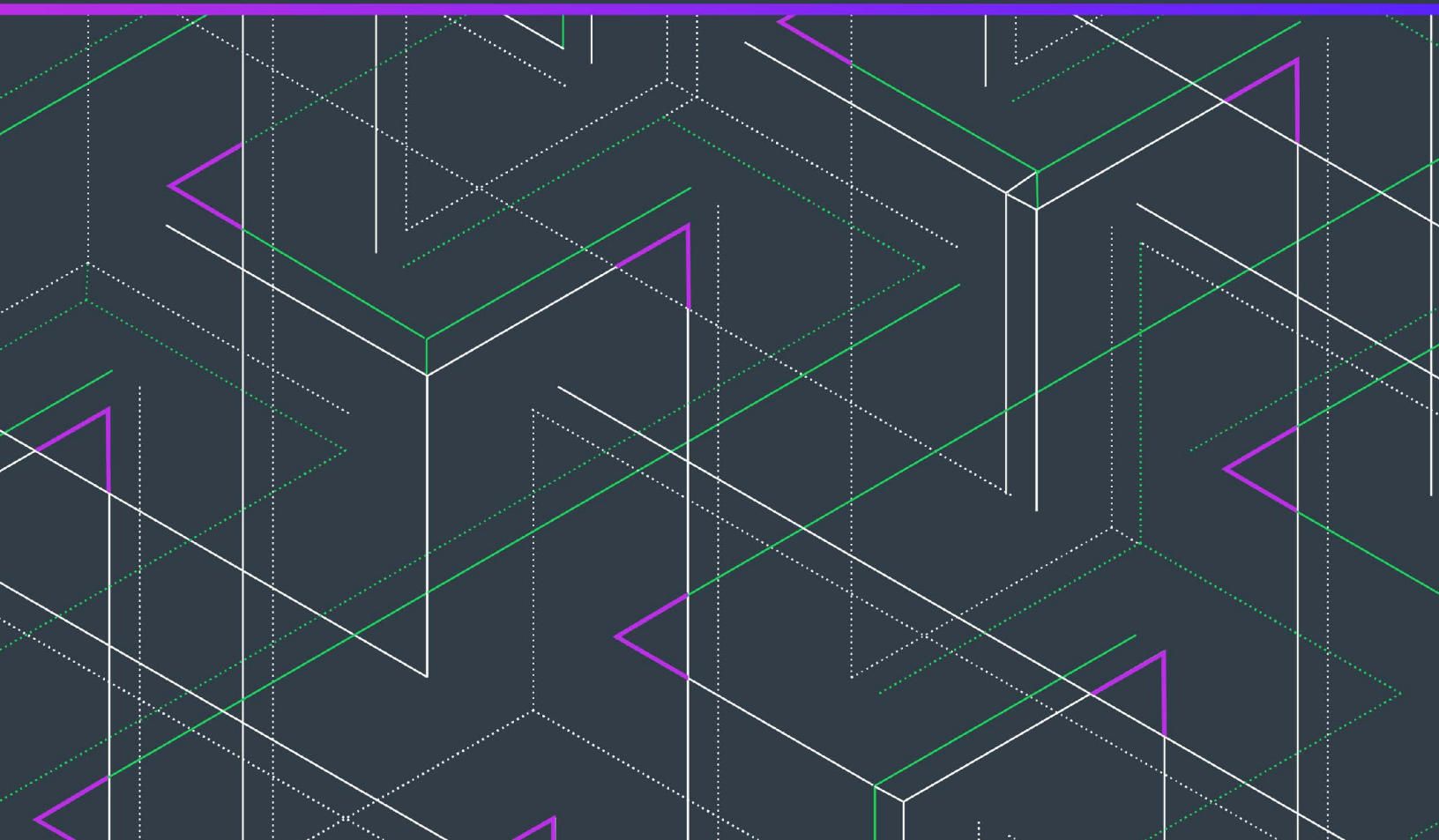
InstallShield 2023

InstallScript Reference Guide



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Contents

InstallScript Language Reference

InstallShield makes designing your installation easy with InstallScript, a simple but powerful programming language. InstallScript is similar to the C language. It has a defined format and regulated syntax. It uses certain data types, each with specific properties. It also allows you to create custom functions.

InstallScript, however, does not provide the full range of programming functionality that C does. InstallScript was designed to do one thing—create installations. And it does so better than any programming language in the world. Regardless of your programming background, you can quickly learn to build an installation with InstallScript.

Project ▪ *Some InstallScript functions, events, and variables are limited to specific project types.*

Table -1 ▪ InstallScript Language Reference

Section	Description
Integrated Compiler	Provides general information about the InstallScript integrated compiler.
Command-Line Compiler	Contains details about the InstallScript command-line compiler that can be invoked from the DOS prompt or from a DOS batch file.
Setup Scripts	Introduces you to the InstallScript language and the structure of a script.
Language Keywords	Presents background about language keywords, which are words InstallScript uses as commands in the script. Language keywords are interpreted by the InstallScript compiler to perform some action, or are considered part of a statement.
Predefined Constants	Identifies and describes each of the predefined constants reserved by InstallScript. These constants represent specific literal values that are passed to and returned by built-in functions.

Table -1 ▪ InstallScript Language Reference (cont.)

Section	Description
Predefined Script Variables	Contains information about script variables that you can use with InstallScript.
Data Types and Predefined Structures	Contains content about the data types and predefined structures supported in InstallScript.
Preprocessor Directives	Discusses preprocessor directives, which are instructions to the InstallScript compiler that are executed as the script is compiled. Preprocessor directives can instruct the compiler to include other source files in the compilation, to define constants, to include or exclude statements based on compile-time conditions, and to display a user-defined error message.
Flow Control	Contains information on how to control the flow of execution within scripts.
Event Handlers	InstallScript project installation programs are driven by the InstallScript engine, which generates a series of events in a specific order.
Functions	Describes the different types of functions that you can use in your installation scripts; also includes details about—and examples of—each of the built-in functions available in InstallScript.
Operators	Contains information about supported operators in InstallScript.
Objects and Object Handlers	Contains information about the objects that InstallScript supports and how to separate error handling from the rest of your script code.

Note ▪ *Some of the functions that were available in InstallShield Professional are deprecated in later versions of InstallShield. To view a list of the functions, see Unsupported Functions.*

Because the InstallShield Help Library is designed to interact with InstallShield, it is recommended that you open the help from within InstallShield. Copying the help files to another folder or system causes many of its features to work incorrectly.

Integrated Compiler

If you want to compile your script without building a release, you can use the integrated InstallScript compiler in InstallShield.

Task ***To compile your script:***

On the **Build** menu, click **Compile**.

InstallShield displays compiler messages in the Output window.

Command-Line Compiler

In addition to the integrated compiler, which you can launch from within InstallShield, InstallShield includes a command-line compiler that you can invoke from the DOS prompt or from a DOS batch file. This program, called `Compile.exe`, is in the following folder:

`InstallShield Program Files Folder``\System`

After you have completed the design of an installation project, you can use `Compile.exe` to compile the installation script using different options than those that are used when you compile the script from within InstallShield.

For the syntax and available command-line parameters and switches for `Compile.exe`, see Compile.exe.

Note ▪ *When you build a release from the command line using* `ISCmdBld.exe`*, the build engine automatically compiles your script; therefore, you do not need to use* `Compile.exe` *directly unless you want to use compiler options that are different from those specified for the project in InstallShield. For more information, see ISCmdBld.exe.*

Setup Scripts

A setup script is a collection of event handlers, functions called by those event handlers, and data used by the event handlers and functions. These elements are expressed in the InstallScript Language, a simple but powerful programming language. InstallScript is similar to the C language. It has a defined format and regulated syntax. It uses certain data types, each with specific properties. It also allows you to create custom functions.

InstallScript, however, does not provide the full range of programming functionality that C does. InstallScript was designed to do one thing—create setups. And it does this effectively and efficiently.

Regardless of your programming background, you can learn quickly to build your setup with InstallScript.

InstallScript Limits

Following are limits for the compiled script file (`setup.inx`):

- Maximum number of statements: about 4,294,967,295 (If this limit is exceeded, error -5009 may occur during setup initialization.)
- Maximum number of global variables: about 196,605 (65,535 numbers, 65,535 variants, 65,535 strings)
- Maximum number of typedefs: about 65,535
- Maximum number of prototypes: about 65,535
- Maximum number of functions: about 65,535
- Maximum number of statements per function: about 65,535
- Maximum local variables per function: about 196,605 (65,535 numbers, 65,535 variants, 65,535 strings)

Following are limits for script files (.rul):

- Maximum line width: 1,024 characters
- Maximum number of nested include files: 80
- Maximum number of include files: 2,048
- Maximum identifier length: 63 characters
- Maximum number of macro expansions: 100
- Maximum macro expansion text length: 256 characters
- Maximum file name length: 256 characters
- Maximum number of nested #if statements: 10
- Maximum number of parameters per function: 16

Compile errors occur if one or more of these .rul limits are exceeded.

Tip ▪ *If you encounter any of the aforementioned limits, consider reducing the size of your installation script by removing code, or by splitting up your installation script into multiple projects, creating separate installations, and calling the child installations from your main installation (parent installation).*

Structure of a Script

Every script includes declarations and function blocks. Declarations can precede function declarations or appear between a function statement and the begin statement for that function.

The general outline of a script is shown below:

```
// Constant definitions, global data declarations, and function declarations

// Function blocks
```

Declarations

Every script begins with global data declarations. Here, you define constants and declare each of the global variables and user-defined functions that you will be using. Declarations instruct the InstallScript compiler that the script will be using the listed items at a later time. Declarations also build an association between a function and its attributes or values. You do not need to declare any of the built-in functions, since the InstallScript compiler already recognizes the function names.

Below are some examples of constant definitions, data declarations, and function declarations:

```
// Constant definitions
#define PRODUCT "InstallShield"
#define LIMIT    100

    // Variable declarations
    CHAR  cVal;
    NUMBER nVal;
    STRING szName;

    // Function declarations
    prototype DisplayMsg (NUMBER, STRING);
    prototype GetName (BYREF STRING);
```

Program Block

Program blocks are used in scripts written using InstallShield Professional 5.5 or earlier. A program block cannot be used for an InstallScript custom action or in an event-driven script. The only code that is executed is found in event handlers and entry-point functions.

```
program

    // In an event-driven script, the program block is optional and remains empty.

endprogram
```

Function Block

Project ▪ *This information applies to InstallScript projects.*

All functions that have been declared with a prototype statement must be defined in the function block, which follows the keyword endprogram in a setup script. Additional global data declarations may be made in the function block, either between the endprogram statement and the first function declaration or between function declarations. However, data declared in the function block is visible only to functions that are defined after the data declaration.

Identifiers

Identifiers are the names that you create to denote constants, variables, and functions in your script. Observe the following syntax rules when creating identifiers:

- An identifier may be of any length, but only the first 63 characters are significant.
- The first character of an identifier must be alphabetic (a-z, A-Z) or an underscore.
- The remaining characters may be alphabetic (a-z, A-Z), numeric (0-9), or an underscore.
- Each identifier must be unique. Be careful not to create an identifier that is a reserved word in InstallScript.

Syntax Punctuation Rules

Like any programming language, InstallScript has syntax rules that regulate its usage. The basic syntax of InstallScript is similar to that of the C programming language.

The following punctuation reminders apply to all sections of the script:

- Most statements end with a semicolon (;). This includes many one-word statements, such as end;, exit;, and return;.
- Preprocessor statements—such as #define and #include—never end with a semicolon.
- The keywords program, endprogram, and begin are placed on separate lines by themselves and receive no punctuation. The function line that begins each function block receives no punctuation.
- End a label, such as start: or starthere:, with a colon (:).
- Enclose parameter lists within parentheses. Separate multiple parameters with commas.

Writing Comments

InstallScript gives you two ways to create comments in a script. You can use either method to add explanatory text to your script or to exclude or “comment out” certain parts of your script for testing and debugging purposes.

Caution ▪ *You can begin comments anywhere in a script—with one exception: Comments cannot be placed on the same line as an #ifdef or #ifndef statement. You must write comments before or after these statements, if necessary. Otherwise, the compiler returns an error.*

Block of Text

One way to create a comment is to enclose a block of text between the character pairs /* and */. This method makes it easy to write a comment over multiple lines:

```
/* This is a line of sample code that shows you
 * how to use the InstallScript function PlaceBitmap. */
```

Line by Line

The second way is to insert the characters // into a line. The compiler ignores everything to the right of the double slashes on that line only.

```
    // This is a line of sample code showing the
    // InstallScript function PlaceBitmap.
```

Using White Space

Like C and other programming languages, InstallScript does not recognize white space (spaces and tabs, carriage returns) except in a string literal. It is recommended that you use white space to make your script easier to follow.

Code Without White Space

For example, the following section of code is dense and difficult to decipher:

```
#define DISK_DRIVE "C:\\"
    STRING szDrive, svString;
    NUMBER nSpace, nResult;
szDrive = DISK_DRIVE;
nSpace = GetDiskSpace(szDrive);
nResult = NumToStr(svString, nSpace);
if (nResult < 0) then
MessageBox("NumToStr failed.", SEVERE);
abort;
endif;
SprintfBox(INFORMATION, "Info", "Disk Space: %s", svString);
```

Code With White Space

Adding white space with indentation makes the same code much easier to read:

```
    #define DISK_DRIVE "C:\\"

    STRING  szDrive, svString;
    NUMBER  nSpace, nResult;

    szDrive = DISK_DRIVE;
    nSpace  = GetDiskSpace(szDrive);

    nResult = NumToStr(svString, nSpace);
    if (nResult < 0) then
        MessageBox("NumToStr failed.", SEVERE);
        abort;
    endif;

    SprintfBox(INFORMATION, "Info",
              "Disk Space: %s", svString);
```

Hungarian Notation

InstallShield help topics employ an extended form of Hungarian notation—a naming convention that uses short, lowercase prefixes to indicate the data type. For example, iPointSize denotes an integer variable, while szFileName indicates a string variable.

Hungarian notation is used in example scripts to indicate the data type of all variables. In function syntax descriptions, Hungarian notation is used for parameter names to indicate the type of data that may be passed in a parameter. For example, the syntax description of BatchDeleteEx shows that it takes two parameters:

```
BatchDeleteEx ( szKey, nOptions );
```

The first parameter, identified as szKey, could be a string variable or constant. The second, identified as nOptions, could be a number variable or constant.

Variable Parameters

In those cases where a variable parameter is required, the Language reference employs a special set of two-letter prefixes:

- The first letter indicates the data type.
- The second character is the letter v, for variable.

In the syntax description for GetDir, the first parameter can be a string variable or constant, but the second parameter must be a variable.

```
GetDir ( szPath, svDir );
```

Functions that require variable parameters generally return data to the caller in those parameters.

Prefix Table

Because Hungarian notation makes it easy to recognize a variable's type, it is strongly recommended that you use Hungarian notation when you create variable names in your own scripts. The table below describes each of the prefixes used in InstallShield.

Table 1 ▪ Prefix Table

Prefix	Data Type	When Used in Function Syntax
b	Boolean (BOOL)	Boolean constant, literal, or variable.
bv	Boolean (BOOL)	Boolean variable only. Constants and literals not allowed.
c	Character (CHAR)	Character constant, literal, or variable.
const	Constant	Constant or literal. Variables not allowed.
h	Handle (HWND)	Handle variable.
i	Integer (INT)	Integer constant, literal, or variable.
l	Long integer (LONG)	Long integer constant, literal, or variable.

Table 1 ▪ Prefix Table (cont.)

Prefix	Data Type	When Used in Function Syntax
lv	Long integer (LONG)	Long integer variable only. Constants and literals not allowed.
list	List (LIST)	List variable.
n	Number (NUMBER)	Number constant, literal, or variable.
nv	Number (NUMBER)	Number variable only. Constants and literals not allowed.
p	Pointer (POINTER)	Pointer variable.
pstruct	Pointer to a defined structure type	Not used.
s	Short integer (SHORT)	Short integer constant, literal, or variable.
sz	String (STRING)	String constant, literal, or variable.
sv	String (STRING)	String variable only. Constants and literals not allowed.
struct	Defined structure type	Not used.

Escape Sequences

An escape sequence is a set of characters used to insert into a string certain special characters—such as tabs, carriage returns and quotation marks. Escape sequences in InstallScript are very much like those in C. They begin with a backslash, called an escape character, and the backslash is followed by one or more characters that have special meaning. If the backslash is followed by characters other than those used in an escape sequence, the backslash is ignored.

Inserting a Newline Character Into a String

A commonly used escape sequence is \n, which inserts a newline character into a string. The string “This is line one, This is line two.” is displayed or printed on a single line. However, the string “This is line one,\nThis is line two.” is displayed or printed as shown below:

```
This is line one,
This is line two.
```

Note ▪ *The \n escape sequence works only in multiline static text fields. For example, you can insert \n in the szQuestion argument of AskText to manually format the string. You can also use \n with MessageBox and SprintfBox.*

The newline escape sequence is case sensitive; that is, \N does not insert a newline character.

The percent sign (%) also has a special function in InstallScript; it is used as the first character of a format specifier, which is a sequence of characters that is used with functions such as Sprintf and SprintBox to indicate how the value stored in a variable should be displayed on screen.

Supported Escape Sequences

The following table lists the escape sequences that are supported by InstallScript:

Table 2 ▪ Supported Escape Sequences

Escape Sequence	Performs the Following Action
\n	Inserts a line feed.
\'	Inserts a single quotation mark in the string.
\"	Inserts a double quotation mark in the string.
\r	Inserts a carriage return only. Does not insert a line feed.
\t	Inserts a tab character.
\ooo	Indicates an ASCII character—not an integer—in octal notation.
****	Inserts a backslash.

Specifying a Universal Naming Convention Path

To specify a Universal Naming Convention (UNC) path in an InstallScript string, you must use *two* backslash escape sequences (that is, four backslashes—\\\\), to create the double backslash at the start of the path. For example, the path \\MyServer\Public\Readme.txt must be specified as follows:

```
"\\\\MyServer\\Public\\Readme.txt"
```

Embedding Quotation Marks

You can insert double quotation marks as part of a string literal using one of two methods. If you begin the string literal with double quotation marks, you must use the \" escape character to embed double quotation marks. You can, however, begin the literal with a single quotation mark and then type the double quotation mark:

```
//These two statements will both yield embedded double quotation marks
szQuote1 = "Who said, \"Quitters never win\"?";
szQuote2 = 'The same guy who said, "I quit. "';
```

To embed a single quotation mark, either use the \' escape sequence or open the string literal with double quotation marks:

```
//These two statements will both yield embedded single quotation marks
szQuote1 = 'Who said, \'Nice guys finish last\'?';
szQuote2 = "The same guy who said, 'I win.'";
```

Note ▪ *Your setup scripts must use the standard quotation marks (" and ') found to the right of the semicolon (;) key on the standard U.S. keyboard. Do not use open or closed typographer's quotation marks (“”), such as this help files uses outside of example scripts.*

Format Specifiers

Format specifiers are used with the functions Sprintf and SprintfBox to control the display of values that are stored in variables. A format specifier begins with a percent sign (%) and is followed by at least one or two characters. Format specifications follow the format shown below:

```
% [-] [#] [0] [width] [.precision] type
```

Each field of a format specification is a single character or number that represents a particular format option. The type field, for example, determines whether Sprintf or SprintfBox interprets the associated argument as a character, a string, or a number. The initial character % and the type field are both required. Items enclosed within brackets are optional. The simplest format specification contains only the percent sign and a type character, for example %s.

In the following example, the value of svString is displayed in a message box. The format specifier %s, which is assigned to svFormat, indicates to SprintfBox that the value of svString should be displayed as a string of characters.

```
STRING szTitle, szFormat, szString;

szTitle  = "Demonstrate format specifiers";
szFormat = "%s";
szString = "This is a string.";

SprintfBox(INFORMATION, szTitle, szFormat, szString);
```

The value assigned to svFormat may contain literal characters (including escape sequences) that are to be displayed along with the value of a variable. In the following example, an identifying label is displayed to the left of a number variable: nNumber = 100;.

```
STRING szTitle, szFormat;
NUMBER nNumber;

szTitle  = "Demonstrate format specifiers";
szFormat = "nNumber = %d.";
nNumber = 100;

SprintfBox(INFORMATION, szTitle, szFormat, nNumber);
```

Note ▪ *To print a percent sign, you must insert two percent signs in the string assigned to svFormat. Assuming that the number to be printed is 100, the following format specification string displays “nNumber = 100%”:*

```
svFormat = "nNumber = %d%%."
```

Table 3 ▪ Format Specifier Fields

Field	Meaning
-	If you include a hyphen after the percent character, the output value is aligned left and padded on the right to the width of the field with blanks or zeros. If you omit this field, the output value is right aligned and padded on the left.
#	Use this symbol to prefix hexadecimal values with 0x (lowercase) or 0X (uppercase).
0	Pads the output value with zeros to fill the field width. If you omit this field, the output value is padded with blanks.
width	Enter the minimum number of characters you want to place in this field. Type the width field as a non-negative integer. When you enter a width specification, the value is never truncated. If the number of characters in the output value is greater than the width specified, or if you omit the width field, every character of the value is displayed, subject to the value of the precision field.
precision	Enter the minimum number of digits you want in this field. If the number of digits in the argument is less than the precision value you enter, the output value on the left is padded with zeros. When the number of digits exceeds the precision value, the value is not truncated. If you enter a precision value of zero or omit it entirely, or if the period (.) appears without a number following it, the precision is set to 1. For strings, convert the maximum number of characters.
type	Format the corresponding argument as a character, a string, or a number. When two format specifier letter combinations are shown, you can use one or the other, but not both at the same time. This is a required field. In this field you must enter one of the following characters: • **c**—Formats a single character of type CHAR. The Sprintf function ignores a character with a numeric value of zero. • **d, i**—Formats a single integer of type INT or of type NUMBER. • **ld, li**—Formats a single signed decimal integer of type LONG. • **lx, lX**—Formats a single unsigned hexadecimal integer of type LONG. • **s**—Formats a string (type STRING).

Each format specifier has a matching variable. The variables are listed from left to right after the string, with the first variable matching the first format specifier in the string, the second variable matching the second format specifier in the string, and so on. At run time, InstallShield inserts each variable's contents into the string at the location of its matching format specifier.

Reserved Words

Reserved words and characters have special meaning in InstallScript and cannot be used except for their intended purposes. InstallScript has the following classes of reserved words:

- Functions
- Language Keywords
- Predefined Constants
- System Variables
- Event Handlers
- Predefined Script Variables

Language Keywords

Language keywords are words InstallScript uses as commands in the script. Language keywords are interpreted by the InstallScript compiler to perform some action, or are considered part of a statement. You cannot use these following keywords for any reason other than their predefined purpose (for example, these keywords cannot be used as variable names).

abort

When the script encounters an abort statement, the setup terminates. The abort statement is also encountered in the InstallShield default exit handler (OnCanceling) when the end user exits the installation before it has completed by pressing the Esc key or the Cancel button of an InstallScript dialog.

Note ▪ *The abort statement exits the installation and runs the uninstaller in silent mode to clean up the aborted installation. The exit statement aborts the installation, but does not remove anything from the target system.*

The abort statement does not call a rollback if initiated after the OnFirstUIAfter event.

BOOL

Boolean data: either TRUE (1) or FALSE (0). Variables of this type should not be used to store any other values. Like C++, InstallScript evaluates non-zero values as TRUE; only the value of zero is evaluated as FALSE. Normally, the value of 1 is used to indicate TRUE.

cdecl

Project ▪ *This information applies to InstallScript projects.*

The cdecl keyword is used when declaring an external DLL function that uses the cdecl calling convention. For example:

```
prototype cdecl POINTER Msvcrt.memcpy( byref string, pointer, long );
```

In previous versions of InstallShield Professional, the setup engine always used the stdcall convention but would sometimes overlook an inconsistent DLL convention.

Most Windows API functions use the stdcall (WINAPI) calling convention. Consult Microsoft documentation for more information about calling conventions.

exit

When the setup program encounters an exit statement in the script it is executing, the setup process terminates. Each setup script contains—at most—one exit statement. If your script includes conditional expressions that might cause it to exit before the installation has completed, you should use abort instead of exit.

export

The prototype of any function that is called directly by the setup engine must be marked as export. An example is shown below:

```
export prototype NewFeature1_Installing();
```

external

The keyword external is reserved and may not be used.

for...endfor

The for statement is designed to execute one or more statements a fixed number of times. It begins with the keyword for and an expression that specifies the number of times statements within the for structure are to be executed. The for structure ends with the keyword endfor.

Note ▪ *The for statement itself is not terminated with a semicolon; however, a semicolon is required after the endfor statement.*

Using for...endfor

In the following example, the function MessageBox is called 10 times. On the first pass, iCount is set to 1. Because 1 is in the specified range (1 to 10), the message box is displayed. Then iCount is incremented by 1 and the for statement is resolved again. This time, iCount = 2 (still in the specified range) and the message box is displayed a second time.

When iCount is incremented after the tenth pass, its value becomes 11. Because this value is outside the specified range, the for statement ends.

```
for iCount = 1 to 10
    MessageBox ("This appears ten times.", INFORMATION);
endfor;
```

Adjusting the Increment

The default increment in a for statement is one (1), but you can use the keyword step to adjust the increment. In the example below, step increases the value of iCount by 10 each time loop is executed. On the first pass, iCount = 10; on the second pass, iCount = 20; on the third pass, iCount = 30, and so on.

```
for iCount = 10 to 100 step 10
    MessageBox ("This appears ten times.", INFORMATION);
endfor;
```

Counting Down from a Higher Number to a Lower Number

You can count down from a higher number to a lower number by using the keyword downto in place of the keyword to. In the following example, a message box is displayed three times. The first time the loop is entered, j is set to 20.

Because downto specifies that the controlling variable be decremented and step 5 sets a decrement of 5 per loop, j is equal to 15 the second time the loop is entered. The third time, j is equal to 10.

```
for j = 20 downto 10 step 5
    MessageBox ("This appears three times.", INFORMATION);
endfor;
```

Note ▪ *You cannot define a label within a for statement.*

goto

The goto keyword is used to branch directly to the statement immediately following a specified label. In the following code fragment, the goto statement causes execution to continue with the AskText statement.

```
Name:
AskText("Company name:", "", szSrc);

if (szSrc = "") then
    MessageBox("Please enter the company name.", SEVERE);
    goto Name;
endif;
```

A goto statement in the main program must specify a label that has been declared in the main program. A goto statement in a function must specify a label that has been declared in that function.

Note ▪ *You cannot use a goto statement within a try...catch...endcatch statement.*

if

Use an if statement when you want your script to choose between two or more options. An if statement consists of the keyword if, a condition to be evaluated, the keyword then, and the keyword endif followed by a semicolon, as shown below:

```
if (condition) then
    // statements to be executed if condition is true
endif;
```

The condition can be one of the following:

- A Boolean or integer constant, variable or literal.
- An expression that produces a Boolean or integer result.
- A function that returns an integer result.

The parentheses around the condition are optional, but highly recommended for readability.

Tip ▪ *Many InstallScript functions return a negative value when they fail. When using the result of InstallScript functions as the condition in an if statement, test for failure by using a statement like the one below:*

```
if (FunctionA (ParameterOne) < 0) then
    // Statements to handle the failure
else
    // Statements when the function succeeds
endif;
```

InstallScript provides the following if statement structures:

- if Structure with goto
- if-then Structure
- if-then-else Structure
- Nested if-then-else Structure
- elseif Structure

if Structure with goto

InstallScript supports a special form of the if statement that can be used only with goto statements:

```
if condition goto labelname;
```

This special structure is has the following features:

- The condition must be followed by a goto statement.
- The keyword then is not used.
- The keyword endif is not used.

In the following example, the user will be prompted to enter a company name as long as szSrc is a null string (“”).

```
Name:
 AskText("Company name:", "", szSrc);
 if (szSrc = "") goto Name;
```

if-then Structure

The simplest if statement evaluates an expression and performs a specified action if the expression is true. If the expression is not true, InstallShield ignores the entire statement. For example:

```
if (szStringA = "exit") then
    AskYesNo ( "Are you sure you want to exit?", NO );
endif;
```

If szStringA equals "exit", the test evaluates to TRUE (1) and the AskYesNo function is called. If szStringA contains anything else, the result is FALSE (0) and the entire statement is ignored.

The sample code below compares the values of the variable nDialog and the constant DLG_ERR. If they are equivalent, InstallShield executes the MessageBox function:

```
if (nDialog = DLG_ERR) then
    MessageBox ("Error has occurred", WARNING);
endif;
```

Tip ▪ *You may find that your if statement is easier to read when you place the expression to be evaluated in parentheses, but the parentheses are optional in InstallScript.*

if-then-else Structure

An if statement can also specify one or more statements to be executed if the condition is false. This option is indicated with the keyword else, as shown below:

```
if (condition) then
    // statements to be executed if condition is true
else
    // statements to be executed if condition is false
endif;
```

In the example below, if szStringA equals "exit," the test evaluates to TRUE (1), and the AskYesNo function is called. If szStringA is not equal to "exit," the result is FALSE (0), and the MessageBox function is called following the else statement.

```
if szStringA = "exit" then
    AskYesNo ("Are you sure you want to exit?", NO );
else
    MessageBox ("Please wait... ", INFORMATION );
endif;
```

Nested if-then-else Structure

You can create nested if statements, in which one if statement is embedded in another:

```
if (first condition) then
    if (second condition) then
        // statements to be executed if first and
        // second conditions are true
    else
        // statements to be executed if first is true but
        // second condition is false
    endif;
else
    if (third condition) then
        // statements to be executed if first condition is
        // false and third condition is true
    else
        // statements to be executed if first condition is
        // false and third condition is false
    endif;
endif;
```

In the following example, if the value of szStringA is "exit", AskYesNo is called. If the value of szStringA is "exit", the program displays a message box. if szStringA is not equal to either of those values, the execution proceeds to the label UserErrorHandler.

```
if szStringA = "exit" then
    AskYesNo ("Are you sure you want to exit?", NO);
else
```

```
    if szStringA = "continue" then
        MessageBox ("Please wait...", INFORMATION);
    else
        UserErrorHandler;
    endif;
endif;
```

elseif Structure

InstallScript provides the elseif statement to create if structures in which the else branch of one if statement leads to another if statement:

```
if (first condition) then
    // statements to be executed if first condition
    // is true
elseif (second condition) then
    // statements to be executed if first condition
    // is false and second condition is true
elseif (third condition) then
    // statements to be executed if first and second
    // conditions are false and third condition is
    // true
endif;
```

In the following example, if szStringA equals “exit,” AskYesNo is called. If szStringA is not equal to “exit,” the program continues to the elseif statement to test if szStringA is equal to “continue.” If szStringA is equal to “continue,” the result is TRUE and MessageBox is called. If szStringA is not equal to “continue,” the program moves to the next elseif, and so on.

```
if szStringA = "exit" then
    AskYesNo ("Are you sure you want to exit?", NO );
elseif szStringA = "continue" then
    MessageBox ("Please wait...", INFORMATION );
elseif szStringA = "reboot" then
    goto StartHere;
endif;
```

Note ▪ *You cannot define a label within an if statement.*

method

Project ▪ *This information applies to InstallScript projects.*

The method keyword is used to declare a method in an object script with the following syntax:

```
method <return variable type> <method name> ( <argument variable type(s)> );
```

For example:

```
method STRING MyMethod ( STRING, NUMBER );
```

If you add a method to the object project by using the Add New Method dialog box, a method declaration is automatically placed in the object script.

property()

Project ▪ *This information applies to InstallScript projects.*

The property() keyword is used to declare a property and its get and/or put procedures in an object script with the following syntax:

Table 1 ▪ Property() Keyword Declarations

Access	Declaration
Read only	`property(get) <return variable type> <property name> ( <argument variable type(s)> );`
Write only	`property(put) <return variable type> <property name> ( <argument variable type(s)> );`
Read/write	`property(get,put) <return variable type> <property name> ( <argument variable type(s)> );`

For example:

```
property(get,put) STRING MyProperty ( NUMBER );
```

If you add a property to the object project by using the Add New Property dialog box, a property declaration is automatically placed in the object script.

prototype

The prototype keyword tells the InstallScript compiler that the line of code contains a function definition. To learn how to use this keyword, see Declaring Functions.

repeat...until

The repeat statement is analogous to the do...while loop in the C language. It also is very similar to the InstallScript while statement.

There are two main differences between repeat and while in InstallScript:

- The repeat statement must loop at least once. A while statement might not loop at all.
- A while statement terminates when the expression evaluates as false. A repeat statement terminates when the expression evaluates as true.

Task ***To create a repeat loop:***

1. Set the variable you will be using in the conditional test as you would for a while loop.
2. Type repeat on its own line with no punctuation.
3. Build the operation(s) that you want repeated.
4. Add the operation that changes the test variable (for example, nCount = nCount + 1, or nCount = SomeVariable).
5. End the loop with an until statement containing the conditional test in parentheses.

The following example demonstrates repeat loop syntax:

```
nCount = 1;
repeat
    MessageBox("Count is less than 5", INFORMATION);
    nCount = nCount + 1;
until (nCount = 5);
```

Note ▪ *You cannot define a label within the repeat statement.*

return

You can use the return statement to return a value from a user-defined function (if the function prototype does not specify a return type of void). When a return statement is encountered, program flow returns to the point at which the function was called. When used to return from a call to a user-defined function, the return statement can return a specified value to the caller.

The return value of most built-in functions will be either 0 (zero), indicating the success of the function, or a value less than zero (< 0), indicating failure. You can assign a number to the return value by using a return statement above the end statement in the function block, as shown below:

```
    return -1;
end;
```

This attribute allows you to return the value of a local variable to the caller, even though the local variable itself is destroyed:

```
function MyFunction(ParamOne, ParamTwo)
    NUMBER nNumber;
begin
    nNumber = (ParamOne + ParamTwo);
    // . . .
    return nNumber;
end;
```

set

The set keyword must precede the assignment of an OBJECT variable to a reference returned by the CreateObject function. For example:

```
function OnBegin( )
    OBJECT oMSI;
begin
    // create the object
    set oMSI = CreateObject("WindowsInstaller.Installer");

    // use the object (display MSI version on user's system)
    MessageBox("Your MSI version is: " + oMSI.Version, INFORMATION);

    // free the object
    set oMSI = NOTHING;
end;
```

Note ▪ *You can use the keywords try–catch–endcatch for more control over exception handling for COM objects.*

stdcall

Project ▪ *This information applies to InstallScript projects.The stdcall keyword is used when declaring an external DLL function that uses the stdcall calling convention. For example:*

```
prototype stdcall POINTER kernel32.lstrcpy( byref string, byref string);
```

If no calling convention is specified, stdcall is assumed.

Most Windows API functions use the stdcall (WINAPI) calling convention. Consult Microsoft documentation for more information about calling conventions.

switch...endswitch

The switch statement is similar to the elseif Structure statement. Use the switch statement to execute one of several different sections of code, depending on the value of an expression. The switch statement evaluates the expression and then branches to the case statement whose constant value matches the result of the expression. If no match is found among the case statements, control passes to a default statement, if one has been specified.

Creating Switch Statements

Task ***To create a switch statement:***

1. Type the keyword *switch*, followed by the expression to be evaluated. The expression—which can be a constant, variable, arithmetic expression, logical expression, or function result—must be enclosed within parentheses. Do not punctuate this line.
2. For each option, type the keyword *case* and one or more constants followed by a colon. If more than one constant is specified, delimit them with commas. Note that only constants can be specified here. Specifying a variable name, string identifier, function result, or other type of expression after the keyword case results in an error.

3. For each case, follow the colon with the statement or statements to be executed for that option. Terminate each statement with a semicolon.
4. After all case statements have been specified, use the keyword *default*, followed by a colon (:), to control the program when the expression does not match any of the stated cases.
5. Close the block with the keyword *endswitch*, followed by a semicolon (;).

Example Script

The following script segment displays the current video resolution of the computer on which it is executed:

```
STRING szMsg, svResult;
NUMBER nvResult;

GetSystemInfo (VIDEO, nvResult, svResult);

switch (nvResult)
    case IS_UNKNOWN:
        szMsg = "The user's video is unknown.";
    case IS_EGA:
        szMsg = "EGA resolution.";
    case IS_VGA:
        szMsg = "VGA resolution.";
    case IS_SVGA:
        szMsg = "Super VGA (800 x 600) resolution.";
    case IS_XVGA:
        szMsg = "XVGA (1024 x 768) resolution.";
    case IS_UVGA:
        szMsg = "Greater than 1024 x 768 resolution.";
    default:
        szMsg = "Error";
endswitch;

MessageBox (szMsg, INFORMATION);
```

Note ▪ *Only one case block is executed each time a switch statement is executed. After InstallShield executes a case block, it executes the next statement after the endswitch. A switch block can be quite useful inside of a while loop. By using the case statements as flags, you can create a loop with optional exit points.*

try, catch, and endcatch

The keywords try, catch, and endcatch are used for exception handling. For more information on exception handling, see Exception Handling.

Note ▪ *You cannot use a goto statement within a try...catch...endcatch statement. In addition, you cannot define a label within a try...catch...endcatch statement.*

void

Void is not a true data type, in the sense that a variable cannot be declared as type void. Void is only used in function prototypes to indicate that the function does not return a value, as in the following:

```
prototype void Subroutine(int);

function void Subroutine(int);
begin
    // perform operations, but
    // do not return a value
end;
```

while...endwhile

Use the while statement when you want to execute one or more statements repeatedly, as long as a particular condition is true. If the condition is not true when the statement is first executed, the loop is not performed.

Task ***To create a while loop:***

1. Set the variable you are using as the condition to an initial state.
2. Type the keyword while, followed by the conditional test in parentheses. Do not punctuate this line.
3. Build the operation(s) that you want repeated.
4. Add the operation that changes the test variable (for example, nCount = nCount + 1, or nCount = SomeVariable).
5. End the loop by typing endwhile, followed by a semicolon.

In the following example, the message box is displayed four times.

```
nCount = 1;

while (nCount < 5)
    MessageBox ("This is still true.", INFORMATION);
    nCount = nCount + 1;
endwhile;
```

Because nCount is assigned an initial value of 1, the while statement evaluates TRUE the first time it is executed; the message box is displayed and nCount is incremented by 1. After the fourth pass through the loop, nCount is equal to 5; the while statement evaluates FALSE and the program continues executing with the statement after endwhile.

Note ▪ *You cannot define a label within a while block. You can, however, nest while statements in InstallScript. You must end each while block with endwhile.*

Nested while Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
  /* This script illustrates a nested while loop.
 * It searches for the specified type of files and
 * shows the number of lines in each file.      */

#define SOURCEDIR "c:\\example";

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Nested while(HWND);

function ExFn_Nested while(hMSI)
    LIST    listID;
    STRING  svTarget, svResult, filename, svLine, szPath, szFileName;
    NUMBER  nResult, nOp,nFileHandle,count;
begin

    count = 0;
    nOp = RESET;
    svTarget = SOURCEDIR;
    listID = ListCreate (STRINGLIST);

    while FindAllFiles (svTarget, "*.txt", svResult, nOp) = 0;

        // To get the name of the file in the fully specified path
        StrGetTokens(listID,svResult,"\\");
        ListCurrentString(listID,filename);

        // Set the file mode to normal.
        OpenFileMode(FILE_MODE_NORMAL);
        szFileName = filename;
        szPath     = svTarget;

        // The following opens the file for editing.
        OpenFile(nFileHandle, szPath, szFileName);

/*------------------------------------------------------------------*\
 *
 * The following retrieves each line of text from the open file and increments
 * a count to find the number of lines.
 *
\*------------------------------------------------------------------*/

        while (GetLine (nFileHandle, svLine) = 0)
            count = count + 1;
        endwhile;

        SprintfBox(INFORMATION,"The Total lines in the file",
                  "The  No. of lines in the file %s is %d",filename,count);
```

```
        count = 0;

        // The following closes the file
        CloseFile(nFileHandle);

        // Continue searching files where last file was left off
        nOp = CONTINUE;

        if (FindAllFiles (svTarget, "*.txt", svResult, nOp) < 0) then
            abort;
        endif;

    endwhile;

end;
```

Flow Control

Like most programming languages, InstallScript processes statements within a function block sequentially, starting with the first statement and ending with the last. The linear flow of execution within a function block can be controlled with conditional statements that perform branching and iteration.

Branching is most commonly performed with an if statement that directs execution down one path or another. Iteration is performed with loop statements that execute one or more statements repeatedly, either for a set number of times or as long as a specified condition is met.

To control the flow of execution within scripts, InstallShield provides the following keywords:

- abort
- exit
- for...endfor
- goto
- if...then...else...endif
- repeat...until
- return
- switch...endswitch
- while...endwhile

Predefined Constants

A predefined constant is an identifier reserved by InstallScript to represent a specific literal value. InstallScript uses predefined constants to represent certain data values that are passed to and returned by built-in functions. By using these predefined constants rather than literal values, you can improve the readability of your setup scripts.

You cannot change the value InstallShield assigns to a predefined constant. However, you can determine the value of a predefined constant by calling SprintfBox, as shown in the example below, which displays the value of the predefined constant FEATURE_FIELD_SELECTED:

```
SprintfBox (INFORMATION, "", "%d", FEATURE_FIELD_SELECTED);
```

Although you can use a literal value in place of a predefined constant, it is strongly recommended that you use predefined constants wherever indicated for a function.

Following is a list of the predefined constants used by InstallScript.

-
-
-
-

AFTER

AFTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- EzBatchAddString
- EzBatchAddPath
- ConfigAdd
- ConfigMove
- ListAddItem
- ListAddString
- PathAdd
- PathMove
- BatchAdd
- PathMove
- BatchMoveEx
- FileInsertLine
- EzConfigAddDriver

- EzConfigAddString

ALLCONTENTS

ALLCONTENTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DeleteDir

ALLCONTROLS

ALLCONTROLS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlSetFont

APPEND

APPEND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileInsertLine

ASKDESTPATH

ASKDESTPATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskDestPath

ASKOPTIONS

ASKOPTIONS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskOptions
- PlaceWindow

ASKPATH

ASKPATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskPath
- PlaceWindow

ASKTEXT

ASKTEXT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskText
- PlaceWindow

BACK

BACK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskDestPath
- AskOptions
- AskPath
- AskText
- FeatureDialog
- SdAskDestPath
- SdAskOptions
- SdAskOptionsList
- SdBitmap
- SdDisplayTopics
- SdFeatureDialog
- SdFeatureDialog2
- SdFeatureDialogAdv
- SdFeatureMult

- SdLicense
- SdOptionsButtons
- SdRegisterUser
- SdRegisterUserEx
- SdSelectFolder
- SdShowAnyDialog
- SdShowDlgEdit1
- SdShowDlgEdit2
- SdShowDlgEdit3
- SdShowFileMods
- SdShowInfoList
- SdStartCopy
- SdWelcome
- SelectFolder
- Welcome

BACKBUTTON

BACKBUTTON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable
- Is

BACKGROUND

BACKGROUND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow
- SetColor
- Enable
- SizeWindow

- Disable

BACKGROUNDCAPTION

BACKGROUNDCAPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetTitle

BASEMEMORY

Project ▪ *This information applies to InstallScript projects.*

BASEMEMORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

BEFORE

BEFORE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PathMove
- FileInsertLine
- EzBatchAddPath
- EzBatchAddString
- BatchAdd
- BatchMoveEx
- EzConfigAddDriver
- EzConfigAddString
- ConfigAdd
- ConfigMove
- ListAddItem
- ListAddString

- PathAdd

BIF_BROWSEFORCOMPUTER

Project *▪ This information applies to InstallScript projects.*

BIF_BROWSEFORCOMPUTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_BROWSEFORPRINTER

Project *▪ This information applies to InstallScript projects.*

BIF_BROWSEFORPRINTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_DONTGOBELOWDOMAIN

Project *▪ This information applies to InstallScript projects.*

BIF_DONTGOBELOWDOMAIN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_EDITBOX

Project *▪ This information applies to InstallScript projects.*

BIF_EDITBOX is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_RETURNFSANCESTORS

Project *▪ This information applies to InstallScript projects.*

BIF_RETURNFSANCESTORS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_RETURNONLYFSDIRS

Project *▪ This information applies to InstallScript projects.*

BIF_RETURNONLYFSDIRS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BIF_STATUSTEXT

Project *▪ This information applies to InstallScript projects.*

BIF_STATUSTEXT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDirEx

BILLBOARD

BILLBOARD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- PlaceWindow

BITMAPICON

BITMAPICON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap

BK_BLUE

BK_BLUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_GREEN

BK_GREEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_MAGENTA

BK_MAGENTA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_ORANGE

BK_ORANGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_PINK

BK_PINK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_RED

BK_RED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SMOOTH

BK_SMOOTH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDBLACK

BK_SOLIDBLACK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDBLUE

BK_SOLIDBLUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDGREEN

BK_SOLIDGREEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDMAGENTA

BK_SOLIDMAGENTA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDORANGE

BK_SOLIDORANGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDPINK

BK_SOLIDPINK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDRED

BK_SOLIDRED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDWHITE

BK_SOLIDWHITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_SOLIDYELLOW

BK_SOLIDYELLOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BK_YELLOW

BK_YELLOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

BLACK

BLACK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetTitle

BLUE

BLUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor
- SetTitle

BOOTUPDRIVE

BOOTUPDRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

BUTTON_CHECKED

BUTTON_CHECKED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlSetState
- CtrlGetState

BUTTON_UNCHECKED

BUTTON_UNCHECKED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlSetState
- CtrlGetState

BYTES

BYTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConvertSizeToUnits
- StrConvertSizeUnit

CANCEL

CANCEL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDir

CANCELBUTTON

CANCELBUTTON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable
- Is

CDROM

CDROM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

CDROM_DRIVE

CDROM_DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetValidDrivesList

CENTERED

CENTERED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow

- PlaceBitmap

CHECKBOX

CHECKBOX is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

CHECKBOX95

CHECKBOX95 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

CHECKLINE

CHECKLINE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

CHECKMARK

CHECKMARK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

CLEAR_FILE_ATTR

CLEAR_FILE_ATTR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile

COLORS

COLORS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

COMMAND

COMMAND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- BatchMoveEx
- ConfigFind
- EzBatchAddString
- BatchAdd
- BatchDeleteEx

COMMON

COMMON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ProgDefGroupType

COMPACT

COMPACT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetupType
- SdSetupType

COMPARE_DATE

COMPARE_DATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare

COMPARE_MD5_SIGNATURE

COMPARE_MD5_SIGNATURE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare

COMPARE_SIZE

COMPARE_SIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare

COMPARE_VERSION

COMPARE_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare

COMP_NORMAL

COMP_NORMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile

COMP_UPDATE_DATE

COMP_UPDATE_DATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile

COMP_UPDATE_SAME

COMP_UPDATE_SAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile

COMP_UPDATE_VERSION

COMP_UPDATE_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile

CONTINUE

CONTINUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileGrep
- BatchFind
- FindFile
- ConfigFind
- PathFind

COPY_ERR_CREATEDIR

COPY_ERR_CREATEDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

COPY_ERR_MEMORY

COPY_ERR_MEMORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

COPY_ERR_NODISKSPACE

COPY_ERR_NODISKSPACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

COPY_ERR_OPENINPUT

COPY_ERR_OPENINPUT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

COPY_ERR_OPENOUTPUT

COPY_ERR_OPENOUTPUT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

COPY_ERR_TARGETREADONLY

COPY_ERR_TARGETREADONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CopyFile
- XCopyFile

CPU

CPU is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

CS_OPTION_FLAG_NO_NEW_INSTALL_HIGHLIGHT

CS_OPTION_FLAG_NO_NEW_INSTALL_HIGHLIGHT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CS_OPTION_FLAG_NO_STARTSCREEN_PIN

CS_OPTION_FLAG_NO_STARTSCREEN_PIN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CS_OPTION_FLAG_PREVENT_PINNING

CS_OPTION_FLAG_PREVENT_PINNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CS_OPTION_FLAG_REPLACE_EXISTING

CS_OPTION_FLAG_REPLACE_EXISTING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CS_OPTION_FLAG_RUN_MAXIMIZED

CS_OPTION_FLAG_RUN_MAXIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CS_OPTION_FLAG_RUN_MINIMIZED

CS_OPTION_FLAG_RUN_MINIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CreateShortcut
- ReplaceShortcut

CURRENTROOTKEY

CURRENTROOTKEY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VarRestore
- VarSave

CUSTOM

CUSTOM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetupType
- SdSetupType

DATA_COMPONENT

DATA_COMPONENT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SilentReadData
- SilentWriteData

DATA_LIST

DATA_LIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SilentWriteData

DATA_NUMBER

DATA_NUMBER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SilentReadData
- SilentWriteData

DATA_STRING

DATA_STRING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SilentReadData
- SilentWriteData

DATE

DATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

DEFAULT

DEFAULT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- switch...endswitch

DEFWINDOWMODE

DEFWINDOWMODE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Enable

DELETE

Project ▪ *This information applies to InstallScript projects.*

DELETE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions
- SERVICE_IS_PARAMS

DELETE_EOF

DELETE_EOF is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileDeleteLine

DIALOGCACHE

DIALOGCACHE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

DIFXAPI_ERROR

DIFXAPI_ERROR is a predefined constant that is used to represent a value that is available for use with one or more event handlers. You cannot change the value of a predefined constant.

Used With

- OnDIFxLogCallback

DIFXAPI_INFO

DIFXAPI_INFO is a predefined constant that is used to represent a value that is available for use with one or more event handlers. You cannot change the value of a predefined constant.

Used With

- OnDIFxLogCallback

DIFXAPI_SUCCESS

DIFXAPI_SUCCESS is a predefined constant that is used to represent a value that is available for use with one or more event handlers. You cannot change the value of a predefined constant.

Used With

- OnDIFxLogCallback

DIFXAPI_WARNING

DIFXAPI_WARNING is a predefined constant that is used to represent a value that is available for use with one or more event handlers. You cannot change the value of a predefined constant.

Used With

- OnDIFxLogCallback

DIRECTORY

DIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

DIR_WRITEABLE

DIR_WRITEABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

DISABLE_ALLUSERBTN

Project ▪ *This information applies to InstallScript projects.*

DISABLE_ALLUSERBTN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

The DISABLE_ALLUSERBTN constant indicates that the all-users option should be disabled (or hidden) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the all-users option is always hidden if the installation is being run without administrator or power-user privileges, regardless of the value of this variable.

Used With

- SdCustomerInformation
- SdCustomerInformationEx

DISABLE_PERUSERBTN

DISABLE_PERUSERBTN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

The DISABLE_PERUSERBTN constant indicates that the per-user option should be disabled (or hidden if HIDE_DISABLED_BTNS is TRUE) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the per-user option is always hidden on Windows 9x platforms, regardless of the value of this variable.

Used With

- SdCustomerInformation
- SdCustomerInformationEx

DISK

DISK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

DISK1FEATURE

Project ▪ *This information applies to InstallScript projects.*

DISK1FEATURE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

DISK1FEATURE specifies the feature with the files needed for maintenance setups and uninstallation. (Note that this feature is automatically placed in your .cab files by the media builder and is not displayed in the IDE.)

Used With

- FeatureSelectItem
- FeatureIsItemSelected

DISK_INFO_QUERY_ALL

DISK_INFO_QUERY_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DISK_INFO_QUERY_BYTES_PER_CLUSTER

DISK_INFO_QUERY_BYTES_PER_CLUSTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DISK_INFO_QUERY_DISK_FREE_SPACE

DISK_INFO_QUERY_DISK_FREE_SPACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DISK_INFO_QUERY_DISK_TOTAL_SPACE

DISK_INFO_QUERY_DISK_TOTAL_SPACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DISK_INFO_QUERY_DRIVE_TYPE

DISK_INFO_QUERY_DRIVE_TYPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DISK_TOTALSPACE

DISK_TOTALSPACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

DISK_TOTALSPACE_EX

DISK_TOTALSPACE_EX is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

DLG_ASK_OPTIONS

DLG_ASK_OPTIONS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_ASK_PATH

DLG_ASK_PATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_ASK_TEXT

DLG_ASK_TEXT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_ASK_YESNO

DLG_ASK_YESNO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_CENTERED

DLG_CENTERED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DefineDialog

DLG_CLOSE

DLG_CLOSE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- WaitOnDialog

DLG_DIR_DIRECTORY

DLG_DIR_DIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlDir

DLG_DIR_DRIVE

DLG_DIR_DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlDir

DLG_DIR_FILE

DLG_DIR_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlDir

DLG_ENTER_DISK

DLG_ENTER_DISK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_ERR

DLG_ERR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- WaitOnDialog
- EzDefineDialog
- ReleaseDialog
- CtrlGetState
- DefineDialog

DLG_ERR_ALREADY_EXISTS

DLG_ERR_ALREADY_EXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DefineDialog
- EzDefineDialog

DLG_ERR_ENDDLG

DLG_ERR_ENDDLG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ReleaseDialog

DLG_INFO_ALTIMAGE

DLG_INFO_ALTIMAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INFO_ALTIMAGE_HIDPI

DLG_INFO_ALTIMAGE_HIDPI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INFO_ALTIMAGE_REVERT_IMAGE

DLG_INFO_ALTIMAGE_REVERT_IMAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INFO_ALTIMAGE_VERIFY_BMP

DLG_INFO_ALTIMAGE_VERIFY_BMP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INFO_CHECKSELECTION

This constant is now obsolete. The checkbox controls in InstallScript are now drawn automatically using your current Windows theme to provide a modern and uniform look that is compatible with high DPI displays.

DLG_INFO_KUNITS

DLG_INFO_KUNITS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INFO_USEDECIMAL

DLG_INFO_USEDECIMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DialogSetInfo

DLG_INIT

DLG_INIT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- WaitOnDialog

DLG_MSG_ALL

DLG_MSG_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DefineDialog

DLG_MSG_INFORMATION

DLG_MSG_INFORMATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_MSG_SEVERE

DLG_MSG_SEVERE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_MSG_STANDARD

DLG_MSG_STANDARD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DefineDialog

DLG_MSG_WARNING

DLG_MSG_WARNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_STATUS

DLG_STATUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DLG_USER_CAPTION

DLG_USER_CAPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDialogTitle

DOINSTALL_OPTION_NOHIDEPROGRESS

DOINSTALL_OPTION_NOHIDEPROGRESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall

DOINSTALL_OPTION_NOHIDESPLASH

DOINSTALL_OPTION_NOHIDESPLASH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall

DOINSTALL_OPTION_NOLANGSWITCH

DOINSTALL_OPTION_NOLANGSWITCH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall

DOINSTALL_OPTION_NOSETBATCHINSTALL

DOINSTALL_OPTION_NOSETBATCHINSTALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall

DOTNETFRAMEWORKINSTALLED

DOTNETFRAMEWORKINSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

DOTNETSERVICEPACKINSTALLED

DOTNETSERVICEPACKINSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

DRIVE

DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

DRIVE_CDROM

DRIVE_CDROM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_FIXED

DRIVE_FIXED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_NO_ROOT_DIR

DRIVE_NO_ROOT_DIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_RAMDISK

DRIVE_RAMDISK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_REMOTE

DRIVE_REMOTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_REMOVABLE

DRIVE_REMOVABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVE_UNKNOWN

DRIVE_UNKNOWN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetDiskInfo

DRIVER_PACKAGE_DELETE_FILES

DRIVER_PACKAGE_DELETE_FILES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageUninstall

DRIVER_PACKAGE_FORCE

DRIVER_PACKAGE_FORCE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall
- DIFxDriverPackageUninstall

DRIVER_PACKAGE_LEGACY_MODE

DRIVER_PACKAGE_LEGACY_MODE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall

DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT

DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall

DRIVER_PACKAGE_REPAIR

DRIVER_PACKAGE_REPAIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall
- DIFxDriverPackageUninstall

DRIVER_PACKAGE_SILENT

DRIVER_PACKAGE_SILENT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall

EDITBOX_CHANGE

EDITBOX_CHANGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlGetSubCommand

EFF_BOXSTRIPE

EFF_BOXSTRIPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_FADE

EFF_FADE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_HORZREVEAL

EFF_HORZREVEAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_HORZSTRIPE

EFF_HORZSTRIPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_NONE

EFF_NONE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_REVEAL

EFF_REVEAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

EFF_VERTSTRIPE

EFF_VERTSTRIPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetDisplayEffect

END_OF_FILE

END_OF_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileGrep

END_OF_LIST

END_OF_LIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListCurrentItem
- ListCurrentString
- ListGetFirstItem
- ListSetIndex
- ListDeleteItem
- ListDeleteString
- ListFindItem

- ListFindString
- ListCurrentString
- ListGetNextItem
- ListGetNextString
- ListSetCurrentItem
- ListSetCurrentString

ENTERDISK

ENTERDISK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- EnterDisk
- PlaceWindow

EQUALS

EQUALS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerCompare
- FileCompare

ERROR_ACCESS_DENIED

Project ▪ *This information applies to InstallScript projects.*

ERROR_ACCESS_DENIED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_CIRCULAR_DEPENDENCY

Project *▪ This information applies to InstallScript projects.*

ERROR_CIRCULAR_DEPENDENCY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_DATABASE_DOES_NOT_EXIST

Project *▪ This information applies to InstallScript projects.*

ERROR_DATABASE_DOES_NOT_EXIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_DEPENDENT_SERVICES_RUNNING

Project *▪ This information applies to InstallScript projects.*

ERROR_DEPENDENT_SERVICES_RUNNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_DUP_NAME

Project *▪ This information applies to InstallScript projects.*

ERROR_DUP_NAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_FILE_NOT_FOUND

Project *▪ This information applies to InstallScript projects.*

ERROR_FILE_NOT_FOUND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_INVALID_HANDLE

Project *▪ This information applies to InstallScript projects.*

ERROR_INVALID_HANDLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_INVALID_PARAMETER

Project *▪ This information applies to InstallScript projects.*

ERROR_INVALID_PARAMETER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_INVALID_SERVICE_ACCOUNT

Project *▪ This information applies to InstallScript projects.*

ERROR_INVALID_SERVICE_ACCOUNT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_INVALID_SERVICE_CONTROL

Project *▪ This information applies to InstallScript projects.*

ERROR_INVALID_SERVICE_CONTROL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_PATH_NOT_FOUND

Project *▪ This information applies to InstallScript projects.*

ERROR_PATH_NOT_FOUND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_ALREADY_RUNNING

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_ALREADY_RUNNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_CANNOT_ACCEPT_CTRL

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_CANNOT_ACCEPT_CTRL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_DATABASE_LOCKED

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_DATABASE_LOCKED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_DEPENDENCY_DELETED

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_DEPENDENCY_DELETED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_DEPENDENCY_FAIL

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_DEPENDENCY_FAIL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_DISABLED

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_DISABLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_DOES_NOT_EXIST

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_DOES_NOT_EXIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_EXISTS

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_EXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_LOGON_FAILED

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_LOGON_FAILED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_NOT_ACTIVE

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_NOT_ACTIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_NO_THREAD

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_NO_THREAD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_SERVICE_REQUEST_TIMEOUT

Project *▪ This information applies to InstallScript projects.*

ERROR_SERVICE_REQUEST_TIMEOUT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERROR_TIMEOUT

Project *▪ This information applies to InstallScript projects.*

ERROR_TIMEOUT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetExtendedErrInfo

ERR_ABORT

ERR_ABORT is a predefined constant that is used to represent a value that is passed to or returned by one or more event handlers. You cannot change the value of a predefined constant.

Used With

- OnNextDisk

ERR_BOX_BADPATH

ERR_BOX_BADPATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetErrorMsg
- SetErrorTitle

ERR_BOX_BADTAGFILE

ERR_BOX_BADTAGFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetErrorMsg
- SetErrorTitle

ERR_BOX_DISKID

ERR_BOX_DISKID is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetErrorTitle
- SetErrorMsg

ERR_BOX_DRIVEOPEN

ERR_BOX_DRIVEOPEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetErrorTitle
- SetErrorMsg

ERR_IGNORE

ERR_IGNORE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- SdExceptions

ERR_NO

ERR_NO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- SdExceptions

ERR_PERFORM_AFTER_REBOOT

ERR_PERFORM_AFTER_REBOOT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- SdExceptions

ERR_RETRY

ERR_RETRY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- OnNextDisk
- SdExceptions

ERR_YES

ERR_YES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- SdExceptions

EXCLUDE_SUBDIR

EXCLUDE_SUBDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile
- FindAllDirs

EXCLUSIVE

EXCLUSIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdAskOptionsList
- AskOptions
- SdAskOptions

EXISTS

EXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ExistsDir
- ExistsDisk

EXIT

EXIT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Do
- HandlerEx

EXTENDEDMEMORY

EXTENDEDMEMORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

EXTENSION_ONLY

EXTENSION_ONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

FALSE

FALSE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskOptions
- CtrlSetMultCurSel
- DialogSetInfo
- FeatureAddItem
- FeatureGetData
- FeatureIsItemSelected
- FeatureSelectItem
- FeatureTotalSize
- LongPathToQuote
- SdDiskSpace2
- SelectDir
- SdShowMsg
- SQLDatabaseBrowse
- SQLRTConnect
- SQLRTConnect2
- SQLRTConnectDB
- SQLRTGetDatabases
- SQLRTGetServers
- SQLRTGetServers2
- SQLRTPutConnectionAuthentication
- SQLRTTestConnection
- SQLRTTestConnection2

- SQLServerSelectLogin
- SQLServerSelectLogin2

FEATURE_FIELD_CDROM_FOLDER

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_CDROM_FOLDER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_DESCRIPTION

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_DESCRIPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_DISPLAYNAME

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_DISPLAYNAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_ENCRYPT

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_ENCRYPT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_FILENEED

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_FILENEED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_FLAGS

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_FLAGS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_FTPLOCATION

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_FTPLOCATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_GUID

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_GUID is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_HANDLER_ONINSTALLED

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_HANDLER_ONINSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_HANDLER_ONINSTALLING

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_HANDLER_ONINSTALLING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_HANDLER_ONUNINSTALLED

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_HANDLER_ONUNINSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_HANDLER_ONUNINSTALLING

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_HANDLER_ONUNINSTALLING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_HTTPLOCATION

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_HTTPLOCATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_IMAGE

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_IMAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureSetData

FEATURE_FIELD_MISC

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_MISC is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_PASSWORD

Project *▪ This information applies to InstallScript projects.*

FEATURE_FIELD_PASSWORD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_FIELD_SELECTED

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_SELECTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_SIZE

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_SIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_STATUS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_STATUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_FIELD_VISIBLE

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_FIELD_VISIBLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData
- FeatureSetData

FEATURE_INFO_ATTRIBUTE

Project *▪ This information applies to InstallScript MSI projects.*

FEATURE_INFO_ATTRIBUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_COMPONENT_FLAGS

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_COMPONENT_FLAGS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_COMPSIZE_HIGH

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_COMPSIZE_HIGH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_COMPSIZE_LOW

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_COMPSIZE_LOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_DATE

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_DATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_DATE_EX

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_DATE_EX is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_DESTINATION

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_DESTINATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_FTPLOCATION

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_FTPLOCATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_HTTPLOCATION

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_HTTPLOCATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_LANGUAGE

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_LANGUAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_MD5_SIGNATURE

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_MD5_SIGNATURE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_MISC

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_MISC is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_ORIGSIZE_HIGH

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_ORIGSIZE_HIGH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_ORIGSIZE_LOW

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_ORIGSIZE_LOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_OS

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_OS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_OVERWRITE

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_OVERWRITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_PLATFORM_SUITE

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_PLATFORM_SUITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_TIME

Project *▪ This information applies to InstallScript projects.*

FEATURE_INFO_TIME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_VERSIONLS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_VERSIONLS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_VERSIONMS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_VERSIONMS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_INFO_VERSIONSTR

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FEATURE_INFO_VERSIONSTR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- FeatureFileInfo

FEATURE_OPCOST_UNINSTALL_FILE

FEATURE_OPCOST_UNINSTALL_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureAddUninstallCost
- FeatureSpendUninstallCost

FEATURE_OPCOST_UNINSTALL_REGORINI

FEATURE_OPCOST_UNINSTALL_REGORINI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureAddUninstallCost
- FeatureSpendUninstallCost

FEATURE_OPCOST_UNINSTALL_UNREGFILE

FEATURE_OPCOST_UNINSTALL_UNREGFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureAddUninstallCost
- FeatureSpendUninstallCost

FEATURE_VALUE_CRITICAL

Project ▪ *This information applies to InstallScript projects.*

FEATURE_VALUE_CRITICAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_VALUE_HIGHLYRECOMMENDED

Project ▪ *This information applies to InstallScript projects.*

FEATURE_VALUE_HIGHLYRECOMMENDED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

FEATURE_VALUE_STANDARD

Project ▪ *This information applies to InstallScript projects.*

FEATURE_VALUE_STANDARD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureGetData

File Attributes

Project ▪ *This information applies to InstallScript projects.*

Table 1 ▪ File Attributes

Attribute	Description
FILE_ATTR_NORMAL	The file is a normal file.
FILE_ATTR_ARCHIVED	The file is archived.
FILE_ATTR_DIRECTORY	The file is a directory.
FILE_ATTR_HIDDEN	The file is hidden.
FILE_ATTR_READONLY	The file is read-only.
FILE_ATTR_SYSTEM	The file is a system file.

FILE_ADD_FILE

FILE_ADD_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_ADD_SUBDIRECTORY

FILE_ADD_SUBDIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_ALL_ACCESS

FILE_ALL_ACCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_APPEND_DATA

FILE_APPEND_DATA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_ATTR_ARCHIVED

FILE_ATTR_ARCHIVED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFileInfo

FILE_ATTR_HIDDEN

FILE_ATTR_HIDDEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFileInfo

FILE_ATTR_NORMAL

FILE_ATTR_NORMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFileInfo

FILE_ATTR_READONLY

FILE_ATTR_READONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFileInfo

FILE_ATTR_SYSTEM

FILE_ATTR_SYSTEM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFileInfo

FILE_ATTRIBUTE

FILE_ATTRIBUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo
- SetFileInfo

FILE_BIN_CUR

FILE_BIN_CUR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SeekBytes

FILE_BIN_END

FILE_BIN_END is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SeekBytes

FILE_BIN_START

FILE_BIN_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SeekBytes

FILE_DATE

FILE_DATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo
- SetFileInfo

FILE_DELETE_CHILD

FILE_DELETE_CHILD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_EXECUTE

FILE_EXECUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_EXISTS

FILE_EXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

FILE_INSTALLED

FILE_INSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerSearchAndUpdateFile

FILE_IS_LOCKED

FILE_IS_LOCKED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerUpdateFile
- VerSearchAndUpdateFile

FILE_LINE_LENGTH

FILE_LINE_LENGTH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileInsertLine
- FileGrep

FILE_LIST_DIRECTORY

FILE_LIST_DIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_LOCKED

FILE_LOCKED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

FILE_MD5_SIGNATURE

FILE_MD5_SIGNATURE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo

FILE_MODE_APPEND

FILE_MODE_APPEND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- OpenFileMode
- CreateFile

FILE_MODE_APPEND_UNICODE

FILE_MODE_APPEND_UNICODE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- OpenFileMode

FILE_MODE_BINARY

FILE_MODE_BINARY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- WriteBytes
- OpenFileMode

FILE_MODE_BINARYREADONLY

FILE_MODE_BINARYREADONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- OpenFileMode

FILE_MODE_NORMAL

FILE_MODE_NORMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- OpenFileMode

FILE_NOT_FOUND

FILE_NOT_FOUND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerGetFileVersion
- FileGrep
- FileInsertLine
- FileCompare
- FileDeleteLine
- VerFindFileVersion

FILE_NO_VERSION

FILE_NO_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerGetFileVersion
- VerSearchAndUpdateFile
- VerFindFileVersion
- VerUpdateFile

FILE_RD_ONLY

FILE_RD_ONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerUpdateFile
- FileDeleteLine
- FileInsertLine
- VerSearchAndUpdateFile

FILE_READ_ATTRIBUTES

FILE_READ_ATTRIBUTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_READ_DATA

FILE_READ_DATA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_READ_EA

FILE_LIST_DIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_SHARED_COUNT

Project ▪ *This information applies to InstallScript projects.*

FILE_SHARED_COUNT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo

FILE_SIZE

FILE_SIZE (same as FILE_SIZE_LOW) is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo

FILE_SIZE_HIGH

FILE_SIZE_HIGH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo

FILE_SIZE_LOW

FILE_SIZE_LOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo

FILE_SRC_OLD

FILE_SRC_OLD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerSearchAndUpdateFile
- VerUpdateFile

FILE_TIME

FILE_TIME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFileInfo
- SetFileInfo

FILE_TRAVERSE

FILE_TRAVERSE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_WRITE_ATTRIBUTES

FILE_WRITE_ATTRIBUTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_WRITE_DATA

FILE_WRITE_DATA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_WRITE_EA

FILE_WRITE_EA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

FILE_WRITEABLE

Project ▪ *This information applies to the following project types:*

- *Installscript*
- *InstallScript Object*

FILE_WRITEABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

FILENAME

FILENAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

FILENAME_ONLY

FILENAME_ONLY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

FIXED_DRIVE

FIXED_DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetValidDrivesList

FONT_AVAILABLE

FONT_AVAILABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

FULL

FULL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PathAdd
- PathFind
- PathMove
- PathDelete

FULLSCREEN

FULLSCREEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap

FULLSCREENSIZE

FULLSCREENSIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap

FULLWINDOWMODE

FULLWINDOWMODE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Enable

FUNCTION_EXPORTED

Project ▪ *This information applies to InstallScript projects.*

FUNCTION_EXPORTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

GBYTES

GBYTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConvertSizeToUnits
- StrConvertSizeUnit

GENERIC_ALL

GENERIC_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

GENERIC_EXECUTE

GENERIC_EXECUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

GENERIC_READ

GENERIC_READ is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

GENERIC_WRITE

GENERIC_WRITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

GREATER_THAN

GREATER_THAN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare
- VerCompare

GREEN

GREEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor
- SetTitle

GTFIS_OPTION_DELETE_TEMP_FILE

GTFIS_OPTION_DELETE_TEMP_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetTempFileNameIS

GTFIS_OPTION_DONT_CREATE_DIR

GTFIS_OPTION_DONT_CREATE_DIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetTempFileNameIS

GTFIS_OPTION_DONT_RESOLVE_TEXTSUBS

GTFIS_OPTION_DONT_RESOLVE_TEXTSUBS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetTempFileNameIS

GTFIS_OPTION_NONE

GTFIS_OPTION_NONE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetTempFileNameIS

HELP

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

HELP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Do
- HandlerEx

HIDE_DISABLED_BTNS

HIDE_DISABLED_BTNS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

The HIDE_DISABLED_BTNS constant indicates that the per-user and all-users options should be hidden instead of being disabled. The default value of this variable is TRUE. Note that when this variable is set to TRUE, both options are hidden if either option is determined to be disabled.

Used With

- SdCustomerInformation
- SdCustomerInformationEx

HKEY_CLASSES_ROOT

HKEY_CLASSES_ROOT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBSetDefaultRoot

- RegDBSetKeyValueEx
- RegDBDeleteKey
- RegDBDeleteValue
- RegDBGetKeyValueEx
- RegDBKeyExist
- RegDBCreateKeyEx

HKEY_CURRENT_USER

HKEY_CURRENT_USER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBSetDefaultRoot

HKEY_LOCAL_MACHINE

HKEY_LOCAL_MACHINE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Note ▪ *Windows NT 4.0 does not allow the creation of a key directly under HKEY_LOCAL_MACHINE.*

Used With

- RegDBConnectRegistry
- InstallationInfo
- RegDBSetDefaultRoot

HKEY_USERS

HKEY_USERS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Note ▪ *Windows NT 4.0 does not allow the creation of a key directly under HKEY_USERS.*

Used With

- RegDBSetDefaultRoot
- RegDBConnectRegistry

HKEY_USER_SELECTABLE

Project ▪ *This information applies to InstallScript projects.*

HKEY_USER_SELECTABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBSetDefaultRoot

HOURGLASS

HOURGLASS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

HWND_DESKTOP

HWND_DESKTOP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetWindowHandle

HWND_INSTALL

HWND_INSTALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetWindowHandle

IDCANCEL

Project ▪ *This information applies to InstallScript projects.*

IDCANCEL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDir
- SelectDirEx

IDOK

Project *▪ This information applies to InstallScript projects.*

IDOK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectDir
- SelectDirEx

IDS_IFX_ERROR_INVALID_MEDIA_PASSWORD

Project *▪ This information applies to InstallScript projects.*

IDS_IFX_ERROR_INVALID_MEDIA_PASSWORD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SdLoadString

IFX_ONNEXTDISK_PACKAGE_CAPTION

Project *▪ This information applies to InstallScript projects.*

IFX_ONNEXTDISK_PACKAGE_CAPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SdLoadString

IFX_ONNEXTDISK_PACKAGE_MSG

Project ▪ *This information applies to InstallScript projects.*

IFX_ONNEXTDISK_PACKAGE_MSG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SdLoadString

INCLUDE_SUBDIR

INCLUDE_SUBDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FindAllDirs
- XCopyFile

INDVFILESTATUS

INDVFILESTATUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- SetStatusWindow
- Enable

INFORMATION

INFORMATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MessageBox
- SprintfBox

IS_PERMISSIONS_OPTION_64BIT_OBJECT

IS_PERMISSIONS_OPTION_64BIT_OBJECT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_OPTION_ALLOW_ACCESS

IS_PERMISSIONS_OPTION_ALLOW_ACCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_OPTION_DENY_ACCESS

IS_PERMISSIONS_OPTION_DENY_ACCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_OPTION_NO_APPLYDOWN

IS_PERMISSIONS_OPTION_NO_APPLYDOWN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_TYPE_FILE

IS_PERMISSIONS_TYPE_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_TYPE_FOLDER

IS_PERMISSIONS_TYPE_FOLDER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

IS_PERMISSIONS_TYPE_REGISTRY

IS_PERMISSIONS_TYPE_REGISTRY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

ISDIFX_OPTION_DONT_ASSOCIATE

ISDIFX_OPTION_DONT_ASSOCIATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackageUninstall

ISDIFX_OPTION_DONT_RESOLVE_TEXTSUBS

ISDIFX_OPTION_DONT_RESOVE_TEXTSUBS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageGetPath
- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall
- DIFxDriverPackageUninstall

ISDIFX_OPTION_LOG_IN_DRIVER_PACKAGE_PATH

ISDIFX_OPTION_LOG_IN_DRIVER_PACKAGE_PATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall

ISDIFX_OPTION_NO_REPAIR

ISDIFX_OPTION_NO_REPAIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DIFxDriverPackageInstall
- DIFxDriverPackagePreinstall

ISERR_GEN_FAILURE

Project *▪ This information applies to InstallScript projects.*

ISERR_GEN_FAILURE is a predefined constant that is used to represent the value that is returned by built-in functions when they fail and more specific information on the cause of the failure is not available. You cannot change the value of a predefined constant.

ISERR_SUCCESS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

ISERR_SUCCESS is a predefined constant that is used to represent the value that is returned by built-in functions when they are successful. You cannot change the value of a predefined constant.

ISLANG_AFRIKAANS

ISLANG_AFRIKAANS is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_AFRIKAANS_STANDARD

ISLANG_AFRIKAANS_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ALBANIAN

ISLANG_ALBANIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ALBANIAN_STANDARD

ISLANG_ALBANIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ALL

ISLANG_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterLanguage

ISLANG_ARABIC

ISLANG_ARABIC is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_ALGERIA

ISLANG_ARABIC_ALGERIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_BAHRAIN

ISLANG_ARABIC_BAHRAIN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_EGYPT

ISLANG_ARABIC_EGYPT is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_IRAQ

ISLANG_ARABIC_IRAQ is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_JORDAN

ISLANG_ARABIC_JORDAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_KUWAIT

ISLANG_ARABIC_KUWAIT is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_LEBANON

ISLANG_ARABIC_LEBANON is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_LIBYA

ISLANG_ARABIC_LIBYA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_MOROCCO

ISLANG_ARABIC_MOROCCO is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_OMAN

ISLANG_ARABIC_OMAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_QATAR

ISLANG_ARABIC_QATAR is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_SAUDIARABIA

ISLANG_ARABIC_SAUDIARABIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_SYRIA

ISLANG_ARABIC_SYRIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_TUNISIA

ISLANG_ARABIC_TUNISIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_UAE

ISLANG_ARABIC_UAE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ARABIC_YEMEN

ISLANG_ARABIC_YEMEN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BASQUE

ISLANG_BASQUE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BASQUE_STANDARD

ISLANG_BASQUE_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BELARUSIAN

ISLANG_BELARUSIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BELARUSIAN_STANDARD

ISLANG_BELARUSIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BULGARIAN

ISLANG_BULGARIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_BULGARIAN_STANDARD

ISLANG_BULGARIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CATALAN

ISLANG_CATALAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CATALAN_STANDARD

ISLANG_CATALAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CHINESE

ISLANG_CHINESE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CHINESE_HONGKONG

ISLANG_CHINESE_HONGKONG is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CHINESE_PRC

ISLANG_CHINESE_PRC is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CHINESE_SINGAPORE

ISLANG_CHINESE_SINGAPORE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CHINESE_TAIWAN

ISLANG_CHINESE_TAIWAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CROATIAN

ISLANG_CROATIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CROATIAN_STANDARD

ISLANG_CROATIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CZECH

ISLANG_CZECH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_CZECH_STANDARD

ISLANG_CZECH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_DANISH

ISLANG_DANISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_DANISH_STANDARD

ISLANG_DANISH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_DUTCH

ISLANG_DUTCH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_DUTCH_BELGIAN

ISLANG_DUTCH_BELGIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_DUTCH_STANDARD

ISLANG_DUTCH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH

ISLANG_ENGLISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_AUSTRALIAN

ISLANG_ENGLISH_AUSTRALIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_BELIZE

ISLANG_ENGLISH_BELIZE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_CANADIAN

ISLANG_ENGLISH_CANADIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_CARIBBEAN

ISLANG_ENGLISH_CARIBBEAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_IRELAND

ISLANG_ENGLISH_IRELAND is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_JAMAICA

ISLANG_ENGLISH_JAMAICA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_NEWZEALAND

ISLANG_ENGLISH_NEWZEALAND is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_SOUTHAFRICA

ISLANG_ENGLISH_SOUTHAFRICA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_TRINIDAD

ISLANG_ENGLISH_TRINIDAD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_UNITEDKINGDOM

ISLANG_ENGLISH_UNITEDKINGDOM is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ENGLISH_UNITEDSTATES

ISLANG_ENGLISH_UNITEDSTATES is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ESTONIAN

ISLANG_ESTONIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ESTONIAN_STANDARD

ISLANG_ESTONIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FAEROESE

ISLANG_FAEROESE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FAEROESE_STANDARD

ISLANG_FAEROESE_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FARSI

ISLANG_FARSI is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FARSI_STANDARD

ISLANG_FARSI_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FINNISH

ISLANG_FINNISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FINNISH_STANDARD

ISLANG_FINNISH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH

ISLANG_FRENCH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH_BELGIAN

ISLANG_FRENCH_BELGIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH_CANADIAN

ISLANG_FRENCH_CANADIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH_LUXEMBOURG

ISLANG_FRENCH_LUXEMBOURG is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH_STANDARD

ISLANG_FRENCH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_FRENCH_SWISS

ISLANG_FRENCH_SWISS is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN

ISLANG_GERMAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN_AUSTRIAN

ISLANG_GERMAN_AUSTRIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN_LIECHTENSTEIN

ISLANG_GERMAN_LIECHTENSTEIN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN_LUXEMBOURG

ISLANG_GERMAN_LUXEMBOURG is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN_STANDARD

ISLANG_GERMAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GERMAN_SWISS

ISLANG_GERMAN_SWISS is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GREEK

ISLANG_GREEK is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_GREEK_STANDARD

ISLANG_GREEK_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_HEBREW

ISLANG_HEBREW is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_HEBREW_STANDARD

ISLANG_HEBREW_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_HUNGARIAN

ISLANG_HUNGARIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_HUNGARIAN_STANDARD

ISLANG_HUNGARIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ICELANDIC

ISLANG_ICELANDIC is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ICELANDIC_STANDARD

ISLANG_ICELANDIC_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_INDONESIAN

ISLANG_INDONESIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_INDONESIAN_STANDARD

ISLANG_INDONESIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ITALIAN

ISLANG_ITALIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ITALIAN_STANDARD

ISLANG_ITALIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ITALIAN_SWISS

ISLANG_ITALIAN_SWISS is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_JAPANESE

ISLANG_JAPANESE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_JAPANESE_STANDARD

ISLANG_JAPANESE_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_KOREAN

ISLANG_KOREAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_KOREAN_JOHAB

ISLANG_KOREAN_JOHAB is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_KOREAN_STANDARD

ISLANG_KOREAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_LATVIAN

ISLANG_LATVIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_LATVIAN_STANDARD

ISLANG_LATVIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_LITHUANIAN

ISLANG_LITHUANIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_LITHUANIAN_STANDARD

ISLANG_LITHUANIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_NORWEGIAN

ISLANG_NORWEGIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_NORWEGIAN_BOKMAL

ISLANG_NORWEGIAN_BOKMAL is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_NORWEGIAN_NYNORSK

ISLANG_NORWEGIAN_NYNORSK is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_POLISH

ISLANG_POLISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_POLISH_STANDARD

ISLANG_POLISH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_PORTUGUESE

ISLANG_PORTUGUESE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_PORTUGUESE_BRAZILIAN

ISLANG_PORTUGUESE_BRAZILIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_PORTUGUESE_STANDARD

ISLANG_PORTUGUESE_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ROMANIAN

ISLANG_ROMANIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_ROMANIAN_STANDARD

ISLANG_ROMANIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_RUSSIAN

ISLANG_RUSSIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_RUSSIAN_STANDARD

ISLANG_RUSSIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SERBIAN_CYRILLIC

ISLANG_SERBIAN_CYRILLIC is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SERBIAN_LATIN

ISLANG_SERBIAN_LATIN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SLOVAK

ISLANG_SLOVAK is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SLOVAK_STANDARD

ISLANG_SLOVAK_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SLOVENIAN

ISLANG_SLOVENIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SLOVENIAN_STANDARD

ISLANG_SLOVENIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH

ISLANG_SPANISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_ARGENTINA

ISLANG_SPANISH_ARGENTINA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_BOLIVIA

ISLANG_SPANISH_BOLIVIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_CHILE

ISLANG_SPANISH_CHILE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_COLOMBIA

ISLANG_SPANISH_COLOMBIA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_COSTARICA

ISLANG_SPANISH_COSTARICA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_DOMINICANREPUBLIC

ISLANG_SPANISH_DOMINICANREPUBLIC is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_ECUADOR

ISLANG_SPANISH_ECUADOR is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_ELSALVADOR

ISLANG_SPANISH_ELSALVADOR is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_GUATEMALA

ISLANG_SPANISH_GUATEMALA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_HONDURAS

ISLANG_SPANISH_HONDURAS is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_MEXICAN

ISLANG_SPANISH_MEXICAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_MODERNSORT

ISLANG_SPANISH_MODERNSORT is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_NICARAGUA

ISLANG_SPANISH_NICARAGUA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_PANAMA

ISLANG_SPANISH_PANAMA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_PARAGUAY

ISLANG_SPANISH_PARAGUAY is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_PERU

ISLANG_SPANISH_PERU is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_PUERTORICO

ISLANG_SPANISH_PUERTORICO is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_TRADITIONALSORT

ISLANG_SPANISH_TRADITIONALSORT is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_URUGUAY

ISLANG_SPANISH_URUGUAY is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SPANISH_VENEZUELA

ISLANG_SPANISH_VENEZUELA is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SWEDISH

ISLANG_SWEDISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SWEDISH_FINLAND

ISLANG_SWEDISH_FINLAND is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_SWEDISH_STANDARD

ISLANG_SWEDISH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_THAI

ISLANG_THAI is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_THAI_STANDARD

ISLANG_THAI_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_TURKISH

ISLANG_TURKISH is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_TURKISH_STANDARD

ISLANG_TURKISH_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_UKRAINIAN

ISLANG_UKRAINIAN is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_UKRAINIAN_STANDARD

ISLANG_UKRAINIAN_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_VIETNAMESE

ISLANG_VIETNAMESE is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISLANG_VIETNAMESE_STANDARD

ISLANG_VIETNAMESE_STANDARD is a predefined constant that corresponds to a Windows language ID. For more information about how to use this constant, see Language IDs.

ISOSL_ALL

ISOSL_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_SUPPORTED

ISOSL_SUPPORTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN7_SERVER2008R2

ISOSL_WIN7_SERVER2008R2 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN8

ISOSL_WIN8 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN81

ISOSL_WIN81 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN10

ISOSL_WIN10 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN10_SERVER2019

ISOSL_WIN10_SERVER2019 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN10_SERVER2019

ISOSL_WIN10_SERVER2019 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN11

ISOSL_WIN11 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WIN10_SERVER2022

ISOSL_WIN10_SERVER2022 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WINVISTA

Note ▪ *ISOSL_WINVISTA_SERVER2008 supersedes ISOSL_WINVISTA.*

ISOSL_WINVISTA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WINVISTA_SERVER2008

ISOSL_WINVISTA_SERVER2008 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOSL_WINXP

ISOSL_WINXP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_ALL

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_BACKOFFICE

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_BACKOFFICE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_DATACENTER

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_DATACENTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_ENTERPRISE

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_ENTERPRISE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_PROC_ARCH_32

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_PROC_ARCH_32 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_PROC_ARCH_AMD64

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_PROC_ARCH_AMD64 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_PROC_ARCH_IA64

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_PROC_ARCH_IA64 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_SERVER

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_SERVER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_SERVER2003_R2

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_SERVER2003_R2 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_SMALLBUSINESS

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_SMALLBUSINESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_SMALLBUSINESS_RESTRICTED

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_SMALLBUSINESS_RESTRICTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_TERMINAL

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_TERMINAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_WORKSTATION

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_WORKSTATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_XP_HOME

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_XP_HOME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISOS_ST_XP_PRO

Project *▪ This information applies to InstallScript projects.*

ISOS_ST_XP_PRO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFilterOS

ISUS_AGENT_FEATURE

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_MAIN_FEATURE

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_HOST

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_INTERVAL

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_LANGUAGE

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_LOGO

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_MANAGER

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_TEXTSUB_VERSION

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

ISUS_UPDATEMANAGER_FEATURE

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

IS_386

IS_386 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_486

IS_486 is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_ALPHA

IS_ALPHA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_CDROM

IS_CDROM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_EGA

IS_EGA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_FIXED

IS_FIXED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_FOLDER

IS_FOLDER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- QueryProgItem
- ReplaceFolderIcon

IS_ITEM

IS_ITEM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- QueryProgItem
- ReplaceFolderIcon

IS_PENTIUM

IS_PENTIUM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_REMOTE

IS_REMOTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_REMOVABLE

IS_REMOVABLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_SVGA

IS_SVGA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_UNKNOWN

IS_UNKNOWN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_UVGA

IS_UVGA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_VGA

IS_VGA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_WINDOWS

IS_WINDOWS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_WINDOWS9X

IS_WINDOWS9X is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_WINDOWSNT

IS_WINDOWSNT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

IS_XVGA

IS_XVGA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

KBYTES

KBYTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConvertSizeToUnits
- StrConvertSizeUnit

KEY_CREATE_LINK

KEY_CREATE_LINK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

KEY_CREATE_SUB_KEY

KEY_CREATE_SUB_KEY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

KEY_ENUMERATE_SUB_KEYS

KEY_ENUMERATE_SUB_KEYS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

KEY_NOTIFY

GENERIC_WRITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

KEY_QUERY_VALUE

KEY_QUERY_VALUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

KEY_SET_VALUE

KEY_SET_VALUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

LAAW_OPTION_CHANGEDIRECTORY

LAAW_OPTION_CHANGEDIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- LaunchApplication

LAAW_OPTION_FIXUP_PROGRAM

LAAW_OPTION_CHANGEDIRECTORY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- LaunchApplication

LAAW_OPTION_HIDDEN

LAAW_OPTION_HIDDEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_MAXIMIZED

LAAW_OPTION_MAXIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_MINIMIZED

LAAW_OPTION_MINIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication

- WaitForApplication

LAAW_OPTION_NO_CHANGEDIRECTORY

LAAW_OPTION_NO_CHANGEDIRECTORY is an obsolete predefined constant.

LAAW_OPTION_NOWAIT

LAAW_OPTION_NOWAIT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_SET_BATCH_INSTALL

Project ▪ *This constant is available for InstallScript event–driven code in InstallScript and InstallScript MSI projects. It does not have any effect in InstallScript custom actions in Basic MSI, InstallScript MSI, or Suite/Advanced UI projects.*

LAAW_OPTION_SET_BATCH_INSTALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_SHOW_HOURGLASS

LAAW_OPTION_SHOW_HOURGLASS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall

- LaunchAppAndWait

LAAW_OPTION_USE_CALLBACK

LAAW_OPTION_USE_CALLBACK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_USE_SHELLEXECUTE

LAAW_OPTION_USE_SHELLEXECUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- LaunchApplication

LAAW_OPTION_WAIT

LAAW_OPTION_WAIT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait
- LaunchApplication
- WaitForApplication

LAAW_OPTION_WAIT_INCL_CHILD

LAAW_OPTION_WAIT_INCL_CHILD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DoInstall
- LaunchAppAndWait

- LaunchApplication
- WaitForApplication

LANGUAGE_SUPPORTED

LANGUAGE_SUPPORTED is a predefined constant that is used to specify the language that an installation supports. The language is a four-digit hexadecimal language code, including the 0x prefix. For example, for English, the value should be 0x0409. To build a string with STANDARD_SELECTED_LANGUAGE in this format, use a statement such as:

```
Sprintf (szLang, "0x%.04lx", STANDARD_SELECTED_LANGUAGE);
```

You cannot change the value of a predefined constant.

Used With

- Is

LANGUAGE

LANGUAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

LESS_THAN

LESS_THAN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileCompare
- VerCompare

LINE_NUMBER

LINE_NUMBER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileDeleteLine
- FileInsertLine

LISTBOX_ENTER

LISTBOX_ENTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlGetSubCommand

LISTBOX_SELECT

LISTBOX_SELECT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- CtrlGetSubCommand

LISTFIRST

LISTFIRST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListSetIndex

LISTLAST

LISTLAST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListSetIndex

LISTNEXT

LISTNEXT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListSetIndex

LISTPREV

LISTPREV is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListSetIndex

LIST_NULL

LIST_NULL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListCreate

LOCKEDFILE

LOCKEDFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile
- InstallationInfo
- VerUpdateFile
- DeinstallStart

LOGGING

LOGGING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DeinstallStart
- Disable
- Enable
- InstallationInfo

LOWER_LEFT

LOWER_LEFT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap
- PlaceWindow

LOWER_RIGHT

LOWER_RIGHT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap
- PlaceWindow

LWTF_OPTION_APPEND_TO_FILE

LWTF_OPTION_APPEND_TO_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListWriteToFileEx

LWTF_OPTION_WRITE_AS_ANSI

LWTF_OPTION_WRITE_AS_ANSI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Note ▪ *In earlier versions of InstallShield, this constant was called LWFT_OPTION_WRITE_AS_ANSI (where* **LWFT** *was used instead of* **LWTF***). To maintain backwards compatibility, both constants are now available, and they are defined the same way.*

Used With

- ListWriteToFileEx

LWTF_OPTION_WRITE_AS_UNICODE

LWTF_OPTION_WRITE_AS_UNICODE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Note ▪ *In earlier versions of InstallShield, this constant was called LWFT_OPTION_WRITE_AS_UNICODE (where* **LWFT** *was used instead of* **LWTF***). To maintain backwards compatibility, both constants are now available, and they are defined the same way.*

Used With

- ListWriteToFileEx

MAGENTA

MAGENTA is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor
- SetTitle

MATH_COPROCESSOR

MATH_COPROCESSOR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

MBYTES

MBYTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConvertSizeToUnits
- StrConvertSizeUnit

MEDIA_FIELD_ADDREMOVE_NOMODIFY

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_ADDREMOVE_NOMODIFY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_ADDREMOVE_NOREMOVE

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_ADDREMOVE_NOREMOVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_COMPANY_NAME

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_COMPANY_NAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_MEDIA_FLAGS

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_MEDIA_FLAGS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_PREVIOUS_VERSIONS

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PREVIOUS_VERSIONS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_PRODUCT_COMMENTS

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_COMMENTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_EXE

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_EXE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_PRODUCT_ICON

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_ICON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_NAME

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_NAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_PRODUCT_README

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_README is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_SUPPORT_CONTACT

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_SUPPORT_CONTACT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_SUPPORT_PHONE

Project ▪ *This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_SUPPORT_PHONE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_SUPPORT_URL

Project ▪ *This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_SUPPORT_URL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_UPDATE_URL

Project ▪ *This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_UPDATE_URL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_URL

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_URL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_FIELD_PRODUCT_VERSION

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_PRODUCT_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FIELD_TARGETDIR

Project *▪ This information applies to InstallScript projects.*

MEDIA_FIELD_TARGETDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FLAG_FORMAT_DIFFERENTIAL

Project *▪ This information applies to InstallScript projects.*

MEDIA_FLAG_FORMAT_DIFFERENTIAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FLAG_FORMAT_PATCH

Project ▪ *This information applies to InstallScript projects.*

MEDIA_FLAG_FORMAT_PATCH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MediaGetData

MEDIA_FLAG_UPDATEMODE_SUPPORTED

Project ▪ *This information applies to InstallScript projects.*

MEDIA_FLAG_UPDATEMODE_SUPPORTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

The MEDIA_FLAG_UPDATEMODE_SUPPORTED flag is always set.

Used With

- MediaGetData
- MediaGetDataEx

MEDIA_PASSWORD_KEY

Project ▪ *This information applies to InstallScript projects.*

MEDIA_PASSWORD_KEY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- LogReadCustomString
- LogWriteCustomString

METAFILE

METAFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SizeWindow

MMEDIA_AVI

MMEDIA_AVI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia
- PlaceWindow
- SizeWindow

MMEDIA_MIDI

MMEDIA_MIDI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MMEDIA_PLAYASYNCH

MMEDIA_PLAYASYNCH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MMEDIA_PLAYCONTINUOUS

MMEDIA_PLAYCONTINUOUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MMEDIA_PLAYSYNCH

MMEDIA_PLAYSYNCH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MMEDIA_STOP

MMEDIA_STOP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MMEDIA_SWF

MMEDIA_SWF is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia
- PlaceWindow
- SizeWindow

MMEDIA_WAVE

MMEDIA_WAVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlayMMedia

MODIFY

Project ▪ *This information applies to InstallScript projects.*

MODIFY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdWelcomeMaint

NEXT

NEXT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskDestPath
- AskOptions
- AskPath
- AskText
- FeatureDialog
- SdAskDestPath
- SdAskOptions
- SdAskOptionsList
- SdBitmap
- SdDisplayTopics
- SdFeatureDialog
- SdFeatureDialog2
- SdFeatureDialogAdv
- SdFeatureMult
- SdLicense
- SdOptionsButtons
- SdRegisterUser
- SdRegisterUserEx
- SdSelectFolder
- SdShowAnyDialog
- SdShowDlgEdit1
- SdShowDlgEdit2
- SdShowDlgEdit3
- SdShowFileMods
- SdShowInfoList

- SdStartCopy
- SdWelcome
- SelectFolder
- Welcome

NEXTBUTTON

NEXTBUTTON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable
- Is

NO

NO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdConfirmNewDir
- SdConfirmRegistration
- AskYesNo

NONEXCLUSIVE

NONEXCLUSIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdAskOptionsList
- AskOptions
- SdAskOptions

NORMALMODE

NORMALMODE is a predefined constant that can be used to test whether or not a setup is running in silent mode. For more information, refer to the InstallShield system variable MODE.

NORMAL_PRIORITY_CLASS

Project *▪ This information applies to InstallScript projects.*

NORMAL_PRIORITY_CLASS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

NOSET

NOSET is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- EzBatchAddString

NOTEXISTS

NOTEXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ExistsDir
- ExistsDisk

NO_SUBDIR

Project *▪ This information applies to InstallScript projects.*

NO_SUBDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureFileEnum

NULL

NULL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AddFolderIcon
- CreateShortcut
- GetShortcutInfo
- FindWindow
- QueryProgItem
- ReplaceFolderIcon
- ReplaceShortcut

NUMBERLIST

NUMBERLIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListCreate

OFF

OFF is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- StatusUpdate

OK

OK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- EnterDisk

ON

ON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- StatusUpdate

ONLYDIR

ONLYDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DeleteDir

OTHER_FAILURE

OTHER_FAILURE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileDeleteLine
- VerUpdateFile
- FileCompare
- FileGrep
- FileInsertLine

OUT_OF_DISK_SPACE

OUT_OF_DISK_SPACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerUpdateFile
- FileInsertLine
- FileDeleteLine
- VerSearchAndUpdateFile

PARALLEL

PARALLEL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

PARTIAL

PARTIAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PathAdd
- PathFind
- PathMove
- PathDelete

PATH

PATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ParsePath

PATH_EXISTS

» InstallScript Language Reference

PATH_EXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

PCRESTORE

Project *▪ This information applies to InstallScript projects.*

PCRESTORE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

PERSONAL

PERSONAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ProgDefGroupType

READ_CONTROL

READ_CONTROL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS
- SetObjectPermissions

REBOOTED

REBOOTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

RECORDMODE

RECORDMODE is a predefined constant that can be used to test whether or not a setup is automatically generating a silent setup file (.iss file), which is a record of the setup input, in the Windows folder. For more information, refer to the InstallScript system variable MODE.

RED

RED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor
- SetTitle

REGDBREMOTEREGCONNECTED

REGDBREMOTEREGCONNECTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

REGDB_APPPATH

REGDB_APPPATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_APPPATH_DEFAULT

REGDB_APPPATH_DEFAULT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_BINARY

REGDB_BINARY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBSetAppInfo
- RegDBGetKeyValueEx
- RegDBSetKeyValueEx
- RegDBGetAppInfo
- RegDBSetKeyValueEx

REGDB_ERR_CONNECTIONEXISTS

REGDB_ERR_CONNECTIONEXISTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBConnectRegistry

REGDB_ERR_CORRUPTEDREGISTRY

REGDB_ERR_CORRUPTEDREGISTRY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBConnectRegistry

REGDB_ERR_INITIALIZATION

REGDB_ERR_INITIALIZATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBConnectRegistry

REGDB_ERR_INVALIDHANDLE

REGDB_ERR_INVALIDHANDLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBConnectRegistry

REGDB_ERR_INVALIDNAME

REGDB_ERR_INVALIDNAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBConnectRegistry

REGDB_KEYPATH_APPPATHS

REGDB_KEYPATH_APPPATHS is a predefined constant whose value is the registry location (not including the root key) of the general application paths key, that is, `Software\Microsoft\Windows\CurrentVersion\App Paths\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_DOTNET_10

REGDB_KEYPATH_DOTNET_10 is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 1.0 of the .NET Framework. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\Full\v1.0.3705\1033\Microsoft .NET Framework Full v1.0.3705
    (1033)\
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_11

REGDB_KEYPATH_DOTNET_11 is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 1.1 of the .NET Framework. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v1.1.4322\
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_20

REGDB_KEYPATH_DOTNET_20 is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 2.0 of the .NET Framework. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v2.0.50215\
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_30

REGDB_KEYPATH_DOTNET_30 is a predefined constant whose value is the registry location (not including the root key) of the registry key for the RTM version of the .NET Framework 3.0. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v3.0\Setup\
```

Tip ▪ *You can use the REGDB_KEYPATH_DOTNET_30 variable to detect whether the RTM version of the .NET Framework 3.0 is installed. To detect whether SP1—or a later service pack—of the .NET Framework 3.0 is installed, use REGDB_KEYPATH_DOTNET_30_SP.*

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_30_SP

REGDB_KEYPATH_DOTNET_30_SP is a predefined constant whose value is the registry location (not including the root key) of the registry key for SP1—or a later service pack—of the .NET Framework 3.0. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v3.0\
```

Tip ▪ *You can use the REGDB_KEYPATH_DOTNET_30_SP variable when querying whether SP1—or a later service pack—of the .NET Framework 3.0 is installed. To detect whether the RTM version of the .NET Framework 3.0 is installed, use REGDB_KEYPATH_DOTNET_30.*

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_35

REGDB_KEYPATH_DOTNET_35 is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 3.5 of the .NET Framework. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v3.5\
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_40_CLIENT

REGDB_KEYPATH_DOTNET_40_CLIENT is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 4.0 of the .NET Framework Client Profile. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v4\Client
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_DOTNET_40_FULL

REGDB_KEYPATH_DOTNET_40_FULL is a predefined constant whose value is the registry location (not including the root key) of the registry key for version 4.0 of the .NET Framework. It is defined as follows:

```
Software\Microsoft\NET Framework Setup\NDP\v4\Full
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_ISUNINSTINFO

ISUNINSTINFO is a predefined constant whose value is the registry location (not including the root key) of the InstallShield Uninstall Information key. It is defined as follows:

```
Software\Microsoft\Windows\CurrentVersion\Uninstall\InstallShield Uninstall Information
```

You cannot change the value of a predefined constant. You can use this constant to specify a key when calling a general registry-related function. This predefined constant is also supported when using the **Is** function.

Used With

- Is

REGDB_KEYPATH_RUN

REGDB_KEYPATH_RUN is a predefined constant whose value is the registry location (not including the root key) of the general application paths key, that is, `Software\Microsoft\Windows\CurrentVersion\Run\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_RUNONCE

REGDB_KEYPATH_RUNONCE is a predefined constant whose value is the registry location (not including the root key) of the general application paths key, that is, `Software\Microsoft\Windows\CurrentVersion\RunOnce\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_RUNONCEEX

REGDB_KEYPATH_RUNONCEEX is a predefined constant whose value is the registry location (not including the root key) of the general application paths key, that is, `Software\Microsoft\Windows\CurrentVersion\RunOnceEx\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_SHAREDDLLS

REGDB_KEYPATH_SHAREDDLLS is a predefined constant whose value is the registry location (not including the root key) of the general application paths key, that is, `Software\Microsoft\Windows\CurrentVersion\SharedDLLs\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_UNINSTALL

REGDB_KEYPATH_UNINSTALL is a predefined constant whose value is the registry location (not including the root key) of the general uninstallation key for applications, that is, `Software\Microsoft\Windows\CurrentVersion\Uninstall\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_WINCURRVER

REGDB_KEYPATH_WINCURRVER is a predefined constant whose value is the registry location (not including the root key) of the Windows current version key, that is, `Software\Microsoft\Windows\CurrentVersion\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYPATH_WINCURRVER_AUTO

The value of this system variable is REGDB_KEYPATH_WINCURRVER on Windows 95, Windows 95, and Windows Me, and REGDB_KEYPATH_WINNTCURRVER on Windows NT, Windows 2000, and Windows XP and later.

REGDB_KEYPATH_WINNTCURRVER

REGDB_KEYPATH_WINNTCURRVER is a predefined constant whose value is the registry location (not including the root key) of the Windows NT current version key, that is, `Software\Microsoft\Windows NT\CurrentVersion\`. You can use this constant to specify a key when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_KEYS

REGDB_KEYS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBQueryKey

REGDB_NAMES

REGDB_NAMES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBQueryKey

REGDB_NUMBER

REGDB_NUMBER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBGetAppInfo
- RegDBGetKeyValueEx
- RegDBSetKeyValueEx
- RegDBSetAppInfo

REGDB_STRING

REGDB_STRING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBGetAppInfo
- RegDBGetKeyValueEx
- RegDBSetKeyValueEx
- RegDBSetAppInfo

REGDB_STRING_EXPAND

REGDB_STRING_EXPAND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBSetAppInfo
- RegDBGetKeyValueEx
- RegDBSetKeyValueEx
- RegDBGetAppInfo

REGDB_STRING_MULTI

REGDB_STRING_MULTI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBGetAppInfo
- RegDBGetKeyValueEx
- RegDBSetKeyValueEx
- RegDBSetAppInfo

REGDB_UNINSTALL_COMMENTS

REGDB_UNINSTALL_COMMENTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_CONTACT

REGDB_UNINSTALL_CONTACT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_DISPLAYICON

REGDB_UNINSTALL_DISPLAYICON is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_DISPLAY_VERSION

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_DISPLAY_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_HELPLINK

REGDB_UNINSTALL_HELPLINK is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_HELPTELEPHONE

REGDB_UNINSTALL_HELPTELEPHONE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_INSTALLDATE

REGDB_UNINSTALL_INSTALLDATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_INSTALLLOC

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_INSTALLLOC is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem

- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_INSTALLSOURCE

REGDB_UNINSTALL_INSTALLSOURCE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_LANGUAGE

REGDB_UNINSTALL_LANGUAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_LOGFILE

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_LOGFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MAINT_OPTION

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_MAINT_OPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MAJOR_VERSION

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_MAJOR_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MAJOR_VERSION_OLD

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_MAJOR_VERSION_OLD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MINOR_VERSION

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_MINOR_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MINOR_VERSION_OLD

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_MINOR_VERSION_OLD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_MODIFYPATH

REGDB_UNINSTALL_MODIFYPATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_NAME

REGDB_UNINSTALL_NAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_NOMODIFY

REGDB_UNINSTALL_NOMODIFY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_NOREMOVE

REGDB_UNINSTALL_NOREMOVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_NOREPAIR

REGDB_UNINSTALL_NOREPAIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_PRODUCTGUID

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_PRODUCTGUID is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_PRODUCTID

REGDB_UNINSTALL_PRODUCTID is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_PUBLISHER

REGDB_UNINSTALL_PUBLISHER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_README

REGDB_UNINSTALL_README is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem

- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_REGCOMPANY

REGDB_UNINSTALL_REGCOMPANY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_REGOWNER

REGDB_UNINSTALL_REGOWNER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_STRING

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_STRING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_SYSTEMCOMPONENT

REGDB_UNINSTALL_SYSTEMCOMPONENT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_URLINFOABOUT

REGDB_UNINSTALL_URLINFOABOUT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_URLUPDATEINFO

REGDB_UNINSTALL_URLUPDATEINFO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem
- RegDBGetItem
- RegDBSetItem

REGDB_UNINSTALL_VERSION

Project ▪ *This information applies to InstallScript projects.*

REGDB_UNINSTALL_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBDeleteItem

- RegDBGetItem
- RegDBSetItem

REGDB_VALUENAME_APPPATH

REGDB_VALUENAME_APPPATH is a predefined constant whose value is the path value name under the application path key, that is, *Path*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_APPPATHDEFAULT

REGDB_VALUENAME_APPPATHDEFAULT is a predefined constant whose value is the default value name under the application path key, that is, a null string (""). You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_INSTALL

REGDB_VALUENAME_INSTALL is a predefined constant whose value is *Install*. You can use this constant to specify a value when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_INSTALLSUCCESS

REGDB_VALUENAME_INSTALLSUCCESS is a predefined constant whose value is *InstallSuccess*. You can use this constant to specify a value when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_SP

REGDB_VALUENAME_INSTALL is a predefined constant whose value is *SP*. You can use this constant to specify a value when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_COMMENTS

REGDB_VALUENAME_UNINSTALL_COMMENTS is a predefined constant whose value is the comments value name under the application uninstallation key—that is, *Comments*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_CONTACT

REGDB_VALUENAME_UNINSTALL_CONTACT is a predefined constant whose value is the contact value name under the application uninstallation key—that is, *Contact*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_DISPLAYICON

REGDB_VALUENAME_UNINSTALL_DISPLAYICON is a predefined constant whose value is the display icon value name under the application uninstallation key—that is, *DisplayIcon*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_DISPLAYNAME

REGDB_VALUENAME_UNINSTALL_DISPLAYNAME is a predefined constant whose value is the display name value name under the application uninstallation key—that is, *DisplayName*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_DISPLAYVERSION

REGDB_VALUENAME_UNINSTALL_DISPLAYVERSION is a predefined constant whose value is the display version value name under the application uninstallation key—that is, *DisplayVersion*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_HELPLINK

REGDB_VALUENAME_UNINSTALL_HELPLINK is a predefined constant whose value is the help link value name under the application uninstallation key—that is, *HelpLink*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_HELPTELEPHONE

REGDB_VALUENAME_UNINSTALL_HELPTELEPHONE is a predefined constant whose value is the help telephone value name under the application uninstallation key—that is, *HelpTelephone*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_INSTALLDATE

REGDB_VALUENAME_UNINSTALL_INSTALLDATE is a predefined constant whose value is the installation date value name under the application uninstallation key—that is, *InstallDate*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_INSTALLLOCATION

REGDB_VALUENAME_UNINSTALL_INSTALLLOCATION is a predefined constant whose value is the installation location value name under the application uninstallation key—that is, *InstallLocation*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_INSTALLSOURCE

REGDB_VALUENAME_UNINSTALL_INSTALLSOURCE is a predefined constant whose value is the installation source value name under the application uninstallation key—that is, *InstallSource*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_LANGUAGE

REGDB_VALUENAME_UNINSTALL_LANGUAGE is a predefined constant whose value is the language value name under the application uninstallation key—that is, *Language*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_LOGFILE

REGDB_VALUENAME_UNINSTALL_LOGFILE is a predefined constant whose value is the log file value name under the application uninstallation key—that is, *LogFile*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_LOGMODE

REGDB_VALUENAME_UNINSTALL_LOGMODE is a predefined constant whose value is the log mode value name under the application uninstallation key—that is, *LogMode*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_MAJORVERSION

REGDB_VALUENAME_UNINSTALL_MAJORVERSION is a predefined constant whose value is the major version value name under the application uninstallation key—that is, *VersionMajor*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_MAJORVERSION_OLD

REGDB_VALUENAME_UNINSTALL_MAJORVERSION_OLD is a predefined constant whose value is the major version value name under the application uninstallation key—that is, *MajorVersion*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_MINORVERSION

REGDB_VALUENAME_UNINSTALL_MINORVERSION is a predefined constant whose value is the minor version value name under the application uninstallation key—that is, *VersionMinor*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_MINORVERSION_OLD

REGDB_VALUENAME_UNINSTALL_MINORVERSION_OLD is a predefined constant whose value is the minor version value name under the application uninstallation key—that is, *MinorVersion*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_MODIFYPATH

REGDB_VALUENAME_UNINSTALL_MODIFYPATH is a predefined constant whose value is the modify path value name under the application uninstallation key—that is, *ModifyPath*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_NOMODIFY

REGDB_VALUENAME_UNINSTALL_NOMODIFY is a predefined constant whose value is the no modify value name under the application uninstallation key—that is, *NoModify*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_NOREMOVE

REGDB_VALUENAME_UNINSTALL_NOREMOVE is a predefined constant whose value is the no remove value name under the application uninstallation key—that is, *NoRemove*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_NOREPAIR

REGDB_VALUENAME_UNINSTALL_NOREPAIR is a predefined constant whose value is the no repair value name under the application uninstallation key—that is, *NoRepair*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_PRODUCTGUID

REGDB_VALUENAME_UNINSTALL_PRODUCTGUID is a predefined constant whose value is the product GUID value name under the application uninstallation key—that is, *ProductGuid*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_PRODUCTID

REGDB_VALUENAME_UNINSTALL_PRODUCTID is a predefined constant whose value is the product ID value name under the application uninstallation key—that is, *ProductId*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_PUBLISHER

REGDB_VALUENAME_UNINSTALL_PUBLISHER is a predefined constant whose value is the publisher value name under the application uninstallation key—that is, *Publisher*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_README

REGDB_VALUENAME_UNINSTALL_README is a predefined constant whose value is the readme value name under the application uninstallation key—that is, *Readme*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_REGCOMPANY

REGDB_VALUENAME_UNINSTALL_REGCOMPANY is a predefined constant whose value is the reg company value name under the application uninstallation key—that is, *RegCompany*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_REGOWNER

REGDB_VALUENAME_UNINSTALL_REGOWNER is a predefined constant whose value is the reg owner value name under the application uninstallation key—that is, *RegOwner*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_SYSTEMCOMPONENT

REGDB_VALUENAME_UNINSTALL_SYSTEMCOMPONENT is a predefined constant whose value is the system component value name under the application uninstallation key—that is, *SystemComponent*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_UNINSTALLSTRING

REGDB_VALUENAME_UNINSTALL_UNINSTALLSTRING is a predefined constant whose value is the uninstallation string value name under the application uninstallation key—that is, *UninstallString*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_URLINFOABOUT

REGDB_VALUENAME_UNINSTALL_URLINFOABOUT is a predefined constant whose value is the URL info about value name under the application uninstallation key—that is, *URLInfoAbout*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_URLUPDATEINFO

REGDB_VALUENAME_UNINSTALL_URLUPDATEINFO is a predefined constant whose value is the URL date info value name under the application uninstallation key—that is, *URLDateInfo*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALL_VERSION

REGDB_VALUENAME_UNINSTALL_VERSION is a predefined constant whose value is the application version value name under the application uninstallation key—that is, *Version*. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_UNINSTALLKEY

REGDB_VALUENAME_UNINSTALLKEY is a predefined constant whose value is defined as UninstallKey. You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_WINCURRVER_REGORGANIZATION

REGDB_VALUENAME_WINCURRVER_REGORGANIZATION is a predefined constant whose value is the registered organization value name under the Windows (on Windows 95, Windows 95, and Windows Me) or Windows NT (on Windows 95, Windows 95, and Windows Me) current version key, that is, "RegisteredOrganization". You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_VALUENAME_WINCURRVER_REGOWNER

REGDB_VALUENAME_WINCURRVER_REGOWNER is a predefined constant whose value is the registered owner value name under the Windows (on Windows 95, Windows 95, and Windows Me) or Windows NT (on Windows 95, Windows 95, and Windows Me) current version key, that is, "RegisteredOwner". You can use this constant to specify a value name when calling a general registry-related function. You cannot change the value of a predefined constant.

REGDB_WINCURRVER_REGORGANIZATION

REGDB_WINCURRVER_REGORGANIZATION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBGetItem

REGDB_WINCURRVER_REGOWNER

REGDB_WINCURRVER_REGOWNER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegDBGetItem

REGFONT_OPTION_DEFAULT

REGFONT_OPTION_DEFAULT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegisterFontResource

REGFONT_OPTION_DONTBROADCASTFONTCHANGEMSG

REGFONT_OPTION_DONTBROADCASTFONTCHANGEMSG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegisterFontResource

REGFONT_OPTION_DONTUPDATEREGISTRY

REGFONT_OPTION_DONTUPDATEREGISTRY is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- RegisterFontResource

REGISTRYFUNCTIONS_USETEXTSUBS

REGISTRYFUNCTIONS_USETEXTSUBS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

REMOTE_DRIVE

REMOTE_DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetValidDrivesList

REMOVE

REMOVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap

REMOVEABLE_DRIVE

REMOVEABLE_DRIVE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetValidDrivesList

REMOVEALL

Project ▪ *This information applies to InstallScript projects.*

REMOVEALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdWelcomeMaint

REPAIR

Project ▪ *This information applies to InstallScript projects.*

REPAIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdWelcomeMaint

REPLACE

REPLACE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConfigAdd
- AddFolderIcon
- FileInsertLine
- BatchAdd
- ReplaceFolderIcon

RESET

RESET is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FindFile

RESTART

RESTART is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FileGrep
- PathFind
- ConfigFind
- BatchFind

ROOT

ROOT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- DeleteDir

RUN_MAXIMIZED

RUN_MAXIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AddFolderIcon
- ReplaceFolderIcon

RUN_MINIMIZED

RUN_MINIMIZED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- QueryProgItem
- AddFolderIcon
- ReplaceFolderIcon

SELECTFOLDER

SELECTFOLDER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SelectFolder

SELFREGISTER

SELFREGISTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerUpdateFile
- XCopyFile

SELFREGISTERBATCH

SELFREGISTERBATCH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Enable
- Disable

SELFREGISTRATIONPROCESS

SELFREGISTRATIONPROCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Do

SERIAL

SERIAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

SERVICE_ADAPTER

Project ▪ *This information applies to InstallScript projects.*

SERVICE_ADAPTER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ALL_ACCESS

Project ▪ *This information applies to InstallScript projects.*

SERVICE_ALL_ACCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_AUTO_START

Project *▪ This information applies to InstallScript projects.*

SERVICE_AUTO_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_BOOT_START

Project *▪ This information applies to InstallScript projects.*

SERVICE_BOOT_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_CHANGE_CONFIG

Project *▪ This information applies to InstallScript projects.*

SERVICE_CHANGE_CONFIG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_CONTINUE_PENDING

Project *▪ This information applies to InstallScript projects.*

SERVICE_CONTINUE_PENDING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_DEMAND_START

Project *▪ This information applies to InstallScript projects.*

SERVICE_DEMAND_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_DISABLED

Project *▪ This information applies to InstallScript projects.*

SERVICE_DISABLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ENUMERATE_DEPENDENTS

Project *▪ This information applies to InstallScript projects.*

SERVICE_ENUMERATE_DEPENDENTS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ERROR_CRITICAL

Project ▪ *This information applies to InstallScript projects.*

SERVICE_ERROR_CRITICAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ERROR_IGNORE

Project ▪ *This information applies to InstallScript projects.*

SERVICE_ERROR_IGNORE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ERROR_NORMAL

Project ▪ *This information applies to InstallScript projects.*

SERVICE_ERROR_NORMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ERROR_SEVERE

Project *▪ This information applies to InstallScript projects.*

SERVICE_ERROR_SEVERE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_FILE_SYSTEM_DRIVER

Project *▪ This information applies to InstallScript projects.*

SERVICE_FILE_SYSTEM_DRIVER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_FLAG_DIFX_32

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript Object*

SERVICE_FLAG_DIFX_32 is a predefined constant that is used to represent a value that can be set as a bit flag in the system variable ENABLED_ISERVICES. You cannot change the value of a predefined constant.

SERVICE_FLAG_DIFX_AMD64

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript Object*

SERVICE_FLAG_DIFX_AMD64 is a predefined constant that is used to represent a value that can be set as a bit flag in the system variable ENABLED_ISERVICES. You cannot change the value of a predefined constant.

SERVICE_FLAG_DIFX_IA64

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript Object*

SERVICE_FLAG_DIFX_IA64 is a predefined constant that is used to represent a value that can be set as a bit flag in the system variable ENABLED_ISERVICES. You cannot change the value of a predefined constant.

SERVICE_FLAG_ISFONTREG

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript Object*

SERVICE_FLAG_ISFONTREG is a predefined constant that is used to represent a value that can be set as a bit flag in the system variable ENABLED_ISERVICES. If the expression ENABLED_ISERVICES & SERVICE_FLAG_ISFONTREG is equal to a non-zero value, global font registration is currently enabled. You cannot change the value of a predefined constant.

SERVICE_INTERACTIVE_PROCESS

Project *▪ This information applies to InstallScript projects.*

SERVICE_INTERACTIVE_PROCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_INTERROGATE

Project *▪ This information applies to InstallScript projects.*

SERVICE_INTERROGATE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_ISFONTREG

SERVICE_ISFONTREG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable

SERVICE_ISUPDATE

Project ▪ *This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

SERVICE_KERNEL_DRIVER

Project ▪ *This information applies to InstallScript projects.*

SERVICE_KERNEL_DRIVER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_PAUSED

Project ▪ *This information applies to InstallScript projects.*

SERVICE_PAUSED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_PAUSE_CONTINUE

Project *▪ This information applies to InstallScript projects.*

SERVICE_PAUSE_CONTINUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_PAUSE_PENDING

Project *▪ This information applies to InstallScript projects.*

SERVICE_PAUSE_PENDING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_QUERY_CONFIG

Project *▪ This information applies to InstallScript projects.*

SERVICE_QUERY_CONFIG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_QUERY_STATUS

Project *▪ This information applies to InstallScript projects.*

SERVICE_QUERY_STATUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_RECOGNIZER_DRIVER

Project *▪ This information applies to InstallScript projects.*

SERVICE_RECOGNIZER_DRIVER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_RUNNING

Project *▪ This information applies to InstallScript projects.*

SERVICE_RUNNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_START

Project *▪ This information applies to InstallScript projects.*

SERVICE_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_START_PENDING

Project *▪ This information applies to InstallScript projects.*

SERVICE_START_PENDING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_STOP

Project *▪ This information applies to InstallScript projects.*

SERVICE_STOP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_STOPPED

Project *▪ This information applies to InstallScript projects.*

SERVICE_STOPPED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_STOP_PENDING

Project *▪ This information applies to InstallScript projects.*

SERVICE_STOP_PENDING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_STATUS

SERVICE_SYSTEM_START

Project *▪ This information applies to InstallScript projects.*

SERVICE_SYSTEM_START is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_USER_DEFINED_CONTROL

Project *▪ This information applies to InstallScript projects.*

SERVICE_USER_DEFINED_CONTROL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_WIN32_OWN_PROCESS

Project *▪ This information applies to InstallScript projects.*

SERVICE_WIN32_OWN_PROCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SERVICE_WIN32_SHARE_PROCESS

Project ▪ *This information applies to InstallScript projects.*

SERVICE_WIN32_SHARE_PROCESS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS

SETUPTYPE

SETUPTYPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetupType

SETUPTYPE_INFO_DESCRIPTION

SETUPTYPE_INFO_DESCRIPTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureSetupTypeGetData

SETUPTYPE_INFO_DISPLAYNAME

SETUPTYPE_INFO_DISPLAYNAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureSetupTypeGetData

SETUPTYPE_STR_COMPACT

SETUPTYPE_STR_COMPACT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureStandardSetupTypeSet

SETUPTYPE_STR_COMPLETE

SETUPTYPE_STR_COMPLETE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureStandardSetupTypeSet

SETUPTYPE_STR_CUSTOM

SETUPTYPE_STR_CUSTOM is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureStandardSetupTypeSet

SETUPTYPE_STR_TYPICAL

SETUPTYPE_STR_TYPICAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- FeatureStandardSetupTypeSet

SETUP_PACKAGE

Project ▪ *This information applies to InstallScript projects.*

SETUP_PACKAGE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- Is

SEVERE

SEVERE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MessageBox
- SprintfBox

SHAREDFILE

SHAREDFILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- XCopyFile
- VerUpdateFile
- DeinstallStart
- InstallationInfo
- System

SILENTMODE

SILENTMODE is a predefined constant that can be used to test whether or not a setup is running in silent mode. For more information, refer to the InstallShield system variable MODE.

SKIN_LOADED

Project ▪ *This information applies to InstallScript projects.*

SKIN_LOADED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

SQL_BATCH_INSTALL

SQL_BATCH_INSTALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBatchList

SQL_BATCH_UNINSTALL

SQL_BATCH_UNINSTALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBatchList

SQL_BROWSE_ALIAS

SQL_BROWSE_ALIAS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBrowseOption
- SQLRTSetBrowseOption

SQL_BROWSE_ALL

SQL_BROWSE_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBrowseOption
- SQLRTSetBrowseOption

SQL_BROWSE_LOCAL

SQL_BROWSE_LOCAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBrowseOption
- SQLRTSetBrowseOption

SQL_BROWSE_REMOTE

SQL_BROWSE_REMOTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetBrowseOption
- SQLRTSetBrowseOption

SQL_ERROR_GET_SCHEMA_VERSION

SQL_ERROR_GET_SCHEMA_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetComponentScriptError
- SQLRTGetComponentScriptError2

SQL_ERROR_SCRIPT_COMMAND_ERROR

SQL_ERROR_SCRIPT_COMMAND_ERROR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetComponentScriptError
- SQLRTGetComponentScriptError2

SQL_ERROR_SCRIPT_CONNECTION_NOT_OPEN

SQL_ERROR_SCRIPT_CONNECTION_NOT_OPEN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetComponentScriptError
- SQLRTGetComponentScriptError2

SQL_ERROR_SCRIPT_UNABLE_OPEN_FILE

SQL_ERROR_SCRIPT_UNABLE_OPEN_FILE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetComponentScriptError
- SQLRTGetComponentScriptError2

SQL_ERROR_SET_SCHEMA_VERSION

SQL_ERROR_SET_SCHEMA_VERSION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SQLRTGetComponentScriptError
- SQLRTGetComponentScriptError2

SRCINSTALLDIR

Note ▪ *SRCTARGETDIR replaces SRCINSTALLDIR.*

SRCINSTALLDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VarRestore
- VarSave

SRCTARGETDIR

Note ▪ *SRCTARGETDIR replaces SRCINSTALLDIR.*

SRCTARGETDIR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VarRestore
- VarSave

SSP_PROPERTY_NO_NEW_INSTALL_HIGHLIGHT

SSP_PROPERTY_NO_NEW_INSTALL_HIGHLIGHT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetShortcutProperty

SSP_PROPERTY_NO_STARTSCREEN_PIN

SSP_PROPERTY_NO_STARTSCREEN_PIN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetShortcutProperty

SSP_PROPERTY_PREVENT_PINNING

SSP_PROPERTY_PREVENT_PINNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetShortcutProperty

STANDARD_RIGHTS_ALL

STANDARD_RIGHTS_ALL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

STANDARD_RIGHTS_EXECUTE

STANDARD_RIGHTS_EXECUTE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

STANDARD_RIGHTS_READ

STANDARD_RIGHTS_READ is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

STANDARD_RIGHTS_REQUIRED

STANDARD_RIGHTS_REQUIRED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS
- SetObjectPermissions

STANDARD_RIGHTS_WRITE

STANDARD_RIGHTS_WRITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SetObjectPermissions

STATUS

STATUS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow
- Enable
- Disable

STATUSBAR

STATUSBAR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor

STATUSBBRD

STATUSBBRD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Enable
- Disable

STATUSDLG

STATUSDLG is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow
- Enable
- Disable

STATUSEX

STATUSEX is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow
- Enable
- Disable

STATUSOLD

STATUSOLD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceWindow
- Enable
- Disable

STRINGLIST

STRINGLIST is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ListCreate

STYLE_BOLD

STYLE_BOLD is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFont
- SetFont

STYLE_ITALIC

STYLE_ITALIC is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFont
- SetFont

STYLE_NORMAL

STYLE_NORMAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFont
- SetFont

STYLE_SHADOW

STYLE_SHADOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetFont

STYLE_UNDERLINE

STYLE_UNDERLINE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetFont
- SetFont

SW_MAXIMIZE

SW_MAXIMIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ShowProgramFolder

SW_MINIMIZE

SW_MINIMIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ShowProgramFolder

SW_RESTORE

SW_RESTORE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ShowProgramFolder

SW_SHOW

SW_SHOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ShowProgramFolder

SYNCHRONIZE

SYNCHRONIZE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS
- SetObjectPermissions

SYS_BOOTMACHINE

SYS_BOOTMACHINE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- System
- RebootDialog
- SdFinishReboot

SYSTEM_DPI

SYSTEM_DPI is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

SYSTEM_DPI_SCALING

SYSTEM_DPI_SCALING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

TBYTES

TBYTES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- ConvertSizeToUnits
- StrConvertSizeUnit

TILED

TILED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap

TIME

TIME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

TRUE

TRUE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskOptions
- CtrlSetMultCurSel
- DialogSetInfo
- FeatureAddItem
- FeatureGetData
- FeatureIsItemSelected
- FeatureSelectItem
- FeatureTotalSize

- LongPathToQuote
- SdDiskSpace2
- SelectDir
- SdShowMsg
- SQLDatabaseBrowse
- SQLRTConnect
- SQLRTConnect2
- SQLRTConnectDB
- SQLRTGetDatabases
- SQLRTGetServers
- SQLRTGetServers2
- SQLRTPutConnectionAuthentication
- SQLRTTestConnection
- SQLRTTestConnection2
- SQLServerSelectLogin
- SQLServerSelectLogin2

TTFONTFILEINFO_FONTTITLE

TTFONTFILEINFO_FONTTITLE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetTrueTypeFontFileInfo

TYPICAL

TYPICAL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SdSetupType
- SetupType

UPDATE_SERVICE_INSTALL

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

UPDATESERVICECOMPONENT

Project *▪ This information applies to InstallScript projects.*

This constant is obsolete. For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

UPPER_LEFT

UPPER_LEFT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap
- PlaceWindow

UPPER_RIGHT

UPPER_RIGHT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- PlaceBitmap
- PlaceWindow

URL

Project *▪ This information applies to InstallScript projects.*

URL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

USER_ADMINISTRATOR

USER_ADMINISTRATOR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

USER_INADMINGROUP

USER_INADMINGROUP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

USER_POWERUSER

Project *▪ This information applies to InstallScript projects.*

USER_POWERUSER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

USE_LOADED_SKIN

Project *▪ This information applies to InstallScript projects.*

USE_LOADED_SKIN is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

VALID_PATH

VALID_PATH is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

VERSION_COMPARE_RESULT_NEWER

Project *▪ This information applies to InstallScript projects.*

VERSION_COMPARE_RESULT_NEWER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VERSION_COMPARE_RESULT_NEWER_NOT_SUPPORTED

Project *▪ This information applies to InstallScript projects.*

VERSION_COMPARE_RESULT_NEWER_NOT_SUPPORTED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VERSION_COMPARE_RESULT_NOT_INSTALLED

Project *▪ This information applies to InstallScript projects.*

VERSION_COMPARE_RESULT_NOT_INSTALLED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VERSION_COMPARE_RESULT_OLDER

Project *▪ This information applies to InstallScript projects.*

VERSION_COMPARE_RESULT_OLDER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VERSION_COMPARE_RESULT_SAME

Project *▪ This information applies to InstallScript projects.*

VERSION_COMPARE_RESULT_SAME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VERSION_PREVIOUS_VERSION_DELIMITER

Project *▪ This information applies to InstallScript projects.*

VERSION_PREVIOUS_VERSION_DELIMITER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerProductCompareVersions

VER_DLL_NOT_FOUND

VER_DLL_NOT_FOUND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerSearchAndUpdateFile

VER_UPDATE_ALWAYS

VER_UPDATE_ALWAYS is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerUpdateFile
- VerSearchAndUpdateFile

VER_UPDATE_COND

VER_UPDATE_COND is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- VerSearchAndUpdateFile

VIDEO

VIDEO is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

VIRTUAL_MACHINE_TYPE

VIRTUAL_MACHINE_TYPE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

VOLUMELABEL

VOLUMELABEL is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

WARNING

WARNING is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- MessageBox
- SprintfBox

WEB_BASED_SETUP

Project ▪ *This information applies to InstallScript projects.*

WEB_BASED_SETUP is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

WELCOME

WELCOME is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Welcome

WHITE

WHITE is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetTitle

WILL_REBOOT

WILL_REBOOT is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or event handlers. You cannot change the value of a predefined constant.

Used With

- RebootDialog
- SdFinishReboot

WINDOWS_SHARED

WINDOWS_SHARED is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Is

WINMAJOR

WINMAJOR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

WINMINOR

WINMINOR is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- GetSystemInfo

WOW64FSREDIRECTION

Project ▪ *This information applies to InstallScript projects.*

WOW64FSREDIRECTION is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- Disable
- Enable

WRITE_DAC

WRITE_DAC is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS
- SetObjectPermissions

WRITE_OWNER

WRITE_OWNER is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions or assigned to one or more system variables. You cannot change the value of a predefined constant.

Used With

- SERVICE_IS_PARAMS
- SetObjectPermissions

YELLOW

YELLOW is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- SetColor
- SetTitle

YES

YES is a predefined constant that is used to represent a value that is passed to or returned by one or more built-in functions. You cannot change the value of a predefined constant.

Used With

- AskYesNo
- SdLicense
- SdConfirmNewDir
- SdConfirmRegistration

_MAX_PATH

Project ▪ *This information applies to InstallScript projects.*

MAX_PATH is a predefined constant that is used to represent the maximum length of a path variable that is passed to a Windows API function. The following sample code lines illustrate possible uses of _MAX_PATH:

```
string szPath[_MAX_PATH]; /* variable declaration */
    ...
    Kernel32.GetTempPathA( _MAX_PATH, szPath ); /* Windows API function call */
```

Predefined Script Variables

This section includes a list of predefined script variables that are reserved during script compilation.

- __FILE__
- __LINE__
- BASICMSI
- INSTALLSCRIPTMSI
- INSTALLSCRIPTMSIEEUI
- ISUS_PRODUCT_CODE
- SERVICE_IS_PARAMS
- SERVICE_IS_STATUS
- SUITE_HOSTED

__FILE__

During script compilation this reserved identifier is replaced by a string that contains the fully qualified name of the source file in which __FILE__ resides. __FILE__ can be specified anywhere in a script where a string constant is allowed, but it is most useful when used with __LINE__ for simple debugging. For example, by constructing a statement like the one below and copying it to strategic locations in your source files during testing, you can easily associate specific parts of your setup with specific sections of your script as you observe your setup run.

```
SprintfBox (INFORMATION, "", "File: %s\nLine:%ld";,
          __FILE__, __LINE__);
```

Note that the path will be the location from which the file was compiled, not the location from which the setup is being run. If necessary, the ParsePath function can be called with __FILE__ in the second parameter to extract parts of the fully qualified file name. The code fragment below extracts the file name and displays it.

```
ParsePath (svReturnString, __FILE__, FILENAME);
MessageBox (svReturnString, INFORMATION);
```

For more complete and powerful debugging, use the InstallScript Debugger by clicking Debug on the Build menu in InstallShield. For more information, see the InstallScript Debugger Help.

__LINE__

During setup compilation, this reserved identifier is replaced by the number of the source file line in which __LINE__ resides. Note that __LINE__ can be specified anywhere in a script where a number constant is allowed, but it is most useful when used with __FILE__ for simple debugging. For example, by constructing a statement like the one below and copying it to strategic locations in your source files during testing, you can easily associate specific parts of your setup with specific sections of your script as you observe your setup run.

```
SprintfBox (INFORMATION, "", "File: %s\nLine:%ld", __FILE__, __LINE__);
```

For more complete and powerful debugging, use the InstallScript Debugger by clicking Debug on the Build menu in InstallShield. For more information, see the InstallScript Debugger Help.

BASICMSI

The BASICMSI script variable is defined for Basic MSI projects, but it is undefined and evaluates as zero in InstallScript MSI projects and in InstallScript projects.

Note ▪ *BASICMSI is not a preprocessor switch; therefore, you can use this script variable to create script code that will work differently in different project types without being recompiled.*

You can use BASICMSI to write a single script that produces different behavior in the different project types by including code such as the following in your script:

```
if( BASICMSI ) then
  //Code for Basic MSI projects
else
  //Code for InstallScript MSI or InstallScript projects
endif;
```

INSTALLSCRIPTMSI

INSTALLSCRIPTMSI is defined in InstallScript MSI and Basic MSI projects, but it is undefined and evaluates as zero in InstallScript projects.

Note ▪ *INSTALLSCRIPTMSI is not a preprocessor switch; therefore, you can use this script variable to create script code that will work differently in the two project types without being recompiled.*

You can use INSTALLSCRIPTMSI to write a single script that produces different behavior in the different project types by including code such as the following in your script:

```
if( INSTALLSCRIPTMSI ) then
  //Code for InstallScript MSI and Basic MSI projects...
else
  //Code for InstallScript projects...
endif;
```

INSTALLSCRIPTMSIEEUI

The INSTALLSCRIPTMSIEEUI variable is set to enable an installation to determine at run time whether the InstallScript engine is used as the embedded user interface (UI) handler for an InstallScript MSI installation. This implementation is also known as the new style of InstallScript UI.

If the InstallScript engine is used as the embedded user interface handler for an InstallScript MSI installation, INSTALLSCRIPTMSIEEUI is set to TRUE. If it is not an embedded user interface handler, this variable is set to FALSE.

Tip ▪ *For information on using the InstallScript engine as an embedded user interface handler for an InstallScript MSI installation, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.*

You can use INSTALLSCRIPTMSIEEUI to write a single script that produces different behavior for the different user interface styles by including code such as the following in your script:

```
if( INSTALLSCRIPTMSIEEUI ) then
  //Code for new-style InstallScript MSI installations
  //(InstallScript engine as an embedded UI handler)...
else
  //Code for traditional-style InstallScript MSI installations
  (InstallScript engine as an external UI handler)...
endif;
```

ISUS_PRODUCT_CODE

The ISUS_PRODUCT_CODE variable is a read-write script variable which is set to PRODUCT_GUID during initialization. Like PRODUCT_GUID, this variable is not linked to a text-sub. Therefore, if customized, this script variable must be customized each time the setup is run, even during maintenance mode.

SERVICE_IS_PARAMS

Project ▪ *This information applies to InstallScript projects.*

The SERVICE_IS_PARAMS variable is initialized automatically during installation initialization by a call to ServiceInitParams.

Note ▪ *Certain InstallScript service functions internally call the Windows API functions OpenSCManager, CreateService, or ChangeServiceConfig. The following members of the structured variable SERVICE_IS_PARAMS specify the corresponding arguments for these Windows API functions:*

- *SERVICE_IS_PARAMS.lpMachineName*
- *SERVICE_IS_PARAMS.lpDatabaseName*
- *SERVICE_IS_PARAMS.dwDesiredAccess*
- *SERVICE_IS_PARAMS.dwServiceType*
- *SERVICE_IS_PARAMS.dwStartType*
- *SERVICE_IS_PARAMS.dwErrorControl*
- *SERVICE_IS_PARAMS.lpLoadOrderGroup*
- *SERVICE_IS_PARAMS.lpdwTagId*
- *SERVICE_IS_PARAMS.lpDependencies*
- *SERVICE_IS_PARAMS.lpServiceStartName*
- *SERVICE_IS_PARAMS.lpPassword*

The following members of SERVICE_IS_PARAMS control how the installation behaves when waiting for a service to reach a desired state. See the descriptions for each member for additional information.

- *SERVICE_IS_PARAMS.nWaitHintMin*
- *SERVICE_IS_PARAMS.nWaitHintMax*
- *SERVICE_IS_PARAMS.nStartServiceWaitCount*

- *SERVICE_IS_PARAMS.nStopServiceWaitCount*

The SERVICE_IS_PARAMS script variable has the following members:

Table 1 ▪ SERVICE_IS_PARMS Parameters

Member	Description
dwServiceType	This member can be set to these predefined constants: • SERVICE_WIN32_OWN_PROCESS • SERVICE_WIN32_SHARE_PROCESS • SERVICE_KERNEL_DRIVER • SERVICE_FILE_SYSTEM_DRIVER • SERVICE_ADAPTER • SERVICE_RECOGNIZER_DRIVER • SERVICE_INTERACTIVE_PROCESS
dwStartType	This member can be set to these predefined constants: • SERVICE_BOOT_START • SERVICE_SYSTEM_START • SERVICE_AUTO_START • SERVICE_DEMAND_START • SERVICE_DISABLED
dwErrorControl	This member can be set to these predefined constants: • SERVICE_ERROR_IGNORE • SERVICE_ERROR_NORMAL • SERVICE_ERROR_SEVERE • SERVICE_ERROR_CRITICAL
nWaitHintMin	Specifies the minimum dwWaitHint wait time (in milliseconds). If a service specifies a dwWaitHint smaller than nWaitHintMin, nWaitHintMin is used instead as the wait time. This applies to both starting and stopping services. The default value of this member variable is 1000 (1 second), and is set by calling ServiceInitParams. See the MDSN documentation for more information on how a service sets dwWaitHint.

Table 1 ▪ SERVICE_IS_PARMS Parameters (cont.)

Member	Description
nWaitHintMax	Specifies the maximum dwWaitHint wait time (in milliseconds). If a service specifies a dwWaitHint longer than nWaitHintMax, nWaitHintMax is used instead as the wait time. This applies to both starting and stopping services. The default value of this member variable is 10000 (10 seconds), and is set by calling ServiceInitParams. See the MDSN documentation for more information on how a service sets dwWaitHint.
nStartServiceWaitCount	Specifies the service start timeout in seconds. This value can be set to a specific value to force the installation to stop waiting after the specified interval regardless of whether the service has reached the desired state.  ***Important*** ▪ *Unlike nWaitHintMax, if a service specifies a long dwWaitHint, the installation does not interrupt this wait regardless of the value of this parameter. Therefore, it is recommended that this value not be changed from the default value of INFINITE set by ServiceInitParams. Instead, update nWaitHintMax to prevent an undesired wait interval.*
nStopServiceWaitCount	Specifies the service stop timeout in seconds. This value can be set to a specific value to force the setup to stop waiting after the specified interval regardless of whether the service has reached the desired state.  ***Important*** ▪ *Unlike nWaitHintMax, if a service specifies a long dwWaitHint, the installation does not interrupt this wait regardless of the value of this parameter. Therefore, it is recommended that this value not be changed from the default value of INFINITE set by ServiceInitParams. Instead, update nWaitHintMax to prevent an undesired wait interval.*

Additional Information

For more information about the Windows API functions OpenSCManager, CreateService, or ChangeServiceConfig, consult the Windows API documentation.

SERVICE_IS_STATUS

Project ▪ *This information applies to InstallScript projects.*

When you call **ServiceGetServiceState**, this structured variable returns identification information about the service. This system variable is of type SERVICE_IS_STATUS; it has the following members:

Table 2 ▪ SERVICE_IS_STATUS Parameters

Member	Meaning
dwServiceType	The type of service. This member can be one of the following values. • **SERVICE_FILE_SYSTEM_DRIVER**—The service is a file system driver. • **SERVICE_KERNEL_DRIVER**—The service is a device driver. • **SERVICE_WIN32_OWN_PROCESS**—The service runs in its own process. • **SERVICE_WIN32_SHARE_PROCESS**—The service shares a process with other services. If the service type is either SERVICE_WIN32_OWN_PROCESS or SERVICE_WIN32_SHARE_PROCESS, the following type may also be specified. • **SERVICE_INTERACTIVE_PROCESS**—The service can interact with the desktop.
dwCurrentState	The current state of the service. This member can be one of the following values. • **SERVICE_CONTINUE_PENDING**—The service continue is pending. • **SERVICE_PAUSE_PENDING**—The service pause is pending. • **SERVICE_PAUSED**—The service is paused. • **SERVICE_RUNNING**—The service is running. • **SERVICE_START_PENDING**—The service is starting. • **SERVICE_STOP_PENDING**—The service is stopping. • **SERVICE_STOPPED**—The service is not running.
dwWin32ExitCode	A Win32 error code that the service uses to report an error that occurs when it is starting or stopping. To return an error code specific to the service, the service must set this value to ERROR_SERVICE_SPECIFIC_ERROR to indicate that the dwServiceSpecificExitCode member contains the error code. The service should set this value to NO_ERROR when it is running and on normal termination.

Table 2 ▪ SERVICE_IS_STATUS Parameters (cont.)

Member	Meaning
dwServiceSpecificExitCode	A service-specific error code that the service returns when an error occurs while the service is starting or stopping. This value is ignored unless the dwWin32ExitCode member is set to ERROR_SERVICE_SPECIFIC_ERROR.
dwCheckPoint	A value that the service increments periodically to report its progress during a lengthy start, stop, pause, or continue operation. For example, the service should increment this value as it completes each step of its initialization when it is starting up. The user interface program that invoked the operation on the service uses this value to track the progress of the service during a lengthy operation. This value is not valid and should be zero when the service does not have a start, stop, pause, or continue operation pending.
dwWaitHint	An estimate of the amount of time, in milliseconds, that the service expects a pending start, stop, pause, or continue operation to take before the service makes its next call to the Windows API function SetServiceStatus with either an incremented dwCheckPoint value or a change in dwCurrentState. If the amount of time specified by dwWaitHint passes, and dwCheckPoint has not been incremented, or dwCurrentState has not changed, the service control manager or service control program can assume that an error has occurred.
dwControlsAccepted	The control codes that the service will accept and process in its handler function. A user interface process can control a service by specifying a control command in the Windows API function ControlService. By default, all services accept the SERVICE_CONTROL_INTERROGATE value. Table 3 lists the possible control codes for this member.

dwControlAccepted Control Codes

This table lists the possible control codes for dwControlAccept script variable.

Table 3 ▪ dwControlsAccepted Control Codes

Control Code	Description
SERVICE_ACCEPT_NETBINDCHANGE	The service is a network component that can accept changes in its binding without being stopped and restarted. This control code allows the service to receive SERVICE_CONTROL_NETBINDADD, SERVICE_CONTROL_NETBINDREMOVE, SERVICE_CONTROL_NETBINDENABLE, and SERVICE_CONTROL_NETBINDDISABLE notifications.

Table 3 ▪ dwControlsAccepted Control Codes (cont.)

Control Code	Description
SERVICE_ACCEPT_PARAMCHANGE	The service can reread its startup parameters without being stopped and restarted. This control code allows the service to receive SERVICE_CONTROL_PARAMCHANGE notifications.
SERVICE_ACCEPT_PAUSE_CONTINUE	The service can be paused and continued. This control code allows the service to receive SERVICE_CONTROL_PAUSE and SERVICE_CONTROL_CONTINUE notifications.
SERVICE_ACCEPT_SHUTDOWN	The service is notified when system shutdown occurs. This control code allows the service to receive SERVICE_CONTROL_SHUTDOWN notifications. Note that the Windows API function ControlService cannot send this notification; only the system can send it.
SERVICE_ACCEPT_STOP	The service can be stopped. This control code allows the service to receive SERVICE_CONTROL_STOP notifications.

The dwControlAccept value can also contain the following extended control codes, which are supported only by service handler functions that are used with the Windows API function **RegisterServiceCtrlHandlerEx**.

Table 4 ▪ Extended Control Codes for dwControlAccept

Control Code	Description
SERVICE_ACCEPT_HARDWAREPROFILECHANGE	The service is notified when the computer's hardware profile has changed. This enables the system to send SERVICE_CONTROL_HARDWAREPROFILECHANGE notifications to the service.
SERVICE_ACCEPT_POWEREVENT	The service is notified when the computer's power status has changed. This enables the system to send SERVICE_CONTROL_POWEREVENT notifications to the service.
SERVICE_ACCEPT_SESSIONCHANGE	Whistler: The service is notified when the computer's session status has changed. This enables the system to send SERVICE_CONTROL_SESSIONCHANGE notifications to the service.

SUITE_HOSTED

Project ▪ *This information applies to InstallScript projects.*

Use the SUITE_HOSTED variable to determine whether the InstallScript installation is running as an InstallScript package in an Advanced UI or Suite/Advanced UI installation.

If the InstallScript installation is running as an InstallScript package in an Advanced UI or Suite/Advanced UI installation, SUITE_HOSTED is set to a non-zero value. If SUITE_HOSTED is set to zero, the InstallScript installation is not running as an InstallScript package in an Advanced UI or Suite/Advanced UI installation. For example:

```
if SUITE_HOSTED then
    // Code for an InstallScript installation that is run
    // as an InstallScript package in an Suite/Advanced UI
    // or Advanced UI installation
else
    // Code for an InstallScript installation that is run
    // standalone, not as an InstallScript package in an
    // a Suite/Advanced UI or Advanced UI installation
endif;
```

Data Types and Predefined Structures

Data Types

InstallScript supports the following data types. Note that some data types can be entered in either lowercase or uppercase letters:

Table 1 ▪ Data Types

Data Type	Description
binary **BINARY**	Indicates binary data (specified in a string variable) to be passed to or retrieved from an external DLL function. Unlike the STRING or WSTRING data types, when the BINARY data type is specified, the InstallScript engine does not attempt to interpret the data as a string or perform any type of data conversion or validation; thus, this data type is used when passing binary data that may or may not consist of valid string characters. Note that this data type can be used only in a prototype of an external DLL function. If this data type is used for a variable instance or as a parameter for a non-DLL InstallScript function, compile error C8116 error occurs. If a standard InstallScript string is passed through the BINARY data type, the characters in the string are passed as ASCII characters. Therefore, the binary type is similar to the STRING data type, not the WSTRING data type, for valid string characters.
BOOL	Boolean data: either TRUE (1) or FALSE (0). Variables of this type should not be used to store any other values. Like C++, InstallScript evaluates non-zero values as TRUE; only the value of zero is evaluated as FALSE. Normally, the value of one is used to indicate TRUE.
char **CHAR**	Character data: a single 8-bit signed character. When a literal character appears in a script, it must be enclosed within single or double quotation marks. Note that you can assign a numeric ASCII value to a character value. To display a char variable as a character, use the Format Specifiers "%c" with the function SprintfBox. To display the numeric value of a char variable use the specifier "%d". InstallScript character variable types are signed; therefore extended ASCII characters will be interpreted as negative numbers when interpreted numerically. To avoid this problem, assign the value to a number variable; then AND (&) the number variable with the value 255 before interpreting the number.
HWND	Handle to a window. The HWND variable type also can be used to store any other type of handle valid in Windows. HWND variables are normally initialized using the CmdGetHwndDlg or GetWindowHandle functions. Internally, HWND variables are equivalent to the data type NUMBER.

Table 1 ▪ Data Types (cont.)

Data Type	Description
int **INT**	Equivalent to the number type; provided for convenience.
LIST	Pointer to an InstallScript list. LIST variables are always initialized and uninitialized using the ListCreate and ListDestroy functions. Internally, LIST variables are equivalent to the data type NUMBER.
long **LONG**	Equivalent to the NUMBER type; provided for convenience.
LPSTR	Equivalent to the POINTER type; provided for convenience. For more information, see Pointers.
LPWSTR	Equivalent to the WPOINTER type; provided for convenience. For more information, see Pointers.
number **NUMBER**	Signed four-byte integer. Number is the recommended data type for storing numeric data. The data type is similar to the LONG variable type of other programming languages. It can hold any value between -2,147,483,648 and +2,147,483,647. Note that all numeric data types in InstallScript are equivalent to the NUMBER variable type.
object **OBJECT**	A reference to a COM object. The reference is returned by the CreateObject function and assigned to the object variable using the set keyword.
pointer **POINTER**	A pointer to data. In the case of a pointer to a string variable, the data pointed to is an ANSI string. Pointer variables are normally initialized by using the address-of (&) operator to assign the address of a variable to the pointer variable. For more information, see Pointers.
short **SHORT**	Equivalent to the NUMBER type; provided for convenience.

Table 1 ▪ Data Types (cont.)

Data Type	Description
string **STRING**	An array of Unicode characters (two bytes per character). String variables, which are similar to arrays of characters in the C++ language, are NULL terminated. However, InstallShield does not support multiple NULL-terminated strings in the same string variable. String variables can be declared with an explicit size of up to 65,535 characters. Strings variables that are declared without an explicit size are automatically sized by InstallShield. Note that string concatenation in a setup script is performed by using the concatenation operator, which is a plus sign (+). Strings to be concatenated are positioned as operands on either side of the operator, as shown in the statement below, which appends the value of szLastName to the value of szFirstName and assigns the resulting string to szFullName: `szFullName = szFirstName + szLastName;` To display a string variable, use the SprintfBox function with the format specifier "%s", or use the MessageBox function.  ***Note ▪*** *You can declare string variables as STRING in InstallScript code; string variables that are declared this way in InstallScript code are stored as Unicode strings in string tables. However, if you want to store Unicode strings in structures that are passed outside of the InstallScript code—for example, to a DLL function—you may need to use the WSTRING type when declaring the strings as structure members in your InstallScript code. For more information, see Data Structures.*
variant **VARIANT**	Any kind of data: character, string, numeric, object reference, and so on. It is recommended that you use the other data types whenever possible; the VARIANT data type is necessary only when declaring a script-defined function that takes an array as an argument, for example: `prototype number AverageValue( variant );` `function OnBegin( )` `  number nAverage , nArray(10);` `begin` `  /* Assign values to array elements here. */` `  /* Pass the array to the function. */` `  nAverage = AverageValue( nArray );` `end;` Note that the VARIANT data type cannot be defined within a data structure.

Table 1 ▪ Data Types (cont.)

Data Type	Description
void **VOID**	Void is not a true data type, in the sense that a variable cannot be declared as type void. Void is only used in function prototypes to indicate that the function does not return a value, as in the following: `prototype void Subroutine(int);` `function void Subroutine(int);` `begin` `  // perform operations, but` `  // do not return a value` `end;`
wpointer **WPOINTER**	A pointer to string data. The POINTER type should be used in all cases except when a pointer to Unicode string data is needed. Pointer variables are normally initialized by using the address-of (&) operator to assign the address of a variable to the pointer variable. For more information, see Pointers.
wstring **WSTRING**	Same as STRING except that, unlike STRING, it can be used when declaring DLL function calls in which a wide-character string argument or Unicode string argument is expected. For example: `prototype long Kernel32.GetWindowsDirectoryW(BYREF wstring, int);` You can pass a string variable in a WSTRING argument; for example: `wstring svWinDir;` `...` `GetWindowsDirectoryW(svWinDir, 1024);` ***Note ▪*** *You can declare string variables as STRING in InstallScript code; string variables that are declared this way in InstallScript code are stored as Unicode strings in string tables. However, if you want to store Unicode strings in structures that are passed outside of the InstallScript code—for example, to a DLL function—you may need to use the WSTRING type when declaring the strings as structure members in your InstallScript code. For more information, see Data Structures.*

Note ▪ *InstallScript does not provide unsigned or floating-point data types.*

Predefined Structures

InstallScript supports the following predefined structures:

Table 2 ▪ Predefined Structures

Predefined Structure	Description
_FONTFILEINFO	This is a data structure that is passed to the OnInstalledFontFile and OnUninstallingFontFile event handlers. It has the following members: • **string szFileName[_MAX_PATH]**—The complete path to the font file being installed on the system • **string szFaceName[_MAX_PATH]**—The face name of the font being installed (if you specify the name for the font file in InstallShield) Note that the information in the structure is passed to the event handler so that the event handler can use the information. Thereafter, the values of the structure are used by the installation. Therefore, changing the structure members does not have any effect on the installation.
_LAAW_PARAMETERS	For a list of this data structure's members and their purposes and permitted values, see LAAW_PARAMETERS.
_SERVICE_IS_PARAMS	For a list of this data structure's members and their purposes and permitted values, see SERVICE_IS_PARAMS.
_SERVICE_IS_STATUS	For a list of this data structure's members and their purposes and permitted values, see SERVICE_IS_STATUS.
ISURL_COMPONENTS	This is a data structure that contains the constituent parts of a URL. This structure is similar to the Windows API structure URL_COMPONENTS. For an example of the use of this structure, see ParseUrl. This structure has the following members: • **szScheme**—String value that contains the scheme name. • **nInternetScheme**—Numeric value that indicates the Internet protocol scheme; equals 3 for HTTP and 4 for HTTPS. • **szUserName**—String value that contains the user name. • **szPassword**—String value that contains the password. • **szHostName**—String value that contains the host name. • **nInternetPort**—Port number. • **szUrlPath**—String value that contains the URL path. • **szExtraInfo**—String value that contains the extra information (for example, ?something or #something).
PROCESS_INFORMATION	For a list of this data structure's members and their purposes and permitted values, see LAAW_PROCESS_INFORMATION.

Table 2 ▪ Predefined Structures (cont.)

Predefined Structure	Description
STARTUPINFO	For a list of this data structure's members and their purposes and permitted values, see LAAW_STARTUPINFO.

Arrays

You can declare and use any InstallScript data type as an array. To declare a variable as an array, append an open parenthesis and a close parenthesis, with an array size optionally between the parentheses, to the variable name in the declaration. For example, the following declares a variable called nArray to be an array containing 10 NUMBER elements:

```
NUMBER nArray(10);
```

If you do not declare an array size, for example,

```
NUMBER nArray( );
```

the array size defaults to zero. You can resize arrays in the script by using the Resize operator. You can get the size of an array by using the SizeOf operator.

Use the following syntax to assign values to array elements:

Syntax

```
<array variable name>(<array index>) = <value>;
```

For example:

```
nArray(0) =  1; /* Array indexing begins with zero. */
nArray(5) = 17;
```

When declaring a script-defined function that takes an array as an argument, do not use an array as the parameter data type; for example:

```
prototype NUMBER AverageValue( NUMBER( ) ); /* This will not compile. */
```

Instead, use the VARIANT data type; for example:

```
prototype NUMBER AverageValue( VARIANT );

function OnBegin( )
    NUMBER nAverage, nArray(10);
begin
    /* Assign values to array elements here. */

    /* Pass the array to the function. */
    nAverage = AverageValue( nArray );
end;
```

Constant Data

A constant is a named data item with a defined value. InstallShield supports two types of constants:

- Predefined constants, such as TRUE and RESET, are part of InstallScript. These constants, which are used as function parameters and return values for built-in functions, cannot be redefined in the script. Attempting to redefine a predefined constant results in a compiler error.
- User-defined constants are declared by the programmer as needed for individual scripts. Although a user-defined constant can be redefined after the initial declaration, it is generally not considered good programming practice to do so.

User-defined constants are declared with a #define preprocessor statement. (InstallScript does not support the const keyword for declaring variable constants as the C++ language does.) String constants must be enclosed within quotation marks; numeric constants are defined without quotation marks and contain only numeric characters. Once declared, a string constant can be used anywhere that a string literal can be used. Likewise, number constants can be used anywhere that a numeric literal can be used.

In the following example, a string constant and a numeric constant are declared:

```
#define COMPANY_NAME "Example_Company"
#define MAXCOUNT       1000
```

A constant name must follow the rules for InstallScript identifiers. By convention, constant identifiers are created with all uppercase characters. InstallScript's predefined constants follow that convention.

Data Structures

A data structure is a named data item that consists of logically related variables, called members. In many programming languages, data structures are called records, and the variables within records are called fields. In InstallScript, data structures are similar in form and function to structures in C. They can include members of different data types, and those members within the data structure can be referenced directly by using the member operator (.).

Defining a Data Structure

To define a data structure, use the keyword typedef and follow it with the name of the data structure. Fields in the structure must be defined within a begin...end block, as shown in the example below, which defines a structure called EMPLOYEE. The data structure EMPLOYEE includes three variables: a string variable for an employee's name, a string variable for an employee's department, and a number variable for an employee's phone extension.

```
typedef EMPLOYEE
begin
    STRING szName[50];
    STRING szDepartment[50];
    NUMBER nExtension;
end;
```

When you define a data structure, you are actually defining a new data type. To use a data structure within a program, you must first declare a variable of that type. To do that, use the name of the defined data structure as the data type and follow it with an identifier, as shown in the example below, which creates a variable of type EMPLOYEE.

```
EMPLOYEE structEmployee;
```

To reference members of the structure variable, use the member operator (.). In the example below, literal values are assigned to each member of structEmployee.

```
structEmployee.szName = "I. S. Coder";
structEmployee.szDepartment = "Development";
structEmployee.nExtension = 555;
```

Restrictions

The following restrictions apply to structures:

- You cannot assign the contents of one structure to another structure with the assignment operator, as in newstruct = struct1. Instead, you must copy the structure one element at a time.
- You must specify the size of all STRING declarations in a structure—the autosizing functionality in InstallScript does not work in typedef statements.
- You cannot declare a structure within a function.
- You cannot use the BYREF operator with a structure, nor can you pass a structure member in a parameter that was declared with the BYREF operator. To modify a member of a user-defined structure in a user-defined function, pass a pointer to the structure and then use the Structure Pointer Operator (->) to access the data within the function.
- Referencing a pointer before the address of a data structure has been assigned to the pointer results in a run-time error.

Unicode Support for Structures

Structures in InstallScript can contain any basic data type, including strings and pointers, or other structures. If a structure needs to contain a Unicode string and the structure is passed to an external DLL, the InstallScript engine can distinguish between string member types in a structure, and then size the structure and calculate member offsets correctly. String members that need to be stored and passed as Unicode can be declared with the WSTRING type.

Note that if a Unicode string is declared with the STRING type and the string is used in a structure, the InstallScript engine treats the string as ANSI when passing it to an external DLL. As a result, the size of the structure and member offsets in the structure could be wrong, causing the DLL to incorrectly read or write data related to the structure.

Pointer members in structures can be declared as WPOINTER. This enables you to store pointers to Unicode strings in a structure.

Examples

Like C, InstallScript allows you to nest or embed data structures. For example, suppose you wanted to create a structure that could be used to define the upper-left and lower-right coordinates of a rectangle. Each coordinate consists of two values: an x value and a y value. You could define a structure that consists of four members: the x and y positions of the upper-left corner and the x and y positions of the lower-right corner.

However, since each x and y pair is a logical unit, you might first define a structure called POINT that has two members defining a vertical and horizontal position. Then you could define a structure called RECT that includes two members of type POINT, one to define the upper left coordinate, another to define the lower right coordinate. These two structures are shown below:

```
// Define a point structure.
typedef POINT
begin
    SHORT nX;
```

```
    SHORT nY;
end;

// Use nested point structures to define a rectangle structure.
typedef RECT
begin
    POINT UpperLeft;
    POINT LowerRight;
end;
```

When a structure is to be referenced by a pointer to that structure, you must use the structure pointer operator (->) to address members of the structure. In the example below, a variable of type RECT is declared, a pointer to the structure is declared, and then the address of the RECT variable is assigned to the pointer. Finally, the structure pointer operator is used to initialize each member to 0.

```
RECT Rectangle;
RECT POINTER pRect;

pRect = &Rectangle;
pRect->UpperLeft.nX  = 0;
pRect->UpperLeft.nY  = 0;
pRect->LowerRight.nX = 0;
pRect->LowerRight.nY = 0;
```

The following script presents a more complete demonstration of structure pointers, nested structures, and structure pointer dereferencing with the structure pointer operator.

```
// Use a structure to define a point.
typedef POINT
begin
    SHORT nX;
    SHORT nY;
end;

// Use nested structures to define a rectangle.
typedef RECT
begin
    POINT UpperLeft;
    POINT LowerRight;
end;

// Declare a rectangle structure variable.
RECT Rectangle;

// Define a pointer to a RECT structure.
RECT POINTER pRect;

// Declare a function to display structure contents.
prototype ShiftRectBy2(RECT POINTER);

. . .

// Get a pointer to the Rectangle structure.
pRect = &Rectangle;

// Define the points that define the rectangle.
pRect->UpperLeft.nX = 100;
```

```
pRect->UpperLeft.nY = 400;
pRect->LowerRight.nX = 200;
pRect->LowerRight.nY = 100;

// Display point x and y values before calling ShiftRectBy2.
SprintfBox (INFORMATION,
           "BEFORE calling ShiftRectBy2",
           "pRect->UpperLeft.nX  = %d\n" +
           "pRect->UpperLeft.nY  = %d\n" +
           "pRect->LowerRight.nX = %d\n" +
           "pRect->LowerRight.nY = %d\n",
           pRect->UpperLeft.nX,
           pRect->UpperLeft.nY,
           pRect->LowerRight.nX,
           pRect->LowerRight.nY
           );

// Shift the rectangle 2 up and 2 to the right.
ShiftRectBy2(pRect);

// Display point x and y values after calling ShiftRectBy2.
SprintfBox (INFORMATION,
           "AFTER calling ShiftRectBy2",
           "pRect->UpperLeft.nX  = %d\n" +
           "pRect->UpperLeft.nY  = %d\n" +
           "pRect->LowerRight.nX = %d\n" +
           "pRect->LowerRight.nY = %d\n",
           pRect->UpperLeft.nX,
           pRect->UpperLeft.nY,
           pRect->LowerRight.nX,
           pRect->LowerRight.nY
           );

// Define the rectangle shifting function.
function ShiftRectBy2(pR)
begin
    pR->UpperLeft.nX = pR->UpperLeft.nX + 2;
    pR->UpperLeft.nY = pR->UpperLeft.nY + 2;
    pR->LowerRight.nX = pR->LowerRight.nX + 2;
    pR->LowerRight.nY = pR->LowerRight.nY + 2;
end;
```

Language IDs

InstallShield provides language constants for all languages supported by Windows. However, most of these constants are not supported for the designation of language-specific components and language filtering.

InstallScript constants can be used in the following contexts.

Parameter for FeatureFilterLanguage

InstallScript language constants are used as the second parameter to the function FeatureFilterLanguage. In this context, the language constant specifies which files to filter or unfilter. Only supported language constants, which are listed in the supported language table should be used for this purpose. Using an unsupported language constant for component filtering has no effect since components designated for an unsupported language are filtered (not included) during the media build and so cannot be installed.

Return Value for GetSystemInfo

A language constant serves as the value returned in nvResult by function GetSystemInfo when it is called with the constant LANGUAGE in the nItem parameter. In this context, any of the language constants that are listed in `ISRTDefs.h` can be returned because Windows supports all the language constants.

Note ▪ *If your installation includes language filtering based on these return values, you must use a switch statement to convert constants returned by this function into one of the constants supported for language filtering.*

Language Constant Reference

For a complete list of language constants that are supported by InstallShield, as well as their numeric equivalents, refer to the file `ISRTDefs.h`, which is located in the `Script\Include` folder within the InstallShield Program Files folder.

For a list of supported languages and the appropriate InstallScript constants, see Language Support for InstallScript.

Note ▪ *The language that the setup is using to display prompts and messages is stored in the system variable SELECTED_LANGUAGE.*

When the language selection dialog is used by a multilanguage installation to allow the end user to select the installation language during setup initialization, the language dialog will display the Windows equivalent names. Because these names are generated by Windows, they will be localized to the version of Windows under which the installation is being run.

Pointers

A pointer is a variable that contains the address of another variable. To declare a pointer, use the keyword POINTER or WPOINTER followed by a variable name, as shown in the following two sample lines of code:

```
POINTER pPointerName;
WPOINTER pWPointerName;
```

To declare a pointer that will be used to access the members of a data structure, precede the keyword POINTER or WPOINTER with the structure type:

```
typedef RECT
begin
  SHORT sX;
  SHORT sY;
```

```
end;

RECT Rectangle;

RECT POINTER pRect;
```

Use the address operator (&) to assign the address of a variable to a pointer variable:

```
pPointerName = &MyStructure;
pNum = &nvNumber;
pString = &svString;
```

When you are defining a function that takes a pointer to a structure as a parameter, use the structure name with POINTER or WPOINTER in the function prototype, as shown below. Note that any function prototype that specifies a pointer to a structure as one of its parameters must be declared after the structure declaration.

```
   typedef RECT
begin
  SHORT sX;
  SHORT sY;
end;

RECT Rectangle;
RECT POINTER pRect;

prototype SizeRectangle(RECT POINTER);

. . .

pRect = &Rectangle;
SizeRectangle(pRect);

. . .

function SizeRectangle(pRectangle)
begin
  pRectangle->sX = 10;
  pRectangle->sY = 5;
end;
```

Passing Pointers to Strings to Functions that Are Implemented Outside InstallScript Code

The InstallScript compiler lets you pass pointers to Unicode or ANSI strings to functions that are implemented outside script. For example, if you want to call a DLL function that accepts pointers to strings in its parameters, the DLL function prototype would look something like the following in C or C++:

```
void __stdcall MyDllFunction(LPCSTR pszString);
```

In InstallScript, the function could be prototyped as follows:

```
prototype DLL.MyDllFunction(POINTER);
```

You can use the address-of operator (&) to call the function and pass a pointer to a string:

```
DLL.MyDllFunction(&myString);
```

When the script engine makes this function call, the data in string **myString** is passed through a pointer value to **MyDllFunction**. **MyDllFunction** receives a pointer to an ANSI representation of the string that is contained in **myString**.

The pointer type WPOINTER (or optionally wpointer or LPWSTR) lets you pass pointers to Unicode strings to functions outside of script. For example, if the DLL uses Unicode strings, you could change its prototype in C or C++ to the following:

```
void __stdcall MyDllFunction(LPCWSTR pszString);
```

In InstallScript, the only change that is required to pass a Unicode string pointer to a DLL that uses Unicode strings is the prototype, which would contain the WPOINTER type, as follows:

```
prototype DLL.MyDllFunction(WPOINTER);
```

When the DLL function is called in the running script, the engine passes a pointer to a Unicode copy of the string that is stored in **myString** instead of an ANSI version.

Using STRING and WSTRING Instead of Pointers

In most cases, you do not need to use pointers to pass strings to external DLL functions. The STRING and WSTRING types may be used in place of POINTER or WPOINTER. If a DLL function expects an ANSI string, you can use the STRING type; if a DLL function expects a Unicode string, you can use the WSTRING type. Using BYREF and BYVAL will allow for passing a string that either can be modified by the external DLL function or not.

Thus, if you use the following prototype for the function, an ANSI string could be passed by value or by references (modifying the prototype to BYREF as needed):

```
prototype DLL.MyDllFunction(byval string);
```

Changing the parameter type to BYVAL WSTRING allows a Unicode version of the string to be passed instead of the ANSI version.

Variable Data

A variable is a named data item whose value can change during program execution.

Variable Declaration

Format

A variable must be declared in the following format:

```
data_type  VariableName1[, VariableName2 [,...]];
```

Rules

Variable declaration must follow these rules:

- A variable name can have a maximum of 32 characters.
- When more than one variable name is specified in a single declaration, the names must be separated by commas.
- Each variable declaration must be terminated with a semicolon.

Caution ▪ *The names of InstallScript variables and functions are case sensitive. For example, svItemCounter is not equivalent to svITEMCOUNTER.*

Variable Declaration Example

In the following example, seven variables are declared. Note that the last declaration creates three numeric variables.

```
BOOL bValidEntry;

LONG lPopulation;

//String explicitly sized
STRING szUserName[128];

//String autosized
STRING szMessage;

NUMBER nFileSize, nDirSize, nDiskSpace;
```

Declaring String Variables

You can declare a string variable with or without an explicit size. String variables that are not declared with an explicit size are then sized automatically during a setup to accommodate the values assigned to them. Autosizing is recommended for all string variables except those that will be passed to an external (DLL or Windows API) function—in these cases, the string's size *must* be declared explicitly. The maximum size of a string is 65534 characters.

Global vs. Local Variables

Variables may be either global or local:

- A variable is global if it is declared outside of the main program block and not within a function. Global variables are visible and available to all statements in a setup script that follow its declaration.
- A variable is local if it is declared between the function declaration and the keyword *begin* within that function. Local variables are visible and available only within the function where they are declared.

Project ▪ *InstallScript events are not used in Basic MSI and merge module projects; therefore, all InstallScript code for these project types must be written in InstallScript custom actions. Global variables do not share state between these custom action invocations.*

Note ▪ *InstallScript system variables are global and therefore are visible to the main program and to all functions in a script.*

In the following example, the variable nVisibleEverywhere can be referenced by any statement in the script. The variable nVisibleOnlyToFunctions may be referenced only by the functions. The variable nVisibleOnlyToSecondFunction cannot be referenced by the main program or by FirstFunction. The variable szString is local to FirstFunction.

```
    prototype FirstFunction();
    prototype SecondFunction();

    NUMBER nVisibleEverywhere;

    . . .

    nVisibleEverywhere = 10;

    FirstFunction();
    SecondFunction();

    . . .

    NUMBER nVisibleOnlyToFunctions;

function FirstFunction()
  STRING szString;
begin
  szString = "Local to FirstFunction";
  nVisibleOnlyToFunctions = 20;
end;

    NUMBER nVisibleOnlyToSecondFunction;

function SecondFunction()
begin
  nVisibleOnlyToSecondFunction = 30;
end;
```

Although identifiers in a script must be unique, it is valid for a local variable to have a name identical to that of a global variable, or for one function to declare a local variable that has the same name as a local variable declared in another function. These exceptions are allowed because InstallShield qualifies local variable names based on the function with which they are associated. In the example below, the global variable szVal is not affected by the action of AFunction, which has a local variable of the same name; the function MessageBox displays the string "YES," which was the value assigned to the global variable szVal.

```
    STRING szVal;

    prototype AFunction();

    . . .

    szVal = "YES";
    AFunction();
    MessageBox(szVal, INFORMATION);

    . . .

function AFunction()
  STRING szVal;
begin
  szVal = "NO";
end;
```

Parameter names in function definitions are considered to be local variables. If a global variable is passed to a function whose parameter has the same name as the global variable, the value of that global variable will not be changed (unless the parameter was specified with the BYREF operator in the function prototype). In the following example, AFunction has no effect on the global variable szVal; the script displays the string "YES".

```
    STRING szVal;
    prototype AFunction(STRING);

    . . .

    szVal = "YES";
    AFunction(szVal);
    MessageBox(szVal, INFORMATION);


    . . .

function AFunction(szVal)
begin
  szVal = "NO";
end;
```

String Variables

For information about string variables, refer to the following topics:

- String Indexing
- String Size and Autosize

String Indexing

A string variable is an array of Unicode characters with a null terminator. You can reference individual characters within a string by specifying the string name followed by an index value within square brackets. Note that the first character in a string is in position 0.

In the example below, the function BlankLeadingZeros uses the string indexing technique to replace leading zeros in the string representation of a number with blank characters.

```
    prototype BlankLeadingZeros(BYREF STRING);

function BlankLeadingZeros(szString)
  INT iVal, iLength;
begin
  iVal = 0;
  iLength = StrLength (szString);

  while (szString[iVal] = "0") && (iVal <= iLength)
    szString[iVal] = " ";
    iVal++;
  endwhile;
end;
```

String Size and Autosize

InstallShield Autosizing

When you declare a string variable without a size specification, InstallShield automatically sizes a string buffer for that variable. The allocation for the buffer occurs when you first assign a string to the variable. If later, you assign a longer string to that variable, InstallShield increases the memory allocation to accommodate the longer string—up to the amount of available memory. However, if you later assign a shorter string to an autosized variable, InstallShield does not decrease the memory allocation.

Caution ▪ *InstallShield's autosizing feature does not work in typedef statements; you must specify the size of all STRING declarations in a structure.*

Specifying a String Size

When specifying a string size, you must declare one character position for the null terminator. For example, if you want your string to hold up to 128 characters, you must declare it with a length of 129 to allow room for the null terminator. For this reason, the minimum size of a string is 2.

When you are using a string that you have declared with a size, you must be aware of how that string might be used with other strings. For example, consider the following function call:

```
  STRING szQuestion[20], szDefault[20], svResult[50];

begin
  szQuestion = "Enter company name";
  szDefault  = "My Software Company";
  AskText (szQuestion, szDefault, svResult);
```

The size of the string svResult should be greater than or equal to the size of the string szDefault. If not, then szDefault, if accepted, will not fit into the svResult variable returned by the function. The easiest way to avoid conflicts is to let InstallShield autosize all strings (except those in a typedef statement).

Caution ▪ *An autosized string variable that is passed by reference to a function is not autosized within the called function. If the function attempts to assign a value whose length is greater than the current size of that parameter, run-time error 401 occurs.*

System Variables

System variables are predefined script variables that contain information such as the source path, the target path, the Windows folder, and the Windows system folder. The installation automatically initializes these system variables when the installation process begins, and it is not necessary to declare these variables in your script.

Project ▪ *Many Windows Installer directory properties—such as* `INSTALLDIR`*,* `AppDataFolder`*, and* `TempFolder`*—are available directly as variables in your InstallScript code for Basic MSI and InstallScript MSI projects.*

System Variables and Text Substitutions

Some of the system variables have corresponding text substitutions. The installation internally uses text substitution to set the values of certain system variables as shown in the following tables. You can use these text substitutions in your script in the same way that you use text substitutions that you have defined.

Writable System Variables and Text Substitutions

Table 1 ▪ Writable System Variables and Text Substitutions

Script Variable	Corresponding Text Substitution	Comments
ALLUSERS	<PERUSER_INSTALL>	
DISK1TARGET	<DISK1TARGET>	
IFX_COMPANY_NAME	<IFX_COMPANY_NAME>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_INSTALLED_DISPLAY_VERSION	<IFX_INSTALLED_DISPLAY_VERSION>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_INSTALLED_VERSION	<IFX_INSTALLED_VERSION>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_MULTI_INSTANCE_SUFFIX	<IFX_MULTI_INSTANCE_SUFFIX>	
IFX_PRODUCT_DISPLAY_NAME	<IFX_PRODUCT_DISPLAY_NAME>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.

Table 1 ▪ Writable System Variables and Text Substitutions (cont.)

Script Variable	Corresponding Text Substitution	Comments
IFX_PRODUCT_DISPLAY_VERSION	<IFX_PRODUCT_DISPLAY_VERSION>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_PRODUCT_KEY	<IFX_PRODUCT_KEY>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_PRODUCT_NAME	<IFX_PRODUCT_NAME>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_PRODUCT_VERSION	<IFX_PRODUCT_VERSION>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.

Table 1 ▪ Writable System Variables and Text Substitutions (cont.)

Script Variable	Corresponding Text Substitution	Comments
IFX_SETUP_TITLE	<IFX_SETUP_TITLE>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
IFX_SUPPORTED_VERSIONS	<IFX_SUPPORTED_VERSIONS>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
SHELL_OBJECT_FOLDER	<SHELL_OBJECT_FOLDER>	
SRCDIR (Read from local)	<SRCDIR>	
SRCDISK (Read from local)	<SRCDISK>	
TARGETDIR	<TARGETDIR>	
TARGETDISK	<TARGETDISK>	
UNINST	<UNINST>	
UNINSTALL_STRING	<UNINSTALL_STRING>	

Read-Only System Variables and Text Substitutions

Table 2 ▪ Read-Only System Variables and Text Substitutions

Script Variable	Corresponding Text Substitution	Comments
COMMONFILES	<COMMONFILES>	
DISK1SETUPEXENAME	<DISK1SETUPEXENAME>	
ENGINECOMMONDIR	<ENGINECOMMONDIR>	
ENGINEDIR	<ENGINEDIR>	
FOLDER_APPDATA	<FOLDER_APPDATA>	
FOLDER_DOTNET_10	<FOLDER_DOTNET_10>	
FOLDER_DOTNET_11	<FOLDER_DOTNET_11>	
FOLDER_DOTNET_20	<FOLDER_DOTNET_20>	
FOLDER_DOTNET_30	<FOLDER_DOTNET_30>	
FOLDER_DOTNET_35	<FOLDER_DOTNET_35>	
FOLDER_DOTNET_40	<FOLDER_DOTNET_40>	
FOLDER_PERSONAL	<PERSONALDIR>	
FOLDER_TEMP	<FOLDER_TEMP>	
ISRES	<ISRES>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.
ISUSER	<ISUSER>	If this text substitution is defined in an object script, it applies to only that object, not to the main installation or any other objects in the installation. If it is defined in the main installation, it does not apply to any objects.

Table 2 ▪ Read-Only System Variables and Text Substitutions (cont.)

Script Variable	Corresponding Text Substitution	Comments
MULTI_INSTANCE_COUNT	<MULTI_INSTANCE_COUNT>	
PACKAGE_LOCATION	<PACKAGE_LOCATION>	
PROGRAMFILES	<PROGRAMFILES>	
SELECTED_LANGUAGE	<SELECTED_LANGUAGE>	
SHAREDSUPPORTDIR	<SHOW_PASSWORD_DIALOG>	
SHOW_PASSWORD_DIALOG	<SHOW_PASSWORD_DIALOG>	
SUPPORTDIR	<SUPPORTDIR>	
WINDIR	<WINDIR>	
WINDISK	<WINDISK>	
WINSYSDIR	<WINSYSDIR>	
WINSYSDISK	<WINSYSDISK>	

ADDREMOVE

Project ▪ *This information applies to InstallScript projects.*

The ADDREMOVE system variable is set equal to a non-zero value if the setup is run from Add or Remove Programs in the Control Panel and is set equal to FALSE otherwise. This system variable is read-only; if you attempt to assign a value to it, a compiler error results.

ADDREMOVE_COMBINEDBUTTON

Project ▪ *This information applies to InstallScript projects.*

This system variable's value is used by the MaintenanceStart function to specify the existence of and data in the application uninstallation registry key's ModifyPath and UninstallString values, so as to specify whether the application's Add or Remove Programs entry displays separate Change and Remove buttons or a combined Change/Remove button. For more information on this variable, see MaintenanceStart.

This system variable is initialized to FALSE.

ADDREMOVE_HIDECHANGEOPTION

Project *▪ This information applies to InstallScript projects.*

This system variable's value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's ModifyPath, NoModify, and UninstallString values. The NoModify registry value specifies whether a Change button is displayed for the application in Add or Remove Programs in the Control Panel. The ModifyPath and UninstallString registry values specify the behaviors of the Change and Remove buttons.

This system variable is initialized based on the value that you specify in the Disable Change Button setting in the General Information view.

ADDREMOVE_HIDEREMOVEOPTION

Project *▪ This information applies to InstallScript projects.*

This system variable's value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's ModifyPath, NoRemove, and UninstallString values. The NoRemove registry value specifies whether a Remove button is displayed for the application in Add or Remove Programs in the Control Panel. The ModifyPath and UninstallString registry values specify the behaviors of the Change and Remove buttons.

This system variable is initialized based on the value that you specify in the Disable Remove Button setting in the General Information view.

ADDREMOVE_STRING_REMOVEONLY

Project *▪ This information applies to InstallScript projects.*

This system variable's value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's UninstallString value, which specifies the behavior of the Remove button (if any) in the application's Add or Remove Programs entry. For more information on this variable, see MaintenanceStart.

This system variable is initialized to the string value " -removeonly".

ADDREMOVE_SYSTEMCOMPONENT

Project *▪ This information applies to InstallScript projects.*

This system variable's value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's SystemComponent value, which specifies whether an entry is displayed for the application in Add or Remove Programs in the Control Panel.

This system variable is initialized to FALSE, meaning that an entry is displayed.

ALLUSERS

The ALLUSERS system variable is the key to installations that allow installing the application to the current user or all users on the target system. The value of ALLUSERS determines the following:

- The root key that is used by registry functions that are called after RegDBSetDefaultRoot(HKEY_USER_SELECTABLE) is called
- The root key under which the application uninstallation key is created
- The location of registry entries that are specified in a registry set's HKEY_USER_SELECTABLE root key
- The value of the DISK1TARGET system variable (which specifies the path to the folder in which copies of certain installation files are placed to enable maintenance installations and uninstallation)
- The default value of the TARGETDIR system variable that is set by the default OnFirstUIBefore code
- Whether a shortcut that is defined in InstallShield with its Type property set to Automatic appears in the list of personal shortcuts or common shortcuts when the shortcut is created
- The default option selection in the SdCustomerInformation and SdCustomerInformationEx dialogs

ALLUSERS has no effect on the registration of COM DLL files.

The following sections explain how the value of ALLUSERS is determined and set in different project types.

InstallScript Installations

If an installation is running as a first-time installation, the InstallScript engine determines during initialization the most appropriate value for the ALLUSERS variable and initializes it to that value:

- If the user does not have administrator privileges, ALLUSERS is set to 0. This results in a per-user installation.
- Otherwise, ALLUSERS is set to 1. This results in a per-machine installation by default.

If an installation is running in maintenance mode, the InstallScript engine determines the value of the ALLUSERS variable based on whether the initial installation was installed as per-user or per-machine (based on the location of where the uninstallation information was installed).

For an example of an InstallScript installation that allows installing the application to the current user or all users on the target system, see the sample project in the ALLUSERS Sample Project folder. This folder is a subfolder in the Samples folder of your InstallShield Program Files folder. The default location is:

```
C:\Program Files\InstallShield\2022\Samples\InstallScript\ALLUSERS Sample Project
```

InstallScript Custom Actions in Basic MSI and InstallScript MSI Installations

Getting the Value of the ALLUSERS Variable

The ALLUSERS InstallScript variable is determined by querying the Windows Installer property ALLUSERS:

Table 3 ▪ Getting the Value of the ALLUSERS InstallScript Variable

Windows Installer Property	InstallScript Variable	Notes
""	0	Any per-user or per-machine dependent script code in the custom action results in per-user behavior.
1	1	Any per-user or per-machine dependent script code in the custom action results in per-machine behavior.
Any other value	The InstallScript engine attempts to determine the appropriate value.	

If the Windows Installer property ALLUSERS cannot be determined because the InstallScript engine determines that a deferred custom action is running, an unexpected property value is returned, or **MSIGetProperty** returns an error value. Therefore, the InstallScript engine attempts to determine the best value for the variable.

Note that the InstallScript engine uses **MsiGetMode** with the MSIRUNMODE_SCHEDULED, MSIRUNMODE_ROLLBACK, and MSIRUNMODE_COMMIT flags to determine if a deferred custom action is running. If **MsiGetMode** returns true for any of the above values, the custom action is assumed to be deferred and the InstallScript mechanism is used.

Note that if a Basic MSI installation does not have a value for ALLUSERS in the Property table, any InstallScript custom action that runs before the installation displays an ALLUSERS dialog (such as the CustomerInformation dialog, which sets the ALLUSERS Windows Installer property) has the ALLUSERS InstallScript variable set to 0. Therefore, the InstallScript custom action exhibits per-user behavior. Thus, it is recommended that all Basic MSI installations have a default value for ALLUSERS in the Property table.

Setting the Value of the ALLUSERS Variable

When the ALLUSERS InstallScript variable is set in script, the InstallScript engine first determines whether the platform and privilege level allow the ALLUSERS InstallScript variable to be changed. (In scenarios where the end user is not an administrator or power user, ALLUSERS cannot be changed.)

If the ALLUSERS InstallScript variable can be changed, the InstallScript engine attempts to update the ALLUSERS Windows Installer property appropriately as follows:

Table 4 ▪ Setting the Value of the ALLUSERS InstallScript Variable

InstallScript Variable	Windows Installer Property
1	1

Table 4 ▪ Setting the Value of the ALLUSERS InstallScript Variable (cont.)

InstallScript Variable	Windows Installer Property
0	""

Note that the InstallScript engine sets the ALLUSERS InstallScript variable even if the Windows Installer property cannot be set. This could result in synchronization problems between the Windows Installer property and the InstallScript variable. Therefore, if you change the ALLUSERS InstallScript variable in a custom action, it is recommended that you set the Windows Installer property manually as well to ensure that the property can be changed successfully.

The following table shows the behavior for various scenarios on Windows Vista with User Account Control (UAC) enabled.

Table 5 ▪ ALLUSERS Value on Windows Vista with UAC Enabled

Type of Custom Action	Manifest	ALLUSERS Value in Property Table	Windows Installer Property	Resulting InstallScript Variable	Notes
Immediate	Highest available	2	1	1	
Immediate	Invoker	2	""	0	The InstallScript variable cannot be changed. Per-machine InstallScript actions are not possible.
Immediate	Highest available	1	1	1	
Immediate	Invoker	1	1	1	The InstallScript variable cannot be changed. Per-machine InstallScript actions fail.
Immediate, before CustomerInformation dialog (or end user selects to install per user)	Invoker	""	""	0	The InstallScript variable cannot be changed. Per-machine InstallScript actions are not possible.
Immediate, after CustomerInformation dialog	Highest available	""	1	1	

Table 5 ▪ ALLUSERS Value on Windows Vista with UAC Enabled (cont.)

Type of Custom Action	Manifest	ALLUSERS Value in Property Table	Windows Installer Property	Resulting InstallScript Variable	Notes
Deferred	Invoker	Any	Cannot be determined	0	The InstallScript variable cannot be changed. InstallScript method for determining ALLUSERS is used.
Deferred	Highest available	Any	Cannot be determined	1	InstallScript method for determining ALLUSERS is used.

The following table shows the behavior for various scenarios on pre-Windows Vista systems and on Windows Vista systems with User Account Control (UAC) disabled.

Table 6 ▪ ALLUSERS Value on Systems Earlier than Windows Vista and on Windows Vista with UAC Disabled

Type of Custom Action	User Privileges	ALLUSERS Value in Property Table	Windows Installer Property	Resulting InstallScript Variable	Notes
Immediate	Administrator	2	1	1	
Immediate	Limited	2	""	0	The InstallScript variable cannot be changed.
Immediate	Administrator	1	1	1	
Immediate	Limited	1	1	1	The InstallScript variable cannot be changed. The installation fails during UI sequence, and per-machine InstallScript custom actions fail.

Table 6 ▪ ALLUSERS Value on Systems Earlier than Windows Vista and on Windows Vista with UAC Disabled (cont.)

Type of Custom Action	User Privileges	ALLUSERS Value in Property Table	Windows Installer Property	Resulting InstallScript Variable	Notes
Immediate, before CustomerInformation dialog (or end user selects to install per user)	Administrator	""	""	0	The InstallScript variable cannot be changed. Per-machine InstallScript actions are not possible.
Immediate, after CustomerInformation dialog	Administrator	""	1	1	
Deferred	Administrator	Any	Cannot be determined	1	InstallScript method for determining ALLUSERS is used.
Deferred	Limited	Any	Cannot be determined	0	The InstallScript variable cannot be changed. InstallScript method for determining ALLUSERS is used.
Any on Windows 9x	Not applicable	Any	Any	1	The InstallScript variable cannot be changed. InstallScript method for determining ALLUSERS is used.

If the resulting InstallScript variable is 0, InstallScript custom actions are used in a per-user context. If the resulting InstallScript variable is 1, InstallScript custom actions are used in a per-machine context.

Event-Driven InstallScript Code in InstallScript MSI Installations

InstallScript MSI installations work similarly to InstallScript installations except that when the ALLUSERS InstallScript variable is changed, the installation attempts to update the Windows Installer property ALLUSERS as described for InstallScript custom actions.

During InstallScript MSI installations, the Windows Installer property ALLUSERS is not queried to determine the appropriate value of the ALLUSERS InstallScript variable; the InstallScript engine always attempts to determine the value, as described for InstallScript installations.

How an InstallScript Installation Works by Default Depending on ALLUSERS

Project ▪ *This information applies to InstallScript projects.*

The following table provides information on how an installation is installed based on the ALLUSERS system variable.

Table 7 ▪ ALLUSERS

	Admin & Power User	User and Guest
Default setting of ALLUSERS	True	False
Automatic setting will check ALLUSERS property	Per machine	Per user
HKEY_USER_SELECTABLE_AUTO	HKEY_LOCAL_MACHINE	HKEY_CURRENT_USER
Registry Set Data	HKEY_LOCAL_MACHINE	HKEY_CURRENT_USER
DISK1TARGET	Program Files\InstallShield Installation Information\GUID	My Docs\InstallShield Installation Information\GUID
Uninstall Registry Key	HKEY_LOCAL_MACHINE\...\Uninstall\GUID	HKEY_CURRENT_USER\...\Uninstall\GUID
TARGETDIR	Program Files\Company Name\Product Name	My Docs\Company Name\Product Name
Engine Installation	Program Files\Common Files	My Docs\...
Register COM Information (.dll, .ocx, .exe)	Supported	Not supported

Note ▪ *My Docs refers to a destination location to which the user has rights. This value depends on the operating system.*

ADMINUSER

Project ▪ *This information applies to the following project types:*

- *Basic MSI projects with InstallScript custom actions*
- *InstallScript MSI projects with InstallScript custom actions*

This information does not apply to InstallScript projects or to event-driven InstallScript code in InstallScript MSI projects.

The ADMINUSER system variable is set to the value of the Windows Installer property AdminUser.

BATCH_INSTALL

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI—if the InstallScript user interface (UI) style is the traditional style (which uses the InstallScript engine as an external UI handler)*

This information does not apply to InstallScript MSI projects in which the InstallScript UI style is the new style (which uses the InstallScript engine as an embedded UI handler). To learn more, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.

The BATCH_INSTALL system variable is set to a non-zero value to indicate that one or more operations need to be performed after the target system restarts. BATCH_INSTALL can be set to a non-zero value for any of the following reasons:

- The installation determines that a file cannot be installed because the file already exists on the target system and it is locked.
- BATCH_INSTALL is set to non-zero manually through script. Note that this can occur in some objects if the object determines that an embedded installation needs a reboot to complete.
- LAAW_OPTION_SET_BATCH_INSTALL is used when calling **LaunchApplication**, and the function determines that the launched installation needs a reboot to complete.
- The installation attempted to update a Windows service (through **ServiceAddService** and the related functions), but it could not stop the existing service.
- The DIFx integration indicated that a reboot is needed, due to the installation of a DIFx driver.

If BATCH_INSTALL is set to FALSE, no locked files were found and the installation process can end normally.

For more information, see Understanding When an Installation or Uninstallation Restarts the Target System.

CMDLINE

The CMDLINE variable varies, depending on the project type.

CMDLINE in InstallScript Projects

In InstallScript projects, `Setup.exe` accepts all user-defined command-line arguments and assigns them to the system string variable CMDLINE at run time.

Note ▪ *CMDLINE stores only user-defined command-line arguments. InstallShield command-line arguments (predefined arguments) are not copied to CMDLINE.*

CMDLINE in InstallScript Installations That Are Included in Advanced UI and Suite/Advanced UI Projects as InstallScript Packages

Data can be passed to an InstallScript package through the package's Command Line and Silent Command Line settings in the Advanced UI or Suite/Advanced UI project that contains the InstallScript package. The data can then be parsed from the CMDLINE variable in the Advanced UI or Suite/Advanced UI script events. For more information, see OnSuiteShowUI.

CMDLINE in InstallScript MSI Projects

In InstallScript MSI projects, any command-line data that are passed to `Setup.exe` with the `/z` switch are stored in the system string variable CMDLINE. For example, if the user runs the following command line, CMDLINE is set to the string **My custom data**.

```
Setup.exe /z"My custom data"
```

CMDLINE in Basic MSI Projects

In Basic MSI projects, you can pass public properties through `Setup.exe` to `Msiexec.exe` using the `/v` command-line argument.

COMMONFILES

The COMMONFILES system variable contains the fully qualified name of the folder that is defined by Windows and that stores files shared by applications that are installed on the system. In English Windows, that folder is named Common Files, and it is located in the Program Files folder. (In other language versions of Windows, the common files folder name is localized appropriately by default.) The common files folder is the recommended default location for files and folders that are shared by applications.

On 64-bit Windows systems, this folder stores common files for 32-bit applications; common files for 64-bit applications should be installed to the COMMONFILES64 folder.

Project ▪ *During setup initialization in InstallScript installations, the value of the COMMONFILES variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_COMMON_FILES parameter.*

In Basic MSI and InstallScript MSI installations, the value of the COMMONFILES variable is initialized based on the Windows Installer property `CommonFilesFolder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding COMMONFILES variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

COMMONFILES64

The COMMONFILES64 system variable contains the fully qualified name of the folder that is defined by Windows and that stores files shared by 64-bit applications. In English Windows, that folder is named Common Files, and it is located in the PROGRAMFILES64 folder. (In other language versions of Windows, the common files folder name is localized appropriately by default.) The common files folder is the recommended default location for files and folders that are shared by applications.

Project *▪ During setup initialization in InstallScript installations, the value of the COMMONFILES64 variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_COMMON_FILES parameter from a 64-bit executable file.*

In Basic MSI and InstallScript MSI installations, the value of the COMMONFILES64 variable is initialized based on the Windows Installer property `CommonFiles64Folder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding COMMONFILES64 variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

DISK1SETUPEXENAME

DISK1SETUPEXENAME is a read-only system variable that contains the file name and file name extension—but not the path—of the setup launcher, the installation's executable file. This now used internally and always returns *`Setup.exe`*.

Refer SETUPEXENAME to get the actual executing setup exe name.

Project *▪ DISK1SETUPEXENAME is intended for use in InstallScript projects only. Using this variable with other project types may result in different behavior or scenarios where the variable is not set as expected.*

SETUPEXENAME

SETUPEXENAME is a read-only system variable that contains the executing setup exe name.

Project *▪ SETUPEXENAME is intended for use in InstallScript projects only. Using this variable with other project types may result in different behavior or scenarios where the variable is not set as expected.*

DISK1TARGET

This system variable contains the path to the folder in which copies of certain of the installation's files (such as the compiled script file) are placed to enable maintenance installations and uninstallation.

ENABLED_ISERVICES

Project *▪ This information applies to InstallScript projects.*

This system variable contains a set of bit flags indicating which InstallShield services are currently enabled. For example, if the expression **ENABLED_ISERVICES & SERVICE_FLAG_ISFONTREG** is equal to a non-zero value, global font registration is currently enabled.

ENGINECOMMONDIR

Project ▪ *This information applies to InstallScript projects.*

The ENGINECOMMONDIR system variable stores the fully qualified path to the folder that contains the run-time files that are used by all 6.x, 7.x, and 9.x InstallScript (not InstallScript MSI) setups running on the system.

The value of this system variable is shared among object scripts and between object scripts and the main setup script. This system variable is read-only; if you attempt to assign a value to it, a compiler error results.

ENGINEDIR

Project ▪ *This information applies to InstallScript projects.*

The ENGINEDIR system variable stores the fully qualified path to the folder that contains the run-time files specific to the version of the engine being used by the setup, i.e., 7.00, 7.01, or 9.00, but not by InstallShield Professional 6.x setups.

The value of this system variable is shared among object scripts and between object scripts and the main setup script. This system variable is read-only; if you attempt to assign a value to it, a compiler error results.

ERRORFILENAME

This system variable stores the name of the file that was involved in an error. For example, if an error occurs while copying a specific file with a built-in function, InstallShield sets ERRORFILENAME to the name of the file that caused the error. Not all file-operation functions use ERRORFILENAME.

FOLDER_APPDATA

The FOLDER_APPDATA system variable stores the fully qualified path to the folder that is defined by the operating system and that serves as a common repository for application-specific data.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the FOLDER_APPDATA variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_APPDATA value for LPITEMIDLIST.*

In Basic MSI and InstallScript MSI installations, the value of the FOLDER_APPDATA variable is initialized based on the Windows Installer property `AppDataFolder` *or* `LocalAppDataFolder`*. Note that deferred, commit, and rollback custom actions do not have access to these properties. Therefore, the corresponding FOLDER_APPDATA variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

FOLDER_APPLICATIONS

The FOLDER_APPLICATIONS system variable stores the fully qualified path to the root folder for application folders. The value of this system variable is equal to the value of the system variable PROGRAMFILES when the value of the system variable ALLUSERS is non-zero; when ALLUSERS is FALSE, the value of this system variable is equal to the value of the system variable FOLDER_APPDATA.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

FOLDER_APPLICATIONS64

The FOLDER_APPLICATIONS64 system variable stores the fully qualified path to the root folder for application folders on a 64-bit system. The value of this system variable is equal to the value of the system variable PROGRAMFILES64 when the value of the system variable ALLUSERS is non-zero; when ALLUSERS is FALSE, the value of this system variable is equal to the value of the system variable FOLDER_APPDATA.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

FOLDER_COMMON_APPDATA

The FOLDER_COMMON_APPDATA system variable stores the fully qualified path to the folder that is defined by the operating system and that serves as a common repository for application-specific data.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the FOLDER_COMMON_APPDATA variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_COMMON_APPDATA value for LPITEMIDLIST.*

In Basic MSI and InstallScript MSI installations, the value of the FOLDER_COMMON_APPDATA variable is initialized based on the Windows Installer property **CommonAppDataFolder***. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding FOLDER_COMMON_APPDATA variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

FOLDER_DESKTOP

The FOLDER_DESKTOP system variable stores the fully qualified path to the Desktop folder, which holds the program folders and items that are displayed on the end user's desktop.

To ensure that groups and folders are created at the proper location, the location to which FOLDER_DESKTOP points changes when the default group or folder type is changed from Common to Personal or from Personal to Common when the system variable ALLUSERS is changed.

FOLDER_DOTNET_10

The FOLDER_DOTNET_10 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 1.0 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v1.0.3705\
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_DOTNET_11

The FOLDER_DOTNET_11 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 1.1 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v1.1.4322\
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_DOTNET_20

The FOLDER_DOTNET_20 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 2.0 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v2.0.50727\
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_DOTNET_30

The FOLDER_DOTNET_30 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 3.0 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v3.0
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_DOTNET_35

The FOLDER_DOTNET_35 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 3.5 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v3.5
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_DOTNET_40

The FOLDER_DOTNET_40 system variable stores the fully qualified path of the folder where the Microsoft .NET Framework 4.0 redistributable files are located:

```
<WINDIR>\Microsoft.NET\Framework\v4.0.30319
```

This system variable is read-only. If you attempt to assign a value to it, a compiler error results.

FOLDER_FONTS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript Object*

The FOLDER_FONTS system variable stores the fully qualified path of the Windows font folder.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

FOLDER_LOCAL_APPDATA

The FOLDER_LOCAL_APPDATA system variable stores the fully qualified path to the folder that is defined by the operating system and that serves as a common repository for application-specific data. Common values are `C:\Users\<User>\Application Data` on Windows Vista and later and `C:\Documents and Settings\<User>\Application Data` on earlier systems.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project *▪ During setup initialization in InstallScript installations, the value of the FOLDER_LOCAL_APPDATA variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_LOCAL_APPDATA value for LPITEMIDLIST.*

In Basic MSI and InstallScript MSI installations, the value of the FOLDER_LOCAL_APPDATA variable is initialized based on the Windows Installer property `LocalAppDataFolder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding FOLDER_LOCAL_APPDATA variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

FOLDER_PERSONAL

Project *▪ This information applies to InstallScript projects.*

The FOLDER_PERSONAL system variable stores the fully qualified path to the folder that is defined by the operating system and that serves as a common repository for application-specific data. Common values are `C:\Users\<User>\Application Data` on Windows Vista and later and `C:\Documents and Settings\<User>\Application Data` on earlier systems.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the FOLDER_PERSONAL variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_PERSONAL value for LPITEMIDLIST.*

In Basic MSI and InstallScript MSI installations, the value of the FOLDER_PERSONAL variable is initialized based on the Windows Installer property `PersonalFolder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding FOLDER_PERSONAL variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

FOLDER_PROGRAMS

The FOLDER_PROGRAMS system variable stores the fully qualified path to the Start Menu\Programs folder, which is displayed when you select Programs from the Start Menu.

To ensure that groups and folders are created at the proper location, the location to which FOLDER_PROGRAMS points changes when the default group or folder type is changed from Common to Personal or from Personal to Common when the system variable ALLUSERS is changed.

FOLDER_STARTMENU

The FOLDER_STARTMENU system variable stores the fully qualified path to the Start Menu folder, which is displayed when you click the Windows Start button.

To ensure that groups and folders are created at the proper location, the location to which FOLDER_STARTMENU points changes when the default group or folder type is changed from Common to Personal or from Personal to Common when the system variable ALLUSERS is changed.

FOLDER_STARTUP

The FOLDER_STARTUP system variable stores the fully qualified path to the Startup folder, which contains the program folders and items that are launched when Windows starts.

To ensure that groups and folders are created at the proper location, the location to which FOLDER_STARTUP points changes when the default group or folder type is changed from Common to Personal or from Personal to Common when the system variable ALLUSERS is changed.

FOLDER_TEMP

Project ▪ *This information applies to InstallScript projects.*

The FOLDER_TEMP system variable stores the fully qualified path of the folder designated for temporary files. This folder is used by Windows and most applications on the system and is not created or deleted by the installation. (The folder whose path is stored in the system variable SUPPORTDIR is created by the installation to store installation-specific files and is deleted after the installation completes.)

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the FOLDER_TEMP variable is obtained by calling the Windows API function* **GetTempPath**.

In Basic MSI and InstallScript MSI installations, the value of the FOLDER_TEMP variable is initialized based on the Windows Installer property `TempFolder`. *Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding FOLDER_TEMP variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

HKEYCURRENTROOTKEY

The value of this system variable is the root key that is used by the general registry-related functions. The system variable's possible values are the following:

- HKEY_CLASSES_ROOT
- HKEY_CURRENT_USER
- HKEY_LOCAL_MACHINE
- HKEY_USERS
- HKEY_CURRENT_CONFIG
- HKEY_DYN_DATA

You can set the default root key by setting HKEYCURRENTROOTKEY equal to one of the preceding predefined constants, the predefined constant HKEY_USER_SELECTABLE, or the system variable HKEY_USER_SELECTABLE_AUTO.

Unlike RegDBGetDefaultRoot, the value of HKEYCURRENTROOTKEY is never HKEY_USER_SELECTABLE. If you most recently set the default root key by using HKEY_USER_SELECTABLE, the value of HKEYCURRENTROOTKEY is HKEY_LOCAL_MACHINE if the ALLUSERS system variable is non-zero or HKEY_CURRENT_USER if ALLUSERS is FALSE.

HKEY_USER_SELECTABLE_AUTO

The value of this system variable is HKEY_LOCAL_MACHINE if the ALLUSERS system variable is non-zero or HKEY_CURRENT_USER if ALLUSERS is FALSE.

IFX_COMPANY_NAME

Project ▪ *This information applies to InstallScript projects.*

This system variable is automatically initialized to the value of the string entry COMPANY_NAME, if that entry exists; if that entry does not exist, IFX_COMPANY_NAME is initialized to the company name that you specified in the Project Settings property sheet's Application page.

IFX_DISK1INSTALLED

Project ▪ *This information applies to InstallScript projects.*

This system variable is set equal to zero at the beginning of a setup and is reset to a non-zero value if the setup installs or reinstalls the feature with the files needed for maintenance setups and uninstallation. (Note that this feature is automatically placed in your .cab files by the media builder and is not displayed in the IDE.)

IFX_INITIALIZED

Project ▪ *This information applies to InstallScript projects.*

This system variable is set equal to a non-zero value if the setup is event based and is set equal to FALSE if the setup is procedural (that is, has a program...endprogram block).

IFX_INSTALLED_DISPLAY_VERSION

Project ▪ *This information applies to InstallScript projects.*

The IFX_INSTALLED_DISPLAY_VERSION system variable replaces the placeholder %VI in Sd dialog static text fields and string passed to the **SdSubstituteProductInfo** function. This system variable is automatically initialized to the value of the system variable IFX_INSTALLED_VERSION; if you assign a new value to IFX_INSTALLED_VERSION the value of IFX_INSTALLED_DISPLAY_VERSION does not automatically change.

IFX_INSTALLED_VERSION

Project ▪ *This information applies to InstallScript projects.*

This system variable is automatically initialized to the string equivalent of the data in the Version value of the application uninstallation registry key if that data is a packed DWORD; if the key or value does not exist or the data is not a packed DWORD, IFX_INSTALLED_VERSION is initialized to a null string ("").

IFX_KEYPATH_PRODUCT_INFO

This system variable specifies the registry location of the application information key that is created by CreateInstallationInfo and whose values are read by RegDBGetAppInfo and modified by RegDBSetAppInfo. This system variable is initialized to a value of:

```
Software\<IFX_COMPANY_NAME>\<IFX_PRODUCT_NAME>\<IFX_PRODUCT_VERSION>\.
```

IFX_MULTI_INSTANCE_SUFFIX

Project ▪ *This information applies to InstallScript projects.*

The IFX_MULTI_INSTANCE_SUFFIX system variable is set in the default code for the OnFirstUIBefore event handler function. IFX_MULTI_INSTANCE_SUFFIX is used in that handler function to construct a unique target folder name for a multi-instance installation. It is also used in the OnCustomizeUninstInfo handler function to construct a unique uninstallation display name for a multi-instance installation.

IFX_PRODUCT_COMMENTS

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's Comments value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in ARP Comments setting in the General Information view.

IFX_PRODUCT_DISPLAY_NAME

This system variable replaces the placeholder %P in Sd dialog static text fields and string passed to the **SdSubstituteProductInfo** function. This system variable is automatically initialized to the value of the system variable IFX_PRODUCT_NAME; if you assign a new value to IFX_PRODUCT_NAME the value of IFX_PRODUCT_DISPLAY_NAME does not automatically change.

Note ▪ *The system variable IFX_SETUP_TITLE specifies the text in the title bar of all built-in dialogs.*

IFX_PRODUCT_DISPLAY_VERSION

Project ▪ *This information applies to InstallScript projects.*

This system variable replaces the placeholder %VS in Sd dialog static text fields and string passed to the **SdSubstituteProductInfo** function. This system variable is automatically initialized to the value of the system variable IFX_PRODUCT_VERSION; if you assign a new value to IFX_PRODUCT_VERSION the value of IFX_PRODUCT_DISPLAY_VERSION does not automatically change.

IFX_PRODUCT_ICON

Project *▪ This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's DisplayIcon value. This registry value specifies the icon that is displayed for the application in Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify for the Display Icon setting in the Add or Remove Programs area of the General Information view.

IFX_PRODUCT_KEY

Project *▪ This information applies to InstallScript projects.*

This system variable is automatically initialized to the value of the string entry PRODUCT_KEY, if that entry exists; if that entry does not exist, IFX_PRODUCT_KEY is initialized to the executable file name that you specified in the Project Settings property sheet's Application page.

IFX_PRODUCT_NAME

Project *▪ This information applies to InstallScript projects.*

This system variable is automatically initialized to the value of the string entry PRODUCT_NAME, if that entry exists; if that entry does not exist, IFX_PRODUCT_NAME is initialized to the product name that you specified in the Project Settings property sheet's Application page.

IFX_PRODUCT_README

Project *▪ This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's Readme value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Read Me setting in the General Information view.

IFX_PRODUCT_REGISTEREDCOMPANY

If the *IFX_PRODUCT_REGISTEREDCOMPANY* system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's RegCompany value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the data in the registry value HKEY_LOCAL_MACHINE\Software\Microsoft*Windows key*\CurrentVersion\RegisteredOrganization, where *Windows key* is Windows NT if the target operating system is Windows XP or later, or Windows for other Windows operating systems. This system variable's value is modified by end-user input in the Company Name edit box of the SdRegisterUser, SdRegisterUserEx, SdCustomerInformation, and SdCustomerInformationEx dialogs.

Project ▪ *In an InstallScript MSI installation, if the value of IFX_PRODUCT_REGISTEREDCOMPANY is set, the Windows Installer property* ***COMPANYNAME*** *is automatically updated.*

IFX_PRODUCT_REGISTEREDOWNER

If the *IFX_PRODUCT_REGISTEREDOWNER* system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's RegOwner value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the data in the registry value HKEY_LOCAL_MACHINE\Software\Microsoft*Windows key*\CurrentVersion\RegisteredOwner, where *Windows key* is Windows NT if the target operating system is Windows XP or later, or Windows for other Windows operating systems. This system variable's value is modified by end-user input in the User Name edit box of the SdRegisterUser, SdRegisterUserEx, SdCustomerInformation, and SdCustomerInformationEx dialogs.

Project ▪ *In an InstallScript MSI installation, if the value of IFX_PRODUCT_REGISTEREDOWNER is set, the Windows Installer property* ***USERNAME*** *is automatically updated.*

IFX_PRODUCT_REGISTEREDSERIALNUM

If the *IFX_PRODUCT_REGISTEREDSERIALNUM* system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's ProductId value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable's value is modified by end-user input in the Serial Number edit box of the SdCustomerInformation, and SdCustomerInformationEx dialogs.

IFX_PRODUCT_SUPPORT_CONTACT

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's Contact value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Support Contact setting in the General Information view.

IFX_PRODUCT_SUPPORT_PHONE

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's HelpTelephone value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Support Phone Number setting in the General Information view.

IFX_PRODUCT_SUPPORT_URL

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's HelpLink value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Support URL setting in the General Information view.

IFX_PRODUCT_UPDATE_URL

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's URLUpdateInfo value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Product Update URL setting in the General information view.

IFX_PRODUCT_URL

Project ▪ *This information applies to InstallScript projects.*

If this system variable's value is not a null string (""), its value is used by the MaintenanceStart function to specify the data in the application uninstallation registry key's URLInfoAbout value. This registry value provides information about the application to Add or Remove Programs in the Control Panel.

This system variable is initialized to the value that you specify in the Publisher/Product URL setting in the General Information view.

IFX_PRODUCT_VERSION

Project ▪ *This information applies to InstallScript projects.*

This system variable is automatically initialized to the value of the string entry PRODUCT_VERSION, if that entry exists; if that entry does not exist, IFX_PRODUCT_VERSION is initialized to the product version that you specified in the Project Settings property sheet's Application page.

IFX_SETUP_TITLE

This system variable specifies the text in the title bar of all built-in dialogs (except dialogs generated directly by Windows API function calls) and all message boxes generated by the MessageBox function. This system variable is automatically initialized to the value of the string entry TITLE_CAPTIONBAR, if that entry exists; if that entry does not exist, IFX_SETUP_TITLE is initialized with the following internal code:

```
Sprintf( IFX_SETUP_TITLE, SdLoadString( IDS_IFX_FORMAT_SETUP_TITLE ), IFX_PRODUCT_DISPLAY_NAME );
```

Changing the value of IFX_SETUP_TITLE automatically resets the title of all dialogs displayed by the setup.

IFX_SUPPORTED_VERSIONS

Project ▪ *This information applies to InstallScript projects.*

This system variable is automatically initialized to a pipe(|)-delimited list of the versions of your product to which the update can be applied, which you specified in the media property sheet's Update page or the Media Wizard's Update panel.

INFOFILENAME

When you use BatchFileSave to save a batch file or ConfigFileSave to save a Config.sys file, you can specify that InstallShield create a backup of the file as it existed before you updated it. InstallShield assigns the name of that backup file to the system variable INFOFILENAME. If you want to alert the user to the existence of the backup file, use the function MessageBox to display the value of INFOFILENAME.

INSTALLDIR

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript MSI*

In an InstallScript project, use TARGETDIR.

During setup initialization, the installation assigns to the system variable INSTALLDIR the fully qualified path to a target folder on the hard drive. The INSTALLDIR path is resolved based on the destination that is specified in the INSTALLDIR setting in the General Information view. By default, the INSTALLDIR path is resolved based on the [ProgramFilesFolder]ISYourCompanyDir\ISYourProductDir entries in the `Directory` table of your .msi package.

INSTANCE_GUID

Project *▪ This information applies to InstallScript projects.*

This system variable contains a globally unique identifier (GUID) for the installation, which is used as the name of the application uninstallation registry key. This variable's value is set at run time to equal PRODUCT_GUID except in a multi-instance installation.

The value of this system variable is shared among object scripts and between object scripts and the main installation script. You cannot assign a new value to this system variable.

ISDIFXAPPID

This predefined global system variable determines the application to associate when installing or uninstalling device drivers. ISDIFXAPPID is set to PRODUCT_GUID by default during initialization and can be changed as desired to specify an alternate application ID.

Note *▪ See the DIFxAPI documentation for the INSTALLERINFO structure for more information regarding specifying application association.*

ISMSI_HANDLE

This system variable is set to the handle of the currently running .msi database, and can be used in event-handler functions as an argument to Windows Installer API functions that require a handle to the currently running database.

For example, to retrieve the value of the USERNAME property in the OnBegin event handler, you can use code similar to the following:

```
function OnBegin( )
    STRING svUsername[256];
    NUMBER nBuffer;
```

```
begin
    nBuffer = 256;
    MsiGetProperty(ISMSI_HANDLE, "USERNAME", svUsername, nBuffer);
    MessageBox("USERNAME = " + svUsername, INFORMATION);
end;
```

Project ▪ *ISMSI_HANDLE is not supported in Basic MSI projects, and is not supported in InstallScript custom actions.*

IS_NULLSTR_PTR

You can use the IS_NULLSTR_PTR variable to pass a null pointer to an external DLL function or Windows API through a parameter that has been prototyped as an InstallScript string. This functionality works for byval string, byref string, wstring, and binary data types.

This functionality does not apply to byref number parameters. If you want to specify a NULL pointer for byref number parameters, you must prototype the parameter as a pointer data type and pass the address of the number variable or NULL, as needed.

IS_NULLSTR_PTR is a global string variable instance with the value of <IS_NULLSTR_PTR>. A statement that assigns a new value to this variable compiles; however, the assignment does not have any effect. The variable's value remains <IS_NULLSTR_PTR>.

If you pass this variable to a non-DLL function, the function receives the string <IS_NULLSTR_PTR>.

If you pass a string that has the value <IS_NULLSTR_PTR> to an external DLL function, the result is the same as if you used IS_NULLSTR_PTR.

Using the IS_NULLSTR_PTR Variable to Pass a Null Pointer to a Windows API

The Windows function **WritePrivateProfileString** lets you flush the INI file buffer on Windows 9x by specifying NULL for the first three parameters. However, since this function is prototyped as follows, there does not appear to be any way to accomplish this:

```
prototype number   KERNEL32.WritePrivateProfileString (byval string, byval string, byval string, byval string);
```

Using the pointer data type allows NULL to be specified, but it causes problems when trying to specify a valid string.

If you want the InstallScript engine to pass a null pointer to the function, you can use the following code:

```
KERNEL32.WritePrivateProfileString (IS_NULLSTR_PTR, IS_NULLSTR_PTR, IS_NULLSTR_PTR, szFile);
```

Using the IS_NULLSTR_PTR Variable to Pass a Null Pointer to an External DLL Function

You can use IS_NULLSTR_PTR with any external DLL function that expects a string. In this case, the DLL function receives a NULL pointer.

ISRES

During setup initialization, the installation decompresses `_isres.dll` from your setup and copies it to a temporary folder on the target system, giving it a unique name so that it does not interfere with other InstallShield installations. The fully qualified name of this file, which contains setup resources, is assigned to the system variable ISRES.

ISUSER

During setup initialization, the installation decompresses `_isuser.dll`, if present, from your setup and copies it to the temporary folder SUPPORTDIR on the target system, giving the file a unique name so that it does not interfere with other InstallShield installations. The fully qualified name of this file, which contains user-defined setup resources, is assigned to the system variable ISUSER.

ISVERSION

When the setup script starts running, the installation gets the version of `Setup.exe` that is running and assigns it to the system variable ISVERSION. The version number also appears in the Setup program's About box.

LAAW_PARAMETERS

If you call **LaunchApplication** without LAAW_OPTION_USE_SHELLEXECUTE or you call **LaunchAppAndWait** or **LaunchApp**, these functions internally call the Windows API function **CreateProcess**. The LAAW_PARAMETERS structured variable specifies certain arguments for **CreateProcess**, and whether to display a text window while the launched application is running. For information on **CreateProcess**, consult the Windows API documentation.

The LAAW_PARAMETERS system variable is initialized automatically during setup initialization by a call to LaunchAppAndWaitInitStartupInfo.

Table 8 ▪ LAAW_PARAMETERS

Member	Description
bCallbackEndedWait	Indicates that **WaitForApplication** ended the wait because the callback function returned LAAW_CALLBACK_RETURN_END_WAIT.
bInheritHandles	Sets the corresponding argument to **CreateProcess**.
dwCreationFlags	Sets the corresponding argument to **CreateProcess**.
lpCurrentDirectory	Sets the corresponding argument to **CreateProcess**. This member is set to the szDirectory parameter of **LaunchApplication** or **LaunchAndAppAndWait**. Note that setting the value of lpCurrentDirectory manually has no effect on **LaunchApplication** or **LaunchAndAppAndWait**.
lpEnvironment	Sets the corresponding argument to **CreateProcess**.

Table 8 ▪ LAAW_PARAMETERS (cont.)

Member	Description
lpProcessAttributes	Sets the corresponding argument to **CreateProcess**.
lpThreadAttributes	Sets the corresponding argument to **CreateProcess**.
nCallbackInterval	This member defines the callback interval in milliseconds. It is set to 1000 (1 second) by default when you call the **LaunchApplicationInit** or **LaunchAppAndWaitInitStartupInfo** functions.
nLaunchResult	If the application cannot be launched, the nLaunchResult member contains the result of calling **GetLastError** after the **CreateProcess** call. If **LaunchApp**, **LaunchAppAndWait**, or **LaunchApplication** is successful and the LAAW_OPTION_WAIT option was specified, the nLaunchResult member contains the return code of the launched application.
nTimeOut	Indicates the timeout value used internally by **LaunchApplication** or **LaunchAndAppAndWait** when **WaitForApplication** is called. The default value is INFINITE. You can customize this value to set a wait timeout for **LaunchApplication** or **LaunchAndAppAndWait**.
nTimeOutCheckInterval	Indicates the interval for how often the installation checks whether the timeout interval has elapsed while waiting for an application through **WaitForApplication** (or through **LaunchApplication** or **LaunchAndAppAndWait**, which may call **WaitForApplication** internally). This value is not used if nTimeOut is set to INFINITE and LAAW_USE_CALLBACK is not specified. If LAAW_USE_CALLBACK is specified, the timeout/callback check interval is the lower of the two values for LAAW_PARAMETERS.nTimeOutCheckInterval and LAAW_PARAMETERS.nCallbackInterval. The default value is 1000.
nWaitForInputIdleMax	Indicates the maximum amount of time (in milliseconds) to wait for the application to complete its initialization through the Windows API **WaitForInputIdle**. The default value for this structure member is 2000. You can set it to 0 to indicate that the installation should not wait for the application to initialize before beginning the wait for the application to complete. Since **LaunchApplication** and **LaunchAndAppAndWait** wait for the application to initialize only if LAAW_OPTION_WAIT is specified, this value is only used if LAAW_OPTION_WAIT is specified.
nWaitResult	Indicates additional information about the last wait that occurred as a result of calling **WaitForApplication**. For more information, see WaitForApplication.

Table 8 ▪ LAAW_PARAMETERS (cont.)

Member	Description
szCommandLineResult	Contains the resulting command line used as the lpCommandLine parameter in the internal call to **CreateProcess**. This member is populated when **LaunchApplication** or **LaunchAndAppAndWait** is called, so setting its value directly before or after this function is called has no effect. Also, this member is set to null ("") when you call the **LaunchApplicationInit** or **LaunchAppAndWaitInitStartupInfo** functions.
szStatusText	 ***Project ▪*** *The szStatusText member is not available for use in InstallScript actions that are called in Suite/Advanced UI installations.* If this member is set to anything other than a null string ("") ,the installation displays its contents in a text window (by calling SdShowMsg) while the launched application is running. Note that szStatusText cannot contain more than 4 kilobytes of data.

LAAW_PROCESS_INFORMATION

When you call **LaunchApplication**, **LaunchAndAppAndWait**, or **LaunchApp**, this structured variable returns identification information about the launched process. The PROCESS_INFORMATION system variable has the following members:

Table 9 ▪ LAAW_PROCESS_INFORMATION

Member	Description
hProcess	A handle to the newly created process. The handle is used to specify the process in all functions that perform operations on the process object.
hThread	A handle to the primary thread of the newly created process. The handle is used to specify the thread in all functions that perform operations on the thread object.
dwProcessId	A global process identifier that can be used to identify a process. The value is valid from the time the process is created until the time the process is terminated.
dwThreadId	A global thread identifiers that can be used to identify a thread. The value is valid from the time the thread is created until the time the thread is terminated.

LAAW_SHELLEXECUTEINFO

The LAAW_SHELLEXECUTEINFO script variable is an instance of a SHELLEXECUTEINFO structure used by the **LaunchApplication** function when the **ShellExecuteEx** function is called. You can customize the members of this structure to affect how using **LaunchApplication** with the LAAW_OPTION_USE_SHELLEXECUTE parameter works.

SHELLEXECUTEINFO Structure

```
typedef SHELLEXECUTEINFO

begin

    int     cbSize;

    int     fMask;

    HWND    hwnd;

    pointer lpVerb;

    pointer lpFile;

    pointer lpParameters;

    pointer lpDirectory;

    int     nShow;

    HWND    hInstApp;

    pointer lpIDList;

    pointer lpClass;

    HWND    hkeyClass;

    int     dwHotKey;

    HWND    hIconMonitor;

    HWND    hProcess;

end;
```

LAAW_SHELLEXECUTEVERB

The LAAW_SHELLEXECUTEVERB script variable is a string that indicates the verb used by **LaunchApplication** when calling **ShellExecuteEx**. The default value is **open**. The lpVerb member of LAAW_SHELLEXECUTEINFO points to this string by default.

Tip ▪ *If you are using LAAW_OPTION_USE_SHELLEXECUTE on systems running Windows Vista or later and you want to launch the application using the full administrator account (similar to right-clicking the executable file to be run and clicking Run as Administrator), set LAAW_SHELLEXECUTEVERB to* **runas** *before using* **LaunchApplication** *in your script:*

```
LAAW_SHELLEXECUTEVERB = "runas";
```

This ensures that the application is always run with full administrator privileges regardless of whether the application to be launched has an application manifest with relevant settings. Note that this may trigger a User Account Control (UAC) prompt for consent or credentials.

On systems running operating systems earlier than Windows Vista, if **runas** *is used, a Run As dialog box is displayed. The behavior is similar to right-clicking the executable file to be run and clicking Run As. This dialog box enables the end user to select the user account that should be used to run the application.*

LAAW_STARTUPINFO

When you call **LaunchApplication**, **LaunchAndAppAndWait**, or **LaunchApp**, the LAAW_STARTUPINFO structured variable specifies main window properties if a new window is created for the launched process. This system variable is initialized automatically during installation initialization by a call to LaunchAppAndWaitInitStartupInfo.

The STARTUPINFO system variable has the following members:

Table 10 ▪ LAAW_STARTUPINFO

Member	Description
cb	Specifies the size, in bytes, of the structure.
lpReserved	Reserved. Set this member to NULL.
lpDesktop	Pointer to a null-terminated string that specifies either the name of the desktop only or the name of both the desktop and window station for this process. A backslash in the string pointed to by lpDesktop indicates that the string includes both desktop and window station names. If lpDesktop is NULL, the new process inherits the desktop and window station of its parent process. If lpDesktop is an empty string, the process does not inherit the desktop and window station of its parent process; instead, the system determines if a new desktop and window station need to be created. If the impersonated user already has a desktop, the system will use the existing desktop.
lpTitle	For console processes, this is the title displayed in the title bar if a new console window is created. If NULL, the name of the executable file is used as the window title instead. This parameter must be NULL for GUI or console processes that do not create a new console window.
dwX	Ignored unless dwFlags specifies STARTF_USEPOSITION. Specifies the x offset, in pixels, of the upper left corner of a window if a new window is created. The offset is from the upper left corner of the screen. For GUI processes, the specified position is used the first time the new process calls the Windows API function **CreateWindow** to create an overlapped window if the x parameter of **CreateWindow** is CW_USEDEFAULT.
dwY	Ignored unless dwFlags specifies STARTF_USEPOSITION. Specifies the y offset, in pixels, of the upper left corner of a window if a new window is created. The offset is from the upper left corner of the screen. For GUI processes, the specified position is used the first time the new process calls the Windows API function **CreateWindow** to create an overlapped window if the y parameter of **CreateWindow** is CW_USEDEFAULT.

Table 10 ▪ LAAW_STARTUPINFO (cont.)

Member	Description
dwXSize	Ignored unless dwFlags specifies STARTF_USESIZE. Specifies the width, in pixels, of the window if a new window is created. For GUI processes, this is used only the first time the new process calls the Windows API function **CreateWindow** to create an overlapped window if the nWidth parameter of **CreateWindow** is CW_USEDEFAULT.
dwYSize	Ignored unless dwFlags specifies STARTF_USESIZE. Specifies the height, in pixels, of the window if a new window is created. For GUI processes, this is used only the first time the new process calls **CreateWindow** to create an overlapped window if the nHeight parameter of **CreateWindow** is CW_USEDEFAULT.
dwXCountChars	Ignored unless dwFlags specifies STARTF_USECOUNTCHARS. For console processes, if a new console window is created, dwXCountChars specifies the screen buffer width in character columns. This value is ignored in a GUI process.
dwYCountChars	Ignored unless dwFlags specifies STARTF_USECOUNTCHARS. For console processes, if a new console window is created, dwYCountChars specifies the screen buffer height in character rows. This value is ignored in a GUI process.
dwFillAttribute	Ignored unless dwFlags specifies STARTF_USEFILLATTRIBUTE. Specifies the initial text and background colors if a new console window is created in a console application. These values are ignored in GUI applications. This value can be any combination of the following values: FOREGROUND_BLUE, FOREGROUND_GREEN, FOREGROUND_RED, FOREGROUND_INTENSITY, BACKGROUND_BLUE, BACKGROUND_GREEN, BACKGROUND_RED, and BACKGROUND_INTENSITY. For information on using these Windows constants, which are not defined in `ISRTWindows.h`, see Using Windows Constants in a Script. For example, the following combination of values produces red text on a white background: `FOREGROUND_RED| BACKGROUND_RED| BACKGROUND_GREEN| BACKGROUND_BLUE`

Table 10 ▪ LAAW_STARTUPINFO (cont.)

Member	Description
dwFlags	This is a bit field that determines whether certain STARTUPINFO members are used when the process creates a window. Any combination of the following values can be specified: • **STARTF_FORCEONFEEDBACK**—Indicates that the cursor is in feedback mode for two seconds after **LaunchApplication** or **LaunchAndAppAndWait** is called. If during those two seconds the process makes the first GUI call, the system gives five more seconds to the process. If during those five seconds the process shows a window, the system gives five more seconds to the process to finish drawing the window. The system turns the feedback cursor off after the first call to the Windows API function **GetMessage**, regardless of whether the process is drawing. • **STARTF_FORCEOFFFEEDBACK**—Indicates that the feedback cursor is forced off while the process is starting. The normal cursor is displayed. • **STARTF_RUNFULLSCREEN**—Indicates that the process should be run in full-screen mode, rather than in windowed mode. This flag is only valid for console applications running on an x86 computer. • **STARTF_USECOUNTCHARS**—If this value is not specified, the dwXCountChars and dwYCountChars members are ignored. • **STARTF_USEFILLATTRIBUTE**—If this value is not specified, the dwFillAttribute member is ignored. • **STARTF_USEPOSITION**—If this value is not specified, the dwX and dwY members are ignored. • **STARTF_USESHOWWINDOW**—If this value is not specified, the wShowWindow member is ignored. • **STARTF_USESIZE**—If this value is not specified, the dwXSize and dwYSize members are ignored. • **STARTF_USESTDHANDLES**—Sets the standard input, standard output, and standard error handles for the process to the handles specified in the hStdInput, hStdOutput, and hStdError members of the STARTUPINFO structure. LAAW_PARAMETERS.bInheritHandles must be set to TRUE for this to work properly. If this value is not specified, the hStdInput, hStdOutput, and hStdError members of the STARTUPINFO structure are ignored.
wShowWindow	Ignored unless dwFlags specifies STARTF_USESHOWWINDOW. The wShowWindow member can be any of the SW_ constants defined in Winuser.h. For GUI processes, wShowWindow specifies the default value the first time the Windows API function **ShowWindow** is called. The nCmdShow parameter of **ShowWindow** is ignored. In subsequent calls to **ShowWindow**, the wShowWindow member is used if the nCmdShow parameter of **ShowWindow** is set to SW_SHOWDEFAULT.
cbReserved2	Reserved; must be zero.

Table 10 ▪ LAAW_STARTUPINFO (cont.)

Member	Description
lpReserved2	Reserved; must be NULL.
hStdInput	Ignored unless dwFlags specifies STARTF_USESTDHANDLES. Specifies a handle that will be used as the standard input handle to the process if STARTF_USESTDHANDLES is specified.
hStdOutput	Ignored unless dwFlags specifies STARTF_USESTDHANDLES. Specifies a handle that will be used as the standard output handle to the process if STARTF_USESTDHANDLES is specified.
hStdError	Ignored unless dwFlags specifies STARTF_USESTDHANDLES. Specifies a handle that will be used as the standard error handle to the process if STARTF_USESTDHANDLES is specified.

Example

To specify that the launched application should be displayed at coordinates (0,0), before calling **LaunchAppAndWait**, you would customize the structure as follows:

```
LAAW_STARTUPINFO.dwFlags = LAAW_STARTUPINFO.dwFlags | STARTF_USEPOSITION;
LAAW_STARTUPINFO.dwX = 0;
LAAW_STARTUPINFO.dwY = 0;
```

MAINTENANCE

This system variable is set to TRUE if your installation program is running in maintenance mode, or set to FALSE for a first-time installation.

MAINT_OPTION

Project ▪ *This information applies to InstallScript projects.*

The MAINT_OPTION system variable is set to one of the following values, corresponding to the maintenance option that you set for the Maintenance Experience setting in the General Information view:

- MAINT_OPTION_STANDARD
- MAINT_OPTION_MULTI_INSTANCE
- MAINT_OPTION_NONE

MEDIA

This system variable stores the name of the current file media library or script-created feature set. During setup initialization, MEDIA is assigned the value of 'DATA', which corresponds to the DATAx.cab file that was created by the media build. If you change the value of this system variable to refer to a script-created component set, you must change the value back to 'DATA' before calling FeatureMoveData.

MODE

The system variable MODE holds one of the following constant values (note that the value cannot be changed at run time):

Table 11 ▪ MODE

Constant	Meaning
SILENTMODE	Indicates that Setup.exe is running in silent mode. (That is, the user ran Setup.exe with the /s argument.)
NORMALMODE	Indicates Setup.exe is running in normal mode.
RECORDMODE	Indicates Setup.exe is automatically generating a silent setup file (.iss file), which is a record of the setup input, by default in the Windows folder. (That is, when you run Setup.exe with the /r argument.)

You can use the system variable MODE in if statements to control the flow of your script based on mode, as shown below:

```
if (MODE = SILENTMODE) then
    // Perform silent setup actions and events.
else
    // Perform normal setup actions and events.
endif;
```

Note ▪ *For a Basic MSI project, you can find if the user is running the installation in silent mode with the Windows Installer condition "UILevel=2".*

MSI_TARGETDIR

MSI_TARGETDIR represents the destination of an administrative installation (when a user runs Setup.exe with the /a argument) for an InstallScript MSI project.

For a Basic MSI project, the TARGETDIR *property* (not the InstallScript variable) contains the destination of an administrative installation.

MULTI_INSTANCE_COUNT

Project ▪ *This information applies to InstallScript projects.*

This system variable is set equal to the number of instances of the currently running multi-instance setup that are already installed on the target system. You cannot assign a new value to this system variable.

PACKAGE_LOCATION

Project ▪ *The PACKAGE_LOCATION system variable applies to InstallScript projects only.*

This system variable contains the fully qualified file name of the installation's self-extracting executable file if the installation is running from a self-extracting executable file that was created from within InstallShield, or a null string ("") value otherwise.

PRODUCT_GUID

This read-only system variable contains the GUID for the setup, which is initialized to the value of the project's ProductCode property. By default, PRODUCT_GUID is used as part of the UNINSTALLKEY variable and also as part of the DISK1TARGET and SUPPORTDIR directories.

PRODUCT_INSTALLED

Project ▪ *This information applies to InstallScript projects.*

This system variable is set to a non-zero value if a valid log file exists for the installation. If the installation is running with the standard maintenance option, this variable is equal to the MAINTENANCE system variable.

PROGRAMFILES

The PROGRAMFILES system variable contains the fully qualified name of the folder defined by Windows to store applications. In English Windows, that folder is named Program Files, and it is located off the root of the drive on which Windows is installed. (In other language versions of Windows, the folder name is localized appropriately by default.) The program files folders is the recommended default location for application folders.

On 64-bit Windows systems, this folder is for 32-bit applications only and has the name Program Files (x86) by default; 64-bit applications should be installed to the PROGRAMFILES64 folder.

Tip ▪ *If your company distributes more than one application, you may prefer to create a company folder inside the program files folder and then create application folders within the company folder.*

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the PROGRAMFILES variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_PROGRAM_FILES parameter.*

In Basic MSI and InstallScript MSI installations, the value of the PROGRAMFILES variable is initialized based on the Windows Installer property `ProgramFilesFolder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding PROGRAMFILES variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

PROGRAMFILES64

The PROGRAMFILES64 system variable contains the fully qualified name of the folder defined by Windows to store 64-bit applications on a 64-bit system. (Note that 32-bit applications are stored under the PROGRAMFILES folder.) In English Windows, that folder is named Program Files, and it is located off the root of the drive on which Windows is installed. (In other language versions of Windows, the folder name is localized appropriately by default.) The program files folders are the recommended default locations for application folders.

Tip ▪ *If your company distributes more than one application, you may prefer to create a company folder inside the program files folder and then create application folders within the company folder.*

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the PROGRAMFILES64 variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_PROGRAM_FILES parameter from a 64-bit executable file.*

In Basic MSI and InstallScript MSI installations, the value of the PROGRAMFILES64 variable is initialized based on the Windows Installer property `ProgramFiles64Folder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding PROGRAMFILES64 variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

REGDB_OPTIONS

The REGDB_OPTIONS system variable enables you to set various options for the general registry functions. The following table describes the options that you can specify:

Table 12 ▪ REGDB_OPTIONS

Option	Meaning
REGDB_OPTION_DISABLETEXTSUBS	Disables text substitutions in strings that are passed to registry functions. Use this option when working with registry function strings that contain opening angle brackets (<) and closing angle brackets (>) but that should not be interpreted as text substitutions.
REGDB_OPTION_NO_DELETE_OLD_MAJMIN_VERSION	Prevents the **MaintenanceStart** function from deleting the legacy values of the following constants: • REGDB_VALUENAME_UNINSTALL_MAJORVERSION (The major version value name under the application uninstallation key), whose value was MajorVersion for installations that were created with InstallShield 2009 and earlier • REGDB_VALUENAME_UNINSTALL_MINORVERSION (The minor version value name under the application uninstallation key), whose value was MinorVersion for installations that were created with InstallShield 2009 and earlier For more information, see the "Changes to the Major and Minor Version Registry Entries for the Uninstall Key of InstallScript Installations" section in Upgrading Projects from InstallShield 2009 or Earlier.
REGDB_OPTION_WOW64_64KEY	Specifies that all future general registry operations affect the 64-bit parts of the registry instead of the 32-bit parts of the registry (on a 64-bit system). Setting this option on a 32-bit system has no effect. For more information about installing to 64-bit registry locations, see Targeting 64-Bit Operating Systems with InstallScript Installations.
REGDB_OPTION_USE_DEFAULT_OPTIONS	Resets (clears) all previously set options.

To add options, combine one or more options using bitwise OR (|) operator as shown:

```
REGDB_OPTIONS = REGDB_OPTIONS | REGDB_OPTION_WOW64_64KEY
```

To remove options, specify the option to remove using the bitwise AND (&) operator and the bitwise NOT (~) operator as shown:

```
REGDB_OPTIONS = REGDB_OPTIONS & ~REGDB_OPTION_WOW64_64KEY
```

Note ▪ *When you enable the REGDB_OPTION_WOW64_64KEY option, this affects where registry entries from registry sets are created. For example, if this option is enabled when you call the CreateRegistrySet function, the registry set is created in the 64-bit part of the registry. If you enable this option for the specific 64-bit registry sets you want to install, it is recommended that you then disable the option so other registry entries or sets are not incorrectly created in the 64-bit part of the registry. For more information about installing to 64-bit registry locations, see Targeting 64-Bit Operating Systems with InstallScript Installations.*

The InstallScript engine currently does not support installing Add or Remove Programs information for a product in the 64-bit part of the registry; therefore, the REGDB_OPTION_WOW64_64KEY option is not supported for the specific registry functions such as **CreateInstallationInfo**, **MaintenanceStart**, **RegDBGetItem**, **RegDBSetItem**, **RegDBGetAppInfo**, **RegDBSetAppInfo**, *and* **RegGetUninstCmdLine**.

REINSTALLMODE

This system variable is non-zero if one of the reinstall functions has been called in an InstallScript installation—that is, if FeatureReinstall, FeatureUpdate, or FeaturePatch have been called in the current instance of the installation.

Project ▪ *In an InstallScript MSI installation, this system variable is non-zero if the* **FeatureReinstall** *function is called.* **FeatureUpdate** *and* **FeaturePatch** *are not defined in an InstallScript MSI installation and should not be called.*

REMOVEALLMODE

Project ▪ *This information applies to InstallScript projects.*

This system variable is non-zero if the application is being completely uninstalled—that is, if FeatureRemoveAll, FeatureRemoveAllInMedia, or FeatureRemoveAllInMediaAndLog have been called in the current instance of the setup—and FALSE otherwise. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Note ▪ *To execute script code only when the application is being completely uninstalled, enclose the code in the following if-then statement:*

```
if REMOVEALLMODE!=0 then
    /* this code is executed only during uninstallation */
endif;
```

To perform specific uninstallation actions when a particular component is uninstalled, override the component's <ComponentName>_Uninstalling event and perform the actions in this event.

REMOVEONLY

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The REMOVEONLY system variable is set equal to a non-zero value if Setup.exe is run with the -removeonly option, and is set equal to FALSE otherwise. The default code for the OnMaintUIBefore event handler function conditionally displays the SdWelcomeMaint dialog, depending on the value of REMOVEONLY.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results.

SELECTED_LANGUAGE

Project *▪ The following project types support SELECTED_LANGUAGE:*

- *InstallScript*
- *InstallScript MSI*

The numeric system variable SELECTED_LANGUAGE contains the ID of the language that the installation is using to display prompts and messages.

This system variable has a corresponding <SELECTED_LANGUAGE> text substitution, which contains the value of SELECTED_LANGUAGE formatted as a four-digit hexadecimal value (including the 0x prefix). For example, if SELECTED_LANGUAGE is ISLANG_ENGLISH_UNITEDSTATES, the value of the text substitution is 0x0409.

SHAREDSUPPORTDIR

Project *▪ InstallScript projects support SHAREDSUPPORTDIR.*

The read-only variable SHAREDSUPPORTDIR identifies the directory that contains all of the support files that are shared among an InstallScript installation and all of the InstallScript objects in that installation.

This system variable has a corresponding <SHAREDSUPPORTDIR> text substitution.

SHELL_OBJECT_FOLDER

Project *▪ The following project types support SHELL_OBJECT_FOLDER:*

- *InstallScript*
- *InstallScript MSI*

The SHELL_OBJECT_FOLDER system variable is used to specify the name of a shell object folder—typically a Start Menu folder—at run time through script.

You can specify **SHELL_OBJECT_FOLDER** (for InstallScript or InstallScript MSI projects) or **<SHELL_OBJECT_FOLDER>** (for InstallScript projects) in the Display Name setting for a folder in the Shortcuts view. Then you can define the display name for the folder at run time by setting the SHELL_OBJECT_FOLDER variable in your script before the shortcut is created. The shortcut is typically created during file transfer.

Project ▪ *For InstallScript projects, you can specify either* **<SHELL_OBJECT_FOLDER>** *or* **SHELL_OBJECT_FOLDER** *in the Display Name setting. In both cases, text substitution is used. However, including the angle brackets—* **<SHELL_OBJECT_FOLDER>***—is recommended.*

For InstallScript MSI projects, you must specify **SHELL_OBJECT_FOLDER** *(without the angle brackets).*

To use this functionality in an InstallScript MSI installation, any letters that are specified for the Key Name setting of the folder in the Shortcuts view must be all uppercase (for example, NEWFOLDER1).

If the installation is not in maintenance mode, SHELL_OBJECT_FOLDER is initialized to the same value as IFX_PRODUCT_NAME during initialization of the InstallScript engine. Note that these variables are not synchronized once initialized; therefore, if you change one and want the other to change, you must change both manually. These types of manual changes are logged, and the changes are read from the log on subsequent maintenance operations. Therefore, a shortcut that uses the SHELL_OBJECT_FOLDER variable for its display name can be removed during uninstallation.

SHOW_PASSWORD_DIALOG

Project ▪ *This information applies to InstallScript projects.*

The SHOW_PASSWORD_DIALOG system variable is TRUE if the "Show Password dialog box during setup initialization" check box was checked in the Media Wizard's General Options panel or the media property sheet's General page, or FALSE otherwise.

SRCDIR

This system variable contains the fully qualified path to the source folder that contains the Windows Installer package.

SRCDIR is initialized to the value of the Windows Installer property `SourceDir` when the sequence begins, and it cannot be assigned a new value in an InstallScript custom action.

SRCDISK

This system variable contains the name of the drive with the source disk. During setup initialization, InstallShield assigns to SRCDISK the name of the drive that holds the disk containing the setup script file, Setup.inx. For example, if you start Setup.exe from a floppy disk in the A drive, then if that disk contains the file Setup.inx, InstallShield assigns the value “A:” to SRCDISK. Note that InstallShield includes the colon (:) with the drive letter.

Note ▪ *If you intend to reference the root folder of the drive specified by this variable, you must append a backslash to it (specified as two backslashes). For example, if the value of SRCDISK is A:, the following statement refers to the root folder of that drive: SRCDISK + "\\".*

SUPPORTDIR

During setup initialization, the installation locates a folder on the target system into which it can copy temporary files and files that were compressed into your installation. The installation sets the value of SUPPORTDIR to the fully qualified path for that folder.

In addition, files that you add to the Language Independent (or language-specific) file list in the Support Files/Billboards view of InstallShield are decompressed into SUPPORTDIR when the installation initializes, and they are deleted when the installation is complete.

To access a particular support file in an InstallScript project, use the SUPPORTDIR variable directly and then append the file name to the SUPPORTDIR value to obtain the complete path of the file. Following is an example of InstallScript event code:

```
prototype STRING GetSupportFilePathIS(STRING);
function STRING GetSupportFilePathIS(szSupportFile)
begin
    return SUPPORTDIR ^ szSupportFile;
end;
```

Note ▪ *The value of the InstallScript variable SUPPORTDIR is not shared among InstallScript Object scripts or between InstallScript Object scripts and the main installation script.*

Project ▪ *Note that the value of the InstallScript system variable SUPPORTDIR is not the same as the value of the Windows Installer property* `SUPPORTDIR`*.*

In event-driven InstallScript, the SUPPORTDIR system variable points to the folder that contains support files.

In Basic MSI or InstallScript MSI projects, each InstallScript custom action initializes its own engine. Each engine does not know where the primary SUPPORTDIR is, and each engine does not extract its own private copy of the support files. For instructions on locating the extracted support files from a custom action, see Placing Files in the .msi Database and Extracting Them During Run Time.

SYSINFO

During setup initialization, the installation sets the members of the SYSINFO structure variable to identify the operating platform of the target computer. By inspecting the values assigned to members of this variable, your script can determine information such as the following:

- The operating system
- The major and minor version number of the operating system
- The subversion of the operating system

- The version of Internet Explorer
- The latest service pack that is installed
- If the end user has administrator rights under Windows NT
- If the end user is a power user
- If the system is 64-bit
- If the system is a virtual machine
- The language IDs of the system language, user language, and operating system language

The following table shows the meaning of each SYSINFO member:

Table 13 ▪ SYSINFO Members

Member	Meaning
SYSINFO.bIntel	If TRUE, the processor is Intel.
SYSINFO.bIsVirtualMachine	If TRUE, a virtual machine is detected. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
SYSINFO.bIsWow64	If the installation is running on a 64-bit platform, this value is non-zero.
SYSINFO.bShellExplorer	If TRUE, the shell is Explorer.
SYSINFO.bWinServer2003R2	If this member is TRUE, the operating system is Windows Server 2003 R2.

Table 13 ▪ SYSINFO Members (cont.)

Member	Meaning
SYSINFO.nISOSL	Value indicates the operating system of the target machine. Possible values are the following: • **ISOSL_WINXP**—Windows XP Edition • **ISOSL_WINSERVER2003**—Windows Server 2003 • **ISOSL_WINVISTA_SERVER2008 (or ISOSL_WINVISTA)**—Note that Windows Vista and Windows Server 2008 use the same major and minor version numbers. Therefore, if you want to use InstallScript to distinguish between Windows Server 2008 and Windows Vista, check whether SYSINFO.nOSProductType = VER_NT_WORKSTATION; for Windows Vista, this is TRUE; for Windows Server 2008, it is FALSE. • **ISOSL_WIN7_SERVER2008R2**—Windows 7 or Windows Server 2008 R2 • **ISOSL_WIN8**—Windows 8 or Windows Server 2012 • **ISOSL_WIN81**—Windows 8.1 or Windows Server 2012 R2 • **ISOSL_WIN10**—Windows 10 or Windows Server 2016  ***Note ▪*** *Several client and server versions of Windows use the same major and minor version numbers:* • *Windows 8.1 and Windows Server 2012 R2 use the same major and minor version numbers.* • *Windows 8 and Windows Server 2012 use the same major and minor version numbers.* • *Windows 7 and Windows Server 2008 R2 use the same major and minor version numbers.* • *Windows Vista and Windows Server 2008 have the same major and minor version numbers.* *Therefore, for these operating system versions, the installation considers the client versions to be the same as the equivalent server versions; thus, components that are marked for the client version are also installed on the server version. To distinguish between the client and server versions, you can check whether SYSINFO.nOSProductType is equal to VER_NT_WORKSTATION; on client versions, this is true. On server versions, this is false.*
SYSINFO.nOSMajor	Value indicates operating system's major version number.
SYSINFO.nOSMinor	Value indicates operating system's major version number.

Table 13 ▪ SYSINFO Members (cont.)

Member	Meaning
SYSINFO.nOSProductType	Value indicates the wProductType of the Windows OSVERSIONINFOEX structure as defined for the current platform. Possible values are the following: • **VER_NT_WORKSTATION** • **VER_NT_DOMAIN_CONTROLLER** • **VER_NT_SERVER** You can also #define and test for any other constant supported by wProduct Type. To learn more, see OSVERSIONINFOEX Structure on the MSDN Web site.
SYSINFO.nOSSuiteMask	Value indicates the wSuitesMask of the Windows OSVERSIONINFOEX structure as defined for the current platform. Possible values are the following: • **VER_SUITE_BACKOFFICE** • **VER_SUITE_DATACENTER** • **VER_SUITE_ENTERPRISE** • **VER_SUITE_PERSONAL** • **VER_SUITE_SMALLBUSINESS** • **VER_SUITE_SMALLBUSINESS_RESTRICTED** • **VER_SUITE_TERMINAL** You can also #define and test for any other constant supported by wSuiteMask. To learn more, see OSVERSIONINFOEX Structure on the MSDN Web site.

Table 13 ▪ SYSINFO Members (cont.)

Member	Meaning
SYSINFO.nSuites	A combination of one or more bit flags that indicate the suite or suites on the target machine. Possible bit flags are the following: • **ISOS_ST_ALL** • **ISOS_ST_XP_PRO** • **ISOS_ST_XP_HOME** • **ISOS_ST_SERVER** • **ISOS_ST_SERVER2003_R2** • **ISOS_ST_WORKSTATION** • **ISOS_ST_BACKOFFICE** • **ISOS_ST_DATACENTER** • **ISOS_ST_ENTERPRISE** • **ISOS_ST_SERVER2003_R2** • **ISOS_ST_SMALLBUSINESS** • **ISOS_ST_SMALLBUSINESS_RESTRICTED** • **ISOS_ST_TERMINAL** • **0 (zero)**—indicates that no suite is detected on the target machine To check whether a bit flag is set, use the bitwise AND (&) operator as in the following example: `if (SYSINFO.nSuites & ISOS_ST_XP_HOME) then` `  /* Perform operations that are` `  specific to Windows XP Home Edition. */` `endif;`  ***Note ▪*** *The suites listed here are those that can be specified in the Windows API's OSVERSIONINFOEX data structure.*
SYSINFO.nSystemDefaultUILangID	Value indicates the installed operating system language's ID.
SYSINFO.nSystemLangID	Value indicates the system language's ID.
SYSINFO.nUserLangID	Value indicates the user language's ID.
SYSINFO.nWinMajor	Value indicates Windows major version number.
SYSINFO.nWinMinor	Value indicates Windows minor version number.

Table 13 ▪ SYSINFO Members (cont.)

Member	Meaning
SYSINFO.szInstalledIEVersion	Value indicates the Internet Explorer version on the system. This member is supported for versions 4 and later. If the version installed is earlier than 4, the value is null ("").  ***Note ▪*** *Do not rely on the fact that this value is null for versions earlier than 4. Instead, test specifically for 4 or later, since in the future, this member variable could support detecting Internet Explorer versions earlier than 4.*
SYSINFO.WINNT.bAdmin_Logged_On	If this member is TRUE, the end user is logged on under NT with administrator rights.
SYSINFO.WINNT.bPowerUser_Logged_On	If this member is TRUE, the current user belongs to the power user group.
SYSINFO.WINNT.bWin11	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows 11.
SYSINFO.WINNT.bWinServer2022	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows Server 2022.
SYSINFO.WINNT.bWin10	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows 10 or Windows Server 2016.
SYSINFO.WINNT.bWin81	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows 8.1 or Windows Server 2012 R2.

Table 13 ▪ SYSINFO Members (cont.)

Member	Meaning
SYSINFO.WINNT.bWin8	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows 8 or Windows Server 2012.
SYSINFO.WINNT.bWin7_Server2008R2	 ***Note ▪*** *This member is applicable to event-based InstallScript code; it is not applicable to InstallScript custom actions.* If this member is TRUE, the operating system is Windows 7 or Windows Server 2008 R2.
SYSINFO.WINNT.bWinNT	If this member is TRUE, the operating system is Windows NT (includes Windows XP).
SYSINFO.WINNT.bWinVista_Server2008 (SYSINFO.WINNT.bWinVista)	If either SYSINFO.WINNT.bWinVista_Server2008 or SYSINFO.WINNT.bWinVista is TRUE, the operating system is Windows Vista or Windows Server 2008. To distinguish between Windows Server 2008 and Windows Vista, check whether SYSINFO.nOSProductType is equal to VER_NT_WORKSTATION; for Windows Vista, this is TRUE; for Windows Server 2008, it is FALSE.
SYSINFO.WINNT.bWinXP	If this member is TRUE, the operating system is Windows XP.
SYSINFO.WINNT.bWinServer2003	If this member is TRUE, the operating system is Windows Server 2003 or Windows Server 2003 R2.
SYSINFO.WINNT.nServicePack	The number of the installed service pack. The installation obtains this information by calling the Windows API **GetVersionEx** and reading the nServicePackMajor value.
SYSINFO.WINNT.bWinServer2019	Returns `TRUE` in Windows Server 2019 else `FALSE`.
SYSINFO.nOSBuildNo	Stores the operating system build number
SYSINFO.nISOSL	Returns `ISOSL_WIN10_SERVER2019` in Windows Server 2019.

Example

The following code fragment displays a message box if the operating system on the target system is Windows XP.

```
if (SYSINFO.WINNT.bWinXP) then
    MessageBox("Installing on Windows XP",INFORMATION);
```

```
endif;
```

SYSPROCESSORINFO

During setup initialization, the installation sets the members of this structure variable to identify information about the processor of the target computer. By inspecting the values assigned to members of this variable, your script can determine information such as the number of processors on the system and the type of processor.

The following table shows the meaning of each SYSPROCESSORINFO member:

Note ▪ *Each of these members corresponds to a member in the Windows SYSINFO structure. These are populated during initialization by calling the Windows API GetSystemInfo or GetNativeSystemInfo functions on 64-bit Windows systems. Consult the documentation on this structure in the MSDN Library. Also, as documented by Microsoft, using nProcessorType is not recommended. Use nProcessorLevel and nProcessorArchitecture instead.*

Table 14 ▪ SYSPROCESSORINFO

Member	Meaning
SYSPROCESSORINFO.nProcessorArchitecture	Indicates the processor architecture. Possible values are the following: **PROCESSOR_ARCHITECTURE_INTEL** **PROCESSOR_ARCHITECTURE_IA64** **PROCESSOR_ARCHITECTURE_AMD64** **PROCESSOR_ARCHITECTURE_UNKNOWN**  ***Note ▪*** *InstallScript includes constants for the most common values for this structure member. However, in unusual cases, this structure member could contain other values defined by Windows. Consult the Windows documentation on the corresponding SYSINFO member for more information on possible additional values.*
SYSPROCESSORINFO.nNumberOfProcessors	Indicates the number of processors on the system.

Table 14 ▪ SYSPROCESSORINFO (cont.)

Member	Meaning
SYSPROCESSORINFO.nProcessorType	Indicates the processor type. Possible values are the following: **PROCESSOR_INTEL_386** **PROCESSOR_INTEL_486** **PROCESSOR_INTEL_PENTIUM** **PROCESSOR_INTEL_IA64** **PROCESSOR_AMD_X8664**  ***Note ▪*** *InstallScript includes constants for the most common values for this structure member. However, in unusual cases, this structure member could contain other values defined by Windows. Consult the Windows documentation on the corresponding SYSINFO member for more information on possible additional values.*
SYSPROCESSORINFO.nProcessorLevel	Indicates the system's architecture-dependent processor level. This is often defined by the vendor and should be used for display purposes. See the Windows documentation on the SYSINFO structure for further information on the meaning of these members.
SYSPROCESSORINFO.nProcessorRevision	Indicates the system's architecture-dependent processor revision. See the Windows documentation on the SYSINFO structure for further information on the meaning of these members.

TARGETDIR

During setup initialization, the installation assigns to the system variable TARGETDIR the fully qualified path to a target folder on the hard disk. This folder will be the one containing the file Win.ini, usually the Windows folder. Some InstallScript functions use this variable when performing file operations. You must set this variable to the folder you want to target before calling these functions. The default code for the OnFirstUIBefore event handler function assigns a value to TARGETDIR.

The value of this system variable is shared among object scripts and between object scripts and the main setup script. The value you assign to this system variable in any script is the value it has in the subsequently executed code in any script (until its value is explicitly reset).

TARGETDISK

During setup initialization, the installation assigns the name of the target disk drive to the system variable TARGETDISK. This drive will be the one containing the file Win.ini, usually the C: drive. Note that InstallShield includes the colon (:) with the drive letter.

Note *▪ If you intend to reference the root folder of the drive specified by this variable, you must append a backslash to it (specified as two backslashes). For example, if the value of TARGETDISK is C:, the following statement refers to the root folder of that drive: TARGETDISK + "\\".*

UNINST

Project *▪ The following project types support UNINST:*

- *InstallScript*
- *InstallScript MSI*

The UNINST system variable is provided for compatibility with earlier versions of InstallShield software. It contains the command line that launches the copy of `Setup.exe` that was placed on the target system to perform uninstallation. The default value is:

```
<UNINSTALL_STRING> -uninst
```

If you use this command line, the installation runs the OnUninstall event when the installation is launched. For more details, review the /uninst command-line parameter information for `Setup.exe`.

This command line is placed in the appropriate registry value by the DeinstallStart function, which is provided for compatibility with previous versions of InstallShield software.

The value of this system variable is shared among object scripts and between object scripts and the main setup script.

You can append your own custom command line switches to UNINST for processing by your script's uninstallation code. If you do so, and you change the value of the system variable DISK1TARGET, be sure to change DISK1TARGET before appending to UNINST; UNINST incorporates DISK1TARGET and is automatically changed when you change DISK1TARGET.

UNINSTALLKEY

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

Note that project-specific differences are provided where applicable.

The UNINSTALLKEY system variable contains the name of the registry key that is used to store your uninstallation information. The registry key is placed under SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall.

In an InstallScript installation, this key is placed under HKEY_USER_SELECTABLE_AUTO, which is controlled by the value of the ALLUSERS script variable. In an InstallScript MSI installation, this key is placed under HKEY_LOCAL_MACHINE if the installation is being run by an administrator; otherwise, it is placed under HKEY_CURRENT_USER.

In an InstallScript installation, the default value is **INSTANCE_GUID**. In an InstallScript MSI installation, the default value of UNINSTALLKEY is **InstallShield_{ProductCode}**.

To specify a different uninstallation key, assign a new value to UNINSTALLKEY in your script, as in the following example:

```
UNINSTALLKEY = "Sample App";
```

Note that to avoid conflicts with other installed applications, be sure to use a value that is unique to your application.

If the UNINSTALLKEY variable has been changed from the default value, the installation automatically creates an additional registry key for the product:

- **For InstallScript installations**—REGDB_KEYPATH_ISUNINSTINFO ^ INSTANCE_GUID
- **For InstallScript MSI installations**—REGDB_KEYPATH_ISUNINSTINFO ^ [ProductGuid]

This key contains a single string value with the name **UninstallKey** (REGDB_VALUENAME_UNINSTALLKEY); the value data contains the name of the product's uninstall key as determined by the UNINSTALLKEY variable. This value can be used to allow other products to find and use the uninstall information for the product without the product's custom uninstall key.

UNINSTALL_DISPLAYNAME

This system variable contains the displayed name of your product in Add or Remove Programs. This value is typically the product name you specified in the General Information view.

To specify a different uninstallation display name, assign a new value to UNINSTALL_DISPLAYNAME in your script before data transfer, as in the following:

```
UNINSTALL_DISPLAYNAME = "Sample App";
```

***Project** ▪ UNINSTALL_DISPLAYNAME is used only in InstallScript and InstallScript MSI installation projects. Basic MSI projects use the value of the* `ProductName` *property as the product's display name in Add or Remove Programs.*

UNINSTALL_STRING

***Project** ▪ The following project types support UNINSTALL_STRING:*

- *InstallScript*
- *InstallScript MSI*

The UNINSTALL_STRING system variable contains the command line that launches the setup launcher, the installation's executable file, which was placed on the target system to perform uninstallation. The default value is:

```
<DISK1TARGET>\<DISK1SETUPEXENAME> -runfromtemp -l<SELECTED_LANGUAGE>
```

The setup launcher automatically writes the UNINSTALL_STRING command line to the registry, unless you have hidden the Remove button (via the Disable Remove Button property) in Add or Remove Programs.

You can append your own custom command line switches to UNINSTALL_STRING for processing by your script's uninstallation code.

UPDATEMODE

The UPDATEMODE system variable applies to InstallScript projects only.

This system variable is set by the OnSetUpdateMode event handler function and is used by the OnShowUI event handler to call the appropriate UI event handlers.

WINDIR

The WINDIR system variable contains the fully qualified name of the folder that contains the main operating environment, for example `C:\Windows`.

This system variable is read-only; if you attempt to assign a value to it, a compiler error results. The value of this system variable is shared among object scripts and between object scripts and the main setup script.

Project ▪ *During setup initialization in InstallScript installations, the value of the WINDIR variable is obtained by calling the Windows API function* **GetWindowsDirectory**.

In Basic MSI and InstallScript MSI installations, the value of the WINDIR variable is initialized based on the Windows Installer property `WindowsFolder`. *Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding WINDIR variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

WINDISK

The WINDISK system variable contains the ID of the disk drive that contains the main operating environment. This drive is the one that contains the Windows program—usually drive C. Note that the InstallScript engine includes the colon (:) with the drive letter.

Note ▪ *If you intend to reference the root folder of the drive specified by this variable, you must append a backslash to it (specified as two backslashes). For example, if the value of WINDISK is C:, the following statement refers to the root folder of that drive: WINDISK + "\\".*

Project ▪ *During setup initialization in InstallScript installations, the value of the WINDIR variable is obtained by calling the Windows API function* **SHGetSpecialFolderPath** *with the CSIDL_WINDOWS parameter.*

In Basic MSI and InstallScript MSI installations, the value of the WINDIR variable is obtained by calling the InstallScript function **GetDisk** *with WINDIR; if that fails, this variable is initialized based on the Windows Installer*

property `WindowsVolume`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding WINDIR variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

WINSYSDIR

The WINSYSDIR system variable contains the name of the System32 folder. This folder is used to store application extensions (DLLs), device drivers, and other Windows system files, depending on the version of Windows.

On 64-bit Windows systems, this variable points to the folder that stores Windows system files that are used by 32-bit applications. This folder is named SysWOW64. There is a different Windows system folder for system files to be used by 64-bit applications; the system variable WINSYSDIR64 provides access to this folder.

Project *▪ During setup initialization in InstallScript installations on 32-bit systems, the value of the WINSYSDIR variable is obtained by calling the Windows API* **GetSystemFolder***. During setup initialization in InstallScript installations on 64-bit systems, the value of the WINSYSDIR variable is obtained by calling the Windows API* **GetSystemWow64Directory** *from a 64-bit executable file.*

In Basic MSI and InstallScript MSI installations on 32-bit systems, the value of the WINSYSDIR variable is initialized based on the Windows Installer property `SystemFolder`*. On 64-bit systems, the value is initialized based on the Windows Installer property* `System64Folder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding WINSYSDIR variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

WINSYSDIR64

The WINSYSDIR64 system variable contains the name of the 64-bit System32 folder. This folder is used to store application extensions (DLLs), device drivers, and other Windows system files, depending on the version of Windows.

Although the WINSYSDIR64 variable is set to the 64-bit System32 folder, 64-bit Windows includes functionality to automatically redirect 32-bit applications (such as the InstallScript engine) to the 32-bit SysWOW64 folder. Therefore, if you are using InstallScript code to read or write to WINSYSDIR64, you may need to first disable file system redirection using the constant WOW64FSREDIRECTION with the functions Disable and Enable. Otherwise, reading from and writing to WINSYSDIR64 are incorrectly redirected to the 32-bit SysWOW64 folder. Since some Windows functionality that could be used by the installation requires that redirection be enabled to work, Windows documentation recommends that you disable redirection only for as long as necessary. It is recommended that you then enable file system redirection as soon as you have completed reading from or writing to WINSYSDIR64.

The example code below shows how to disable and enable redirection before and after transferring a file to the WINSYSDIR64 through script:

```
Disable (WOW64FSREDIRECTION);
XCopyFile (SUPPORTDIR ^ "MyFile.dll", WINSYSDIR64, COMP_NORMAL);
Enable (WOW64FSREDIRECTION);
```

Project ▪ *InstallScript projects have support for installing files to the 64-bit System32 folder without requiring any script modifications with WOW64FSREDIRECTION. If you have files that need to be installed to this location, you can add the files and registry data to a component, and select Yes for that component's 64-Bit Component setting. At run time, the installation automatically disables file system redirection for the System32 files. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.*

During setup initialization in InstallScript installations on 64-bit systems, the value of the WINSYSDIR64 variable is obtained by calling the Windows API **GetSystemFolder** *from a 64-bit executable file.*

In Basic MSI and InstallScript MSI installations on 64-bit systems, the value of the WINSYSDIR64 variable is initialized based on the Windows Installer property `System64Folder`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding WINSYSDIR variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

WINSYSDISK

The WINSYSDISK system variable contains the name of the disk drive that contains the Windows system folder—usually the C: drive. This folder is used to store application extensions (DLLs), device drivers, and other Windows system files, depending on the version of Windows. Note that the InstallScript engine includes the colon (:) with the drive letter. For information about the Windows system folder, see the documentation for the InstallScript system variable WINSYSDIR.

Note ▪ *If you intend to reference the root folder of the drive specified by this variable, you must append a backslash to it (specified as two backslashes). For example, if the value of WINSYSDISK is C:, the following statement refers to the root folder of that drive: WINSYSDISK + "\\".*

Project ▪ *During setup initialization in InstallScript installations, the value of the WINSYSDIR variable is obtained by calling the Windows API* **GetSystemFolder***.*

In Basic MSI and InstallScript MSI installations, the value of the WINSYSDIR variable is obtained by calling the InstallScript function **GetDisk** *with WINSYSDIR; if that fails, this variable is initialized based on the Windows Installer property* `WindowsVolume`*. Note that deferred, commit, and rollback custom actions do not have access to this property. Therefore, the corresponding WINSYSDIR variable is empty in deferred, commit, and rollback custom actions. To learn more, see Accessing or Setting Windows Installer Properties Through Deferred, Commit, and Rollback Custom Actions.*

Preprocessor Directives

Preprocessor directives are instructions to the InstallScript compiler that are executed as the script is compiled. Preprocessor directives can instruct the compiler to include other source files in the compilation, to define constants, to include or exclude statements based on compile-time conditions, and to display a user-defined error message. Although InstallScript directives are similar to directives in the C language, they are not exactly alike.

Preprocessor directives begin with a pound sign (#) and can be inserted anywhere in a script. Each directive must appear on a line by itself and must *not* be terminated with a semicolon.

Using Preprocessor Directives

Use the following guidelines when using preprocessor directives in your script. A preprocessor directive meets the following conditions:

- It does not end with a semicolon.
- It cannot line wrap.
- It must be less than 250 characters in length.

Note ▪ *The expressions used in conditional directives can include constants that have been defined with the #define directive. They cannot include variables.*

Using Boolean Operators with Preprocessor Directives

The following Boolean operators are supported in #if, #ifdef, #ifndef, and #elif statements:

- Logical OR (||)
- Logical AND (&&)
- Relational (=, !=, >, >=, <, <=)

InstallScript-Supported Preprocessor Directives

InstallScript supports the following preprocessor directives:

Table 1 ▪ Preprocessor Directives

Preprocessor Directive	Description
#define	Creates a symbolic constant.
#elif	Combines #else and #if into one statement.
#else	Indicates alternatives if the test fails.
#endif	Ends a preprocessor conditional directive (#if, #ifdef, #ifndef).
#error	Displays a user-defined error message.

Table 1 ▪ Preprocessor Directives

Preprocessor Directive	Description
#if	Compiles if the conditional statement is true.
#ifdef	Compiles if a numeric constant is defined.
#ifndef	Compiles if a numeric constant is not defined.
#include	Includes the contents of another file.
#undef	Undefines a constant that was defined previously with #define.
#warning	Display a compiler warning and a user-defined error message.

#define

Use #define to define a number or string constant. When you define a constant and assign it a value, InstallShield replaces the constant with that value wherever it appears. For example, the following #define statement sets the value of MAX_SIZE to 145:

```
#define  MAX_SIZE       145
```

The following example declares a string constant with the #define directive:

```
#define  STR_MESSAGE    "This is a message."
```

Once you have defined STR_MESSAGE, you can use it anywhere in the script. A string message you want displayed in SprintfBox or MessageBox cannot be longer than 255 characters. If you want to display more than 255 characters, split your string into two or more parts before displaying it. The 255-character limit includes spaces, escape sequences, and other special characters.

Note ▪ *Another way to define constants is in the Preprocessor Defines field on the Compile tab of the Setup Settings dialog box. If you add or change a preprocessor define in the Setup Settings dialog box, you must recompile your setup before the changes will take effect.*

Restrictions

There are a few restrictions regarding the #define directive:

- InstallShield supports the use of #define to define only macros that involve the simple lexical substitution of a number or a string. You cannot define macros with expressions using multiple terms or operators.
- Constants you declare with a #define statement cannot begin with numbers.
- Many InstallShield functions use predefined constants. If you try to define one of the predefined constants, the InstallShield Script Compiler generates an error message.
- InstallShield assigns a value of zero (0) to an undefined constant.

#elif

The #elif compile-time statement is similar in function to the elseif run-time statement. It combines the #if and #else statements, allowing you to specify another condition. For example:

```
#if (A = 1)
    // compile if A equals 1
    . . .
#elif (A = 2)
    // compile if A equals 2
    . . .
#elif (B = 3)
    // compile if B equals 3
    . . .
#else
    // if none of the #elif conditions are true, compile
    // the following portion
    . . .
#endif
```

Note ▪ *When using #elif, end the section with only one #endif.*

#error

Use the #error directive to abort compilation and display a user-defined error message. The message to display must be entered immediately after #error and be separated from the directive by at least one space.

In the example below, the constant PRODUCTID must equal 1 or 2. If the value of PRODUCTID is not within that range, the constant PRODUCTNAME is not defined and a user-defined error message is displayed.

```
#define PRODUCTID 1

#if (PRODUCTID = 1)
   #define PRODUCTNAME "Lite"
#elif (PRODUCTID = 2)
   #define PRODUCTNAME "Professional"
#endif

#ifndef PRODUCTNAME
   #error PRODUCTID out of range.
#endif
```

#if. . .#else. . .#endif

Use the #if statement to select which lines to compile. You can switch various sections of the installation on and off, making the script more flexible. The #if statement works in the same manner as the run-time if statement:

```
#if (A = 1)
    // compile if A equals 1
    . . .
#else
    // compile
```

```
    . . .
#endif
```

Keep in mind the following restrictions when using #if:

- Note that the format of the #if statement is also identical to that of the run-time if statement; you must end the #if statement with the keyword #endif.
- You can test only numeric constants with an #if or #elif statement.
- InstallScript allows nesting of #if statements up to a maximum of 10 levels.

#ifdef and #ifndef

Use the #ifdef statement when you want to compile a section only if a specified expression has been defined with #define. Use #ifndef when you want to compile a section only if a specified expression has not been defined.

Example

```
#ifdef A
    // Compile if A is defined.
    . . .
#endif

#ifndef A
    // Skip if A is defined; otherwise compile.
    . . .
#endif

#ifdef A    // Compile if A is defined.    . . .#endif#ifndef A    // Skip if A is defined; otherwise
compile.    . . .#endif
```

You can also use #ifdef and #ifndef with #else and #elif:

```
#ifdef nFilePath
    //statements
#else
    //statements
#endif
```

Note ▪ *Preprocessor defines can be entered in the Project Settings dialog box's Compile/Link tab's Preprocessor Defines edit box. If you add or change a preprocessor definition in the Project Settings dialog box, you must recompile your setup for the changes to take effect.*

Restrictions

Keep in mind the following restrictions when using #ifdef and #ifndef statements:

- You cannot place comments on the same line as #ifdef and #ifndef directives.
- Do not test a constant that has a value of 0 (zero) with an #ifdef or #ifndef statement.
- You can test only numeric constants with an #ifdef or #ifndef statement.

#include

Use the #include statement to include the contents of another script in the main installation script. When you use #include, the compiler treats the additional source script as if it were part of the main installation script. Additional scripts, or include files, may contain variable declarations, other compiler directives, and program statements.

For example, you can create a separate file that contains all the user-defined constant definitions and then insert it into the script file using the #include statement. If you need to redefine any of the constants at a later date, they are all in one central location.

When you compile from the InstallShield interface, InstallShield searches for include script files in the following order:

1. The project's script file directory
2. The directories that are specified in the Include Paths setting on the Compile/Link tab of the Settings dialog box
3. The InstallShield include directory

If two include files share the same name but they are stored in different locations, InstallShield links to the one that it finds first, according to the aforementioned order. In addition, if an include file is specified by a relative path, InstallShield searches for the path relative to the aforementioned directories, in order.

If the include file is not in any of these locations, specify a fully qualified file name in the #include statement. When using the #include statement, specify a file name or path by enclosing the file name or path in double quotation marks ("filename").

Note the following details when you are using #include directives in your script:

- InstallShield does not handle paths with more than 260 characters, including the file name.
- InstallScript allows nesting of include files up to a maximum of eight levels.
- The InstallShield preprocessor does not interpret a backslash character in an #include directive as a control character; when specifying a path, use a single backslash instead of double backslashes to separate folder names.
- Do not include C language header files in the script. The InstallShield compiler does not recognize some of C's constructs. Create header files using InstallScript only.

The following example shows a section of an installation script that uses the #include statement to include the contents of `Support.rul` and other files. Each of the source scripts referenced by the #include statements has been written for a specific purpose and is then added to the script when the script is compiled:

```
//The following include file contains installation-specific routines.
#include  "SUPPORT.RUL"

// Local include file containing variable and prototype declarations.
#include  "DECLARE.RUL"


// Include scripts from the LIBRARY directory
#include  "..\LIBRARY\SYSCHK.H"

// Include scripts from the DIALOGS directory.
```

```
#include  "..\DIALOGS\WELCOME\WELCOME.H"
#include  "..\DIALOGS\REGINS\REGINS.H"
#include  "..\DIALOGS\ICONS\ICONS.H"
```

#undef

Use the #undef directive to undefine a constant that was previously defined with #define. If you specify a constant with this directive that was not previously defined with the #define directive, an error will occur when you attempt to compile your script. In the following example, two constants are defined; then, the first constant is undefined if the second has been defined:

```
#define NORMSETUP
#define BONUSPAK

. . .

#ifdef NORMSETUP
    MessageBox('Compiling for normal setup .',INFORMATION);
#else
    MessageBox('Compiling for super setup.',INFORMATION);
#endif

#ifdef BONUSPAK
    #undef NORMSETUP
#endif

#ifdef NORMSETUP
    MessageBox('Compiling for normal setup .',INFORMATION);
#else
    MessageBox('Compiling for super setup.',INFORMATION);
#endif
```

#warning

Use the #warning directive to display a compiler warning and a user-defined error message. The message to be displayed must be entered immediately after #warning and be separated from the directive by at least one space.

In the example below, the constant PRODUCTID must equal 1 or 2. If the value of PRODUCTID is not within that range, the constant PRODUCTNAME is not defined and a user-defined warning message is displayed.

```
#define PRODUCTID 1
#if (PRODUCTID = 1)
    #define PRODUCTNAME "Lite"
#elif (PRODUCTID = 2)
    #define PRODUCTNAME "Professional"
#endif
#ifndef PRODUCTNAME
    #warning PRODUCTID out of range.
#endif
```

Event Handlers

Project ▪ *InstallScript event handlers are available in the following project types:*

- *InstallScript*
- *InstallScript MSI*

Some exceptions exist for an InstallScript package that is included in an Advanced UI or Suite/Advanced UI installation. These are described below.

About Event Handlers

InstallScript installations are driven by the InstallScript engine, which generates a series of events in a specific order. These events trigger software handlers that execute installation instructions. For example, shortly after an installation is loaded, it generates an event called Begin, which triggers the execution of an event handler called OnBegin. This handler specifies the instructions to carry out when the Begin event occurs. Other events occur in the installation to trigger other handlers. Together, the event handlers perform the work of installing the application.

A portion of an InstallScript MSI installation is driven by the InstallScript engine, and a portion is driven by the Windows Installer engine. The portion that is driven by the InstallScript engine uses a series of event handlers, similar to InstallScript installations.

Several types of event handlers are available:

- Global Event Handlers
- Feature Event Handlers
- Miscellaneous Event Handlers
- Advanced Event Handlers

When you create an InstallScript or InstallScript MSI project, InstallShield generates a set of default global event handlers, each of which is a function that is written in the InstallScript language. Likewise, when you add features to your project, InstallShield generates a set of default event handlers for that feature. You can override or customize any or all of the event handlers.

It is important to note that, in an event-driven script, event-handler functions are called even if they do not explicitly appear in the InstallScript view.

Order of Event Handlers

Global and feature event handlers are always called in a specific order; which event handlers are called depends on the type of installation (normal installation, maintenance installation, administrative installation, or patch installation). Because miscellaneous event handlers respond to events that may not happen during installation, they are not necessarily called in a specific order, if they are called at all.

Project ▪ *When an InstallScript MSI major upgrade is uninstalling an earlier version of a product, none of the InstallScript event handlers are called.*

First-Time Installations

- OnBegin
- OnCCPSearch
- OnAppSearch
- OnFirstUIBefore
- OnGeneratingMSIScript (InstallScript MSI only)
- OnMoving
- feature Installing events
- OnInstallFilesActionBefore
- OnGeneratedMSIScript (InstallScript MSI only)
- OnInstallFilesActionAfter
- feature Installed events
- OnMoved
- OnFirstUIAfter
- OnEnd

Resumed Installations

- OnResumeUIAfter (InstallScript MSI only)
- OnResumeUIBefore (InstallScript MSI only)

Maintenance Installations

- OnBegin
- OnMaintUIBefore
- OnGeneratingMSIScript (InstallScript MSI only)
- OnMoving
- feature Installing or Uninstalling events
- OnInstallFilesActionBefore
- OnInstallFilesActionAfter
- feature Installed or Uninstalled events
- OnMoved
- OnGeneratedMSIScript (InstallScript MSI only)
- OnMaintUIAfter
- OnEnd

Patch Installations

- OnPatchUIBefore (InstallScript MSI only)
- OnGeneratingMSIScript (InstallScript MSI only)
- OnMoving
- feature Installing or Uninstalling events
- OnInstallFilesActionBefore
- OnInstallFilesActionAfter
- feature Installed or Uninstalled events
- OnMoved
- OnGeneratedMSIScript (InstallScript MSI only)
- OnPatchUIAfter (InstallScript MSI only)

Exceptions for an InstallScript Package That Is Included in an Advanced UI or Suite/Advanced UI Installation

If you include an InstallScript installation as an InstallScript package in an Advanced UI or Suite/Advanced UI project, the Advanced UI or Suite/Advanced UI installation displays its own user interface (UI) while automatically suppressing the UI of the InstallScript package. To make these changes possible, the Advanced UI or Suite/Advanced UI installation uses several Advanced UI– or Suite/Advanced UI–specific InstallScript events and functions by default, and ignores some of the standard InstallScript events and functions. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.

Thus, depending on the installation state (first-time installation, maintenance, or update), OnSuiteShowUI ignores the UI events such as OnFirstUIBefore and OnFirstUIAfter and instead calls the following events:

- **First-time installation**—OnSuiteInstallBefore, OnSuiteInstallAfter
- **Maintenance**—OnSuiteMaintBefore, OnSuiteMaintAfter
- **Update**—OnSuiteUpdateBefore, OnSuiteUpdateAfter

All other events and event call sequencing in an InstallScript package that is launched from an Advanced UI or Suite/Advanced UI installation remain the same as in an InstallScript installation that is launched separately from an Advanced UI or Suite/Advanced UI installation, or that is launched as an executable package from an Advanced UI or Suite/Advanced UI installation.

Event Handler Index

Event handlers are InstallScript functions that are called in response to events that occur during setup. The names of these handlers are reserved. (It is not necessary to prototype these functions in your script.)

Project ▪ *Some of the following event handlers only apply to InstallScript or InstallScript MSI projects. Some apply to both types. Refer to the Project Type column to determine which projects are supported.*

Table 1 ▪ Event Handlers Index

Event Handler	Project Type
OnAbort	InstallScript, InstallScript MSI
OnAdminInstallUIAfter	InstallScript MSI
OnAdminInstallUIBefore	InstallScript MSI
OnAdminPatchUIAfter	InstallScript MSI
OnAdminPatchUIBefore	InstallScript MSI
OnAdvertisementAfter	InstallScript MSI
OnAdvertisementBefore	InstallScript MSI
OnAppSearch	InstallScript, InstallScript MSI
OnBegin	InstallScript, InstallScript MSI
OnCanceling	InstallScript, InstallScript MSI
OnCCPSearch	InstallScript, InstallScript MSI
OnCheckMediaPassword	InstallScript
OnComponentError	InstallScript, InstallScript MSI
OnCustomizeUninstInfo	InstallScript
OnDIFxLogCallback	InstallScript
OnEnd	InstallScript, InstallScript MSI
OnError	InstallScript MSI
OnException	InstallScript MSI
OnFileError	InstallScript
OnFileLocked	InstallScript
OnFileReadOnly	InstallScript

Table 1 ▪ Event Handlers Index (cont.)

Event Handler	Project Type
OnFilesInUse	InstallScript MSI
OnFilterComponents	InstallScript, InstallScript MSI
OnFirstUIAfter	InstallScript, InstallScript MSI
OnFirstUIBefore	InstallScript, InstallScript MSI
OnGeneratedMSIScript	InstallScript MSI
OnGeneratingMSIScript	InstallScript MSI
OnHelp	InstallScript, InstallScript MSI
OnIISComponentInstalled	InstallScript, InstallScript MSI
OnIISInitialize	InstallScript, InstallScript MSI
OnIISUninitialize	InstallScript, InstallScript MSI
OnIISVRootUninstalling	InstallScript, InstallScript MSI
OnInstalled	InstallScript, InstallScript MSI
OnInstalledFile	InstallScript
OnInstalledFontFile	InstallScript
OnInstallFilesActionAfter	InstallScript, InstallScript MSI
OnInstallFilesActionBefore	InstallScript, InstallScript MSI
OnInstalling	InstallScript, InstallScript MSI
OnInstallingFile	InstallScript
OnInternetError	InstallScript
OnLaunchAppAndWaitCallback	InstallScript, InstallScript MSI
OnLogonUserSetMsiProperties	InstallScript MSI
OnMaintUIAfter	InstallScript, InstallScript MSI
OnMaintUIBefore	InstallScript, InstallScript MSI
OnMD5Error	InstallScript

Table 1 ▪ Event Handlers Index (cont.)

Event Handler	Project Type
OnMoved	InstallScript, InstallScript MSI
OnMoveData	InstallScript
OnMoving	InstallScript, InstallScript MSI
OnMsiSilentInstall	InstallScript MSI
OnNetApiCreateUserAccount	InstallScript, InstallScript MSI
OnNextDisk	InstallScript
OnOutOfDiskSpace	InstallScript MSI
OnPatchUIAfter	InstallScript MSI
OnPatchUIBefore	InstallScript MSI
OnRebooted	InstallScript InstallScript MSI—if the InstallScript user interface (UI) style is the traditional style (which uses the InstallScript engine as an external UI handler)
OnRemovingSharedFile	InstallScript
OnResumeUIAfter	InstallScript MSI
OnResumeUIBefore	InstallScript MSI
OnRMFilesInUse	InstallScript MSI
OnSelfRegistrationError	InstallScript
OnSetTARGETDIR	InstallScript
OnSetUpdateMode	InstallScript
OnShowUI	InstallScript
OnSuiteInstallAfter	InstallScript
OnSuiteInstallBefore	InstallScript
OnSuiteMaintAfter	InstallScript
OnSuiteMaintBefore	InstallScript

Table 1 ▪ Event Handlers Index (cont.)

Event Handler	Project Type
OnSuiteUpdateAfter	InstallScript
OnSuiteUpdateBefore	InstallScript
OnSuiteShowUI	InstallScript
OnSQLBatchScripts	InstallScript
OnSQLComponentInstalled	InstallScript
OnSQLComponentUninstalled	InstallScript
OnSQLLogin	InstallScript
OnSQLServerInitialize	InstallScript
OnSQLServerInitializeMaint	InstallScript
OnUninstall	InstallScript, InstallScript MSI
OnUnInstalled	InstallScript, InstallScript MSI
OnUninstalledFile	InstallScript
OnUnInstalling	InstallScript, InstallScript MSI
OnUninstallingDIFxDriverFile	InstallScript
OnUninstallingFile	InstallScript
OnUninstallingFontFile	InstallScript
OnUpdateUIAfter	InstallScript
OnUpdateUIBefore	InstallScript
OnWarning	InstallScript MSI
OnXMLComponentInstalled	InstallScript
OnXMLComponentUninstalling	InstallScript
OnXMLInitialize	InstallScript
OnXMLUninitialize	InstallScript

Component Event Handlers

Windows Installer installations use features—not components—as the highest level of organization in your project. Therefore, component event handlers have been replaced with feature event handlers. In addition, all supported component functions now have feature equivalents that should be used. For more information, see Feature Functions and Feature Event Handlers.

Global Event Handlers

Global event handlers carry out processes required before and after feature installation and uninstallation. They include event handlers in the following categories:

Table 2 ▪ Global Event Handlers Categories

Category	Description
Initialization Handlers	Event handlers that are called directly by the installation engine.
Before Move Data Handlers	Event handlers that are triggered before features are installed or uninstalled on the target computer.
Move Data Handlers	Event handlers that are triggered immediately before and immediately after features are installed or uninstalled on the target computer.
After Data Move Handlers	Event handlers that are triggered after features are installed or uninstalled on the target computer.

Initialization Handlers

The following event handlers are called directly by the installation engine in InstallScript projects:

Table 3 ▪ Initialization Handlers

Event Handler	Project Type	Description
OnCheckMediaPassword	InstallScript	Called directly by the framework during initiation to query the end user for the installation media's password if the password is not already in the installation log file (as it is if the installation is running as a maintenance installation or uninstallation) and you selected the "Show Password dialog box during setup initialization" check box in the Release Wizard's Password panel or set the Show Password Dialog property to Yes in the Releases view.
OnFilterComponents	InstallScript, InstallScript MSI	Called directly by the framework to filter out components in each feature by language and platform. Override this event to perform custom filtering.

Table 3 ▪ Initialization Handlers

Event Handler	Project Type	Description
OnIISCheckRequirements	InstallScript	This event handler is obsolete.
OnSetTARGETDIR	InstallScript	Called directly by the framework during initialization to initialize TARGETDIR to its default value.
OnSetUpdateMode	InstallScript	Called directly by the framework during initialization to set the UPDATEMODE system variable appropriately to control which UI events are called by OnShowUI.

OnCheckMediaPassword

Project ▪ *This information applies to InstallScript projects.*

The OnCheckMediaPassword event handler function is called directly by the setup engine. The handler's default code queries the end user for the setup's password if the password is not already in the setup log file (as it is if the setup is running as a maintenance setup or uninstallation) and you checked the "Show Password dialog box during setup initialization" check box in the Release Wizard's Password panel or set Show Password Dialog to Yes in the Release property sheet.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnCheckMediaPassword ( );
```

Parameters

None.

Return Values

None.

OnFilterComponents

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnFilterComponents event handler is called directly by the InstallScript engine to handle feature filtering—that is, the including and excluding of features' components in the file transfer based on their Language and Operating System settings.

Syntax

```
OnFilterComponents ( );
```

Parameters

None.

Return Values

None.

Additional Information

By default, OnFilterComponents calls FeatureFilterLanguage to exclude all components with languages other than the one specified by the SELECTED_LANGUAGE system variable, and calls FeatureFilterOS to exclude all components with operating systems other than the one specified by the SYSINFO variable's nISOSL member.

This event handler is not called in an installation that uses a procedural script (a script with a program...endprogram block).

OnSetTARGETDIR

Project ▪ *This information applies to InstallScript projects.*

The OnSetTARGETDIR event handler function is called directly by the setup engine to set the value of the system variable TARGETDIR.

This event handler is called in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnSetTARGETDIR ( );
```

Parameters

None.

Return Values

None.

Additional Information

- By default, in a first installation OnSetTARGETDIR sets TARGETDIR to the value that you specified in the TARGETDIR setting in the General Information view, or—if you did not specify a value in InstallShield—to <FOLDER_APPLICATIONS>\<IFX_COMPANY_NAME>\<IFX_PRODUCT_NAME>. <FOLDER_APPLICATIONS>, <IFX_COMPANY_NAME>, and <IFX_PRODUCT_NAME> are texts substitutions whose values are resolved when TARGETDIR is referenced; that is, if you change the value of the system variable IFX_COMPANY_NAME

or IFX_PRODUCT_NAME after OnSetTARGETDIR has been called, that change is reflected in subsequent references to TARGETDIR.

- A maintenance installation or uninstallation initializes TARGETDIR to the value that is stored in the log file, and by default OnSetTARGETDIR does not modify the value of TARGETDIR.

OnSetUpdateMode

Project ▪ *This information applies to InstallScript projects.*

The OnSetUpdateMode event handler function is called directly by the setup engine to determine whether the setup is an update to an existing installation and set the value of the system variable UPDATEMODE accordingly.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnSetUpdateMode ( );
```

Parameters

None.

Return Values

None.

Before Move Data Handlers

The following event handlers are triggered before files are transferred to the target computer. Most of these events are also triggered during a maintenance setup.

Table 4 ▪ Before Move Data Handlers

Event Handler	Project Type	Description
OnBegin	InstallScript InstallScript MSI	In InstallScript projects: Called directly by the framework after Initialization events. In InstallScript MSI projects: Responds to the Begin event, the first redefinable event in a setup.
OnAppSearch	InstallScript InstallScript MSI	In InstallScript projects: Called directly by the framework after OnBegin. In InstallScript MSI projects: Responds to the Application Search event. Code this handler in installations that must search for a specific application on the target computer.

Table 4 ▪ Before Move Data Handlers

Event Handler	Project Type	Description
OnCCPSearch	InstallScript InstallScript MSI	In InstallScript projects: Called directly by the framework after AppSearch. In InstallScript MSI projects: Responds to the Upgrade Compliance event. Code this handler in installations that must search for an application whose presence qualifies the end user to install your application.
OnFirstUIBefore	InstallScript InstallScript MSI	 ***Note ▪*** *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.* In InstallScript projects: Called by the framework when the setup is running in first install mode. By default, this event displays UI allowing the end user to specify installation parameters. In InstallScript MSI projects: Responds to the First UI Before event by displaying dialogs that gather information from the end user for the first installation of an application.
OnMaintUIBefore	InstallScript InstallScript MSI	 ***Note ▪*** *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.* In InstallScript projects: Called by OnShowUI when the installation is running in maintenance mode. OnShowUI can be customized to control whether this event is called. In InstallScript MSI projects: Responds to the MaintenanceUIBefore event by displaying dialogs that gather information from the end user for a maintenance installation of an application.

Table 4 ▪ Before Move Data Handlers

Event Handler	Project Type	Description
OnUpdateUIBefore	InstallScript	 ***Note ▪*** *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.* Called by OnShowUI when the setup is running in update mode. By default this event displays UI that allows the end user to update the application to the current version.
OnSuiteInstallBefore	InstallScript	The OnSuiteShowUI event calls the OnSuiteInstallBefore event. By default, OnSuiteInstallBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnSuiteMaintBefore	InstallScript	The OnSuiteShowUI event calls the OnSuiteMaintBefore event. By default, OnSuiteMaintBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnSuiteUpdateBefore	InstallScript	The OnSuiteShowUI event calls the OnSuiteUpdateBefore event. By default, OnSuiteUpdateBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnSQLLogin	InstallScript MSI	In InstallScript MSI projects: Responds to the First UI Before event. This event handler function creates a dialog which is used by the script to specify SQL login credentials. These credentials include the login ID and password.

Table 4 ▪ Before Move Data Handlers

Event Handler	Project Type	Description
OnSQLServerInitialize	InstallScript	Called by OnFirstUIBefore to establish any connections necessary for SQL Server support. This function will initialize the SQL Server runtime and attempt to make any necessary SQL Server connections displaying a login dialog for each one.
OnSQLServerInitializeMaint	InstallScript	Called by OnMaintUIBefore to establish any connections necessary for SQL Server support.
OnIISInitialize	InstallScript	The OnIISInitialize event is called by OnFirstUIBefore to initialize the IIS run time.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnXMLInitialize	InstallScript	The OnXMLInitialize event is called by OnFirstUIBefore to initialize the XML runtime.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*

OnAppSearch

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnAppSearch event handler responds to the Application Search event. Code this handler in setups that must search for a specific application on the target computer. Your code might, for example, call FindFile to locate a key file, or RegDBKeyExist to search for a registry entry.

The following OnAppSearch function aborts the installation if a file called Notepad.exe is not available in the user's Windows or WinNT folder, or in a subdirectory of it.

```
function OnAppSearch( )
    NUMBER nResult;
    STRING svIgnore;
begin
    nResult =
        FindAllFiles(WindowsFolder, "Notepad.exe",
                     svIgnore, RESET);

    if (nResult < 0) then
```

```
        MessageBox("Unable to find a qualifying program. " +
                   "Setup will now exit.", SEVERE);
        abort;
    endif;
end;
```

Note ▪ *This event handler is not executed during a maintenance setup or uninstallation.*

OnBegin

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnBegin event handler responds to the Begin event, the first redefinable event in a setup. Code that must be executed before anything else in the script should be included in this handler. For example, you can verify that the user's machine meets your product's system requirements here.

OnBegin is prototyped for you when you include iswi.h or ifx.h in your script. Define OnBegin in your script as in the following example:

```
#include "iswi.h"

function OnBegin( )
    // local variables
begin
    // beginning code
end;
```

For example, an OnBegin function that verifies a particular registry key exists before continuing the installation might appear as follows:

```
// abort installation if HKLM\Software\InstallShield does not exist
function OnBegin( )
    NUMBER nReturn;
begin

// set the root key
RegDBSetDefaultRoot(HKEY_LOCAL_MACHINE);

// check for the existence of the subkey
nReturn = RegDBKeyExist("Software\\InstallShield");

if (nReturn < 0) then
    MessageBox("Your system does not meet the system requirements. " +
               "Setup will now exit.", SEVERE);
    abort;
endif;

end;
```

Code in this event handler is always executed, even during a maintenance setup or uninstallation, unless you place it inside the following if-then structure:

```
if (!MAINTENANCE) then
    // non-maintenance code
endif;
```

The setup sets the system variable MAINTENANCE equal to FALSE the first time the setup is run, and TRUE every time the setup is run thereafter.

OnCCPSearch

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnCCPSearch event handler responds to the Upgrade Compliance event. Code this handler in setups that must search for an application whose presence qualifies the end user to install your application. Your code might, for example, call FindFile to locate a specific file. Note that this event handler is not executed during a maintenance setup or uninstallation.

OnFirstUIBefore

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.

The OnFirstUIBefore event handler responds to the First UI Before event. It performs tasks that must take place before the installation of features for a first-time installation of an application.

Typically, this handler calls InstallScript functions for the following tasks:

- To set up the screen.
- To display dialogs that welcome the end user, display the software license, and show other information about the software to be installed.
- To get information from the end user—including user registration, the destination path (TARGETDIR in InstallScript projects and INSTALLDIR in InstallScript MSI projects), and the setup type.

OnIISInitialize

Project *▪ This information applies to InstallScript projects.*

The OnIISInitialize is called before OnMoving. You can override this for similar purposes as OnIISVRootUninstalling, as well as add code that checks the version of IIS or makes custom IIS modifications before installing the web sites and virtual roots.

OnMaintUIBefore

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.

The OnMaintUIBefore event handler responds to the Maintenance UI Before event. It performs tasks that must take place before the reinstallation of features for a maintenance installation of an application.

OnSQLLogin

Project *▪ This information applies to InstallScript MSI projects.*

The OnSQLLogin event responds to the First UI Before event. This event handler function creates a dialog which is used by the script to specify SQL login credentials. These credentials include the login ID and password.

Note *▪ If you want to call a SQL built-in function before the OnSQLLogin event gets called, you need to first call the SQLRTInitialize2 function. This is applicable to all SQL-related functions. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

OnSQLServerInitialize

Project *▪ This information applies to InstallScript projects.*

The OnSQLServerInitialize event is called by OnFirstUIBefore to establish any connections necessary for SQL Server support. This function will initialize the SQL Server runtime and attempt to make any necessary SQL Server connections, displaying a login dialog for each one. Parameter nBtn indicates whether NEXT or BACK was the result of the previously displayed dialog. It is for information purposes only.

If you are working on a script that had overridden OnFirstUIBefore when you upgraded to a newer version of InstallShield and your script is not calling OnSQLServerInitialize, then you should add the OnFirstUIBefore code to your script file.

Note ▪ *If you want to call a SQL built-in function before the OnSQLServerInitialize event gets called, you need to first call the SQLRTInitialize2 function. This is applicable to all SQL-related functions. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

OnSQLServerInitializeMaint

Project ▪ *This information applies to InstallScript projects.*

The OnSQLServerInitializeMaint event is called by OnMaintUIBefore to establish any connections necessary for SQL Server support. This function will initialize the SQL Server runtime and attempt to make any necessary SQL Server connections using login credentials stored in the log file.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnSuiteInstallBefore

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteInstallBefore event. By default, OnSuiteInstallBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnSuiteMaintBefore

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteMaintBefore event. By default, OnSuiteMaintBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnSuiteUpdateBefore

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteUpdateBefore event. By default, OnSuiteUpdateBefore is called to initialize information, such as the selection of features, that is necessary to perform file transfer.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnUpdateUIBefore

Project ▪ *This information applies to InstallScript projects.*

If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.

The OnUpdateUIBefore event handler function is called by the OnShowUI event handler to display the pre-file-transfer user interface for an update setup.

This event handler is not called in a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnUpdateUIBefore ( );
```

Parameters

None.

Return Values

None.

OnXMLInitialize

Project ▪ *This information applies to InstallScript projects.*

The OnXMLInitialize event is called by OnFirstUIBefore to initialize the XML run time.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

Move Data Handlers

The following event handlers are triggered immediately before, during, or immediately after the installation or uninstallation of all features on the target computer:

Table 5 ▪ Move Data Handlers

Event Handler	Project Type	Description
OnMoveData	InstallScript	Called by OnShowUI to transfer files. The event handler's default code calls FeatureTransferData to transfer the files.
OnCustomizeUninstInfo	InstallScript	Called by OnMoveData to customize the uninstall information after calling MaintenanceStart.
OnMoving	InstallScript InstallScript MSI	In InstallScript projects: Called as a result of the installation calling FeatureTransferData or Feature MoveData. The event is called before any file transfer operations occur. In InstallScript MSI projects: Called just before the action GenerateMSIScript is executed.
OnMoved	InstallScript InstallScript MSI	In InstallScript projects: Called directly by the framework after FeatureTransferData is called in the script and after data transfer. In InstallScript MSI projects: Responds to the Moved event that is generated just after all features are installed or uninstalled on the target computer.
OnInstallingFile	InstallScript	Called when a file is about to be installed as a result of FeatureTransferData or FeatureMoveData.
OnUninstallingFile	InstallScript	Called when a file is about to be uninstalled as a result of FeatureTransferData or FeatureMoveData.
OnUninstallingFontFile	InstallScript	Called when a font file logged by RegisterFontResource is uninstalled.
OnUninstallingDIFxDriverFile	InstallScript	Called when a driver installed or preinstalled by the DIFxDriverPackageInstall or DIFxDriverPackagePreinstall functions is uninstalled with uninstall logging enabled.
OnInstalledFile	InstallScript	Called after a file is installed as a result of FeatureTransferData or FeatureMoveData.
OnInstalledFontFile	InstallScript	Called after a file is installed that is listed in the media as a font file.
OnUninstalledFile	InstallScript	Called after a file is uninstalled as a result of FeatureTransferData or FeatureMoveData.

Table 5 ▪ Move Data Handlers (cont.)

Event Handler	Project Type	Description
OnSQLComponentInstalled	InstallScript	Called after each component is installed so any SQL scripts attached to that component can be run. SQLComponentInstalled is called after each component is installed so any SQL scripts attached to that component can be run.
OnSQLComponentUninstalled	InstallScript	Called after each component is uninstalled so any SQL scripts attached to that component can be run. The SQLComponentUninstalled event is called after each component is uninstalled so any SQL scripts attached to that component can be run.
OnSQLBatchScripts	InstallScript	Called automatically by the framework after file transfer.
OnIISComponentInstalled	InstallScript	IISComponentInstalled is called after each component is installed so that any IIS information attached to that component can be installed.
OnIISVRootUninstalling	InstallScript	Called before each IISVRoot is removed.
OnXMLComponentInstalled	InstallScript	ISXMLComponentInstall is called after each component is installed so that any XML information attached to that component can be installed.
OnXMLComponentUninstalling	InstallScript	XMLComponentUninstalling is called before each .xml file is removed.
OnNetApiCreateUserAccount	InstallScript	Called before OnMoving event. This event handler function does nothing unless `NetApiRT.obl` is added before `Isrt.obl` in the list of linked libraries.
OnGeneratedMSIScript	InstallScript MSI	Responds to the MSI standard action LaunchConditions after it is executed.
OnGeneratingMSIScript	InstallScript MSI	Responds to the MSI standard action LaunchConditions before it is executed.
OnInstallFilesActionBefore	InstallScript MSI	Responds to the InstallFiles event handler function before it is called.
OnInstallFilesActionAfter	InstallScript MSI	Responds to the InstallFiles event handler function after it is called.

OnCustomizeUninstInfo

Project ▪ *This information applies to InstallScript projects.*

The OnCustomizeUninstInfo event handler function is called by OnMoveData to customize the uninstall information after calling MaintenanceStart.

Syntax

```
OnCustomizeUninstInfo ( );
```

Parameters

None.

Return Values

None.

OnGeneratedMSIScript

Project ▪ *This information applies to InstallScript MSI projects.*

The OnGeneratedMSIScript event handler is called after the MSI standard action LaunchConditions is executed. This event handler does not contain any code by default; it is included for legacy installations.

OnGeneratingMSIScript

Project ▪ *This information applies to InstallScript MSI projects.*

The OnGeneratingMSIScript event handler responds to the MSI standard action LaunchConditions before it is executed. This event handler does not contain any code by default; it is included for legacy installations.

OnIISComponentInstalled

The OnIISComponentInstalled event handler function is called after each component is installed so any IIS information attached to that component can be installed.

Syntax

```
OnIISComponentInstalled ( szComponent );
```

Parameters

Table 6 ▪ OnIISComponentInstalled Parameters

Parameter	Description
szComponent	This parameter will have the name of the component that has been installed.

Return Values

This event handler function should return ISERR_SUCCESS currently in all cases.

OnIISVRootUninstalling

The OnIISVRootUninstalling event is called before each Virtual Directory is removed. You can check conditions related to IIS in your script, and then call abort() to stop the setup.

OnInstalledFile

***Project ▪** This information applies to InstallScript projects.*

The OnInstalledFile event handler function is called after a file is installed as a result of FeatureTransferData or FeatureMoveData.

Syntax

```
OnInstalledFile ( szFilename );
```

Parameters

Table 7 ▪ OnInstalledFile Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the file that was transferred.

Return Values

None.

OnInstalledFontFile

***Project ▪** This information applies to InstallScript projects.*

The OnInstalledFontFile event handler function is called after a file is installed that is listed in the media as a font file.

Syntax

```
OnInstalledFontFile ( pFontFileInfo );
```

Parameters

Table 8 ▪ OnInstalledFontFile Parameters

Parameter	Description
pFontFileInfo	Pointer to a _FONTFILEINFO structure that gives information about the font file that is being installed.

Return Values

None.

OnInstallFilesActionAfter

The OnInstallFilesActionAfter event handler is called just after the standard Windows Installer action InstallFiles is performed.

OnInstallFilesActionBefore

The OnInstallFilesActionBefore event handler is called just before the standard Windows Installer action InstallFiles is performed.

OnInstallingFile

Project ▪ *This information applies to InstallScript projects.*

The OnInstallingFile event handler function is called when a file is about to be installed as a result of FeatureTransferData or FeatureMoveData.

Code in this event handler is always executed, even during a maintenance setup, unless you place it inside the following if-then structure:

```
if !MAINTENANCE then
     \\ non-maintenance code
 endif;
```

Syntax

```
OnInstallingFile ( szFilename );
```

Parameters

Table 9 ▪ OnInstallingFile Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the file that is about to be transferred.

Return Values

None.

OnMoved

In InstallScript projects, OnMoved is called as a result of the installation calling FeatureTransferData or FeatureMoveData. The event is called when all file transfer operations are completed except for batch self-registration. In InstallScript MSI projects, OnMoved is called just before the action GenerateMSIScript is executed.

Code in this event handler is always executed, even during a maintenance setup or uninstallation, unless you place it inside the following if-then structure:

```
    if (!MAINTENANCE) then
      // non-maintenance code
  endif;
```

OnMoveData

Project ▪ *This information applies to InstallScript projects.*

The OnMoveData event handler function is called by the OnShowUI event handler to handle the file transfer. By default, OnMoveData calls FeatureTransferData to transfer the files.

This event handler is not called in a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnMoveData ( );
```

Parameters

None.

Return Values

None.

OnMoving

In InstallScript projects, OnMoving is called as a result of the installation calling FeatureTransferData or Feature MoveData. The event is called before any file transfer operations occur. In InstallScript MSI projects, OnMoving is called just before the action GenerateMSIScript is executed.

Code in this event handler is always executed, even during a maintenance setup, unless you place it inside the following if-then structure:

```
if !MAINTENANCE then
     \\ non-maintenance code
 endif;
```

OnNetApiCreateUserAccount

The OnNetApiCreateUserAccount event handler function is called before the OnMoving event. This event handler function does nothing unless you add `NetApiRT.obl` before `Isrt.obl` in the list of linked libraries.

Syntax

```
OnNetApiCreateUserAccount()
```

Parameters

None

Return Values

This event handler function should always return ISERR_SUCCESS.

Additional Information

Task ***To add NetApiRT.obl to the list of linked libraries:***

1. On the **Build** menu, click **Settings**. The **Settings** dialog box opens.
2. In the **Libraries (.obl)** box, enter **`NetApiRT.obl`**. Note that it must be listed before `Isrt.obl`.

The path to `NetApiRT.obl` is as follows:

<ISProductFolder>\Script\ISRT\Lib\NetApiRT.obl

OnSQLBatchScripts

The OnSQLBatchScripts event is called automatically by the framework after file transfer.

OnSQLComponentInstalled

Project ▪ *This information applies to InstallScript projects.*

The OnSQLComponentInstalled event is called after each component is installed so any SQL scripts attached to that component can be run. SQLComponentInstalled is called after each component is installed so any SQL scripts attached to that component can be run.

OnSQLComponentUninstalled

Project ▪ *This information applies to InstallScript projects.*

The SQLComponentUninstalled event is called after each component is uninstalled so any SQL scripts attached to that component can be run. The SQLComponentUninstalled event is called after each component is uninstalled so any SQL scripts attached to that component can be run. szComponent will have the name of the component that has been installed.

OnUninstalledFile

Project ▪ *This information applies to InstallScript projects.*

The OnUninstalledFile event handler function is called after a file is uninstalled as a result of FeatureTransferData or FeatureMoveData.

Syntax

```
OnUninstalledFile ( szFilename );
```

Parameters

Table 10 ▪ OnUninstalledFile Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the file that was uninstalled.

Return Values

None.

OnUninstallingFile

Project ▪ *This information applies to InstallScript projects.*

The OnUninstallingFile event handler function is called when a file is about to be uninstalled as a result of FeatureTransferData or FeatureMoveData.

Code in this event handler is always executed, even during a maintenance setup, unless you place it inside the following if-then structure:

```
if !MAINTENANCE then
     \\ non-maintenance code
 endif;
```

Syntax

```
OnUninstallingFile ( szFilename );
```

Parameters

Table 11 ▪ OnUninstallingFile

Parameter	Description
szFilename	Specifies the fully qualified file name of the file that is about to be uninstalled.

Return Values

None.

OnUninstallingDIFxDriverFile

Project ▪ *This information applies to InstallScript projects.*

The OnUninstallingDIFxDriverFile event handler function is called when a driver installed or preinstalled by the DIFxDriverPackageInstall or DIFxDriverPackagePreinstall functions is uninstalled with uninstall logging enabled.

By default, the event uninstalls the driver using the DIFxDriverPackageUninstall function.

Syntax

```
OnUninstallingDIFxDriverFile ( byval string szDriver );
```

Parameters

Table 12 ▪ OnUninstallingDIFxDriverFile

Parameter	Description
szDriver	The complete path and file of the installed driver file.

Return Values

None.

OnUninstallingFontFile

Project ▪ *This information applies to InstallScript projects.*

The OnUninstallingFontFile event handler function is called when a font file logged by RegisterFontResource is uninstalled.

Syntax

```
OnUninstallingFontFile ( pFontFileInfo );
```

Parameters

Table 13 ▪ OnUninstallingFontFile

Parameter	Description
pFontFileInfo	Pointer to a _FONTFILEINFO structure that gives information about the font file that is being uninstalled.

Return Values

None.

OnXMLComponentInstalled

OnXMLComponentInstalled is the event handler function associated with the ISXMLComponentInstall event. The ISXMLComponentInstall event is called after each component is installed so that any XML information attached to that component can be installed.

Syntax

```
OnXMLComponentInstalled ( szComponent );
```

Parameters

Table 14 ▪ OnXMLComponentInstalled

Parameter	Description
szComponent	This parameter will have the name of the component that has been installed.

Return Values

This event handler function should return ISERR_SUCCESS currently in all cases.

OnXMLComponentUninstalling

OnXMLComponentUninstalling is the event handler function associated with the XMLRTComponentUninstall event. The XMLRTComponentUninstall event is called before each .xml file is removed.

Syntax

```
OnXMLComponentUninstalling ( szXmlComponent )
```

Parameters

Table 15 ▪ OnXMLComponentUninstalling

Parameter	Description
szXmlComponent	This parameter will have the name of the component that has been installed.

Return Values

This event handler function should return ISERR_SUCCESS currently in all cases.

After Data Move Handlers

The following event handlers are triggered after files and other data are transferred to the target computer:

Table 16 ▪ After Data Move Handlers

Event Handler	Project Type	Description
OnFirstUIAfter	InstallScript InstallScript MSI	In InstallScript projects: The OnFirstUIAfter event called by OnShowUI after the file transfer of the setup when the setup is running in first install mode. By default this event displays UI that informs the end user that the setup has been completed successfully.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.* In InstallScript MSI projects: Responds to the First UI After event.

Table 16 ▪ After Data Move Handlers (cont.)

Event Handler	Project Type	Description
OnMaintUIAfter	InstallScript InstallScript MSI	In InstallScript projects: The OnMaintUIAfter event called by OnShowUI after the file transfer of the setup when the setup is running in maintenance mode. By default this event displays UI that informs the end user that the maintenance setup has been completed successfully.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.* In InstallScript MSI projects: Responds to the Maintenance UI After event.
OnUpdateUIAfter	InstallScript	The OnUpdateUIAfter event called by OnShowUI after the file transfer of the setup when the setup is running in update mode. By default this event displays UI that informs the end user that the maintenance setup has been completed successfully. This event is not automatically called in a program.
OnEnd	InstallScript InstallScript MSI	In InstallScript projects: The OnEnd event is called at the end of the setup. This event is not called if the setup is aborted. In InstallScript MSI projects: Responds to the End event, the last redefinable event in a setup.
OnSuiteInstallAfter	InstallScript	The OnSuiteShowUI event calls the OnSuiteInstallAfter event after file transfer has completed during an installation.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnSuiteMaintAfter	InstallScript	The OnSuiteShowUI event calls the OnSuiteMaintAfter event after file transfer has completed during maintenance.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*

Table 16 ▪ After Data Move Handlers (cont.)

Event Handler	Project Type	Description
OnSuiteUpdateAfter	InstallScript	The OnSuiteShowUI event calls the OnSuiteUpdateAfter event after file transfer has completed during an upgrade.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnIISUninitialize	InstallScript	The OnIISUninitialize event is called by OnMoveDataAfter to initialize the IIS runtime.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*
OnXMLUninitialize	InstallScript	The OnXMLUninitialize event is called by OnMoveDataAfter to initialize the XML runtime.  ***Note ▪*** *This event is not called automatically in a program...endprogram style installation.*

OnEnd

The OnEnd event handler responds to the End event, the last redefinable event in a setup. You can place any required cleanup code in the OnEnd function.

OnEnd is prototyped for you when you include ifx.h or iswi.h in your script. Define OnEnd in your script as in the following example:

```
#include "iswi.h"

function OnEnd( )
    // local variables
begin
    // cleanup code
end;
```

Code in this event handler is always executed, even during a maintenance setup, unless you place it inside the following if-then structure:

```
  if !MAINTENANCE then
       \\ non-maintenance code
   endif;
```

OnFirstUIAfter

Project ▪ *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

The OnFirstUIAfter event handler responds to the First UI After event. It performs tasks that must take place after the installation of features for a first installation of an application.

OnIISUninitialize

The OnIISUninitialize event is called by OnMoveDataAfter to initialize the IIS runtime. This event will not be called automatically in an endprogram style installation.

OnMaintUIAfter

Project ▪ *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

The OnMaintUIAfter event handler responds to the Maintenance UI After event. It performs tasks that must take place after the reinstallation of features for a maintenance installation of an application.

OnSuiteInstallAfter

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteInstallAfter event after file transfer has completed during an installation.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnSuiteMaintAfter

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteMaintAfter event after file transfer has completed during maintenance.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnSuiteUpdateAfter

Project ▪ *This information applies to InstallScript projects.*

The OnSuiteShowUI event calls the OnSuiteUpdateAfter event after file transfer has completed during an upgrade.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnUpdateUIAfter

Project ▪ *If the InstallScript installation is included in an Advanced UI or Suite/Advanced UI project as an InstallScript package, the Advanced UI or Suite/Advanced UI installation does not call this event handler. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

The OnUpdateUIAfter event handler function is called by the OnShowUI event handler to display the post-file-transfer user interface for an update setup.

This event handler is not called in a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnUpdateUIAfter ( );
```

Parameters

None.

Return Values

None.

OnXMLUninitialize

The OnXMLUninitialize event is called by OnMoveDataAfter to initialize the XML runtime. This event will not be called automatically in an endprogram style installation.

Feature Event Handlers

Feature event handlers carry out processes required just before and just after the installation or uninstallation of a single feature. The number of feature events and handlers depends on the number of features in your project.

To create an event handler function for a feature, select the feature name from the left event-category list, and select the event you want from the right event list. InstallShield creates a second InstallScript file, called `FeatureEvents.rul`, in the InstallScript view.

Note that if you change the default feature event handler code in `FeatureEvents.rul`, you must put the following statement in `Setup.rul` to include your changes in the installation:

```
#include "FeatureEvents.rul"
```

Following is a list of the feature event handlers.

Table 17 ▪ Feature Event Handlers

Event Handler	Project Type	Description
OnInstalled	InstallScript InstallScript MSI	In InstallScript projects: Runs in response to the Installed event that is generated just after the applicable feature is installed on the target system. In InstallScript MSI projects: Runs just after Windows Installer transfers the files to the target system.
OnInstalling	InstallScript InstallScript MSI	In InstallScript projects: Runs in response to the Installing event that is generated just before the feature is installed on the target system. In InstallScript MSI projects: Runs just before Windows Installer transfers the files to the target system.
OnUnInstalled	InstallScript InstallScript MSI	In InstallScript projects: Runs in response to the UnInstalled event that is generated just after the feature is removed from the target system. In InstallScript MSI projects: Runs just after Windows Installer removes the files from the target system.
OnUnInstalling	InstallScript InstallScript MSI	In InstallScript projects: Runs in response to the UnInstalling event that is generated just before the feature is removed from the target system. In InstallScript MSI projects: Runs just before Windows Installer removes the files from the target system.

Project ▪ *Because Windows Installer controls the installation of features in InstallScript MSI installations, the order in which feature event-handler functions are called cannot be specified. In addition, feature events are not launched until all features are copied to the target system.*

Also note that feature-uninstallation event handlers (OnUnInstalling and OnUnInstalled) are not called during rollback.

OnInstalled

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

In InstallScript projects, the OnInstalled feature event handler runs in response to the Installed event that is generated just after the applicable feature is installed on the target system.

In InstallScript MSI projects, the OnInstalled feature event handler runs just after Windows Installer transfers the files to the target system.

The OnInstalled feature event handler is listed in the InstallScript code in the following format:

```
MyFeatureName_Installed()
```

Project *▪ Because Windows Installer controls the installation of features in InstallScript MSI installations, the order in which feature event-handler functions are called cannot be specified. In addition, feature events are not launched until all features are copied to the target system.*

Also note that feature-uninstallation event handlers (OnUnInstalling and OnUnInstalled) are not called during rollback.

OnInstalling

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

In InstallScript projects, the OnInstalling feature event handler runs in response to the Installing event that is generated just before the feature is installed on the target system.

In InstallScript MSI projects, the OnInstalling feature event handler runs just before Windows Installer transfers the files to the target system.

The OnInstalling feature event handler is listed in the InstallScript code in the following format:

```
MyFeatureName_Installing()
```

Project *▪ Because Windows Installer controls the installation of features in InstallScript MSI installations, the order in which feature event-handler functions are called cannot be specified. In addition, feature events are not launched until all features are copied to the target system.*

Also note that feature-uninstallation event handlers (OnUnInstalling and OnUnInstalled) are not called during rollback.

OnUnInstalled

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

In InstallScript projects, the OnUnInstalled feature event handler runs in response to the UnInstalling event that is generated just before the feature is removed from the target system.

In InstallScript MSI projects, the OnUnInstalled feature event handler runs just before Windows Installer removes the files from the target system.

The OnUnInstalled feature event handler is listed in the InstallScript code in the following format:

```
MyFeatureName_UnInstalled()
```

Project *▪ Because Windows Installer controls the installation of features in InstallScript MSI installations, the order in which feature event-handler functions are called cannot be specified. In addition, feature events are not launched until all features are copied to the target system.*

Also note that feature-uninstallation event handlers (OnUnInstalling and OnUnInstalled) are not called during rollback.

OnUnInstalling

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

In InstallScript projects, the OnUnInstalling feature event handler runs in response to the UnInstalling event that is generated just before the feature is removed from the target system.

In InstallScript MSI projects, the OnUnInstalling feature event handler runs just before Windows Installer removes the files from the target system.

The OnUnInstalling feature event handler is listed in the InstallScript code in the following format:

```
MyFeatureName_UnInstalling()
```

Project *▪ Because Windows Installer controls the installation of features in InstallScript MSI installations, the order in which feature event-handler functions are called cannot be specified. In addition, feature events are not launched until all features are copied to the target system.*

Also note that feature-uninstallation event handlers (OnUnInstalling and OnUnInstalled) are not called during rollback.

Miscellaneous Event Handlers

Miscellaneous event handlers are triggered by unscheduled events during an installation, such as the end user exiting the installation.

Table 18 ▪ Miscellaneous Event Handlers

Event Handler	Project Type	Description
OnAbort	InstallScript, InstallScript MSI	In InstallScript projects: The OnAbort event handler is called when a setup is aborted via the abort keyword. In InstallScript MSI projects: Responds to the Abort event generated by InstallScript's abort command.
OnAdminInstallUIAfter	InstallScript MSI	Responds to the Admin Install UI After event.
OnAdminInstallUIBefore	InstallScript MSI	Responds to the Admin Install UI Before event by displaying dialogs that gather information from the end user for an administrative installation of an application.
OnAdminPatchUIAfter	InstallScript MSI	Called after the file transfer of an administrative patch.
OnAdminPatchUIBefore	InstallScript MSI	Called before the file transfer of an administrative patch.
OnAdvertisementAfter	InstallScript MSI	Responds to the Advertisement After event.
OnAdvertisementBefore	InstallScript MSI	Responds to the Advertisement After Before event.
OnCanceling	InstallScript, InstallScript MSI	InstallScript projects: The OnCanceling event is sent when the installation is cancelled, usually as result of the end user clicking the Cancel button of a dialog or pressing the Esc key. Calling Do(EXIT) will also trigger this event. In InstallScript MSI projects: Responds to the Cancel event generated when the end user clicks the Cancel button in a built-in dialog.
OnComponentError	InstallScript, InstallScript MSI	In InstallScript projects: The OnComponentError event is called by the framework when the call to FeatureTransferData or FeatureMoveData returns an error. In InstallScript MSI projects: Responds to general file-transfer errors.
OnDIFxLogCallback	InstallScript	Called when a DIFx-related event occurs that is logged by the built-in DIFx callback functionality.
OnError	InstallScript MSI	This event is called when MSI sends an INSTALLMESSAGE_ERROR message.
OnException	InstallScript MSI	Responds to exceptions generated by a procedural script.

Table 18 ▪ Miscellaneous Event Handlers (cont.)

Event Handler	Project Type	Description
OnFileError	InstallScript	The OnFileError event is sent when an unknown error occurs during the installation or uninstallation of a file.
OnFileLocked	InstallScript	The OnFileLocked event is called when a file that is in use by another application needs to be installed or uninstalled unless the files are in a file group which is potentially marked as locked or shared. In that case, the file will be installed or uninstalled after reboot.
OnFileReadOnly	InstallScript	The OnFileReadOnly event is called when a read-only file needs to be installed or uninstalled.
OnFilesInUse	InstallScript MSI	The OnFilesInUse event handler is called in when the Windows Installer sends an INSTALLMESSAGE_FILESINUSE message to the installation. By default, the OnFilesInUse event handler displays the **SdFilesInUse** dialog.
OnHelp	InstallScript, InstallScript MSI	In InstallScript projects: The OnHelp event is called when the end user presses F1 or Do(HELP) is called. In InstallScript MSI projects: Responds to the Help event generated when the end user presses the F1 key.
OnInternetError	InstallScript	The OnInternetError is called when an error occurs while installing a file from the Internet.
OnLaunchAppAndWaitCallback	InstallScript, InstallScript MSI	The OnLaunchAppAndWaitCallback is called while the installation is waiting for an application to launch if LAAW_OPTION_USE_CALLBACK was specified when calling the LaunchAppAndWait function.
OnLogonUserSetMsiProperties	InstallScript MSI	The OnLogonUserSetMsiProperties event handler sets the Windows Installer properties for the logon user support that is described for InstallScript MSI projects in Adding the Ability to Create or Set an Existing User Account.
OnMD5Error	InstallScript	The OnMD5Error event is called when the MD5 signature of a file being installed does not match the MD5 value stored in the InstallShield CAB file. (The MD5 is calculated when the media is built.)
OnMsiSilentInstall	InstallScript MSI	Responds to the MSI Silent Install event generated when a user runs an InstallScript MSI project's .msi package in silent mode.

Table 18 ▪ Miscellaneous Event Handlers (cont.)

Event Handler	Project Type	Description
OnNextDisk	InstallScript	The OnNextDisk event is called during file transfer when the setup cannot find a data file that is needed. An example of this occurrence is during a multiple floppy or CD install when the next disk is needed.
OnOutOfDiskSpace	InstallScript MSI	Responds to the target system running out of free disk space.
OnPatchUIAfter	InstallScript MSI	Responds to the Patch UI After event.
OnPatchUIBefore	InstallScript MSI	Responds to the Patch UI Before event by displaying dialogs for a patch installation.
OnRebooted	InstallScript, InstallScript MSI (if the InstallScript user interface (UI) style is the traditional style, which uses the InstallScript engine as an external UI handler)	In InstallScript projects: The OnRebooted event is called when the setup is run automatically after rebooting the system. This is the only event that will be called in this case. In InstallScript MSI projects: Responds to the Rebooted event that the installation generates when it restarts after the target system is rebooted.  ***Important ▪*** *This event is not called in an InstallScript MSI installation in which the InstallScript UI style is the new style (which uses the InstallScript engine as an embedded UI handler). To learn more, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.*
OnRemovingSharedFile	InstallScript	The OnRemovingSharedFile event is called during file transfer when a shared file is being uninstalled and the reference count for the file has reached zero.
OnResumeUIAfter	InstallScript MSI	Responds to the Resume UI After event.
OnResumeUIBefore	InstallScript MSI	Responds to the Resume UI Before event.
OnRMFilesInUse	InstallScript MSI	The OnRMFilesInUse event handler is called when the Restart Manager is enabled and Windows Installer 4.0 sends an INSTALLMESSAGE_RMFILESINUSE message to the installation. By default, the OnRMFilesInUse event handler displays the SdRMFilesInUse dialog.

Table 18 ▪ Miscellaneous Event Handlers (cont.)

Event Handler	Project Type	Description
OnSelfRegistrationError	InstallScript	The OnSelfRegistrationError event handler is called directly by the framework when a call to Do(SELFREGISTRATIONPROCESS) fails to register files successfully.
OnWarning	InstallScript MSI	Responds to the Warning event generated when the Windows Installer service sends an INSTALLMESSAGE_WARNING message to the installation's user interface.

OnAbort

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnAbort event handler responds to the Abort event that is generated by the InstallScript abort statement, which uninstalls any changes made to the target system and then exits. In the event handler, you can place any additional cleanup code that you require, such as deleting temporary files created by your installation.

OnAdminInstallUIAfter

Project ▪ *This information applies to InstallScript MSI projects.*

The OnAdminInstallUIAfter event handler responds to the Admin Install UI After event. It performs tasks that must take place after data transfer for an administrative installation of an application. To perform an administrative installation, the user launches `Setup.exe` with the `/a` switch.

Typically, this handler calls SdFinishEx to inform the user that the administrative installation is complete.

OnAdminInstallUIBefore

Project ▪ *This information applies to InstallScript MSI projects.*

The OnAdminInstallUIBefore event handler responds to the Admin Install UI Before event. It performs tasks that must take place before data transfer for an administrative installation of an application. To perform an administrative installation, the user launches `Setup.exe` with the `/a` switch.

Typically, this handler calls the SdWelcome and AdminAskPath functions to welcome the administrative user and prompt for a destination directory.

OnAdminPatchUIAfter

Project *▪ This information applies to InstallScript MSI projects.*

The AdminPatchUIAfter event called after the file transfer of an admin patch setup. By default this event displays UI that informs the end user that the installation has been completed successfully.

OnAdminPatchUIBefore

Project *▪ This information applies to InstallScript MSI projects.*

The OnAdminInstallUIBefore event is called before the file transfer in an admin patch setup. By default this event displays UI allowing the end user to specify installation parameters.

OnAdvertisementAfter

Project *▪ This information applies to InstallScript MSI projects.*

The OnAdvertisementAfter event handler responds to the Advertisement After event. It performs tasks that must take place after an advertised installation, which occurs when the user runs `Setup.exe` with the `/j` argument.

OnAdvertisementBefore

Project *▪ This information applies to InstallScript MSI projects.*

The OnAdvertisementBefore event handler responds to the Advertisement Before event. It performs tasks that must take place before an advertised installation, which occurs when the user runs `Setup.exe` with the `/j` argument.

OnCanceling

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnCanceling event handler responds to the Cancel event that is generated when the end user clicks the Cancel button in one of the built-in InstallScript dialogs.

```
function OnCanceling( )
begin
```

```
if (YES = AskYesNo(
              "Are you sure you want to cancel the setup?",
              YES))
        then abort;
endif;

end;
```

OnComponentError

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnComponentError event handler responds to the ComponentError event that is generated when the installation encounters a general file-transfer error.

The default OnComponentError implementation uses properties of an ErrorInfo object that is declared in OnComponentError and assigned a value by the following statement:

```
set ErrorInfo = ComponentErrorInfo( );
```

Table 19 ▪ OnComponentError Parameters

Property	Description
ErrorInfo.Feature	An object whose properties provide information about the feature that was being transferred when the error occurred. If the error is not associated with a particular feature, or the feature cannot be identified, this property is not set; test for this case by checking the value of IsObject(ErrorInfo.Feature).
ErrorInfo.Feature.Description	A string describing the file transfer error. This string may be null ("").
ErrorInfo.Feature.DisplayName	The display name of the feature that was being transferred when the error occurred. If you did not specify a display name for this feature, this string is null ("").
ErrorInfo.Feature.Name	The name of the feature that was being transferred when the error occurred.
ErrorInfo.FileError.Description	A string-formatted description of ErrorInfo.LastError.
ErrorInfo.FileError.File	For a file-related error: The path and name of the file that encountered an error while the installation attempted to transfer it.
ErrorInfo.FileGroup	The name of the component that is being transferred when the error occurs.
ErrorInfo.LastError	The numeric code for the file-transfer error.

OnDIFxLogCallback

Project ▪ *This information applies to InstallScript projects.*

The OnDIFxLogCallback event handler is called when a DIFx-related event occurs that is logged by the built-in DIFx callback functionality. See the Windows documentation on DIFXAPISetLogCallback for more information.

Note ▪ *This event is not supported for 64-bit drivers and is not called as a result of installing a 64-bit driver.*

Syntax

```
OnDIFxLogCallback ( byval number nEventType, byval number nError, byval string szDescription );
```

Parameters

Table 20 ▪ OnDIFxLogCallback Parameters

Parameter	Description
nEventType	The event type as documented in the DIFxAPI. The following values are available: • **DIFXAPI_SUCCESS**—A success event that logs a message that indicates an operation succeeded. • **DIFXAPI_INFO**—An information event that logs a message that describes the context or progress of an operation. • **DIFXAPI_WARNING**—A warning event that logs a message about a possible problem that is not a fatal error. • **DIFXAPI_ERROR**—An error event that logs a message about a fatal error.
nError	Specifies a Win32 error code that is associated with an event if one exists; otherwise, zero.
szDescription	A string that describes the event.

Return Values

None.

OnError

Project ▪ *This information applies to InstallScript MSI projects.*

This event is called when Windows Installer sends an INSTALLMESSAGE_ERROR message.

OnException

Project ▪ *This information applies to InstallScript MSI projects.*

The OnException event handler responds to exceptions that are generated by a procedural script (one that uses an explicit program...endprogram block). The default implementation displays the error number, source, and description that are stored in the Err Object.

Note that OnException is not called in an event-based script. For an event-based script, you must implement your own try...catch...endcatch blocks to catch exceptions.

OnFileError

Project ▪ *This information applies to InstallScript projects.*

The OnFileError event handler responds to the FileError event that is generated when the setup encounters a file error that does not generate any other file error event (for example, FileLocked or FileReadOnly). When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnFileError ( szFilename, nError );
```

Parameters

Table 21 ▪ OnFileError Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the file for which the error occurred.
nError	Specifies the value returned by the Windows API function GetLastError when the error occurred.

Return Values

Table 22 ▪ OnFileError Return Values

Return Value	Description
ERR_IGNORE	Returned to the setup by the OnFileError event handler to request that the setup ignore the failure to install or uninstall the file specified in OnFileError's first argument and continue without performing the operation.
ERR_RETRY	Returned to the setup by the OnFileError event handler to request that the setup attempt again to install or uninstall the file specified in OnFileError's first argument.
ERR_ABORT	Returned to the setup by the OnFileError event handler to request that the setup be aborted.

OnFileLocked

Project ▪ *This information applies to InstallScript projects.*

The OnFileLocked event handler responds to the FileLocked event that is generated when the setup encounters a locked (in use) file that must be deleted or overwritten. When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is not called for files that are in components whose Potentially Locked property is set to Yes. In this case the file operation is automatically performed after reboot.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnFileLocked ( szFilename );
```

Parameters

Table 23 ▪ OnFileLocked Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the locked file.

Return Values

Table 24 ▪ OnFileLocked Return Values

Return Value	Description
ERR_IGNORE	Returned to the setup by the OnFileLocked event handler to request that the setup ignore the failure to install or uninstall the file specified in OnFileLocked's argument and continue without performing the operation.
ERR_RETRY	Returned to the setup by the OnFileLocked event handler to request that the setup attempt again to install or uninstall the file specified in OnFileLocked's argument.
ERR_ABORT	Returned to the setup by the OnFileLocked event handler to request that the setup be aborted.
ERR_PERFORM_AFTER_REBOOT	Returned to the setup by the OnFileLocked event handler to request that the setup perform the operation on the file after the target system is rebooted.

OnFileReadOnly

Project ▪ *This information applies to InstallScript projects.*

The OnFileReadOnly event handler responds to the ReadOnly event that is generated when a file that must be deleted or overwritten is set to Read Only. When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnFileReadOnly ( szFilename );
```

Parameters

Table 25 ▪ OnFileReadOnly Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the read-only file.

Return Values

Table 26 ▪ OnFileReadyOnly Return Values

Return Value	Description
ERR_YES	Returned to the setup by the OnRemovingSharedFile event handler to request that the setup perform the operation on the file.
ERR_NO	Returned to the setup by the OnRemovingSharedFile event handler to request that the setup not perform the operation on the file.

OnFilesInUse

Project *▪ This information applies to InstallScript MSI projects.*

The OnFilesInUse event handler is called in an InstallScript MSI installation when the Windows Installer sends an INSTALLMESSAGE_FILESINUSE message to the installation.

The szMessage parameter contains the string that the Windows Installer provides. This parameter indicates the files that are in use. The **SdFilesInUse** function parses this string appropriately.

By default, the OnFilesInUse event handler displays the **SdFilesInUse** dialog. The event handler returns the value that the dialog returns, and the value is then passed back to the Windows Installer to indicate how the message was handled and what action the Windows Installer should take.

Syntax

```
OnFilesInUse (szMessage);
```

Parameters

Table 27 ▪ OnFilesInUse Parameters

Parameter	Description
szMessage	String provided by the Windows Installer indicating the files that are in use. The **SdFilesInUse** function parses this string.

Return Values

Table 28 ▪ OnFilesInUse Return Values

Return Value	Description
IDCANCEL	Indicates that the installation should be cancelled.
IDRETRY	Indicates that the Windows Installer should recheck for in-use files and send the INSTALLMESSAGE_FILESINUSE message if it still needed.
IDIGNORE	Indicates that the Windows Installer should ignore the fact that the files are in use and should continue the installation.

OnHelp

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnHelp event handler responds to the Help event generated when the end user presses the F1 key.

```
function OnHelp( )
begin
    /* Assumes that MySetupHelp.chm is located
       in the Support Files/Billboards view. */
    LaunchAppAndWait( WINDIR ^ "Hh.exe",
                      SUPPORTDIR ^ "MySetupHelp.chm",
                      NOWAIT );
end;
```

OnInternetError

Project ▪ *This information applies to InstallScript projects.*

The OnInternetError event handler responds to the FileError event that is generated when the setup encounters a file error that does not generate any other file error event (for example, FileLocked or FileReadOnly). When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnInternetError ( hInternet, szFilename, nError );
```

Parameters

Table 29 ▪ OnInternetError Parameters

Parameter	Description
hInternet	Internal handle—ignore.
szFilename	Specifies the fully qualified file name of the file for which the error occurred.
nError	Specifies the value returned by the Windows API function GetLastError when the error occurred.

Return Values

Table 30 ▪ OnInternetError Return Values

Return Value	Description
ERR_IGNORE	Returned to the setup by the OnInternetError event handler to request that the setup ignore the failure to install or uninstall the file specified in OnInternetError's second argument and continue without performing the operation.
ERR_RETRY	Returned to the setup by the OnInternetError event handler to request that the setup attempt again to install or uninstall the file specified in OnInternetError's second argument.
ERR_ABORT	Returned to the setup by the OnInternetError event handler to request that the setup be aborted.

OnLaunchAppAndWaitCallback

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnLaunchAppAndWaitCallback event handler is called while the installation is waiting for an application to launch if LAAW_OPTION_USE_CALLBACK was specified when calling the **LaunchApplication** function. The event is called in the intervals determined by the amount of time specified in the LAAW_PARAMETERS.nCallbackInterval parameter.

If the installation contains multiple **LaunchApplication** calls in which LAAW_OPTION_USE_CALLBACK was specified, the same event is called during each wait. In this case, use the LAAW_PARAMETERS.szCommandLineResult parameter to determine which call is currently being executed. You can return LAAW_CALLBACK_RETURN_CONTINUE_TO_WAIT to continue waiting or LAAW_CALLBACK_RETURN_END_WAIT to end the wait immediately.

```
function number OnLaunchAppAndWaitCallback( )

begin
    return LAAW_CALLBACK_RETURN_CONTINUE_TO_WAIT;
end;
```

Note ▪ *This event handler appears in installations and object projects. Any specified override for this event applies on to the script in which it is overwritten. An override in the main installation script does not affect contained objects and an override in an object project has no effect on the main installation script.*

OnLogonUserSetMsiProperties

Project ▪ *This information applies to InstallScript MSI projects.*

The OnLogonUserSetMsiProperties event handler sets the Windows Installer properties for the logon user support that is described for InstallScript MSI projects in Adding the Ability to Create or Set an Existing User Account. Specifically, OnLogonUserSetMsiProperties sets the following

- The Windows Installer property `IS_NET_API_LOGON_USERNAME` is set to the InstallScript variable IFX_NETAPI_USER_ACCOUNT
- The Windows Installer property `IS_NET_API_LOGON_PASSWORD` is set to the InstallScript variable IFX_NETAPI_PASSWORD
- The Windows Installer property `IS_NET_API_LOGON_GROUP` is set to the InstallScript variable IFX_NETAPI_GROUP.

The IFX_NETAPI_* variables are set to the values of the input fields in the **SdLogonUserInformation** and related dialogs.

OnMD5Error

Project ▪ *This information applies to InstallScript projects.*

The OnMD5Error event handler responds to the MD5Error event that is generated during MD5 checking when the setup extracts a file whose MD5 hash value does not correspond to the value stored in the setup header file. When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

***Tip** ▪ MD5 checking can detect corrupted files, which is useful during Internet setups; not doing MD5 checking can make file transfer proceed faster. You can enable or disable MD5 checking with the Advanced button in the Release Wizard's General Options panel, or with the Setup.ini file's [Startup] section's CheckMD5 key.*

Syntax

```
OnMD5Error ( szFilename );
```

Parameters

Table 31 ▪ OnMD5Error Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the file that generated the MD5 error.

Return Values

Table 32 ▪ OnMD5Error Return Values

Return Value	Description
ERR_IGNORE	Returned to the setup by the OnMD5Error event handler to request that the setup ignore the failure to install or uninstall the file specified in OnMD5Error's argument and continue without performing the operation.
ERR_RETRY	Returned to the setup by the OnMD5Error event handler to request that the setup attempt again to install or uninstall the file specified in OnMD5Error's argument.
ERR_ABORT	Returned to the setup by the OnMD5Error event handler to request that the setup be aborted.

Additional Information

An MD5Error event will be generated at run time if, after running the media builder, you replace an uncompressed file in a disk image folder. You can modify the default OnMD5Error code to automatically handle this MD5Error event rather than display a dialog. For example, to automatically ignore the MD5Error event for the file ReplacedAfterBuild.txt, which is installed to TARGETDIR, add the following lines at the beginning of the OnMD5Error code:

```
if szFilename = TARGETDIR ^ "ReplacedAfterBuild.txt" then
    return ERR_IGNORE;
endif;
```

OnMsiSilentInstall

Project *▪ This information applies to InstallScript MSI projects.*

An installation program created by an InstallScript MSI project requires the end user to run `Setup.exe`. The OnMsiSilentInstall event handler responds to the end user attempting to run an InstallScript MSI project's .msi database in silent mode with the /q option to `MsiExec.exe`. The default implementation is to display an error message and then abort the installation.

OnNextDisk

Project *▪ This information applies to InstallScript projects.*

Because the Windows Installer handles disk prompts, this event is not supported for InstallScript MSI projects.

The OnNextDisk event handler responds to the NextDisk event that occurs in a multi-disk setup when the next disk in the sequence is required to continue the setup.

Return Values

Table 33 ▪ OnNextDisk Return Values

Return Value	Description
ERR_RETRY	Returned to the setup by the OnNextDisk event handler to request that the setup search again for the file specified in OnNextDisk's first argument.
ERR_ABORT	Returned to the setup by the OnNextDisk event handler to request that the setup be aborted.

OnOutOfDiskSpace

Project *▪ This information applies to InstallScript MSI projects.*

The OnOutOfDiskSpace event handler responds to the Out Of Disk Space event. The default implementation of OnOutOfDiskSpace displays the SdDiskSpace2 dialog, and then aborts the installation.

OnPatchUIAfter

Project *▪ This information applies to InstallScript MSI projects.*

The OnPatchUIAfter event handler is called after data transfer for a patch installation. The default implementation of OnPatchUIAfter calls the SdFinishEx function.

OnPatchUIBefore

Project *▪ This information applies to InstallScript MSI projects.*

The OnPatchUIBefore event handler is called when the user launches a patch installation. The default implementation of OnPatchUIBefore calls the SdPatchWelcome dialog function.

OnRebooted

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI—if the InstallScript user interface (UI) style is the traditional style (which uses the InstallScript engine as an external UI handler)*

This information does not apply to InstallScript MSI projects in which the InstallScript UI style is the new style (which uses the InstallScript engine as an embedded UI handler). To learn more, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.

The OnRebooted event handler responds to the Rebooted event that the installation generates when it restarts after the target system is rebooted. When the installation restarts after reboot, OnRebooted is the only event handler it calls.

OnRemovingSharedFile

Project *▪ This information applies to InstallScript projects.*

The OnRemovingSharedFile event handler responds to the RemovingSharedFile event that occurs during uninstallation when a file that might be shared with other applications is about to be removed. When creating an InstallShield object, note that this event is not triggered in an object.

This event handler is called (when appropriate) in any setup, including a setup that uses a procedural script (a script with a program...endprogram block).

Syntax

```
OnRemovingSharedFile ( szFilename );
```

Parameters

Table 34 ▪ OnRemovingSharedFile Parameters

Parameter	Description
szFilename	Specifies the fully qualified file name of the shared file.

Return Values

Table 35 ▪ OnRemovingSharedFile Return Values

Return Value	Description
ERR_YES	Returned to the setup by the OnRemovingSharedFile event handler to request that the setup remove the file.
ERR_NO	Returned to the setup by the OnRemovingSharedFile event handler to request that the setup not remove the file.

OnResumeUIAfter

Project ▪ *This information applies to InstallScript MSI projects.*

The OnResumeUIAfter event handler responds to the Resume UI After event. It performs tasks that must take place after an application's reinstallation or minor upgrade.

The OnResumeUIAfter and OnResumeUIBefore event handlers are called only when all of the following conditions apply:

- The application is already installed on the target machine.
- A patch is *not* being run.
- One of the following properties is set at the command line or in the CmdLine property of Setup.ini:
  - ADDDEFAULT
  - ADDLOCAL
  - ADDSOURCE
  - ADVERTISE
  - COMPADDLOCAL
  - COMPADDSOURCE
  - FILEADDDEFAULT
  - FILEADDLOCAL
  - FILEADDSOURCE

- REINSTALL
- REMOVE

OnResumeUIBefore

Project ▪ *This information applies to InstallScript MSI projects.*

The OnResumeUIBefore event handler responds to the Resume UI Before event. It performs tasks that must take place before an application's reinstallation or minor upgrade.

The OnResumeUIBefore and OnResumeUIAfter event handlers are called only when all of the following conditions apply:

- The application is already installed on the target machine.
- A patch is *not* being run.
- One of the following properties is set at the command line or in the CmdLine property of Setup.ini:
  - ADDDEFAULT
  - ADDLOCAL
  - ADDSOURCE
  - ADVERTISE
  - COMPADDLOCAL
  - COMPADDSOURCE
  - FILEADDDEFAULT
  - FILEADDLOCAL
  - FILEADDSOURCE
  - REINSTALL
  - REMOVE

OnRMFilesInUse

Project ▪ *This information applies to InstallScript MSI projects.*

The OnRMFilesInUse event handler is called in an InstallScript MSI installation when the Restart Manager is enabled and Windows Installer 4.0 sends an INSTALLMESSAGE_RMFILESINUSE message to the installation.

Note that the INSTALLMESSAGE_RMFILESINUSE message is not sent if the Restart Manager is unavailable or disabled. For more information, see MSIRESTARTMANAGERCONTROL Property in the Windows Installer Help Library.

If the Restart Manager is unavailable or disabled, or if the target system has Windows Installer 3.x or earlier, Windows Installer sends an INSTALLMESSAGE_FILESINUSE message to the installation.

By default, the OnRMFilesInUse event handler displays the **SdRMFilesInUse** dialog. The event handler returns the value that the dialog returns, and the value is then passed back to the Windows Installer to indicate how the message was handled and what action the Windows Installer should take.

Syntax

```
OnRMFilesInUse (szMessage);
```

Parameters

Table 36 ▪ OnRMFilesInUse Parameters

Parameter	Description
szMessage	String provided by the Windows Installer indicating the files that are in use. The **SdRMFilesInUse** function parses this string.

Return Values

Table 37 ▪ OnRMFilesInUse Return Values

Return Value	Description
IDCANCEL	Indicates that the installation should be cancelled.
IDRETRY	Indicates that the Windows Installer should recheck for in-use files and send the INSTALLMESSAGE_RMFILESINUSE message if it still needed. ***Note ▪*** *Unlike the SdFilesInUse dialog, the SdRMFilesInUse dialog does not return this value.*
IDIGNORE	Indicates that the Windows Installer should ignore the fact that the files are in use and should continue the installation.
IDOK	Indicates that the Windows Installer should use the Restart Manager to attempt to shut down running applications that are locking files. For more information, see INSTALLMESSAGE_RMFILESINUSE in the Windows Installer Help Library.

OnSelfRegistrationError

Project ▪ *This information applies to InstallScript projects.*

The OnSelfRegistrationError event handler is called directly by the framework when a call to Do(SELFREGISTRATIONPROCESS) fails to register files successfully.

Syntax

```
OnSelfRegistrationError ( );
```

Parameters

None.

Return Values

None.

Additional Information

The default OnSelfRegistrationError code uses the following properties of the global FileRegistrar object:

Table 38 ▪ Global FileRegistar Object Properties

Property	Description
FileRegistrar.Errors.Count	The number of self-registering files that were not registered.
FileRegistrar.Errors(*i*)	An object whose properties provide information about the *i*-th unregistered file. (*i* runs from 1 to the value of FileRegistrar.Errors.Count.)
FileRegistrar.Errors(*i*).File	The name of the *i*-th unregistered file.
FileRegistrar.Errors(*i*).Description	A string describing the error that occurred when the setup attempted to register the *i*-th unregistered file. This string may be null ("").
FileRegistrar.Errors(*i*).LastError	The numeric code for the error that occurred when the setup attempted to register the *i*-th unregistered file.

OnWarning

Project ▪ *This information applies to InstallScript MSI projects.*

The OnWarning event handler responds to the Warning event, which is raised when the Windows Installer service sends a INSTALLMESSAGE_WARNING message.

Advanced Event Handlers

Advanced event handlers are triggered under special circumstances.

Table 39 ▪ Advanced Event Handlers

Event Handler	Project Type	Description
OnShowUI	InstallScript	Called directly by the installation engine to initiate the user interface and file transfer.
OnSuiteShowUI	InstallScript	When an Advanced UI or Suite/Advanced UI installation launches an InstallScript package, the OnSuiteShowUI event is called instead of the OnShowUI event. By default, the OnSuiteShowUI event initializes any feature states that are passed from an Advanced UI or Suite/Advanced UI installation to the InstallScript package, and it starts file transfer.
OnUninstall	InstallScript, InstallScript MSI	The OnUninstall event handler is called when the installation is run with the `/uninst` parameter. This is the only event that is called when the `/uninst` parameter is used. The default code for the OnUninstall event uninstalls a previously installed product.

OnShowUI

The OnShowUI event drives the UI sequence and file transfer of the installation.

The OnShowUI event is called directly by the framework to initiate the UI sequence and file transfer of the installation. By default, this event displays UI that informs the end user that maintenance has been completed successfully.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

Syntax

```
OnShowUI ( );
```

Parameters

None.

Return Values

None.

Additional Information

You can easily convert a procedural script to an event-based script by performing the following steps. If you do this, neither the user interface event handlers (OnFirstUIBefore, OnMaintUIBefore, OnUpdateUIBefore, OnFirstUIAfter, OnMaintUIAfter, and OnUpdateUIAfter) nor OnMoveData are called; but all other feature event handlers are called as appropriate.

Task ***To convert a procedure script to an event-based script:***

1. Open your project in InstallShield; when you are prompted to convert it, click Yes.
2. Open the script and change the following line:

   ```
   program
   ```

   to this:

   ```
   function OnShowUI
   begin
   ```

3. Also change the following line:

   ```
   endprogram
   ```

   to this:

   ```
   end
   ```

4. If you are planning to display any custom objects that include a user interface (objects provided with InstallShield do not), add a call to ShowObjWizardPages to your dialog sequence at the location where you want any object UI to be shown:

   ```
   ShowObjWizardPages( nResult );
   ```

   This function can be called before or after file transfer; the appropriate object event is called based on whether or not file transfer has occurred and on the value of the MAINTENANCE system variable.

5. Make the changes needed to compile the script in InstallShield.

You can also customize the OnBegin and OnEnd events if you wish.

Why This Works

In InstallScript, most installation events are driven by the main UI event, OnShowUI. When you replace the default code in this event with the code in your program...endprogram block, you are basically providing a custom UI sequence. Note that since OnShowUI is called when the installation is run, your installation behaves just like it did when it was a program...endprogram script.

Launching an InstallScript Package in an Advanced UI or Suite/Advanced UI Installation

Note that when an Advanced UI or Suite/Advanced UI installation launches an InstallScript package, the OnSuiteShowUI event is called instead of the OnShowUI event.

OnSuiteShowUI

Project ▪ *This information applies to InstallScript projects.*

When an Advanced UI or Suite/Advanced UI installation launches an InstallScript package, the OnSuiteShowUI event is called instead of the OnShowUI event. By default, the OnSuiteShowUI event initializes any feature states that are passed from an Advanced UI or Suite/Advanced UI installation to the InstallScript package, and it starts file transfer. The OnSuiteShowUI event does not typically show any user interface, since the Advanced UI or Suite/Advanced UI installation's setup launcher typically handles the user interface for the entire Advanced UI or Suite/Advanced UI installation.

Depending on the installation state (first-time installation, maintenance, or update), OnSuiteShowUI ignores the UI events such as OnFirstUIBefore and OnFirstUIAfter and instead calls the following events:

- **First-time installation**—OnSuiteInstallBefore, OnSuiteInstallAfter
- **Maintenance**—OnSuiteMaintBefore, OnSuiteMaintAfter
- **Update**—OnSuiteUpdateBefore, OnSuiteUpdateAfter

All other events and event call sequencing in an InstallScript package that is launched from an Advanced UI or Suite/Advanced UI installation remain the same as in an InstallScript installation that is launched separate from an Advanced UI or Suite/Advanced UI installation, or that is launched as an executable package from an Advanced UI or Suite/Advanced UI installation.

Note ▪ *This event is not called automatically in a program...endprogram style installation.*

OnUninstall

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The OnUninstall event is called when the installation is run with the `/uninst` parameter. This is the only event that is called when the `/uninst` parameter is used. The default code for the OnUninstall event uninstalls a previously installed product.

Functions

A function is a named set of instructions that operate together to perform a specific task.

Function Characteristics

Every function has the following characteristics:

- A function is named. Each function has a unique name. When you call the function by name, you know which set of instructions will run, and you can be sure of consistent results. You can also call a function from within another function.
- A function is independent. In most cases, any function can perform its instructions without interfering with other parts of the program.
- A function performs a certain task. A task is any single job that the script must perform, such as displaying a bitmap, compressing a file, or creating a folder.
- A function can return a value to the script. When the script executes, it performs the instructions of the function. Based on the result of the instructions, a function can return information to the script.

Function Types

InstallShield allows you to use three types of functions in your setup script:

Table 1 ▪ Function Types

Function Type	Description
Built-in functions	Functions supplied by InstallShield or included for Sd dialogs.
User-defined functions	Functions that you create.
DLL-called functions	Functions that you can call in a DLL.

Note ▪ *Like the C programming language, InstallScript does not support nested function blocks.*

Using Built-In Functions

InstallShield has several hundred built-in functions that you can use in your setup scripts to create program groups and items, manipulate folders, work with lists, monitor the status of the setup, create dialogs, manipulate files, and much more. Because the InstallShield Script Compiler already recognizes these function names, you do not have to declare them before you can use them.

Learning About Function Names and Formats

In order call a built-in function, you must know both its name and its format.

To find a function that will fit your requirements, review Built-In Functions by Category, which describes each of the major categories of available functions. Click a category link to view a list of functions and descriptions that pertain to that category.

All of the built-in functions are listed alphabetically in the Built-in Functions sections. To display a complete description of any function in that list, click its name. The help topic for that function provides the function's format.

For example, AskYesNo is a built-in function that displays a query in a dialog and then waits for the end user to respond by clicking a button, either Yes or No. AskYesNo has the following format:

```
AskYesNo (szQuestion, nDefault);
```

The format shows the correct spelling of the function name, which is followed by the function's parameter list, enclosed in parentheses. In the help topic for a built-in function, each parameter is expressed in Hungarian notation, which indicates the type of data that must be passed in that position. AskYesNo requires two parameters: the first parameter is a string; the second is a number.

Note ▪ *Like C, InstallScript is case sensitive. Be sure to pay close attention to the capitalization of letters in the built-in function names.*

Using Built-In Functions in Your Script

To use a built-in function in your script, pass the required number of parameters, and make sure that the data you pass in each parameter is the type indicated for that position. If you pass the incorrect number of parameters, or if you pass the wrong type of data in any parameter positions, the script will not compile.

The specific documentation for each built-in function provides a description of its parameters. For AskYesNo, szQuestion is the question to be displayed in the dialog and nDefault indicates which button to preselect—Yes or No. One of two predefined constants can be passed in nDefault: YES or NO.

Consider a dialog in which the Yes button is preselected. To display this dialog, call AskYesNo as shown below:

```
AskYesNo ("Installation Complete. Would you like to view the ReadMe file now?", YES);
```

Note ▪ *String literals passed as parameters must be enclosed in single or double quotation marks, for example: "Please wait while files are transferred", or 'This is a string', or "C:\\Myfolder\\Myfile.ext".*

Troubleshooting

Note the following:

- InstallScript functions do not allow you to pass an assignment statement as a parameter. In addition, you cannot use the && or || operators within an argument to a function.
- An autosized string variable that is passed by reference to a function will not be autosized within the called function. If the function attempts to assign a value whose length is greater than the current size of that parameter, run-time error 401 occurs. To avoid this error, declare strings with a specific size when they are to be passed by reference to a function.

Built-In Functions by Category

The following categories of functions are available in the InstallScript language.

Table 2 ▪ Built-In Functions by Category

Function Category	Description
Batch File Functions	Work with batch files.
Component Functions	In InstallShield, feature functions replace the component functions that were used in InstallShield Professional.
Configuration File Functions	Modify the default system configuration file.
Device Driver Functions	Install and uninstall device drivers using DIFx.
Dialog Functions	Create InstallScript dialogs and message boxes.
Dialog Customization Functions	Customize InstallScript dialogs, and modify the text, controls, and behavior of InstallScript dialogs.
Extensibility Functions	Call functions in dynamic-link libraries, call Windows APIs, launch another application or setup script, and load or unload a .dll file into memory.
Feature Functions	Control file media. Also create and process script-created feature sets.
File and Folder Functions	Work with text files, binary files, and folders.
Information Functions	Enables you to use FlexNet Connect to notify end users about updates that are available for your product.
Information Functions	Provide data about resources that are available in the operating environment: disk space, memory, and operating mode.
Initialization File Functions	Obtain information from and copy information to the initialization and profile files.
List Processing Functions	Implement lists in a setup script.
Log File Functions	Obtain information from and copy information to the log file's custom logging section.
Long File Name Functions	Create long file names from short file names, convert short file names to long file names, and place double quotation marks around long file names so that operating systems that handle long file names can recognize them.
Miscellaneous Functions	Serve various purposes, such as low-level hardware interface, feature creation and manipulation, and user output.

Table 2 ▪ Built-In Functions by Category (cont.)

Function Category	Description
Object Functions	Initialize objects, as well as obtain and set object status information.
Path Buffer Functions	Work with strings that contain search paths. The path string functions work on a unique temporary string variable known as the path buffer.
Registry Functions	Access the registry, read, create and delete registry keys, and establish registry-related parameters for uninstallation.
Shared and Locked File Functions	Handle shared or locked files.
Shell Functions	Create shortcuts, delete existing shortcuts, and configure shortcuts.
Special Registry-Related Functions	Set up the minimum required registry keys and values. The special registry-related functions work only with the per application paths key, the application uninstallation key, or the application information key.
SQL Functions	Perform SQL tasks such as connect to a catalog, create SQL-related dialogs, and obtain SQL run-time errors.
String Functions	Manipulate string variables and literals. String functions behave similarly to the standard C language functions. The return values also follow the C language convention.
Suite/Advanced UI and Advanced UI Interaction Functions	Interact with an Advanced UI or Suite/Advanced UI installation that contains an InstallScript package, or with a Suite/Advanced UI installation that includes InstallScript actions.
Text Substitutions	Associate a string with another string—for example, associating "<MYTEXTSUB>" with "My Text Sub Value"—and of replacing the former string with the latter in other strings—for example, changing "This string demonstrates text substitution <MYTEXTSUB>" to "This string demonstrates text substitution My Text Sub Value".
Uninstallation Functions	Perform services required for the uninstallation and/or maintenance setup of an installed application.
User Interface Functions	Customize certain error messages and titles of error boxes. Note that several internal error messages that may be encountered during the development of the setup cannot be modified using user interface functions.
Version-Checking Functions	Obtain a specific file's version, find a file and get its version, or search for an existing file and try to install a newer version of the file. The functions work with either compressed or uncompressed files.

Table 2 ▪ Built-In Functions by Category (cont.)

Function Category	Description
Windows Installer Functions	Exported by the Windows Installer engine. These functions enable you to query and manipulate properties of a running installation.

Batch File Functions

When you work with batch and configuration files, you can treat the files as normal text files, or you can use InstallScript functions designed specifically to modify batch and configuration files.

Ez and Advanced Batch Functions

There are two classes of InstallScript batch file functions—Ez and advanced. Ez functions are quick and easy to use because they have many preprogrammed features. If you need greater flexibility and control over the changes you need to make to configuration and batch files, use the advanced functions.

Return Value

InstallShield does not display a message if a batch function fails, but returns a value that is less than zero (< 0). The return value indicates whether the function performed successfully. You can check the return value and display a message based on the result.

Ez Batch File Functions

Ez batch file functions make modifications to the default batch file. Unless changed by a call to BatchSetFileName, the default batch file is the Autoexec.bat file that was executed by the system during the boot sequence. It is important to note that each Ez batch file function opens the default batch file and then saves it automatically after making the specified modification. You do not make calls to open or save when using Ez batch file functions.

Table 3 ▪ Ez Batch File Functions

Function	Description
EzBatchAddPath	Modifies the default batch file by adding a directory to the search path in a PATH command or to the value assigned to an environment variable.
EzBatchAddString	Adds a line of text to the default batch file.
EzBatchReplace	Replaces a statement in the default batch file.

Advanced Batch File Functions

Advanced batch file functions differ from Ez batch file functions in that they provide greater flexibility and more control over batch files. Use these functions when you need to make more extensive or complex changes to a batch file.

To edit a batch file with these advanced functions, you must first load the file into memory by calling BatchFileLoad. When modifications to the batch file are complete, you must then save the file by calling BatchFileSave.

When an InstallScript custom action initializes, InstallShield selects the target system's startup batch file (Autoexec.bat) as the default batch file; unless changed by a call to BatchSetFileName this is the file that BatchFileLoad reads into memory if no other file name is specified. To determine the fully qualified name of the default batch file, call BatchGetFileName.

Table 4 ▪ Advanced Batch File Functions

Function	Description
BatchAdd	Adds an environment variable to a batch file.
BatchDeleteEx	Deletes a line in the batch file.
BatchFileLoad	Loads a batch file into memory for editing with advanced batch functions.
BatchFileSave	Saves a batch file that has been loaded with BatchFileLoad.
BatchFind	Finds items in a batch file.
BatchGetFileName	Retrieves the fully qualified file name of the default batch file.
BatchMoveEx	Moves an item within a batch file.
BatchSetFileName	Specifies a batch file to be the default batch file.

Related Function

Table 5 ▪ Related Function

Function	Description
SdShowFileMods	Creates a dialog that displays proposed file changes and offers options on how to proceed.

Component Functions

Because a Windows Installer-based installation uses features as the highest level of organization in installation projects, and not components, component-related functions are deprecated in InstallShield. All supported component functions now have corresponding feature functions that should be used in your script.

For example, the ComponentAddItem function is now FeatureAddItem. For more information and a list of available feature-related functions, see Feature Functions

Configuration File Functions

Configuration file functions modify the default system configuration file. There are two types of configuration file functions:

- Ez Config.sys File Functions
- Advanced Configuration File Functions

Ez Config.sys File Functions

Ez configuration file functions modify the default system configuration file. Unless changed by a call to ConfigSetFileName, that file is the Config.sys file that was executed by the system during the boot sequence.

Table 6 ▪ Ez Configuration File Functions

Function	Description
EzConfigAddDriver	Adds a device driver statement to the default system configuration file.
EzConfigAddString	Adds a statement or line of text to the default system configuration file.
EzConfigGetValue	Retrieves the value of a system configuration file parameter, such as FILES or BUFFERS.
EzConfigSetValue	Sets the value of a system configuration file parameter, such as FILES or BUFFERS.

Note ▪ *Each of these functions opens the default system configuration file, performs its assigned task, and then saves the file back to disk. It is not necessary to load and save the configuration file as with the advanced configuration file functions.*

Advanced Configuration File Functions

The advanced configuration file functions provide the advanced developer greater flexibility and more control over system configuration files than do the Ez configuration file functions. To access and edit a system configuration file with these advanced functions, start by calling ConfigFileLoad. When you are finished editing the system configuration file, call ConfigFileSave to save your changes. Note that the functions ConfigGetFileName and ConfigSetFileName can be used with both advanced and Ez configuration file functions.

Table 7 ▪ Advanced Configuration File Functions

Function	Description
ConfigAdd	Adds a statement to a system configuration file that has been loaded in memory.

Table 7 ▪ Advanced Configuration File Functions (cont.)

Function	Description
ConfigDelete	Deletes an item from a system configuration file.
ConfigFileLoad	Loads a system configuration file into memory for editing.
ConfigFileSave	Saves a system configuration file that has been loaded into memory with ConfigFileLoad.
ConfigFind	Searches for an item in a system configuration file.
ConfigGetFileName	Retrieves the fully qualified name of default system configuration file.
ConfigGetInt	Retrieves a value from a system configuration file.
ConfigMove	Moves an item within a system configuration file.
ConfigSetFileName	Specifies the fully qualified file name of a system configuration file.
ConfigSetInt	Sets a value in a system configuration file.

Related Function

Table 8 ▪ Related Function

Function	Description
SdShowFileMods	Creates a dialog displaying proposed file changes and offering options on how to proceed.

Device Driver Functions

The functions below handle installing and uninstalling device drivers using Windows Driver Install Frameworks (DIFx). For more information on DIFx and DIFxAPI, see the MSDN Library.

Table 9 ▪ Device Driver Functions

Function	Description
DIFxDriverPackageGetPath	Retrieves the path to the .inf file for driver package after a driver package is preinstalled in the driver store.
DIFxDriverPackageInstall	Preinstalls a driver package in the driver store and then installs the driver in the system.

Table 9 ▪ Device Driver Functions (cont.)

Function	Description
DIFxDriverPackagePreinstall	Preinstalls a driver package for a Plug and Play (PnP) function driver in the driver store and installs the .inf file for the driver package in the system .inf file directory.
DIFxDriverPackageUninstall	Uninstalls the specified driver package from the system and removes the driver package from the driver store.

Dialog Functions

Some of the following functions create simple dialogs, such as Yes/No dialogs and message boxes. Several functions let you easily display various types of common dialogs. Other functions are script dialog (Sd) functions. Sd dialogs are created using special InstallScript definition functions that create a dialog with custom input. The dialogs then automatically return values to the script based on the selected action.

Note ▪ *Dialogs that have a Cancel button do not return a CANCEL value when that button is clicked. Instead, the OnCanceling event handler is called.*

Table 10 ▪ Dialog Functions

Function	Project Type	Description
AdminAskPath	InstallScript MSI	Displays a dialog that prompts the end user to enter the path to a destination location for an administrative installation (when the end user runs an InstallScript MSI project's `Setup.exe` file with the /a argument).
AskDestPath	InstallScript, InstallScript MSI	Presents a dialog that requests destination path information.
AskOptions	InstallScript, InstallScript MSI	Presents a dialog that prompts the end user to select options by using check boxes or radio buttons.
AskPath	InstallScript, InstallScript MSI	Presents a dialog that prompts the end user to enter a path.
AskText	InstallScript, InstallScript MSI	Presents a dialog that prompts the end user to enter text.
AskYesNo	Basic MSI, InstallScript, InstallScript MSI	Presents a message box that prompts the end user to respond to a question by clicking on a Yes or No button.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
EnterDisk	Basic MSI, InstallScript, InstallScript MSI	Presents a message box that prompts the end user for a specific disk.
EnterDiskError	Basic MSI, InstallScript, InstallScript MSI	Checks whether a specified path and file exists. The function displays an appropriate error message box if the file does not exist in the specified path; then it returns success or failure, depending on whether the specified file exists.
EnterLoginInfo	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to specify a user name and password. Note that the dialog does not validate or use the specified information. In addition, the dialog does not perform any error checking for the specified information.
EnterPassword	InstallScript, InstallScript MSI	Displays a dialog that queries the end user for a password; the characters that the end user types in the edit box are displayed as asterisks (*).
FeatureDialog	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select features and specify a destination location.
MessageBox	Basic MSI, InstallScript, InstallScript MSI	Presents a message in a message box.
MessageBoxEx	Basic MSI, InstallScript, InstallScript MSI	Presents a message in a message box.
RebootDialog	InstallScript, InstallScript MSI	Presents a message box that enables end users to choose to restart the computer.
SdAskDestPath	InstallScript, InstallScript MSI	Creates a dialog that enables end users to select an alternate destination path.
SdAskDestPath2	InstallScript, InstallScript MSI	Creates a dialog that enables end users to select an alternate destination path.
SdAskOptions	InstallScript, InstallScript MSI	Creates a dialog that has greater flexibility than the standard AskOptions function.
SdAskOptionsList	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select and deselect items from a list.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdBitmap	InstallScript, InstallScript MSI	Displays a bitmap on a dialog.
SdConfirmNewDir	InstallScript, InstallScript MSI	Displays a message box that prompts the user to confirm the folder selection.
SdConfirmRegistration	InstallScript, InstallScript MSI	Displays a message box that prompts the end user to confirm the information that was entered in dialogs presented by **SdRegisterUser** or **SdRegisterUserEx**.
SdCustomerInformation	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to specify the user name and company name for the product being installed. The dialog may also include radio buttons that let the end user specify whether the product should be installed for all users or only the current user.
SdCustomerInformationEx	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to specify the user name, company name, and serial number for the product being installed. The dialog may also include radio buttons that let the end user specify whether the product should be installed for all users or only the current user.
SdDiskSpace2	InstallScript, InstallScript MSI	Displays a dialog that shows either of the following: • A list view of volumes, required space, available space, and the difference between available space and required space. • A warning message indicating that the target system does not have enough available space for the installation to take place. The dialog also displays a list view of volumes, required space, available space, and the difference between available space and required space.
SdDiskSpaceRequirements	InstallScript, InstallScript MSI	Displays a list of volumes, required space, available space, and the difference between available and required space. **SdDiskSpace2** supersedes this function.
SdDisplayTopics	InstallScript, InstallScript MSI	Displays a list of topics.
SdExceptions	InstallScript, InstallScript MSI	Displays a message box informing the end user that a shared, locked (in use), or read-only file has been encountered.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdFeatureDialog	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select features to install and a destination folder.
SdFeatureDialog2	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select folders, features, and subfeatures to install.
SdFeatureDialogAdv	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select features to install and a destination folder.
SdFeatureMult	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to select the features and subfeatures to install. Additional information about disk space is also provided to help determine the best location for the installation.
SdFeatureTree	InstallScript, InstallScript MSI	Displays a dialog with a tree control that enables end users to select the features and subfeatures to install. Additional information about disk space is also provided to help determine the best location for the installation.
SdFilesInUse	InstallScript MSI	Displays a dialog that includes a list box containing a list of the applications that are open and are locking files.
SdFinish	InstallScript, InstallScript MSI	Displays a dialog that informs the end user that the setup is complete and offers a choice of options, such as whether to view an information file or launch an application.
SdFinishEx	InstallScript, InstallScript MSI	Displays a dialog informing the end user that the installation is complete.
SdFinishReboot	InstallScript, InstallScript MSI	Displays a dialog that informs the user that the setup is complete and offers a choice of options for restarting Windows and the computer.
SdFinishUpdate	InstallScript, InstallScript MSI	Displays a dialog that indicates that the installation is complete. The dialog includes the option to check for application updates. ***Note ▪*** **SdFinishUpdate** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdFinishUpdateEx	InstallScript, InstallScript MSI	Displays a dialog that indicates that the installation is complete. The dialog includes the option to check for application updates.  ***Note ▪*** **SdFinishUpdateEx** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*
SdFinishUpdateReboot	InstallScript, InstallScript MSI	Displays a dialog that indicates that the installation is complete. The dialog gives the end user the option to restart the system and to check for application updates.  ***Note ▪*** **SdFinishUpdateReboot** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*
SdLicense	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file identified in the parameter szLicenseFile. The dialog shows a question in a static text field. The end user responds by clicking the Yes or No button. The SdLicenseEx function supersedes this function.
SdLicense2	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file identified in the parameter szLicenseFile. The dialog displays two radio buttons (one for accepting the terms of the license agreement, and one for not accepting them). The Next button becomes enabled when the end user clicks the appropriate button to accept the terms of the license agreement. The SdLicense2Ex function supersedes this function.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdLicense2Ex	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file (.txt) or a rich text file (.rtf) identified in the parameter szLicenseFile. The dialog displays two radio buttons (one for accepting the terms of the license agreement, and one for not accepting them). The Next button becomes enabled when the end user clicks the appropriate button to accept the terms of the license agreement.
SdLicense2Rtf	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text or rich-text format (RTF) file identified in the parameter szLicenseFile. The dialog displays two radio buttons (one for accepting the terms of the license agreement, and one for not accepting them). The Next button becomes enabled when the end user clicks the appropriate button to accept the terms of the license agreement. The SdLicense2Ex function supersedes this function.
SdLicenseEx	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file (.txt) or a rich text file (.rtf). The dialog shows a question in a static text field. The end user responds by clicking the Yes or No button.
SdLicenseRtf	InstallScript, InstallScript MSI	Displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text or rich-text format (RTF) file identified in the parameter szLicenseFile. The dialog shows a question in a static text field. The end user responds by clicking the Yes or No button. The SdLicenseEx function supersedes this function.
SdLogonUserBrowse	InstallScript, InstallScript MSI	Displays a message box that enables end users to select a domain or server and a user name.
SdLogonUserCreateUser	InstallScript, InstallScript MSI	Displays a dialog that enables end users to enter new user information after the end user clicks the New User Information button on the **SdLogonUserInformation** dialog.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdLogonUserInformation	InstallScript, InstallScript MSI	Displays a dialog that prompts the end user for existing user account information or new user information if an account is to be created during the installation.
SdLogonUserListGroups	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select a group from a specified server and populate the Group field in the **SdLogonUserCreateUser** dialog.
SdLogonUserListServers	InstallScript, InstallScript MSI	Displays a dialog that enables end users to browse for the domain or server with which the user account is associated.
SdLogonUserListUsers	InstallScript, InstallScript MSI	Displays a dialog that enables end users to browse and select an existing user for a specified domain or server.
SdOptionsButtons	InstallScript, InstallScript MSI	Displays a dialog with user-defined buttons that provide an end user with various options.
SdOutOfDiskSpace	InstallScript MSI	When triggered by the Windows Installer's INSTALLMESSAGE_OUTOFDISKSPACE message, this dialog displays a message indicating that the target system is out of disk space. **SdDiskSpace2** supersedes this function.
SdPatchWelcome	InstallScript MSI	Creates a dialog that displays a welcome message to end users during a patch installation.
SdRegisterUser	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to specify the user name and company name for the product being installed.
SdRegisterUserEx	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to specify the user name, company name, and serial number for the product being installed.
SdRMFilesInUse	InstallScript MSI	Displays a dialog that includes a list box containing a list of the applications that are open and are locking files. The dialog also includes two radio buttons that allow end users to specify whether the installation should attempt to use the Restart Manager to shut down the applications that are locking files or attempting to overwrite the locked files (which most likely results in the need for a reboot to complete the installation).
SdSelectFolder	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select a folder from a list of program folders.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdSetupCompleteError	InstallScript, InstallScript MSI	Displays a dialog to inform the end user that the installation was interrupted before it could be completed.
SdSetupType	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to select one of the three standard setup types: Typical, Compact, or Custom.
SdSetupType2	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select one of the two standard setup types: Typical or Custom.
SdSetupTypeEx	InstallScript MSI	Displays a dialog that enables end users to select standard or custom setup types.
SdShowAnyDialog	InstallScript, InstallScript MSI	Displays a general-purpose dialog from a resource DLL. You cannot receive any input from the end user when showing a dialog with **SdShowAnyDialog**.
SdShowDlgEdit1	InstallScript, InstallScript MSI	Displays a dialog that has one single-line edit field and other static controls.
SdShowDlgEdit2	InstallScript, InstallScript MSI	Displays a dialog that has two single-line edit fields and other static controls.
SdShowDlgEdit3	InstallScript, InstallScript MSI	Displays a dialog that has three single-line edit fields and other static controls.
SdShowFileMods	InstallScript, InstallScript MSI	Presents a dialog that previews the changes that may be made to a file and enables end users to approve the changes, reject the changes, or request that the changes be written to a file.
SdShowInfoList	InstallScript, InstallScript MSI	Displays a scrollable list of messages in a dialog.
SdShowMsg	InstallScript, InstallScript MSI	Displays a message in a small window.
SdStartCopy	InstallScript, InstallScript MSI	Presents a dialog that displays the options and settings that have been specified by the end user.
SdStartCopy2	InstallScript, InstallScript MSI	Presents a dialog that informs the end user that the file transfer process is about to begin. The user can click the Back button to return to previous dialogs in order to change settings as required.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SdWelcome	InstallScript, InstallScript MSI	Displays a general-purpose greeting.
SdWelcomeMaint	InstallScript, InstallScript MSI	Displays a dialog for use at the beginning of a maintenance setup.
SelectDir	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select a folder. SelectDir creates the folder if it does not exist.
SelectDirEx	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select a folder.
SelectFolder	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select a folder from a list of program folders.
SetupType	InstallScript, InstallScript MSI	Presents a dialog that enables the end user to select a typical, compact, or custom setup.
SetupType2	InstallScript, InstallScript MSI	Presents a dialog that enables the end user to select one of the two standard setup types: Complete or Custom.
SprintfBox	Basic MSI, InstallScript, InstallScript MSI	Returns a formatted string composed of one or more character, numeric, or string values.
SQLBrowse	InstallScript, InstallScript MSI	Creates a dialog that enables the end user to bring up a list of all SQL Servers available on the network. **SQLBrowse2** supersedes this function.
SQLBrowse2	InstallScript, InstallScript MSI	Creates a dialog that lets an end user display a list of all database servers that are available on the network for the database technologies specified for a connection.
SQLServerLogin	InstallScript, InstallScript MSI	Creates a dialog that is used by the script to specify SQL login credentials. These credentials include the login ID and password.
SQLServerSelect	InstallScript, InstallScript MSI	Creates a dialog to specify a server to target.

Table 10 ▪ Dialog Functions (cont.)

Function	Project Type	Description
SQLServerSelectLogin	InstallScript, InstallScript MSI	Creates a login dialog that enables the targeted end user to specify which SQL Server should to be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the combo box; clicking this button displays a list of all SQL Servers that are available on the network. **SQLServerSelectLogin2** supersedes this function.
SQLServerSelectLogin2	InstallScript, InstallScript MSI	Creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. This function also optionally shows the connection name that is associated with the connection information. In addition, it optionally enables end users to specify which database catalog should be used for the current connection.
SQLServerSelectLoginEx	InstallScript, InstallScript MSI	Creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. This function also shows the connection name that is associated with the connection information. **SQLServerSelectLogin2** supersedes this function.
Welcome	InstallScript, InstallScript MSI	Presents a dialog that displays welcome information.

Note ▪ *Garbled characters in InstallScript dialogs is an indication that the system where the setup is being installed has a font issue. With the following ways this issue can be resolved:*

- *Set the font of an InstallScript dialog using below code:*

  ```
  //code snippet.
  if(SELECTED_LANGUAGE == "Language code") then
  DialogSetFont("Font family name","Font Size",0);
  end if;
  ```

  For instance, if you select the Korean language as a setup language and run the setup in a Japanese machine, the Korean font (Gulim) that is used by resource .dll is discontinued in the Windows 10 and Windows11. The dialog controls of dialog in the resource dialog have the korean strings with the Gulim font.

  ```
  if(SELECTED_LANGUAGE == "0x0412") then
  DialogSetFont("Malgun Gothic","9",0);
  end if;
  ```

  Now, the Gothic font is supported for the Korean language in both the Windows English and Windows Japanese operating system. You can check the supported font for the particular operating systen in the C:\Windows\Fonts directory.

- *Update machine with the required language. Set the target machine's language in accordance with the setup. For more information, see this Microsoft article.*

Dialog Customization Functions

Use the following functions to create and customize new InstallScript dialogs, and to modify the text, controls, and behavior of InstallScript dialogs. Some of the functions handle custom dialog processing.

Any Windows dialog that you can create can be used in a setup script. The dialogs can have single and multiline edit boxes, single and multiselection list boxes, combo boxes, radio buttons, check boxes, and push buttons as standard controls. For more complex controls, advanced functions such as **CmdGetHwndDlg**, **LOWORD**, and **HIWORD** are provided.

Table 11 ▪ Dialog Customization Functions

Function	Description
CmdGetHwndDlg	Retrieves the handle of a dialog.
CtrlClear	Deletes the contents of an edit, static, list box, or combo box control.
CtrlDir	Fills a list box or combo box with either a directory listing or a file listing.
CtrlGetCurSel	Returns the selected item from a list box or combo box.
CtrlGetDlgItem	Retrieves the window handle of a control in a custom dialog.

Table 11 ▪ Dialog Customization Functions (cont.)

Function	Description
CtrlGetMLEText	Retrieves the text from a multi-line edit or static field.
CtrlGetMultCurSel	Returns the selected items from a multi-selection list box.
CtrlGetState	Retrieves the state of a radio button, check box, or push button control from a dialog.
CtrlGetSubCommand	Retrieves the operation performed on the control after a **WaitOnDialog** function call.
CtrlGetText	Retrieves the text from an edit field, a static field, or the edit field of a combo box.
CtrlGetUrlForLinkClicked	Retrieves the URL for a link that an end user clicked.
CtrlPGroups	Retrieves a list of program group names that exist on the target system.
CtrlSelectText	Selects the text displayed in an edit field.
CtrlSetCurSel	Finds and sets the current selection in a list box or combo box.
CtrlSetFont	Specifies a font for a control in the dialog.
CtrlSetList	Places the contents of a list into a list box or combo box.
CtrlSetMLEText	Sets the text in a multi-line edit field.
CtrlSetMultCurSel	Sets the current selection in a multi-selection list box.
CtrlSetState	Sets the current state of a check box, radio button, or push button control.
CtrlSetText	Sets the text in an edit field, a static text field, or the edit field of a combo box.
DefineDialog	Registers a custom dialog with InstallShield.
DialogSetFont	Sets the font for dialogs displayed during the setup.
DialogSetInfo	Changes display elements in the dialogs presented by some built-in dialog functions.
EndCurrentDialog	Closes the currently displayed dialog by calling **EndDialog**.
EndDialog	Closes a custom dialog.
EzDefineDialog	Registers a custom dialog with InstallShield.

Table 11 ▪ Dialog Customization Functions (cont.)

Function	Description
GetCurrentDialogName	Retrieves the name of the currently displayed dialog as it was specified in the call to **EzDefineDialog** when the dialog was defined.
GetFont	Retrieves the handle of a font.
HIWORD	Retrieves the high-order word from a 32-bit integer.
LOWORD	Retrieves the low-order word from a 32-bit integer.
ReleaseDialog	Frees the memory associated with a dialog.
SdGeneralInit	Provides standard dialog initialization, including setting the enable or disable state of the Next, Back, and Cancel buttons. This function also replaces all %P, %VS, and %VI instances on static controls with control IDs 700 through 724, and 202.
SdInit	Prepares a setup for calls to Sd dialog functions.
SdLoadString	Returns the string value associated with a specified resource ID.
SdMakeName	Creates a section name for a custom dialog. This section name is used in writing to and reading from an .iss file, which is used by InstallShield Silent.
SdProductName	Inserts your product name in certain static fields of the script dialogs.
SdSubstituteProductInfo	Replaces any occurrences of the %P, %VS, and %VI placeholders with the values of the system variables IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and IFX_INSTALLED_DISPLAY_VERSION. You can use this function before calling a function, such as MessageBox, that does not automatically perform this replacement before displaying strings.
SilentReadData	Instructs InstallShield Silent to read the .iss file dialog data for a custom dialog.
SilentWriteData	Instructs InstallShield Silent to write to the .iss file dialog data for a custom dialog.
WaitOnDialog	Presents a custom dialog.

Extensibility Functions

Extensibility functions allow you to call functions in dynamic-link libraries, call Windows APIs, or launch another application or setup script. The UseDLL and UnUseDLL functions allow you to load or unload a DLL into memory and make use of the DLL. The LaunchApp and LaunchAppAndWait functions allow you to launch another Windows or DOS application while the script is still executing.

Table 12 ▪ Extensibility Functions

Function	Description
CallDLLFx	Calls a function from an external DLL.
Delay	Delays the execution of the setup script.
LaunchApp	Launches another program. **LaunchApplication** supersedes this function.
LaunchAppAndWait	Launches another program and waits for that program to terminate. **LaunchApplication** supersedes this function.
LaunchAppAndWaitInitStartupInfo	Initializes the LAAW_STARTUPINFO and LAAW_PARAMETERS system variables to the appropriate default values. **LaunchApplicationInit** supersedes this function.
LaunchApplication	Uses either the Windows API function **CreateProcess** or the Windows API function **ShellExecuteEx** to launch the specified application. After the application is launched, the installation can optionally call WaitForApplication to wait for the application to terminate.
LaunchApplicationInit	Initializes the LAAW_STARTUPINFO and LAAW_PARAMETERS system variables to the appropriate default values. This function is called automatically during installation initialization.
UnUseDLL	Unloads a DLL from memory.
UseDLL	Loads a DLL into memory.
WaitForApplication	Waits for a running application to terminate before returning.

Feature Functions

The functions below allow you to control file media and to create and process script-created feature sets.

Table 13 ▪ Feature Functions

Function	Project Type	Description
FeatureAddCost	InstallScript	Specifies that the feature includes additional installation operations that should be accounted for when updating the progress bar during the installation.  ***Note ▪*** *This function is supported only for file media. Use* **FeatureGetData** *or* **FeatureSetData** *to set the size of script-created features.*
FeatureAddItem	InstallScript, InstallScript MSI	Adds a new feature to a script-created feature set.
FeatureAddUninstallCost	InstallScript	Specifies that the feature includes additional uninstallation operations that must be accounted for when updating the progress bar during uninstallation.
FeatureCompareSizeRequired	InstallScript, InstallScript MSI	Determines if enough free disk space exists for the selected features.
FeatureDialog	InstallScript, InstallScript MSI	Presents a dialog that enables end users to select features and specify a destination location.
FeatureError	InstallScript, InstallScript MSI	Returns additional error information when a feature function fails.
FeatureErrorInfo	InstallScript, InstallScript MSI	Returns additional error information when a feature function fails.
FeatureFileEnum	InstallScript, InstallScript MSI	Builds a list of the files in a component associated with the specified feature.
FeatureFileInfo	InstallScript, InstallScript MSI	Retrieves information on file in the file media that is referenced within the function.
FeatureFilterLanguage	InstallScript, InstallScript MSI	Enables and disables filtering based on language.
FeatureFilterOS	InstallScript, InstallScript MSI	Enables and disables filtering based on operating system (OS).

Table 13 ▪ Feature Functions (cont.)

Function	Project Type	Description
FeatureGetCost	InstallScript, InstallScript MSI	Retrieves the total space, in kilobytes (KB), required on the target drive for the specified feature. **FeatureGetCostEx** supersedes this function.
FeatureGetCostEx	InstallScript, InstallScript MSI	Retrieves the cost of the specified feature (in bytes) using the nvCostHigh and nvCostLow parameters.
FeatureGetData	InstallScript, InstallScript MSI	Retrieves information about a feature.
FeatureGetItemSize	InstallScript, InstallScript MSI	Determines the size of a specified feature.
FeatureGetTotalCost	InstallScript, InstallScript MSI	Determines the total space required for the feature installations and uninstallations that have been specified. **FeatureGetCostEx** supersedes this function.
FeatureInitialize	InstallScript	Supported only for compatibility with scripts created in earlier versions of InstallShield. It is recommended that you avoid using multiple file media libraries in InstallShield.
FeatureIsItemSelected	InstallScript, InstallScript MSI	Determines if the specified feature has been selected by the end user.
FeatureListItems	InstallScript, InstallScript MSI	Creates a list of the features in a file media library or a script-created feature set.
FeatureLoadTarget	InstallScript	Called automatically during the initialization of any installation for which a valid log file exists.
FeatureMoveData	InstallScript	Transfers and decompresses files associated with selected features in the file media.
FeaturePatch	InstallScript	Called only in installations that use differential media. This function causes the next call to **FeatureTransferData** or **FeatureMoveData** to reinstall all features that are already installed when **FeatureTransferData** is called, including all of the maintenance/uninstallation feature's files except for Data1.hdr, Data1.cab, and Layout.bin.
FeatureReinstall	InstallScript, InstallScript MSI	Configures the setup so that the next call to **FeatureTransferData** performs the file transfer that was specified the last time the setup was run.

Table 13 ▪ Feature Functions (cont.)

Function	Project Type	Description
FeatureRemoveAll	InstallScript, InstallScript MSI	Configures the setup so that the next call to **FeatureTransferData** uninstalls the setup.
FeatureRemoveAllInLogOnly	InstallScript	Called during an update installation to force the removal of all features that are not in the current media but were installed previously, as recorded in the setup log file.
FeatureRemoveAllInMedia	InstallScript	Used during a maintenance installation to force the removal of all features that are in the current media and were installed previously. This function is generally called when the user selects the Remove option on the **SdWelcomeMaint** dialog.
FeatureRemoveAllInMediaAndLog	InstallScript	Called during an update installation to force the removal of all features that were installed previously—both those that are in the current media, and those that are not in the current media but are recorded in the setup log file.
FeatureSaveTarget	InstallScript, InstallScript MSI	Retrieves the current values of all text substitutions used by the installation project and stores them in the installation log file.
FeatureSelectItem	InstallScript, InstallScript MSI	Selects or deselects features.
FeatureSelectNew	InstallScript	Sets the selection status of all new features to either selected or unselected.
FeatureSetData	InstallScript, InstallScript MSI	Sets properties and data for the specified feature.
FeatureSetTarget	InstallScript, InstallScript MSI	Specifies a user-defined variable for a file media library.
FeatureSetupTypeEnum	InstallScript, InstallScript MSI	Enumerates the setup types associated with the specified file media library.
FeatureSetupTypeGetData	InstallScript, InstallScript MSI	Retrieves data associated with a specified setup type that has been created in the InstallShield interface.
FeatureSetupTypeSet	InstallScript, InstallScript MSI	Selects all features associated with the specified setup type.
FeatureSpendCost	InstallScript	Updates the progress bar for a certain amount of cost that has been spent by an event external to the installation.

Table 13 ▪ Feature Functions (cont.)

Function	Project Type	Description
FeatureSpendUninstallCost	InstallScript	Updates the progress bar for a certain amount of uninstallation cost that has been spent by an event external to the installation.
FeatureStandardSetupTypeSet	InstallScript, InstallScript MSI	Sets the current setup type to the standard setup type specified by nSetupType.
FeatureTotalSize	InstallScript, InstallScript MSI	Calculates the total size, in bytes, of selected features and subfeatures.
FeatureTransferData	InstallScript, InstallScript MSI (if the InstallScript user interface (UI) style is the traditional style, which uses the InstallScript engine as an external UI handler)	 ***Important ▪*** *This function does not apply to InstallScript MSI projects in which the InstallScript UI style is the new style (which uses the InstallScript engine as an embedded UI handler). To learn more, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.* In an event-based script, installs or uninstalls features appropriately based on their selection state and whether they are currently installed.
FeatureUpdate	InstallScript	Configures the installation so that the next call to **FeatureTransferData** or **FeatureMoveData** reinstalls all features that are already installed.
FeatureValidate	InstallScript	Validates the password of the file media library or of a specified feature.
SdSetupType	InstallScript, InstallScript MSI	Displays a dialog that enables end users to select one of the three standard setup types: Typical, Compact, or Custom.
SdSetupType2	InstallScript, InstallScript MSI	Displays a dialog that enables the end user to select one of the two standard setup types: Typical or Custom.
SdSetupTypeEx	InstallScript MSI	Displays a dialog that enables the end user to select the setup type when you specify setup types beyond Complete and Custom.

Script-Created Feature Set vs. File Media Library

You can create features at run time by calling the FeatureAddItem function in your setup script. These script-created features reside only in memory and have no direct connection to a file media library. Unlike the information stored in a file media library, script-created features are not—and cannot be—directly associated with components or a setup type.

However, script-created features provide a convenient way of displaying feature-like options for the end user. After the end user makes feature selections in feature dialogs, you can test the script-created features' selection status and use the result as the basis for carrying out some action. For example, you might want to install files with XCopyFile or VerUpdateFile, select features in the file media library, or create or edit a file.

Building a Script-Created Feature

To build a new script-created feature, call the FeatureAddItem function. Then, set and access properties for the script-created feature using the InstallScript feature functions much as you would for features in a file media library (exceptions noted below).

Referring to Script-Created Feature Sets

Script-created features are often referred to collectively as a "script-created feature set." The reason is that they are often handled just like file media library features by feature functions. You must treat all features as a set when you pass their media name to the feature functions.

Note ▪ *You create the media name in the first parameter of FeatureAddItem. Use this value when you create features and subfeatures as part of the same "script-created feature set" and when you refer to existing script-created features in your script.*

Using Feature Functions

Since the two types of features are so different, you call some of the feature functions differently depending on whether you are working with a script-created feature or a feature in a file media library.

File Media Library and Script-Created Feature Set Functions

These functions can be used on both a feature in a file media library or on a script-created feature:

- FeatureGetData
- FeatureSetData

File Media Library Functions

These functions work only with features in a file media library, but not with script-created features:

- FeatureCompareSizeRequired
- FeatureFilterLanguage
- FeatureFilterOS
- FeatureSetTarget
- FeatureSetupTypeEnum

- FeatureSetupTypeGetData
- FeatureSetupTypeSet
- FeatureTransferData

Script-Created Feature Set Function

The FeatureAddItem function works exclusively with script-created feature sets.

File Media Library

The file media library contains your product's files and all the information that you entered in the InstallShield interface about your installation's component, feature, and setup type settings.

The file media library is created when you create a release for your project. It is defined by `Data1.hdr`, the InstallScript header file. It also has a media name, the default value of which is contained in the MEDIA system variable.

You can set and access information in your file media library using the InstallScript feature functions.

Note ▪ *Some InstallScript feature functions are specifically reserved for use with script-created features.*

File and Folder Functions

File and folder functions provide a comprehensive way to work with text files, binary files, and folders. Many of the functions use the variables TARGETDIR (in InstallScript projects), INSTALLDIR (in InstallScript MSI and Basic MSI projects) and SRCDIR as the paths and accept only file names as parameters. Wild-card characters are also accepted where appropriate.

Table 14 ▪ File and Folder Functions

Function	Description
ChangeDirectory	Makes the specified directory the current directory.
CloseFile	Closes an open file.
CopyFile	Copies a file from one folder to another.
CreateDir	Creates a new folder.
CreateFile	Creates a file with the specified file name.
DeleteDir	Deletes a folder.
DeleteFile	Deletes a file.
ExistsDir	Determines whether or not the specified directory exists.

Table 14 ▪ File and Folder Functions (cont.)

Function	Description
ExistsDisk	Determines whether or not the specified disk exists.
FileCompare	Compares one file with another.
FileDeleteLine	Deletes a line in a text file.
FileGrep	Searches a text file for specified text.
FileInsertLine	Inserts a line in a text file.
FindAllDirs	Finds all subfolders under the specified folder.
FindAllFiles	Finds all files in the specified folder and its subfolders that match a file specification.
FindFile	Finds the first file in the specified folder that matches a file specification.
GetFileInfo	Retrieves a file's attributes, date, time, and size.
GetLine	Retrieves a line of text from an open file.
GetTempFileNameIS	Calls the Windows API **GetTempFileName** to create a temporary file and perform related actions. Note that unlike **GetTempFileName**, **GetTempFileNameIS** creates the folder specified by szPathName if it does not already exist.
Is	Provides file and path checking services, searches for a math coprocessor, tests for administrator privileges, determines whether a particular version of the .NET Framework or a language pack is present on the target system, determines whether Microsoft Windows is running from a shared copy on a network, and more.
OpenFile	Opens an existing file.
OpenFileMode	Sets the mode in which files will be opened with the OpenFile function.
ReadBytes	Reads the specified number of bytes from a binary file.
RenameFile	Renames a file.
SeekBytes	Positions the file pointer in a binary file.
SetFileInfo	Sets the attributes, date, and time of a file.
SetObjectPermissions	Sets permissions for a file, a folder, or a registry key. The file, folder, or registry key can be installed as part of your installation, or it can be already present on the target system.
WriteBytes	Writes a specified number of bytes to a binary file at the current file pointer location.

Table 14 ▪ File and Folder Functions (cont.)

Function	Description
WriteLine	Writes a string to a text file.
XCopyFile	Copies one or more files from a source folder to a target folder, including subfolders if specified.

Related Function

Table 15 ▪ Related Function

Function	Description
SelectDir	Presents a dialog that enables end users to select a folder. **SelectDir** creates the folder if it does not exist.

Information Functions

The following information functions provide data about resources that are available in the operating environment: disk space, memory, and operating mode.

Table 16 ▪ Information Functions

Function	Description
GetDiskInfo	Gets information about a specified disk drive.
GetDiskSpace	Returns the number of bytes available (unused) on the specified disk (up to 2 gigabytes).
GetDiskSpaceEx	Returns the amount of free space on a disk in bytes, kilobytes, megabytes, or gigabytes.
GetEnvVar	Returns the current value of an environment variable.
GetExtendedErrInfo	Returns the error information that was set by **SetExtendedErrInfo**.
GetExtents	Returns the dimensions of the screen.
GetMemFree	This function is obsolete and should not be used.
GetSystemInfo	Retrieves system information.
GetTrueTypeFontFileInfo	Returns information about a particular TrueType font file.
GetValidDrivesList	Returns a listing of all available drives on the target system.

Table 16 ▪ Information Functions (cont.)

Function	Description
GetWindowHandle	Returns the handle of the main installation window.
Is	Provides file and path checking services, searches for a math coprocessor, tests for administrator privileges, determines whether a particular version of the .NET Framework or a language pack is present on the target system, determines whether Microsoft Windows is running from a shared copy on a network, and more.
SetExtendedErrInfo	Sets error information, which can be retrieved by **GetExtendedErrInfo**.
SetInstallationInfo	Sets the values of the system variables IFX_COMPANY_NAME, IFX_PRODUCT_NAME, IFX_PRODUCT_VERSION, and IFX_PRODUCT_KEY.

Initialization File Functions

Initialization file functions obtain information from and copy information to the initialization and profile files. An initialization file is a special ASCII file that contains key name-value pairs. The key name-value pairs represent run-time options for applications. You can also access and update private initialization file and system initialization files. The following list briefly describes each initialization file function.

Table 17 ▪ Initialization File Functions

Function	Description
AddProfString	Adds a non-unique key to a section of the .ini file.
GetProfInt	Returns an integer from an .ini file.
GetProfString	Returns a string from an .ini file.
GetProfStringList	Retrieves lists of key names and string values from an .ini file.
ReplaceProfString	Replaces a string in a profile (.ini) file.
WriteProfInt	Writes a string with an integer value to an .ini file.
WriteProfString	Writes a string to an .ini file.

Related Function

Table 18 ▪ Related Function

Function	Description
SdShowFileMods	Creates a dialog displaying proposed file changes and offering options on how to proceed.

List Processing Functions

Lists are used to store groups of related information. In InstallScript, there are two types of lists: string lists and number lists. Two sets of functions are provided to work with lists, one for each list type. List functions that end with "Item" operate with number lists. List functions that end with "String" operate with string lists. You cannot use number list functions on string lists and vice versa. Below are the functions to implement lists in a setup script.

Table 19 ▪ List Processing Functions

Function	Description
ListAddItem	Adds an item to a list.
ListAddString	Adds a string to a list.
ListCount	Returns the number of string or numeric elements in a specified list.
ListCreate	Creates a new string or number list.
ListCurrentItem	Returns the current item in a list.
ListCurrentString	Returns the current string in a list.
ListDeleteItem	Deletes the current item in a list.
ListDeleteString	Deletes the current string in a list.
ListDestroy	Destroys a list.
ListFindItem	Makes the specified item the current item in a numeric list.
ListFindKeyValueString	Searches a string or number list for a specified value. It returns a value from an additional list that corresponds with the position of the found string in the first list.
ListFindString	Makes the specified item the current item in a string list.
ListGetFirstItem	Retrieves the first element from a number list.
ListGetFirstString	Retrieves the first string from a string list.

Table 19 ▪ List Processing Functions (cont.)

Function	Description
ListGetNextItem	Retrieves the element after the current element from a number list.
ListGetNextString	Retrieves the element after the current element from a string list.
ListReadFromFile	Reads a text file into a list.
ListSetCurrentItem	Sets the current element of a number list.
ListSetCurrentString	Sets the current element of a string list.
ListSetIndex	Uses an index to set the current element of a list.
ListValid	Indicates whether the specified list is valid.
ListValidType	Indicates whether the specified list is valid and is of the specified type.
ListWriteToFile	Writes a string list to a file.
ListWriteToFileEx	Writes or appends a string list to a text file as Unicode or ANSI, depending on the constants that you provide for the nOptions parameter.

Log File Functions

Project ▪ *This information applies to InstallScript projects.*

Log file functions obtain information from and copy information to the custom logging section of the log file. Custom log file entries do not affect maintenance or uninstallation of the application unless you add code to the script to read custom values and perform actions based on those values. The log file functions cannot read data from or write data to the maintenance/uninstallation section of the log file (that is, the section where the setup automatically writes data, such as the files that are installed and the registry entries that are created, and from which it automatically reads data during maintenance or uninstallation). The following list briefly describes each log file function.

Table 20 ▪ Log File Functions

Function	Description
LogReadCustomNumber	Reads numeric data from the log file's custom logging section.
LogReadCustomString	Reads string data from the log file's custom logging section.
LogWriteCustomNumber	Writes numeric data to the log file's custom logging section.
LogWriteCustomString	Writes string data to the log file's custom logging section.

Long File Name Functions

The following functions create long file names from short file names, convert short file names to long file names, and place double quotation marks around long file names so that operating systems that handle long file names can recognize them.

Table 21 ▪ Log File Name Functions

Function	Description
LongPathFromShortPath	Creates a long file name from a short file name.
LongPathToQuote	Inserts or removes double quotation marks around a long file name.
LongPathToShortPath	Creates a short file name from a long file name.

Miscellaneous Functions

The following functions serve various purposes, such as low-level hardware interface, feature creation and manipulation, and user output.

Table 22 ▪ Miscellaneous Functions

Function	Description
Do	Executes the currently defined EXIT and HELP handlers.
DoInstall	Launches another InstallShield installation.
FormatMessage	Returns a string error message for a large negative error code.
Handler	This function is obsolete. Use HandlerEx instead.
HandlerEx	Specifies a label to branch to in response to exit and help events.
ISCompareServicePack	Compares the Service Pack number installed on the target OS to a specified Service Pack number.
IsEmpty	Checks whether a variable of type VARIANT has been initialized.
MessageBeep	Produces a standard warning beep.
Resize	Resizes an InstallScript array.
SendMessage	Sends a Windows message to another window or application.
SetObjectPermissions	Sets permissions for a file, a folder, or a registry key.
SizeOf	Returns the size of an InstallScript array.

Table 22 ▪ Miscellaneous Functions (cont.)

Function	Description
Sprintf	Returns a formatted string composed of one or more character, numeric, or string values.
SprintfMsiLog	Writes a message directly to the Windows Installer log file.
StreamFileFromBinary	Streams a binary key with a file.
System	Reboots the computer.
VarInit	Initializes or reinitializes internal lists used by the **VarSave** and **VarRestore** functions. Calling this function effectively clears any information stored by previous **VarSave** calls and not yet used by subsequent **VarRestore** functions.
VarRestore	Restores the values of the system variables SRCDIR, TARGETDIR (in InstallScript projects), and INSTALLDIR (in Basic MSI and InstallScript projects) that were saved by the last call to **VarSave**.
VarSave	Saves the current value of the system variables SRCDIR, TARGETDIR (in InstallScript projects), and INSTALLDIR (in Basic MSI and InstallScript projects).

Object Functions

The object functions are available to assist you with initializing objects, as well as obtaining and setting status information for objects.

Table 23 ▪ Object Functions

Function	Description
CoCreateObject	Initializes a COM object and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.
CoCreateObjectDotNet	The **CoCreateObjectDotNet** function has been deprecated. Calling this function is the same as calling the **DotNetCoCreateObject** function with a null string ("") for the szAppDomain parameter. For more information, see DotNetCoCreateObject.
CoGetObject	Returns a reference to the specified COM object (as Visual Basic's GetObject function does); that reference can be assigned to a variable of type OBJECT by using the set keyword.
DotNetCoCreateObject	Calls functions in .NET assemblies without the assembly being registered for COM interoperability. This function, unlike the **CoCreateObjectDotNet** function, lets you specify the .NET application domain in which the .NET assemblies should be loaded and run.

Table 23 ▪ Object Functions (cont.)

Function	Description
DotNetUnloadAppDomain	Unloads the specified .NET application domain and releases any assemblies that are currently loaded into the specified application domain.
GetObject	Initializes an object and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.
GetObjectByIndex	Finds the installation's or object's subobject that is specified by nIndex and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.
GetObjectCount	Returns the number of subobjects contained by the object or installation.
GetStatus	Retrieves the current status of the object; that is, the current value of Status.Number.
IsObject	Checks whether a variable of type OBJECT has been assigned a reference to a valid object, using the CreateObject or GetObject functions.
SetStatus	Called in an object script to set the object's Status.Number and Status.Description properties.
SetStatusEx	Called in an object script to set the object's status properties.

Path Buffer Functions

The path buffer functions are available to assist you in working with strings that contain search paths. The path string functions work on a unique temporary string variable known as the path buffer. The path buffer is defined internally within InstallShield—all the path string functions act on the contents of the path buffer.

Path functions assist you in manipulating and building path strings. After you have created a path string, you can save it to the appropriate file.

Table 24 ▪ Path Buffer Functions

Function	Description
PathAdd	Adds a path to the search path in the path buffer.
PathDelete	Deletes a directory from the path buffer.
PathFind	Finds a specific path in the path buffer or any path that includes a specified name.
PathGet	Retrieves the current value of the path buffer.
PathMove	Rearranges the path buffer.

Table 24 ▪ Path Buffer Functions (cont.)

Function	Description
PathSet	Assigns a value to the path buffer.

Registry Functions

The following functions allow you to access the registry, read, create and delete registry keys, and establish registry-related parameters for uninstallation.

Table 25 ▪ Registry Functions

Function	Description
CreateInstallationInfo	Creates an application information key and a per application paths key for the program you are installing.
CreateRegistrySet	Creates one or all of the sets of registry entries specified in the Resources pane's Registry Entries folder.
DeinstallSetReference	This function is obsolete. If you want to check whether a file is locked during uninstallation, write script code that calls the Is function with the FILE_LOCKED constant for the nIsFlag parameter and that responds as needed.
DeinstallStart	This function is obsolete.
InstallationInfo	This function is obsolete. Use the CreateInstallationInfo function instead.
MaintenanceStart	Enables uninstallation functionality by creating the <PRODUCT_GUID> registry keys.
RegDBConnectRegistry	Opens a connection to a remote registry.
RegDBCopyKeys	Copies the registry keys and values under the key specified by szSourceKey to the key specified by szTargetKey.
RegDBCopyValues	Copies the registry values under the key specified by szSourceKey to the key specified by szTargetKey.
RegDBCreateKeyEx	Creates a key in the registry. Also enables you to associate a class object with a registry key (advanced users only).
RegDBDeleteItem	Deletes values under the per application paths key or the application uninstallation key, depending on the value of nItem.
RegDBDeleteKey	Deletes the specified key from the registry.

Table 25 ▪ Registry Functions (cont.)

Function	Description
RegDBDeleteValue	Deletes a value from a specified registry key.
RegDBDisConnectRegistry	Closes the connection to a remote registry.
RegDBGetAppInfo	Retrieves a value from under the application information key.
RegDBGetDefaultRoot	Returns the root key that is used by the general registry-related functions.
RegDBGetItem	Retrieves values under the per-application paths key or the application uninstallation key.
RegDBGetKeyValueEx	Retrieves a value from under a key in the registry.
RegDBGetUninstCmdLine	Gets the registered command line for the uninstallation that is specified by szUninstallKey and returns the command line in svUninstCmdLine.
RegDBKeyExist	Checks that a registry key exists.
RegDBQueryKey	Queries a key for its subkeys and value names.
RegDBQueryKeyCount	Returns the number of subkeys or values under a specified key.
RegDBQueryStringMultiStringCount	Returns the number of strings contained in the multistring value specified by a certain value under a specified key.
RegDBSetAppInfo	Sets a value under the application information key.
RegDBSetDefaultRoot	Sets the root key.
RegDBSetItem	Assign values under the per application paths key or the application uninstallation key.
RegDBSetKeyValueEx	Sets registry entries.
SetInstallationInfo	Specifies company and product information for use by CreateInstallationInfo.
SetObjectPermissions	Sets permissions for a file, a folder, or a registry key.

Service Functions

The following functions allow you to access the registry, read, create and delete registry keys, and establish registry-related parameters for uninstallation.

Table 26 ▪ Service Functions

Function	Description
ServiceAddService	Adds a service to the list of services that are registered on the target system.
ServiceExistsService	Determines whether the specified service is registered.
ServiceGetServiceState	Retrieves the sate of the specified service.
ServiceInitParams	Initializes the SERVICE_IS_PARAMS system variable's members to default values. This function is called automatically during setup initialization.
ServiceRemoveService	Removes a service from the target system.
ServiceStartService	Starts a service. If the service is running when the function is called, the installation stops it and then restarts it.
ServiceStopService	Stops a service.

Shared and Locked File Functions

A shared file is a file, such as a .dll, .vbx, or driver that can be used by more than one application. InstallShield protects shared files from being removed during uninstallation.

Functions using the SHAREDFILE option consider all files to be shared files, and therefore increment registry reference counters for all files involved. InstallShield increments the registry reference counter by one if the file exists in the target directory and it has a reference count greater than 0. If the shared file does not exist in the target directory and it has no reference counter, InstallShield creates the counter and sets it to 1. If the shared file already exists in the target directory but has no reference counter, InstallShield creates the counter and initializes it to 2 as a precaution against accidental removal during uninstallation.

Shared files should not be updated when they are locked. Some InstallShield file transfer functions use the SHAREDFILE option so that .dll and .exe files that are locked during file transfer can be recorded and updated when Windows or the system restarts.

InstallShield considers a file locked when it is in use by an application or the system. Locked files are not necessarily shared files.

The following functions handle shared or locked files:

Table 27 ▪ Shared and Locked File Functions

Function	Description
Is	Provides file and path checking services, searches for a math coprocessor, tests for administrator privileges, determines whether a particular version of the .NET Framework or a language pack is present on the target system, determines whether Microsoft Windows is running from a shared copy on a network, and more.
RebootDialog	Presents a dialog with which the end user can choose to restart Windows or reboot the computer.
SdFinishReboot	Presents a dialog stating that the installation is complete and allowing the end user to choose to restart Windows or reboot the computer.
SetObjectPermissions	Sets permissions for a file, a folder, or a registry key.
VerUpdateFile	Updates files using version resource information. Allows updating of locked .dll and .exe files and incrementing of registry reference counters for all files involved.
XCopyFile	Copies files and subdirectories from the source directory to the target directory. Combines shared file and locked file handling by causing XCopyFile to treat all files as shared, and to record locked .dll and .exe files for update when Windows or the system restarts.

Shell Functions

Shell functions create program folders, delete existing program folders, and add items to existing program folders. At the end of the setup, add the application to the appropriate program folder to allow the user to access your software immediately. The following functions also support various icon options.

Table 28 ▪ Shell Functions

Function	Description
AddFolderIcon	Adds a shortcut or program folder to locations such as the Start menu, the Programs menu, or the desktop. **CreateShortcut** supersedes this function.
CreateProgramFolder	Creates a program folder. **CreateShortcutFolder** supersedes this function.

Table 28 ▪ Shell Functions (cont.)

Function	Description
CreateShortcut	Adds a shortcut or program folder to locations such as the Start menu, the Programs menu, or the desktop. Optionally sets Windows Shell properties for the shortcut to configure behavior such as disabling the ability to pin the shortcut to the Start menu.
CreateShortcutFolder	Creates a program folder.
DeleteFolderIcon	Removes a shortcut from a folder. **DeleteShortcut** supersedes this function.
DeleteProgramFolder	Removes a shortcut folder (that is, a subfolder of the Start menu's Programs folder) and its contents, including all shortcuts and all of the shortcut folder's subfolders and their contents. **DeleteShortcutFolder** supersedes this function.
DeleteShortcut	Removes a shortcut from a folder.
DeleteShortcutFolder	Removes a shortcut folder (that is, a subfolder of the Start menu's Programs folder) and its contents, including all shortcuts and all of the shortcut folder's subfolders and their contents.
GetFolderNameList	Retrieves all subfolder names and shortcuts in the specified folder.
GetShortcutInfo	Returns information about a specified shortcut or subfolder.
ProgDefGroupType	Sets the value of the ALLUSERS system variable.
QueryProgItem	Returns information about a specified shortcut or subfolder. **GetShortcutInfo** supersedes this function.
QueryShellMgr	Returns the name of the current shell manager.
ReplaceFolderIcon	Replaces a shortcut in a specified folder. **ReplaceShortcut** supersedes this function.
ReplaceShortcut	Replaces a shortcut in a specified folder.
SelectFolder	Presents a dialog that enables end users to select a folder from a list of program folders.
SetShortcutProperty	Sets one or more shortcut properties that you want the Windows Shell to set at installation run time.

Table 28 ▪ Shell Functions (cont.)

Function	Description
ShowProgramFolder	Displays the specified program folder.

Special Registry-Related Functions

The special registry-related functions are designed to make it easier for script writers to set up the minimum required registry keys and values. The special registry-related functions work only with the per application paths key, the application uninstallation key, or the application information key, as shown below. Refer to the individual function descriptions for more details.

Per Application Paths Key

```
<root key>\Software\Microsoft\Windows\CurrentVersion\App Paths\<per application paths key>
```

This key is referred to as the per application paths key, or App Paths key. The per application paths key stores path information enabling Windows to find your application's executable files. The root key is HKEY_CURRENT_USER if the ALLUSERS system variable is FALSE or you have called ProgDefGroupType(PERSONAL), or HKEY_LOCAL_MACHINE otherwise.

Table 29 ▪ Per Application Paths Key

Function	Description
CreateInstallationInfo	Uses the name of the application executable file to prepare for the creation of the per application paths key. The key is not created until RegDBSetItem is called (see below). If you use an event-based script, the CreateInstallationInfo function is called by the default OnMoveData event handler code.
RegDBDeleteItem	Deletes the per application paths key and the value of [Path] or of [DefaultPath] under that key.
RegDBGetItem	Retrieves the value of [Path] or of [DefaultPath] under the per applications path key.
RegDBSetItem	Results in the creation of the per application paths key, and sets the value of [Path] or of [DefaultPath] under that key.

Application Uninstallation Key

```
<rootkey>\Software\Microsoft\Windows\CurrentVersion\Uninstall\<INSTANCE_GUID>
```

This key is referred to as the application uninstallation key. The application uninstallation key stores information enabling uninstallation functionality. The root key is HKEY_CURRENT_USER if the ALLUSERS system variable is FALSE or you have called ProgDefGroupType(PERSONAL), or HKEY_LOCAL_MACHINE otherwise.

Table 30 ▪ Application Uninstallation Key

Function	Description
MaintenanceStart	Creates the application uninstallation key and sets the [UninstallString], [DisplayName] (the name displayed in Add or Remove Programs), and [LogFile] values under that key. In an event-based script, MaintenanceStart is called in the default OnMoveData event handler code.
RegDBDeleteItem	Deletes the value of [DisplayName] (the name displayed in Add or Remove Programs) under the application uninstallation key.
RegDBGetItem	Retrieves the value of [DisplayName] under the application uninstallation key.
RegDBSetItem	Sets the value of [DisplayName] (the name displayed in Add or Remove Programs) under the application uninstallation key. This value is also set by MaintenanceStart (which, if you use an event-based script, is called in the default OnMoveData event handler code).

Application Information Key

```
<root key>\Software\<company key>\<product key>\<version key>
```

This key is referred to as the application information key. Your installation should create an application information key for each application it installs. The application information key stores information about the application. The root key is HKEY_CURRENT_USER if the ALLUSERS system variable is FALSE or you have called ProgDefGroupType(PERSONAL), or HKEY_LOCAL_MACHINE otherwise.

Table 31 ▪ Application Information Key

Function	Description
CreateInstallationInfo	Uses the company name, product name, and product version number to create the application information key. No values are set under the key until you call the RegDBSetAppInfo function (see below). If you use an event-based script, the CreateInstallationInfo function is called by the default OnMoveData event handler code.
RegDBGetAppInfo	Retrieves a value from under the application information key.
RegDBSetAppInfo	Sets a value under the application information key.

SQL Functions

The SQL functions enable you to perform tasks such as connect to a catalog, create SQL-related dialogs, and obtain SQL run-time errors.

***Tip** ▪ For information on SQL support and SQL-related InstallScript functions, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Table 32 ▪ SQL Functions

Function	Project Type	Description
SQLBrowse	InstallScript, InstallScript MSI	Creates a dialog that enables the end user to bring up a list of all SQL Servers available on the network. **SQLBrowse2** supersedes this function.
SQLBrowse2	InstallScript, InstallScript MSI	Creates a dialog that lets an end user display a list of all database servers that are available on the network for the database technologies specified for a connection.
SQLDatabaseBrowse	InstallScript, InstallScript MSI	Creates a dialog that lets the end user display a list of all database catalogs available on the specified database server. This function calls **SQLRTGetDatabases**, which uses `SQLRT.dll` for InstallScript projects and `ISSQLSRV.dll` for InstallScript MSI projects.
SQLRTComponentInstall	InstallScript	Executes the SQL script that is associated with the specified component if the script is scheduled to run during installation.
SQLRTComponentUninstall	InstallScript	Executes the SQL script that is associated with the specified component if the script is scheduled to run during uninstallation.
SQLRTConnect	InstallScript	Establishes a connection using the specified credential. **SQLRTConnect2** supersedes this function.
SQLRTConnect2	InstallScript	Establishes a connection. This function must be called before file transfer if the connection is to be used to run scripts during installation. **SQLRTConnect2** returns the database server name when it fails to establish the connection. It uses `SQLRT.dll` so it can be called only after **SQLRTInitialize2** has already been called.

Table 32 ▪ SQL Functions (cont.)

Function	Project Type	Description
SQLRTConnectDB	InstallScript	Establishes a connection to a specific catalog.
SQLRTDoRollbackAll	InstallScript	Executes all of SQL scripts scheduled to run during rollback.
SQLRTGetBatchList	InstallScript	Returns the list of components that are associated with SQL scripts that need to be run when batch mode is enabled. For details about batch mode, see Specifying the Order for Running Multiple SQL Scripts That Are Associated with a Connection.
SQLRTGetBatchMode	InstallScript	Returns whether batch mode is enabled or disabled.
SQLRTGetBrowseOption	InstallScript	Returns the current value of the browse option for the SQL Server browse combo box and list box controls, which can display local servers, remote servers, server aliases, or a combination of these types.
SQLRTGetComponentScriptError	InstallScript	Retrieves the last error while executing a SQL script that is associated with the component. **SQLRTGetComponentScriptError2** supersedes this function.
SQLRTGetComponentScriptError2	InstallScript	Retrieves the last error while executing a SQL script that is associated with the component. This function takes several parameters (szScriptName, szTechnology, szServer, and szDB) that the **SQLRTGetComponentScriptError** function does not.
SQLRTGetConnectionAuthentication	InstallScript, InstallScript MSI	Gets the default SQL Server connection authentication type.
SQLRTGetConnectionInfo	InstallScript, InstallScript MSI	Retrieves strings containing the connection information (the default server, database, default user name, and default password).
SQLRTGetConnections	InstallScript, InstallScript MSI	Retrieves a string list of connections that are present in the settings file.

Table 32 ▪ SQL Functions (cont.)

Function	Project Type	Description
SQLRTGetDatabases	InstallScript, InstallScript MSI	Returns a list of database catalogs that are available on the specified database server.
SQLRTGetErrorMessage	InstallScript	Returns the descriptive message of the last error encountered by the SQL run time when a connection is being opened.
SQLRTGetLastError	InstallScript	Returns the text of the last error encountered by the SQL run time. **SQLRTGetLastError2** supersedes this function.
SQLRTGetLastError2	InstallScript	Returns detailed information about the last error encountered by the SQL run time and loads the proper SQL error message.
SQLRTGetScriptErrorMessage	InstallScript	Returns the descriptive message of the last error encountered by the SQL run time when a SQL script is executing.
SQLRTGetServers	InstallScript, InstallScript MSI	Returns a list of database servers on the network for all database technologies included in the installation. **SQLRTGetServers2** supersedes this function.
SQLRTGetServers2	InstallScript, InstallScript MSI	Returns a list of database servers for the database technologies that are specified for a connection. When szConnection is empty, this function behaves as **SQLRTGetServers**.
SQLRTInitialize	InstallScript	Loads the `SQLRT.dll` and initializes it using the settings file. This function must be the first function called in SQLRT. **SQLRTInitialize2** supersedes this function.
SQLRTInitialize2	InstallScript, InstallScript MSI	Loads the `SQLRT.dll` file for InstallScript projects and the `ISSQLSRV.dll` file for InstallScript MSI projects, and it uses the settings file to initialize the .dll file. This function must be the first function called in SQLRT or ISSQLSRV.
SQLRTPutConnectionAuthentication	InstallScript, InstallScript MSI	Sets the default SQL Server connection authentication type.

Table 32 ▪ SQL Functions (cont.)

Function	Project Type	Description
SQLRTPutConnectionInfo	InstallScript, InstallScript MSI	Sets the connection information (the default server, default user name, and default password) so that it is available in the future. This is useful in situations when you need to recall what a user previously entered, like use of the Back button. **SQLRTPutConnectionInfo2** supersedes this function.
SQLRTPutConnectionInfo2	InstallScript, InstallScript MSI	Sets the connection information (the default server, default database catalog, default user name, and default password) so that it is available in the future. This is useful in situations when you need to recall what an end user previously entered, like use of the Back button.
SQLRTServerValidate	InstallScript MSI	Tests connections specified in the installation.
SQLRTSetBrowseOption	InstallScript	Specifies whether the SQL Server browse combo box and list box controls should show local servers, remote servers, server aliases, or a combination of these types.
SQLRTTestConnection	InstallScript MSI	Tests all of the connections specified in the installation using the specified credential. **SQLRTTestConnection2** supersedes this function.
SQLRTTestConnection2	InstallScript MSI	Establishes a connection.
SQLServerLogin	InstallScript, InstallScript MSI	Creates a dialog that is used by the script to specify SQL login credentials. These credentials include the login ID and password.
SQLServerSelect	InstallScript, InstallScript MSI	Creates a dialog to specify a server to target.

Table 32 ▪ SQL Functions (cont.)

Function	Project Type	Description
SQLServerSelectLogin	InstallScript, InstallScript MSI	Creates a login dialog that enables the targeted end user to specify which SQL Server should to be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the combo box; clicking this button displays a list of all SQL Servers that are available on the network. **SQLServerSelectLogin2** supersedes this function.
SQLServerSelectLogin2	InstallScript, InstallScript MSI	Creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. This function also optionally shows the connection name that is associated with the connection information. In addition, it optionally enables end users to specify which database catalog should be used for the current connection.
SQLServerSelectLoginEx	InstallScript, InstallScript MSI	Creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. This function also shows the connection name that is associated with the connection information. **SQLServerSelectLogin2** supersedes this function.

String Functions

The string functions provide the ability to manipulate string variables and literals. String functions behave similarly to the standard C language functions. The return values also follow the C language convention.

Table 33 ▪ String Functions

Function	Description
CopyBytes	Copies a specified number of bytes from one string to another.
GetCArrayFromISArray	Returns a pointer to an array of pointers that point to the actual data of the specified array. This function does not allocate any additional memory, but it returns a pointer to the data in the existing array.
GetCHARArrayFromISStringArray	Returns a pointer to an array of pointers to ANSI character strings that corresponds to the wide character strings that are contained in the specified array.
GetDir	Deletes the drive designation from a path or fully qualified file name.
GetDisk	Retrieves the disk drive designation from a path or fully qualified file name.
NumToStr	Converts a number to a string.
ParsePath	Retrieves the drive, path, file name, or extension from a path.
StrAddLastSlash	Adds a trailing backslash to a path specification if it does not already have one.
StrCompare	Compares one string to another.
StrConvertSizeUnit	Returns the appropriate display string for the InstallScript size unit constant that is specified.
StrFind	Finds a string in another string.
StrFindEx	Determines whether the string passed in the parameter szFindMe is found within the string passed in the parameter szString; the function begins its search at the location specified by nStart.
StrGetTokens	Gets a token from a string based on specified delimiters.
StrLength	Like **StrLengthChars**, returns the number of characters in a given string variable (that is, the number of code units in the UTF-16-encoded string) up to the first null character.

Table 33 ▪ String Functions (cont.)

Function	Description
StrLengthChars	Like **StrLength**, returns the number of characters in a given string variable (that is, the number of code units in the UTF-16-encoded string) up to the first null character.
StrPutTokens	Extracts list items from a specified string list and places them into the string that is specified by svString.
StrRemoveLastSlash	Removes the last backslash in a path string.
StrReplace	Searches svResult, beginning at the location specified by nStart, and replaces all found instances of szFind with szReplace.
StrSub	Returns a substring from a string.
STRTOCHAR	Returns the first character of a string as data of type CHAR.
StrToLower	Converts all alphabetic characters in string to lowercase.
StrToNum	Converts a string to a number.
StrToNumHex	Converts a string to a number—for example, 0x1A to 26.
StrToUpper	Converts all alphabetic characters in string to uppercase.
StrTrim	Removes the leading and trailing spaces and tabs from a string.

Suite/Advanced UI and Advanced UI Interaction Functions

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note ▪ *All of these functions are available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

Furthermore, all of these functions except for **FeatureConfigureFeaturesFromSuite** *and* **SuiteReportError** *are available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.*

The **FeatureConfigureFeaturesFromSuite** *is also available in the following scenarios; however, the other Advanced UI or Suite/Advanced UI functions return an error:*

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

InstallScript includes the following functions for interacting with an Advanced UI or Suite/Advanced UI installation that contains an InstallScript package. These functions (with the exception of **FeatureConfigureFeaturesFromSuite**) are also available for interacting with the running Suite/Advanced UI installation through an InstallScript action.

Table 34 ▪ Suite/Advanced UI and Advanced UI Interaction Functions

Function	Description
FeatureConfigureFeaturesFromSuite	Sets feature states for the current InstallScript package that is running in an Advanced UI or Suite/Advanced UI installation based on the values of the Advanced UI or Suite/Advanced UI properties **ISFeatureInstall** and **ISFeatureRemove**. The function is called by the default code in the OnSuiteInstallBefore event (for an install operation) and OnSuiteMaintBefore event (for a modify operation).
SuiteFormatString	Resolves Advanced UI or Suite/Advanced UI properties in a string with values from the Advanced UI or Suite/Advanced UI installation.
SuiteGetProperty	Retrieves the value of an Advanced UI or Suite/Advanced UI property from the Advanced UI or Suite/Advanced UI installation.
SuiteLogInfo	Logs information about the InstallScript package or action that is running in an Advanced UI or Suite/Advanced UI installation to the Advanced UI or Suite/Advanced UI debug log.
SuiteReportError	Displays a message box in the Advanced UI or Suite/Advanced UI user interface to report an error that occurred as the Advanced UI or Suite/Advanced UI installation ran the InstallScript package.
SuiteResolveString	Replaces an Advanced UI or Suite/Advanced UI string identifier with its corresponding string value in the InstallScript package or action that is running in an Advanced UI or Suite/Advanced UI installation.
SuiteSetProperty	Sets the value of an Advanced UI or Suite/Advanced UI property in the Advanced UI or Suite/Advanced UI installation.

Text Substitutions

Project ▪ *This information applies to InstallScript projects.*

Text substitution consists of associating a string with another string—for example, associating "<MYTEXTSUB>" with "My Text Sub Value"—and of replacing the former string with the latter in other strings—for example, changing "This string demonstrates text substitution <MYTEXTSUB>" to "This string demonstrates text substitution My Text Sub Value". A text-substitution association can be either global—that is, applying to the scripts of the main installation and any included objects—or local—that is, applying only to the script file in which it occurs, any script files that are included in that script by using the #include preprocessor directive, and any script files in which that script is included. A local text-substitution association that is defined in an object script applies only to that object, not to the main installation or any other objects that are included in the installation; a local text-substitution association that is defined in the main installation script applies only to the main installation, not to any objects that are included in the installation.

A text-substitution association can be embedded in another text-substitution association; for example, "<MYTEXTSUB1>" can be associated with "My Text Sub 1 Value" and "<MYTEXTSUB2>" with "Text Sub <MYTEXTSUB1> Embedded".

InstallScript includes the following functions for using text substitutions:

Table 35 ▪ Text Substitutions Functions

Function	Description
TextSubGetValue	Retrieves the text-substitution string that is associated with the specified string.
TextSubParseTextSub	Locates the first text substitution in the specified string.
TextSubSetValue	Creates a text-substitution association between the specified strings.
TextSubSubstitute	Performs text substitution on the specified string variable.

Uninstallation Functions

The following functions perform services required for the uninstallation and/or maintenance setup of an installed application.

Table 36 ▪ Uninstallation Functions

Function	Description
FeatureGetTotalCost	Determines the total space required for the feature installations and uninstallations that have been specified.
FeatureTransferData	Performs the feature installations and uninstallations that have been specified.
InstallationInfo	Creates registry keys based on a company name, product name, and product version number.
RegDBGetItem	Retrieves values under the per application paths key or the application uninstallation key.

Table 36 ▪ Uninstallation Functions (cont.)

Function	Description
RegDBSetItem	Assign values under the per application paths key or the application uninstallation key.

User Interface Functions

User interface functions allow you to customize certain error messages and titles of error boxes. However, several internal error messages that may be encountered during the development of the setup cannot be modified using user interface functions.

Table 37 ▪ Visual Interface Functions

Function	Description
Disable	Disables the display of a user interface object.
Enable	Enables the display of a user interface object.
FindWindow	Retrieves the handle to a window.
PlaceBitmap	Inserts an image into the installation window.
PlaceWindow	Sets the position of user interface objects.
PlayMMedia	Plays an Adobe Flash application file (.swf), an AVI file, or a sound file (MIDI or WAVE).
RGB	Returns a custom color value based on the specified red, green and blue values.
SetColor	Changes the color of various user-interface elements.
SetDialogTitle	Creates custom dialog titles.
SetDisplayEffect	Sets the display effect for bitmap and metafile images.
SetErrorMsg	When a disk error occurs, this function sets the corresponding error message that is displayed by the **EnterDiskError** function.
SetErrorTitle	When a disk error occurs, this function sets the title bar for the error message that is displayed by the **EnterDiskError** function.
SetFont	Sets the font type and style.
SetStatusWindow	Sets the text for the status window and sets the initial percentage completed value that is displayed in the progress indicator.

Table 37 ▪ Visual Interface Functions (cont.)

Function	Description
SetTitle	Sets the text and color of the title in the main window.
SizeWindow	Specifies the size of most user interface objects.
StatusUpdate	Sets the percent complete to display in the progress indicator after the next file transfer operation.

Version-Checking Functions

The following functions enable you to access version information that is present on Windows-based systems. In order to use the functions, you need to know background information about version resources. Review Microsoft Windows documentation to gain a better understanding of the version resource.

Table 38 ▪ Version-Checking Functions

Function	Description
VerCompare	Compares two strings containing version information.
VerFindFileVersion	Searches for the specified file and retrieves its version and location.
VerGetFileLanguages	Retrieves the list of languages that a specified file supports.
VerGetFileVersion	Retrieves the version of a specified file.
VerProductCompareVersions	Compares product versions.
VerProductGetInstalledVersion	Returns the string equivalent of the data in the Version value of the application uninstallation registry key if that data is a packed DWORD.
VerProductIsVersionSupported	Checks whether a version string is a supported version.
VerProductNumToStr	Returns a string for a specified packed DWORD version.
VerProductStrToNum	Returns a packed DWORD version for a specified string.
VerProductVerFromVerParts	Retrieves the packed DWORD that corresponds to the version parts that are specified by nVersionMajor, nVersionMinor, and nVersionBuild.
VerProductVerPartsFromVer	Retrieves as separate numeric values the version parts of a specified packed DWORD.

Table 38 ▪ Version-Checking Functions (cont.)

Function	Description
VerSearchAndUpdateFile	Replaces an existing file with a more recent version. If the specified file does not exist, the more recent version is installed.
VerUpdateFile	Replaces an existing file with a more recent version. If the specified file does not exist, the more recent version is installed.

Windows Installer Functions

Windows Installer functions, or APIs, are functions exported by the Windows Installer engine. They enable you to query and temporarily manipulate tables of a running installation.

One common use for adding temporary records to a running database is to populate user-interface elements with data not available until run time. For example, you can use Windows Installer APIs to populate a ListBox control in dialog with a list of mapped network drives, user accounts, directory names, or other data that can be discovered only while an installation is running on a particular target system.

For more information about any Windows Installer function, see the Windows Installer Help.

Windows Installer API Functions

You can call Windows Installer API functions from the main script and from within an InstallScript custom action. InstallScript supports these Windows Installer API functions:

Note ▪ *Most Windows Installer API functions take a handle to the currently running database as an argument. For an InstallScript custom action, the database handle is the HWND argument passed to the custom action. In an event-handler function, you can use the global variable ISMSI_HANDLE, which stores the handle to the running .msi database.*

Note ▪ *For Windows APIs that require a buffer size and when the size of the value of the buffer size is greater than 1024 characters, a valid buffer size must be specified. For an example of how to write code for this scenario, refer to Changes in Behavior for Some MSI APIs That Are Called in InstallScript Custom Actions in the "Upgrading Projects from InstallShield 2011 or Earlier" topic.*

Table 39 ▪ Windows Installer API Functions

MsiApplyPatch	MsiGetLanguage	MsiRecordSetInteger
MsiCloseHandle	MsiGetLastErrorRecord	MsiRecordSetStream
MsiCreateTransformSummaryInfo	MsiGetMode	MsiRecordSetString
MsiDatabaseApplyTransform	MsiGetProperty	MsiSequence

Table 39 ▪ Windows Installer API Functions (cont.)

MsiDatabaseExport	MsiGetSourcePath	MsiSetComponentState
MsiDatabaseGenerateTransform	MsiGetSummaryInformation	MsiSetFeatureAttributes
MsiDatabaseGetPrimaryKeys	MsiGetTargetPath	MsiSetFeatureState
MsiDatabaseImport	MsiInstallProduct	MsiSetInstallLevel
MsiDatabaseIsTablePersistent	MsiOpenDatabase	MsiSetMode
MsiDatabaseMerge	MsiOpenPackage	MsiSetProperty
MsiDatabaseOpenView	MsiPreviewBillboard	MsiSetTargetPath
MsiDoAction	MsiPreviewDialog	MsiSummaryInfoGetProperty
MsiEnumComponentCosts	MsiProcessMessage	MsiSummaryInfoSetProperty
MsiEvaluateCondition	MsiRecordClearData	MsiVerifyDiskSpace
MsiFormatRecord	MsiRecordDataSize	MsiViewClose
MsiGetActiveDatabase	MsiRecordGetFieldCount	MsiViewExecute
MsiGetComponentState	MsiRecordGetInteger	MsiViewFetch
MsiGetFeatureCost	MsiRecordGetString	MsiViewGetColumnInfo
MsiGetFeatureState	MsiRecordIsNull	MsiViewGetError
MsiGetFeatureValidStates	MsiRecordReadStream	

Windows Installer API Functions by Category

This section includes the function signatures for the Windows Installer API functions available in InstallScript. See the Windows Installer Help for information about a function's usage, parameters, return values, and sequencing restrictions.

MSI Property and Mode Functions

Table 40 ▪ MSI Property and Mode Functions

Function	Description
prototype INT MsiSetProperty(HWND, BYVAL STRING, BYVAL STRING);	Sets the value of a Windows Installer property. Creates the property if it does not exist. (For an example, see Getting or Setting Properties.)
prototype INT MsiGetProductInfo(BYVAL STRING, BYVAL STRING, BYVAL STRING, BYREF INT);	Returns product information for published and installed products.
prototype INT MsiGetProperty(HWND, BYVAL STRING, BYREF STRING, BYREF INT);	Gets the value of a Windows Installer property. Returns a null string ("") if the property does not exist.
prototype INT MsiGetLanguage(HWND);	Returns the numeric language ID for the running installation.
prototype BOOL MsiGetMode(HWND, INT);	Returns an internal boolean Installer state.
prototype INT MsiSetMode(HWND, INT, BOOL);	Sets an internal boolean Installer state.

Feature and Component Functions

Table 41 ▪ Feature and Component Functions

Function	Description
prototype INT MsiGetFeatureState(HWND, BYVAL STRING, BYREF INT, BYREF INT);	Gets the installation state and action state of a feature.
prototype INT MsiSetFeatureState(HWND, BYVAL STRING, INT);	Sets the installation state of a feature.
prototype INT MsiSetFeatureAttributes(HWND, BYVAL STRING, INT);	Sets the attributes for a feature.
prototype INT MsiGetFeatureValidStates(HWND, BYVAL STRING, BYREF INT);	Returns a set of bit flags representing the valid installation states of a feature.

Table 41 ▪ Feature and Component Functions (cont.)

Function	Description
prototype INT MsiGetComponentState(HWND, BYVAL STRING, BYREF INT, BYREF INT);	Gets the installation state and action state of a component.
prototype INT MsiSetComponentState(HWND, BYVAL STRING, INT);	Sets the installation state of a component.
prototype INT MsiGetFeatureCost(HWND, BYVAL STRING, INT, INT, BYREF INT);	Returns the disk cost of a feature (in units of 512 bytes), and optionally its parent and child features.
prototype INT MsiSetInstallLevel(HWND, INT);	Sets the install level for the entire product.

Directory Functions

Table 42 ▪ Directory Functions

Function	Description
prototype INT MsiGetSourcePath(HWND, BYVAL STRING, BYREF STRING, BYREF INT);	Returns the full source path for a directory listed in the Directory table. (The Directory table is exposed in the Direct Editor.)
prototype INT MsiGetTargetPath(HWND, BYVAL STRING, BYREF STRING, BYREF INT);	Returns the full target path for a directory listed in the Directory table.
prototype INT MsiSetTargetPath(HWND, BYVAL STRING, BYVAL STRING);	Sets the full target path for a directory listed in the Directory table.
prototype INT MsiVerifyDiskSpace(HWND);	Verifies if sufficient disk space exists for the current installation.

Database Functions

With the exception of MsiGetActiveDatabase, the first HWND argument in most of these functions is a handle to a specific database view or record.

Table 43 ▪ Database Functions

Function	Description
prototype INT MsiEvaluateCondition(HWND);	Evaluates a conditional expression that contains property names and values.

Table 43 ▪ Database Functions (cont.)

Function	Description
prototype INT MsiGetActiveDatabase(HWND);	Obtains a handle to the running .msi database, which you can use to open database views.
prototype INT MsiDatabaseApplyTransform(HWND, BYVAL STRING, INT);	Applies a transform to a database. A transform is a way of recording changes to a database without altering the original database.
prototype INT MsiDatabaseExport(HWND, BYVAL STRING, BYVAL STRING, BYVAL STRING);	Exports an installer table from an open database to a text archive file.
prototype INT MsiDatabaseGenerateTransform(HWND, BYVAL STRING, INT, INT);	Generates a transform file of differences between two databases. A transform is a way of recording changes to a database without altering the original database.
prototype INT MsiDatabaseGetPrimaryKeys(HWND, BYVAL STRING, BYREF HWND);	Returns a record containing the names of all the primary key columns for a specified table. This function returns a handle that should be closed using MsiCloseHandle.
prototype INT MsiDatabaseImport(HWND, BYVAL STRING, BYVAL STRING);	Imports an installer text archive table into an open database.
prototype INT MsiDatabaseIsTablePersistent(HWND, BYVAL STRING);	Returns an enumeration describing the state of a particular table.
prototype INT MsiDatabaseMerge(HWND, HWND, BYVAL STRING);	Merges two databases together, allowing duplicate rows.
prototype INT MsiDatabaseOpenView(HWND, BYVAL STRING, BYREF INT);	Prepares a database query, creating a view object.
prototype INT MsiFormatRecord(HWND, HWND, BYREF STRING, BYREF INT);	Formats record field data and properties using a format string.
prototype INT MsiViewModify(HWND, INT, HWND);	Modifies a database record. For a running installation, only temporary database changes are allowed.
prototype INT MsiOpenDatabase(BYVAL STRING, BYVAL STRING, BYREF HWND);	Opens a database file for data access. This function returns a handle that should be closed using MsiCloseHandle.
prototype INT MsiViewClose(HWND);	Closes an executed database view.
prototype INT MsiViewExecute(HWND, HWND);	Executes a SQL query.

Table 43 ▪ Database Functions (cont.)

Function	Description
prototype INT MsiViewFetch(HWND, BYREF HWND);	Fetches a record for the current database view.
prototype INT MsiRecordGetString(HWND, INT, BYREF STRING, BYREF INT);	Returns the string stored in a specific field of the specified record.
prototype INT MsiRecordSetString(HWND, INT, BYVAL STRING);	Sets the string stored in a specific field of the specified record.
prototype INT MsiRecordReadStream(HWND, INT, CHAR, POINTER);	Returns the string value of a record field.
prototype INT MsiRecordSetStream(HWND, INT, BYVAL BINARY);	Sets a record stream field from a file. Stream data cannot be inserted into temporary fields.
prototype INT MsiRecordGetInteger(HWND, INT);	Returns the integer stored in a specific field of the specified record.
prototype INT MsiRecordSetInteger(HWND, INT, INT);	Sets the integer stored in a specific field of the specified record.
prototype INT MsiViewGetColumnInfo(HWND, INT, BYREF INT);	Returns a record containing database column names or definitions.
prototype INT MsiRecordGetFieldCount(HWND);	Returns the number of fields (columns) in a record.
prototype INT MsiCloseHandle(HWND);	Closes a database, view, or record handle.
prototype MsiCloseAllHandles( );	Closes all open handles. Provided for diagnostic purposes, and should not be called for general cleanup.
prototype INT MsiViewGetError(HWND, BYREF STRING, BYREF INT);	Returns an error code for an error generated by MsiViewModify.

Summary Information Stream Management Functions

Table 44 ▪ Summary Information Stream Management Functions

Function	Description
prototype MsiGetSummaryInformation(HWND, BYVAL STRING, INT, BYREF HWND);	Obtains a handle to summary information data for an installer database. This function returns a handle that should be closed using MsiCloseHandle.
prototype INT MsiSummaryInfoGetProperty(HWND, INT, BYREF INT, BYREF INT, POINTER, BYREF STRING, BYREF INT);	Gets a single property from the summary information.
prototype INT MsiSummaryInfoSetProperty(HWND, INT, INT, INT, POINTER, BYREF STRING);	Sets a single summary information property.

Miscellaneous Functions

Table 45 ▪ Miscellaneous Functions

Function	Description
prototype INT MsiApplyPatch(BYVAL STRING, BYVAL STRING, INT, BYVAL STRING);	For each product listed by the patch package as eligible to receive the patch, the MsiApplyPatch function invokes an installation and sets the PATCH property to the path of the patch package.
prototype HWND MsiCreateRecord(INT);	Creates a new record object with the specified number of fields. This function returns a handle that should be closed using MsiCloseHandle.
prototype INT MsiDoAction(HWND, BYVAL STRING);	Executes a built-in action, custom action, or user-interface wizard action.
prototype INT MsiEvaluateCondition(HWND, BYVAL STRING);	Evaluates a conditional expression containing property names and values.
prototype INT MsiInstallProduct(BYVAL STRING, BYVAL STRING);	Installs or uninstalls a product.
prototype INT MsiOpenPackage(BYVAL STRING, BYREF HWND);	Opens a package for use with the functions that access the product database. The MsiCloseHandle function must be called with the handle when the handle is no longer needed.
prototype INT MsiPreviewBillboard(HWND, BYVAL STRING, BYVAL STRING);	Displays a billboard within a host control in the displayed dialog. Supplying a null billboard name removes any billboard displayed.

Table 45 ▪ Miscellaneous Functions (cont.)

Function	Description
prototype INT MsiPreviewDialog(HWND, BYVAL STRING);	Displays a dialog as modeless and inactive.
prototype int MsiProcessMessage(HWND, int, HWND);	Sends an error record to the installer for processing.
prototype INT MsiSequence(HWND, BYVAL STRING, INT);	Executes another action sequence, as described in the specified table.

Windows Installer API Functions Example

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates several Windows API functions that are used
 * to access the tables of the .msi database at run time and
 * add temporary records.
 *
 * Note: Before running this script, add a ListBox control to
 *       the ReadyToInstall dialog, and associate the control
 *       with the property LISTBOXPROP.
 *
 * This script populates the ListBox control in the ReadyToInstall
 * dialog with the current values of every property listed in
 * the Property table. The end user's selection for the ListBox
 * is stored in LISTBOXPROP.
 *
\*---------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "ifx.h"

// InstallScript custom action entry point
export prototype PropDisplay(HWND);

function PropDisplay(hInstall)
    HWND hDB, hViewlist, hRecordlist;
    HWND hViewprop, hRecordprop;
    NUMBER nBuffer, r;
    STRING svPropname, svPropvalue;
begin

    hDB = MsiGetActiveDatabase(hInstall);

    // open view into ListBox table
    MsiDatabaseOpenView(hDB,
        "SELECT * FROM `ListBox` WHERE `Property`='LISTBOXPROP'",
        hViewlist);
    MsiViewExecute(hViewlist, NULL);
```

```
    // open view into Property table
    MsiDatabaseOpenView(hDB,
        "SELECT * FROM `Property`", hViewprop);
    MsiViewExecute(hViewprop, NULL);

    r = 0;

    // for each Property record, add PROPNAME="value" record
    // to ListBox table
    while (MsiViewFetch(hViewprop, hRecordprop) != ERROR_NO_MORE_ITEMS)

        nBuffer = 256; // set size buffer
        MsiRecordGetString(hRecordprop, 1, svPropname, nBuffer);
        nBuffer = 256; // reset size buffer
        MsiGetProperty(hInstall, svPropname, svPropvalue, nBuffer);

        r = r + 1;

        hRecordlist = MsiCreateRecord(4);

        MsiRecordSetString(hRecordlist, 1, "LISTBOXPROP");
        MsiRecordSetInteger(hRecordlist, 2, r);
        MsiRecordSetString(hRecordlist, 3, svPropname);
        MsiRecordSetString(hRecordlist, 4, svPropname + "=" + svPropvalue);

        // can only temporarily modify running .msi database
        MsiViewModify(hViewlist, MSIMODIFY_INSERT_TEMPORARY, hRecordlist);

    endwhile;

    MsiViewClose(hViewlist);
    MsiViewClose(hViewprop);
end;
```

Operators

An operator is a symbol that specifies a basic operation to be performed using one or two operands—such as addition. The operands can be constants, variables, or function calls. In the example below, the plus sign (+) indicates that the variable to the immediate left and the value to the immediate right should be added.

```
nCounter + 1;
```

Operator Functionality

Most InstallScript operators correspond to operators in C and behave very much like their counterparts in that language. As in C, the function of some operators, such as + and ^ depends on the data type of the operands. For example, when a plus sign is used with numeric operands, addition is performed. When a plus sign is used with string operands, concatenation is performed.

Expressions

The combination of operator and operands is called an expression. The example above is a simple expression because it includes only one operator. Complex expressions like the one below specify multiple operations:

```
nPrincipal * nRate - nFee;
```

Evaluating Complex Expressions

In complex expressions, the order in which operations are performed depends on the order of operator precedence. InstallScript operators follow the same order of precedence as C operators. As with C, you can enclose an expression within parentheses to override the order of precedence.

Results

Most expressions produce a new value based on the existing value of the operands. For that reasons, expressions are also referred to by the data type of the result they produce. Arithmetic expressions produce a numeric value, Boolean expressions produce TRUE or FALSE. String expressions produce a string.

Address Operator (&)

The address operator is a unary operator that can be used to obtain the memory address of any variable in your script. The operator itself should precede the variable name, with no intervening space. You can use the address operator to assign the address of a variable to a pointer variable or to pass the address of a variable as an argument in a function call. You can send the address to C programs and operate on them as you would any standard C pointer.

In the example below, the address of a data structure is assigned to a pointer variable:

```
typedef DIMENSIONS
begin
  SHORT sLength;
  SHORT sWidth;
end;

DIMENSIONS rectangle;
DIMENSIONS POINTER pointerObject;
```

```
begin
  pointerObject = &rectangle;

  // . .

end;
```

Caution ▪ *If you use the address operator with a local variable, be aware that the local variable exists only during the life of the function in which it is declared. After the function returns, the address of the local variable will no longer be valid.*

Append to Path Operator (^)

Use the append to path (^) operator when you are combining two paths or a path and a file name. The operator automatically checks to see if you have added the proper number of backslashes when appending a file name or a subdirectory to a path.

If you type:

```
szStringVar = "C:\\MyPath\\" ^ "YourPath\\FileName";
```

the output from szStringVar is:

```
C:\MyPath\YourPath\FileName
```

If you forgot to add the backslashes after MYPATH, as shown below:

```
szStringVar = "C:\\MyPath" ^ "YourPath\\FileName";
```

the result of the operation is still valid. The InstallScript ^ operator adds the backslashes for you.

Note ▪ *Do not use the ^ operator to join strings other than paths, such as registry keys. For other types of strings, use the concatenate operator (+).*

Arithmetic Operators (+, -, *, /)

Arithmetic operators perform mathematical operations such as addition and subtraction with operands. There are two types of mathematical operators, unary and binary. Unary operators perform an action with a single operand. Binary operators perform actions with two operands. In complex expressions—those that include two or more operations—the order of evaluation depends on operator precedence.

Arithmetic Operator Precedence

When the InstallScript compiler encounters a complex expression—one that includes two or more simple expressions—it evaluates those expressions one at a time.

Operator Precedence

The order in which expressions are evaluated is determined by operator precedence. The compiler evaluates arithmetic operators using the same order of precedence that the C language uses:

1. Negative (-) unary.
2. Multiplication and division.
3. Addition and subtraction.
4. Left to Right Processing

If an expression contains two or more operators with the same precedence level, the operator to the left is processed first. For example, in the expression 15 / 3 * 7, the InstallScript compiler first performs the division (15 / 3), then multiplies the result by 7.

Using Parentheses to Affect Processing

When a lower order precedence operation must be performed first, it should be surrounded by parentheses. For example, if the addition must be performed before the multiplication in the expression 30 / 3 + 7, place parentheses around 3 + 7. The parentheses in the expression 30 / (3 + 7) cause the compiler to add 3 and 7 first, yielding 10, and then divide 30 by 10 for a final result of 3.

Nested Parentheses

You can nest parentheses within an expression. InstallShield allocates 20 temporary locations for calculating nested expressions. Therefore, you can nest 19 levels of operations within parentheses. The InstallShield Script Compiler performs the innermost operation first and works its way outward.

Example Expression

For example, in the expression 36 - (3 * (2 + 6 - 4)), the InstallScript compiler first performs the operation 2 + 6, which yields 8, then subtracts 4 from 8, yielding 4, then multiplies 3 by 4, yielding 12, and finally subtracts 12 from 36, yielding 24.

Note ▪ *Within the inner parentheses, InstallShield performed the addition operation first because it was the further left of two operators with equal precedence.*

Binary Arithmetic Operators

The InstallScript compiler recognizes the binary arithmetic operators listed in the following table.

Table 1 ▪ Binary Arithmetic Operators

Symbol	Operation	Example	Description
+	Addition	x + y	Adds two operands.
-	Subtraction	x - y	Subtracts the second operand from the first operand.

Table 1 ▪ Binary Arithmetic Operators (cont.)

Symbol	Operation	Example	Description
*	Multiplication	x * y	Multiplies two operands.
/	Division	x / y	Divides the first operand by the second operand. Because InstallShield does not have floating-point data types, the fractional part of the answer is dropped. For example, 5/2 = 2.5 --> 2.
%	Modulus	19 % 5	Divides the first operand by the second operand and returns the remainder. For example, nResult = 19 % 5; results in nResult = 4.

Tip ▪ *You should include a space both before and after an arithmetic operator to make your script more readable and to maintain a consistent appearance.*

Unary Arithmetic Operators

Unary operators are arithmetic operators that perform an action on a single operand. The InstallScript compiler recognizes two unary operators, negative (-) and positive (+).

Negative

The negative unary operator reverses the sign of an expression from positive to negative or from negative to positive. The net result of using the negative unary operator before an expression is the same as multiplying the expression by -1.

Positive

The positive unary operator has the same net result on an expression as multiplying that expression by 1. It does not change the sign of a negative number to positive.

Assignment Operator

Use the assignment operator (=) to copy a constant, literal, variable, expression result, or function result to a variable of the same type, as shown in the example code fragment below:

```
STRING szName;
LONG nValue;
BOOL bDone;
HWND hInstance;
INT  iStyle;
LIST LISTINFO;
```

```
szName = "InstallShield";
nValue = 15;
bDone = FALSE;
hInstance = 0;
iStyle = DLG_MSG_STANDARD|DLG_CENTERED;

LISTINFO = ListCreate(STRINGLIST);
```

InstallShield automatically sizes string variables that are declared without an explicit length, as in the example above. By default, InstallShield autosizes the string variable to 256 bytes. If you assign to that variable a string longer than 256 bytes (including the null terminator), InstallShield increases the amount of memory reserved for that string variable.

If you declare a string variable with an explicit length, you must make it long enough to receive the string you assign to it. In the example below, the string literal contains 51 characters. Therefore, both szStringVarA and szStringVarB must have a declared length of at least 52, which is just large enough to accommodate the string itself and the null terminator that is added automatically to the end of the string.

```
STRING szStringVarA[52], szStringVarB[52];
szStringVarA = "This is a sample string that is 51 characters long.";
szStringVarB = szStringVarA;
```

Caution ▪ *Unlike C++, InstallScript does not support multiple assignment operations in a single statement. In InstallScript, the statement a = b = c is equivalent to the C++ statement a = b == c. That is, the first operator is interpreted as an assignment operator; the second is interpreted as a relational operator. If b is equal to c, the value 1 (TRUE) is assigned to a; if b is not equal to c, the value 0 (FALSE) is assigned to a.*

Bit Operators (&, |, ^, ~, <<, >>)

Bit, or bitwise, operators allow you to manipulate individual bits in a numeric variable. In order to use the operators effectively, you need to be familiar with binary notation. This topic gives you an overview of binary operators, but it does not try to teach you binary notation.

Bit operators work like logical operators, with one exception: logical operators work with expressions, bit operators work with bits. The InstallScript compiler recognizes the bitwise operators listed in the table below:

Table 2 ▪ Bit Operators

Symbol	Operator	Explanation
&	BitAND	BitAND sets a bit in the result to 1 (TRUE) only if the bits in both operands are 1s; otherwise, the result is 0 (FALSE).
|	BitOR	Bit inclusive OR sets a bit in the result to 0 only if the bits in the operands are 0; otherwise, the result is 1.

Table 2 ▪ Bit Operators (cont.)

Symbol	Operator	Explanation
^	BitXOR	Bit exclusive OR sets a bit in the result to 1 if the corresponding bits in the operands are different (one 1, the other 0). Otherwise, the result is 0.
~	BitNOT	BitNOT is a unary operator that reverses every bit in the operand, changing every 1 to a 0 and vice versa, as in the following example: `~00001100` The result is 11110011.
<<	Shift left	Moves bits a specified number of bits to the left. For example, the expression shown below moves bits three spaces to the left: `00001100 << 3` The result is 01100000.
>>	Shift right	Moves bits a specified number of bits to the right. For example, the expression shown below moves bits two spaces to the right: `00001100 >> 2` The result is 00000011.

Shift operations work the same way in InstallScript that they do in the C language. When you shift by two bits to the right (>> 2), the two bit values furthest to the right are lost. The other bit values are shifted to the right two places, and the sign bit is shifted into the empty bits.

You can use shift operations to multiply and divide a value by a power of 2. Left-shifting an integer by n has the same effect as multiplying the number by 2 to the power of n. Right-shifting an integer by n has the same effect as dividing the number by 2 to the power of n.

BYREF Operator

By default, the parameters of a user-defined function are passed by value; that is, a copy of the data specified by each parameter is passed to the function. Because the function operates on a copy, the original data cannot be changed by the function.

Note ▪ *There is one exception: By default, string variables passed to DLL functions are passed by reference, so the value of the variable can be changed by the function.*

When you want a user-defined function to operate directly on a variable it receives in a parameter rather than on a copy of that variable, you must specify the BYREF operator with the parameter type declaration in the function prototype, as shown below:

```
prototype StrInvert( BYREF STRING );
```

The BYREF operator indicates that the parameter is to be passed by reference—that is, the actual variable is to be passed to the function, and any changes made to that variable will be visible to the caller when the function returns. Parameters that are passed by reference are often referred to as variable parameters because they require a variable. Constants and literals cannot be passed by reference.

Using BYREF With Multiple Parameters

When a user-defined function has more than one parameter, the BYREF operator must be specified with each variable parameter. In the example below, the first and third parameters are passed by reference and the second parameter is passed by value:

```
prototype StrChangeChar( BYREF STRING, CHAR, BYREF BOOL);
```

Limitations

User-defined structure members cannot be passed by reference. Attempting to do so results in a compiler error. Instead, you must pass a pointer to the entire structure by reference and then use the structure pointer operator (->) to access or modify the data elements of the structure.

An autosized string variable that is passed by reference to a function will not be autosized within the called function. If the function attempts to assign a value whose length is greater than the current size of that parameter, run-time error 401 occurs. To avoid this error, declare strings with a specific size when they are to be passed by reference to a function.

BYVAL Operator

They keyword BYVAL can be specified in the parameter specification of a function prototype to indicate a parameter that is passed by value rather than by reference, as in the example below:

```
prototype DisplayString( BYVAL STRING );
```

When a parameter is passed by value, the function receives a copy of the value and any changes it makes to that value are local to the function.

By default, the parameters of a user-defined function are passed by value; so generally it is not necessary to specify this keyword in a function protytpe. (There is one exception: by default, string variables passed to DLL functions are passed by reference, so the value of the variable can be changed by the function.)

When you want a user-defined function to operate directly on a variable it receives in a parameter rather than on a copy of that variable, you must specify the BYREF operator.

Concatenate Operator (+)

Use the concatenate string operator (+) to join one string to the end of another. Concatenating two strings results in a new, third string. In the following example, two string constants are concatenated and the resulting string value is assigned to the string variable szThirdString; after the statement has been executed, the value of szThirdString is “First string Second string”.

```
    szThirdString = "First string " + "Second string";
```

Operands in a concatenation expression may be string literals, string constants, or string variables. In the example below, a string constant and a string literal are concatenated. The resulting string value is assigned to szThirdString.

```
#define FIRST_STRING "This is the first string"

    STRING szThirdString;

// . . .

   szThirdString = FIRST_STRING + "Second string";
```

Caution ▪ *When assigning the result of a concatenation expression to a string variable, you must ensure that the concatenated string is not too long for the string variable to which it is assigned. A statement that assigns a string to a variable of insufficient size produces run-time error 401.*

Indirection Operator (*)

The indirection operator is a unary operator that can be used to obtain the value stored at the memory location referenced by a pointer variable. The indirection operator must precede the pointer variable name, with no intervening space.

In the following example, nvalue is a number and pnumber is a pointer to a number. The assignment statement is used to copy to nvalue the number being pointed to by pnumber.

```
    nvalue = *pnumber;
```

The indirection operator can also be used to pass a value to a function that takes a number value as a parameter, as in the following example:

```
    somefunction(*pnumber);
```

The following limitations apply to the indirection operator:

- The indirection operator can be used with number pointers only.
- The indirection operator cannot be used to assign a value to a memory location.
- The indirection operator cannot be used as an argument to a function whose parameter has been defined with the BYREF operator.
- The indirection operator cannot be used to declare a pointer.
- The indirection operator cannot be used to declare a variable parameter in a function declaration.

Logical Operators (&&, ||, !)

Logical operators allow you to ask more than one relational question at the same time. For example, using a logical operator you can ask if y is greater than 7 and szFilePath contains “C:\\Program Files\\Company Name”. Logical operators return either a TRUE (1) or FALSE (0) value. Like relational operators, they are used most often in if and while statements.

The InstallScript compiler recognizes the logical operators listed in the table below:

Table 3 ▪ Logical Operators

Symbol	Operation	Example	Description
&&	AND	exp1 && exp2	True only if both exp1 and exp2 are true; otherwise, false.
||	OR	exp1 || exp2	True if either exp1 or exp2 is true; false (0) only if both are false.
!	NOT	!exp1	False if exp1 is true; true if exp1 is false.

Logical operators have a lower precedence than arithmetic or relational operators. Among logical operators, the AND operator has higher precedence than the OR operator.

Caution ▪ *Unlike C++, InstallShield performs complete Boolean evaluations of logical expressions. Consider the following if statement:*

```
if (iVar = 10) && (MyFunction( ) = 0) then
    MessageBox("That is so true.", INFORMATION);
endif;
```

MyFunction will be called even if the expression to the left of the logical operator is false. To obtain the effect of short circuit Boolean evaluations (in which the expression to the right of the && is resolved only if the expression to the left of the && is true), use a nested if statement, as shown below:

```
if (iVar = 10) then
    if (MyFunction( ) = 0) then
        MessageBox("That is so true.", INFORMATION);
    endif;
endif;
```

Member Operator (.)

Use the member operator to reference individual elements in a structure variable. The member operator must appear between the structure variable name and the element name, with no intervening space. In the example below, a literal value is assigned to each element in a structure variable.

```
typedef SETTINGSREC
begin
  BOOL bSwitchOn;
  STRING szMssg[255];
  INT nVal;
end;

SETTINGSREC settings;

settings.bSwitchOn = FALSE;
settings.szMssg = "Off";
settings.nVal = 0;
```

Relational Operators (<, >, =, <=, >=, !=)

Relational operators compare one expression to another within the context of a conditional statement, such as an if or while statement. For example, the following statement asks “Is x greater than 20?”:

```
if (x > 20) then
```

The answer to the questions can be only TRUE (1) or FALSE (0). The InstallScript compiler recognizes the relational operators listed in the table below:

Table 4 ▪ Relational Operators

Symbol	Operation	Example	Description
=	Equal	x = y	True if x is equal to y.
>	Greater than	x > y	True if x is greater than y.
<	Less than	x < y	True if x is less than y.
>=	Greater than or equal to	x >= y	True if x is greater than or equal to y.
<=	Less than or equal to	x <= y	True if x is less than or equal to y.
!=	Not equal to	x != y	True if x is not equal to y.

When you use a relational operator in an if...else statement, the program will follow one of two actions:

- If the expression is TRUE, statements that follow the if *are* executed. Statements that follow the else *are not* executed.
- If the expression is FALSE, statements that follow the if *are not* executed. Statements that follow the else *are* executed.

Relational operators have an overall lower precedence than arithmetic operators. Among just relational operators, less than, less than or equal to, greater than, and greater than or equal to have precedence over equal and not equal.

Caution ▪ *You cannot use assignment and relational operators in the same conditional expression. For example, the following will fail:*

```
if ((listID = ListCreate (NUMBERLIST)) = LIST_NULL) then        . . .    endif;
```

Tip ▪ *Unlike C, which uses == to test for equality, InstallScript's assignment operator and relational operator use the same symbol (=).*

Relational Operator Precedence

Relational operators have an overall lower precedence than arithmetic operators. This means that InstallShield performs all arithmetic operations before beginning to evaluate logical operations. Logical expressions are evaluated from left to right, unless the order of operations is modified by parentheses. Among relational operators the order of precedence is as follows:

- First, less than (<), less than or equal to (<=), greater than (>), and greater than or equal to (>=).
- Then, equal to (=) and not equal to (!=).

Therefore, when combining arithmetic and relational expressions, the InstallShield Script Compiler evaluates precedence in the following order:

1. Negative (minus) unary.
2. Multiplication and division.
3. Addition and subtraction.
4. Less than (<), less than or equal to (<=), greater than (>), and greater than or equal to (>=).
5. Equal to (=) and not equal to (!=).

In the expression 6 + 7 > y, the InstallScript compiler adds 6 and 7 together and then compares the result (13) to y. To change the order of precedence, use parentheses. For example, in the expression 6 + (7 > y), the InstallScript compiler first determines if 7 is greater than y. If it is, then 1 (the numeric value of TRUE) is added to 6. If it is not, then 0 (the numeric value of FALSE) is added to 6.

When a statement contains arithmetic, relational, and logical operators, the compiler evaluates precedence in the following order:

1. Negative (minus) unary has first precedence.
2. Multiplication and division have second precedence.
3. Addition and subtraction have third precedence.
4. NOT (!) has fourth precedence.
5. Less than (<), less than or equal to (<=), greater than (>), and greater than or equal to (>=) have fifth precedence.
6. Equal to (=) and not equal to (!=) have sixth precedence.
7. AND (&&) has seventh precedence.
8. OR (||) has eighth precedence.

Use logical operators in if and while statements the same way you used relational operators. The example below adds nExampleSize and nHelpSize if bInstallExample and bInstallHelp are true.

```
if (bInstallExample && bInstallHelp) then
    nTotalSize = nExampleSize + nHelpSize;
endif;
```

The next example sets bPublicFile to TRUE if *either* bInstallProgram1 *or* bInstallProgram2 is TRUE.

```
if (bInstallProgram1 || bInstallProgram2) then
    bPublicFile = TRUE;
endif;
```

Note ▪ *You cannot use the && or || operators within an argument to a function. Instead, follow the above example and assign the value of the logical expression to a Boolean variable and then call the function with the variable as an argument.*

String Operators (^, +, %)

The string operators allow you to directly manipulate strings without the use of functions. Note that string operators are not case-sensitive. The InstallScript compiler supports the following string operations:

Table 5 ▪ String Operators

Operation	Description
Append to Path Operator (^)	Adds additional paths to a path or a file name.
Concatenate Operator (+)	Appends one string to the end of another string.
Find String Operator (%)	Locates a substring in another string.
String Constant Operator (@)	Access a string constant that is used for one of the project's string entries.

Note ▪ *Do not use parentheses to enclose expressions on either side of a string operator. For example, avoid statements like the following:*

```
szPath = szTestPath ^ (AUTOFILE + ".bat");
```

Instead, create expressions without parentheses for use with string operators, as shown below:

```
szFile = AUTOFILE + ".bat";    szPath = szTestPath ^ szFile;
```

String Constant Operator (@)

String entries enable you to access text strings for a given language from within your InstallScript code. That is, to keep the InstallScript code for your installation completely separate from any language-specific strings that you may want to display during the installation, you can refer to each string by using its string identifier. When you use string identifiers in your InstallScript, you must precede them with the at sign (@).

The String Editor view shows the collection of language-independent identifiers and corresponding language-specific values for your project. To learn more, see Localizing the End-User Interface.

When you build a project that includes an InstallScript file (.rul) and the InstallScript code contains one or more references to string entries that use the @ operator, InstallShield validates the string entries at build time. If a string identifier in the project's InstallScript file is not defined in String Editor view, InstallShield displays build warning -7174.

Note ▪ *The @ operator is case-insensitive when it comes to string identifiers. Therefore, when you use a string identifier in your script, you do not necessarily need to match the case of the string identifier that is specified in the String Editor view. However, mixing case may prevent InstallShield from matching the string entries in the script to the corresponding string entries in the String Editor view at build time. Therefore, it is recommended that you use uppercase for all instances of string identifiers.*

Tip ▪ *As an alternative to the @ operator, you can use the* **LoadStringFromStringTable** *function if you want to provide your own missing string error handling.*

Structure Pointer Operator (->)

Use the structure pointer operator to reference individual elements in a structure by means of a pointer variable. The structure pointer operator must appear between the pointer variable name and the element name, with no intervening space. In the example below, a literal value is assigned to each element in a structure.

```
typedef  DIMENSIONS
begin
  SHORT sLength;
  SHORT sWidth;
end;
DIMENSIONS Table;
NUMBER   nvNumValue;
DIMENSIONS  POINTER    pointerObject;
begin
  pointerObject = &Table;
  pointerObject->sLength = 500;
  pointerObject->sWidth = 750;
```

Caution ▪ *You can use only one structure pointer in an expression. If structure A contains a member (Bptr) that is a pointer to structure B, which contains a member (Cptr) that is a pointer to structure C, you cannot reference a member of C from A. The expression A.Btptr->Cptr->Cmember is invalid in InstallScript.*

Find String Operator (%)

Use the boolean Find String operator (%) to determine if one string is a substring of another string. The following example tests szStringVarA to determine if it contains the string “sample.” If it does, then MessageBox is called to display a message.

```
szStringVarA = "This is a sample string.";
    if (szStringVarA % "sample") then
    MessageBox("Variable contains 'string'.",INFORMATION);
endif;
```

The character comparison is not case-sensitive. In the following example, the message box will be displayed:

```
typedef  DIMENSIONS
begin
```

```
  SHORT sLength;
  SHORT sWidth;
end;

DIMENSIONS Table;
NUMBER   nvNumValue;
DIMENSIONS  POINTER    pointerObject;

begin
  pointerObject = &Table;
  pointerObject->sLength = 500;
  pointerObject->sWidth = 750;
```

Note ▪ *The InstallScript function StrFind also determines if a substring is contained within another string. If the substring is found, StrFind returns its position within the string.*

Objects and Object Handlers

This section describes the objects and object handlers that InstallScript supports.

Objects

InstallScript supports the following objects.

Table 1 ▪ InstallScript Objects

Object	Description
Err Object	Use for exception handling.
Objects Object	Obtain access to your project's InstallShield objects by either index or name.
Reboot Object	Pass command-line arguments to the installation after a reboot. This information is written to the appropriate registry key at the end of the installation, so that the installation runs after reboot.
TextSub Object	Make text substitutions.

Err Object

The Err object is used for exception handling. It has the following properties and methods:

Properties

Table 2 ▪ Err Object Properties

Property	Description
Number	A number that identifies the error.
Source	A string that identifies the source of the error.
Description	A string that describes the error.
HelpFile	A string that specifies the fully qualified file name of a help file containing additional information about the error.
HelpContext	A number that specifies the identifier of a help topic containing additional information about the error.
LastDllError	This property holds the return value of the Windows API function **GetLastError**.

Methods

Table 3 ▪ Err Object Methods

Method	Description
Clear	Clears the values of the Err object's properties.
Raise	If executed after the try keyword, script processing passes to the next exception handler (that is, code inside a catch/endcatch block); otherwise processing passes to the setup engine's built-in exception handler. Also resets the values of Err object properties as follows: • `Err.Raise( );`—Does not reset any Err object property values. • `Err.Raise( nNumber );`—Resets the value of Err.Number to nNumber. • `Err.Raise( nNumber, szSource );`—Resets the value of Err.Number to nNumber and Err.Source to szSource. • `Err.Raise( nNumber, szSource, szDesc );`—Resets the value of Err.Number to nNumber, Err.Source to szSource, and Err.Description to szDesc. • `Err.Raise( nNumber, szSource, szDesc, szHelpFile );`—Resets the value of Err.Number to nNumber, Err.Source to szSource, Err.Description to szDesc, and Err.HelpFile to szHelpFile. • `Err.Raise( nNumber, szSource, szDesc, szHelpFile, nHelpContext );`—Resets the value of Err.Number to nNumber, Err.Source to szSource, Err.Description to szDesc, Err.HelpFile to szHelpFile, and Err.HelpContext to nHelpContext.

Objects Object

Project ▪ *This information applies to InstallScript projects.*

The Objects object is used for getting access to your project's InstallShield objects by either index or name; for example:

```
set obj1 = Objects(1);
set obj2 = Objects("New MFC 6.2 Runtime 1");
```

Properties

Table 4 ▪ Objects Object Properties

Property	Description
Count	The number of InstallShield objects included in your project.

Reboot Object

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The Reboot object is used for passing command-line arguments to the `Setup.exe` file after a restart; this information is written to the appropriate registry key at the end of the installation, so that the installation runs after the system is restarted. For example, the following statement runs the installation in debug mode after a restart:

```
Reboot.CommandLine = "-d";
```

Note that the specified argument or arguments are added to the existing command line; they do not replace the existing command line. Note also that currently you cannot change the existing command line or remove text from it.

Passing Parameters to the InstallScript Variable CMDLINE in an InstallScript MSI Installation

As with any `Setup.exe` command line, in an InstallScript MSI installation, if you are trying to pass information to the InstallScript variable CMDLINE variable when the `Setup.exe` file is launched after the restart, you must include the information after specifying the `-z` option. For example, the following adds **TEST1 TEST2** to the reboot string and thus the CMDLINE variable when the `Setup.exe` file is launched after the restart.

```
Reboot.CommandLine = -z"TEST1 TEST2"
```

Note that since multiple –z parameters are not supported, you must specify all information that is intended for the CMDLINE variable in a single Reboot.CommandLine call for your InstallScript MSI installation.

TextSub Object

Project ▪ *This information applies to InstallScript projects.*

The TextSub object is used for making text substitutions. It has the following property and method:

Properties

Table 5 ▪ TextSub Object Properties

Property	Description
Value(szIdentifier)	The value of the string associated with the identifier szIdentifier.

Methods

Table 6 ▪ TextSub Object Methods

Method	Description
Substitute(szString)	Replaces all angle-bracketed identifiers in szString with their associated strings.

Example

The following code:

```
TextSub.Value( "SUBBED" ) = "substituted text";
szString = "123<SUBBED>456<UNSUBBED>789";
TextSub.Substitute( szString );
```

gives szString the value "123substituted text456<UNSUBBED>789".

Object Handlers

InstallScript supports the following object handlers.

Table 7 ▪ InstallScript Object Handlers

Object Handler	Description
InitProperties	Executed when the object is inserted in a project. It initializes the values of the object script's variables that are used to read or write the values of object properties.
ReadProperties	Executed when the object project is opened and when an installation that includes the object is launched. It calls the appropriate Read*xxxx*Property functions to retrieve the property values stored in the property bag object.

Table 7 ▪ InstallScript Object Handlers (cont.)

Object Handler	Description
WriteProperties	Executed when the object project is saved or built. It calls the appropriate Write*xxxx*Property functions to save the property values to the property bag object.

InitProperties

Project ▪ *This information applies to InstallScript projects.*

The InitProperties handler is executed when the object is inserted in a project. It initializes the values of the object script's variables that are used to read or write the values of object properties.

If you add a property to the object project by using the Add New Property dialog box, an appropriate statement, based on your entry in the dialog box's Default Value edit box, is automatically placed in this handler.

ReadProperties

Project ▪ *This information applies to InstallScript projects.*

The ReadProperties handler is executed when the object project is opened and when a setup that includes the object is launched. It calls the appropriate Read*xxxx*Property functions to retrieve the property values stored in the property bag object. (Property values are saved to the property bag object by the Write*xxxx*Property functions, which are called by the WriteProperties handler.)

If you add a property to the object project by using the Add New Property dialog box, an appropriate Read*xxxx*Property function call is automatically placed in this handler.

WriteProperties

Project ▪ *This information applies to InstallScript projects.*

The WriteProperties handler is executed when the object project is saved or built. It calls the appropriate Write*xxxx*Property functions to save the property values to the property bag object. (Property values are retrieved from the property bag object by the Read*xxxx*Property functions, which are called by the ReadProperties handler.)

If you add a property to the object project by using the Add New Property dialog box, an appropriate Write*xxxx*Property function call is automatically placed in this handler.

Exception Handling

Exception handling lets you separate error handling from the rest of your script code. InstallScript supports exception handling with the Err object and the keywords try, catch, and endcatch.

If an exception is raised during execution of code that follows the try keyword, script processing passes to the next exception handler (that is, code inside a catch/endcatch block). After an exception handler has executed, processing passes to the line after its endcatch keyword. If no exception is raised by code that follows the try keyword, the code in the exception handler is skipped and processing resumes with the line after the endcatch keyword.

An exception can be raised by a call to the Err object's Raise method, which takes from zero to five arguments. You can retrieve the values of those arguments in the exception handler by checking the value of the corresponding Err object properties.

Note ▪ *Raised errors must be negative numbers; otherwise, the installation engine converts the error into the appropriate COM error. Therefore, any error code thrown should be a negative number.*

The following code sample demonstrates exception handling:

```
askfile:
AskText( "Path to file?", "", svPathName );

try
    if (!Is( FILE_EXISTS, svPathName )) then
        /* If file does not exist, raise an exception.
           (ERR_NOT_EXIST must have been given a value
           in a #define statement. The error number
           must be a negative number.) */
        Err.Raise( ERR_NOT_EXIST );
    endif;

    if GetFileInfo ( svPathName, FILE_SIZE,
        nvFileSize, svResult )<0 then
        /* If file information could not be obtained,
           raise an exception. (ERR_NO_INFO must have been
           given a value in a #define statement. The error
           number must be a negative number.) */
        Err.Raise ( ERR_NO_INFO );
    endif;

    SprintfBox ( INFORMATION, "File Size", "Size of %s is %ld.",
        svPathName, nvFileSize );
catch
    /* Exception handler. */
    nTemp = Err.Number;
    /* Handle the exception based on its cause. */
    switch (nTemp)
        case ERR_NOT_EXIST:
            if AskYesNo( svPathName +
                " does not exist. Enter another path?", YES )=YES then
                bTryAgain = TRUE;
            endif;
        case ERR_NO_INFO:
```

```
            MessageBox ( "Could not get size of " +
                svPathName, INFORMATION );
            bTryAgain = FALSE;
    endswitch;
endcatch;

if bTryAgain then
    bTryAgain = FALSE;
    goto askfile;
endif;
```

Try/catch/endcatch blocks can be nested as in the following example:

```
try
    /* Normal processing, part 1. */
    try
        /* Normal processing, part 2. */
    catch
        /* Exception handling for part 2. */
    endcatch;
    /* Normal processing, part 3. */
catch
    /* Exception handling for parts 1 and 3. */
endcatch;
```

Built-In Functions (A-D)

For a list of functions by category, see Built-In Functions by Category.

AddFolderIcon

The CreateShortcut function supersedes the **AddFolderIcon** function.

The **AddFolderIcon** function lets you perform tasks such as the following:

- Create a shortcut or folder on the Start menu, the Programs menu, or the desktop. Use the szProgramFolder parameter to specify the appropriate location for the shortcut or folder.
- Create a cascading submenu on the Startup menu, and include a shortcut in the submenu.

Note ▪ *The shortcut target must be present on the target system before* **AddFolderIcon** *can be called.*

AddFolderIcon *does not support the creation of Internet shortcuts.*

Syntax

```
AddFolderIcon ( szProgramFolder, szItemName, szCommandLine, szWorkingDir, szIconPath, nIcon,
    szShortCutKey, nFlag );
```

Parameters

Table 1 ▪ AddFolderIcon Parameters

Parameter	Description
szProgramFolder	Specify the name of the folder that should contain the shortcut, or specify the name of the program folder that you want to create. If the folder does not exist, the installation creates it. For this parameter, you can specify a subfolder in a multi-level cascading menu. If the subfolder does not exist, **AddFolderIcon** creates the subfolder and, if necessary, its parent folders. To add the shortcut to a specific folder, specify the fully qualified path—for example: `C:\\ProgramData\\Microsoft\\Windows\\Start Menu\\Programs` To add a shortcut to the Programs menu on the Start menu, you can pass a null string ("") in this parameter. You can pass one of the following InstallScript system variables in this parameter: ● **FOLDER_DESKTOP**—Adds the shortcut to the desktop. ● **FOLDER_STARTUP**—Adds the shortcut to the Startup menu. ● **FOLDER_STARTMENU**—Adds the shortcut to the Start menu. ● **FOLDER_PROGRAMS**—Adds the shortcut to the Start\Programs menu. You can also specify a path relative to a folder that is identified by an InstallScript system variable—for example: `FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"`
szItemName	Specify the name of the shortcut. Calling **AddFolderIcon** to add a shortcut to a program folder also creates a link file in the links directory that is specified by szCommandLine. Note that Explorer shell does not allow the following characters in item names: /, \, :, ?, <, >, or |.
szCommandLine	Specify one of the following: ● The fully qualified name of the executable file that is associated with the shortcut, including any command-line parameters. This is added to the Target value on the shortcut's Properties dialog box. To add a shortcut to the Start Programs menu, enter the fully qualified path of the links directory, which is where your application stores its icon link files. ● The fully qualified path if szItemName is a subfolder.  ***Caution ▪*** *If the command line includes a long file name, it must be enclosed in quotes. Command-line parameters, however, should not be surrounded with quotation marks. For that reason, it is advisable to build the szCommandLine string from two separate strings.*

Table 1 ▪ AddFolderIcon Parameters (cont.)

Parameter	Description
szWorkingDir	Specify the working directory for the shortcut target. If szItemName is a subfolder, this parameter is not applicable. **AddFolderIcon** writes this directory in the Start In box on the Shortcut tab of the shortcut's Properties dialog box. If you pass a null string ("") in this parameter, the function leaves this Start In box blank, and the path in the Target box is used.  ***Caution ▪*** *Do not call* **LongPathToQuote** *to enclose this path in quotation marks. InstallShield automatically encloses these paths in quotation marks.*
szIconPath	Specify the fully qualified path to the file that contains the icon that you want to be displayed for the shortcut. If szItemName is a subfolder, this parameter is not applicable.  ***Caution ▪*** *Do not call* **LongPathToQuote** *to enclose this path in quotation marks. InstallShield automatically encloses these paths in quotation marks.*
nIcon	Specify the icon index in the executable file that is specified by szIconPath. An icon index of 0 refers to the first icon in the file, an icon index of 1 refers to the second icon, and so on. If you are not using an icon, specify ***0*** in this parameter. If szItemName is a subfolder, this parameter is not applicable.
szShortCutKey	Specify the shortcut key (in the form of a string) that you want to be assigned to your shortcut. You can set szShortCutKey for the shortcut so that end users can press the appropriate hot keys to launch the shortcut. For example, if you want end users to be able to launch the product by pressing the CTRL key, the ALT key, and then the 1 key on the numeric keyboard, pass "Ctrl + Alt + 1" in this parameter. If szItemName is a subfolder, this parameter is not applicable.

Table 1 ▪ AddFolderIcon Parameters (cont.)

Parameter	Description
nFlag	Pass one or more of the following predefined constants in this parameter. To pass two or more predefined constants in this parameter, combine those constants with the bitwise OR operator (|). • **REPLACE**—Indicates that the current icon or shortcut in the folder is to be replaced. • **RUN_MAXIMIZED**—Indicates that the program should be maximized when launched. • **RUN_MINIMIZED**—Indicates that the program should be minimized when launched. • **NULL**—Indicates no options.

Return Values

Table 2 ▪ AddFolderIcon Return Values

Return Value	Description
0	Indicates that the function successfully added or replaced the shortcut in the specified folder and associated the executable file with it.
< 0	Indicates that the function was unable to add or replace the shortcut and associate the executable file with it. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

AddFolderIcon Examples

Choose one of the following examples:

- Place a shortcut to an executable file on the Start menu and the Start Programs menu. (AddFolderIcon Example 1)
- Create a cascading submenu on the Startup menu and add a shortcut to the menu. (AddFolderIcon Example 2)
- Place a subfolder on the desktop and a shortcut pointing to an executable file in the new folder. (AddFolderIcon Example 3)

AddFolderIcon Example 1

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AddFolderIcon function.
 *
 * This example places a shortcut to an executable file on the
 * Start menu and the Start Programs menu.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable and a valid
 *       text file on the target system.
 *
\*---------------------------------------------------------*/

#define PROGRAM "C:\\Windows\\Notepad.exe"
#define PARAM   "C:\\Windows\\Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_AddFolderIcon(HWND);

function ExFn_AddFolderIcon(hMSI)
    STRING szProgramFolder, szItemName, szCommandLine, szWorkingDir;
    STRING szShortCutKey, szProgram, szParam, szIconPath;
    NUMBER nIcon;
begin

    // Set up parameters for call to AddFolderIcon.
    szProgramFolder = FOLDER_STARTMENU;
    szItemName      = "Notepad Example 1";
    szProgram       = PROGRAM;
    szParam         = PARAM;

    LongPathToQuote (szProgram, TRUE);

    LongPathToShortPath (szParam);

    szCommandLine = szProgram + " " + szParam;
    szWorkingDir  = "";
    szIconPath    = "";
    nIcon         = 0;
    szShortCutKey = "";

    // Add a shortcut to the Start menu.
    if (AddFolderIcon (szProgramFolder, szItemName, szCommandLine, szWorkingDir,
                       szIconPath, nIcon, szShortCutKey, REPLACE) < 0) then
        MessageBox ("AddFolderIcon failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "AddFolderIcon", "%s created successfully.",
                    szItemName);
    endif;

    szProgramFolder = "";
```

```
    szItemName    = "Notepad Example 2";

    // Add a shortcut to the Programs menu.
    if (AddFolderIcon (szProgramFolder, szItemName, szCommandLine, szWorkingDir,
                       szIconPath, nIcon, szShortCutKey, REPLACE) < 0) then
        MessageBox ("AddFolderIcon failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "AddFolderIcon", "%s created successfully.",
                    szItemName);
    endif;

end;
```

AddFolderIcon Example 2

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AddFolderIcon function.
 *
 * This example creates a cascading submenu on the Startup menu
 * and adds a shortcut for an executable file to it.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable file and a
 *       valid text file on the target system.
 *
\*---------------------------------------------------------*/

#define PROGRAM "C:\\Windows\\Notepad.exe"
#define PARAM   "C:\\Windows\\Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_AddFolderIcon(HWND);

function ExFn_AddFolderIcon(hMSI)
    STRING  szProgramFolder, szItemName, szCommandLine, szWorkingDir;
    STRING  szIconPath, szShortCutKey, szProgram, szParam;
    NUMBER  nIcon, nFlag, nResult;
begin

    // Set the fully qualified name of the Startup submenu.
    szProgramFolder = FOLDER_STARTUP ^ "SubMenu Example";

    // Construct the shortcut's command-line property.
    szProgram  = PROGRAM;
```

```
    szParam    = PARAM;

    LongPathToQuote (szProgram, TRUE);

    LongPathToShortPath (szParam);

    szCommandLine = szProgram + " " + szParam;

    // Set up the shortcut's other properties to pass to AddFolderIcon.
    szItemName = "Notepad Example1";
    szWorkingDir  = "";
    szIconPath    = "";
    nIcon         = 0;
    szShortCutKey = "";
    nFlag         = REPLACE|RUN_MAXIMIZED;

    // Add the shortcut to the submenu; create the submenu if necessary.
    nResult = AddFolderIcon (szProgramFolder, szItemName, szCommandLine,
                             szWorkingDir, szIconPath, nIcon,
                             szShortCutKey, nFlag);

    // Report the results.
    if (nResult < 0) then
        MessageBox ("AddFolderIcon failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "AddFolderIcon", "%s created successfully.",
                    szItemName);
    endif;

end;
```

AddFolderIcon Example 3

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AddFolderIcon function.
 *
 * This example places a subfolder on the desktop and an icon
 * pointing to an executable in the new folder.  The folder is
 * a shortcut that points to an actual directory.  From this
 * folder the user can execute a shortcut that runs the program.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable and a valid
 *       text file on the target system.
 *
\*---------------------------------------------------------*/
```

```
#define FOLDER     "C:\\Windows\\"
#define PROGRAM    "C:\\Windows\\Notepad.exe"
#define PARAM      "C:\\Windows\\Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AddFolderIcon(HWND);

function ExFn_AddFolderIcon(hMSI)
   STRING  szProgramFolder, szItemName, szCommandLine, szWorkingDir;
    STRING  szIconPath, szShortCutKey;
    STRING  szProgram, szParam, szFolderDir;
    NUMBER  nIcon, nFlag, nResult;
begin

   // szProgramFolder is the Desktop on the local system.
   szProgramFolder = FOLDER_DESKTOP;
   szItemName      = "Example folder";

   // Create the folder which the folder icon will point to.
   szFolderDir = FOLDER ^ szItemName;
   CreateDir(szFolderDir);

   // The command line for the folder icon must be the folder path, and
   // it must be enclosed in quotation marks if the path is longer than
   // eight characters.

   szCommandLine = szFolderDir;
   LongPathToQuote(szCommandLine, TRUE);

   szWorkingDir  = "";
   szIconPath    = "";
   nIcon         = 0;
   szShortCutKey = "";
   nFlag         = REPLACE|RUN_MINIMIZED;

   // Create the folder icon, and show the folder it points to.
   nResult = AddFolderIcon (szProgramFolder, szItemName, szCommandLine,
                            szWorkingDir, szIconPath, nIcon, szShortCutKey,
                            nFlag);

   if (nResult < 0) then
      MessageBox("AddFolderIcon failed.", SEVERE);
   else
      SprintfBox (INFORMATION, "AddFolderIcon", "%s created successfully.",
                  szItemName);
   endif;

   // Display the folder just created.
   ShowProgramFolder (szFolderDir, SW_SHOW);

   // Add the Example icon to the newly created folder.
   szProgramFolder = szFolderDir;
   szItemName      = "Notepad Example";
```

```
   // Make sure the white space is not seen as a delimiter.
   szProgram       = PROGRAM;
   LongPathToQuote (szProgram, TRUE);

   szParam = PARAM;
   LongPathToShortPath (szParam);

   szCommandLine = szProgram + " " + szParam;
   szWorkingDir  = "";
   szIconPath    = "";
   nResult = AddFolderIcon (szProgramFolder, szItemName, szCommandLine,
                            szWorkingDir, szIconPath, nIcon, szShortCutKey,
                           nFlag);

   if (nResult < 0) then
      MessageBox ("AddFolderIcon failed.", SEVERE);
   else
      SprintfBox (INFORMATION, "AddFolderIcon", "%s created successfully.",
                  szItemName);
   endif;

end;
```

AddProfString

The **AddProfString** function unconditionally adds a profile string to an .ini file. Use AddProfString only to add non-unique keys, such as those found in the [386Enh] section of the System.ini file (device = ...). AddProfString adds the line KEY=VALUE to the end of the specified .ini file section. It does not replace or update an existing key. To update an existing non-unique key, call ReplaceProfString. To add a unique key or to update an existing unique key's value in an .ini file, call WriteProfString.

Syntax

```
AddProfString ( szFileName, szSectionName, szKeyName, szValue );
```

Parameters

Table 3 ▪ AddProfString Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file to which the profile string is to be added. If szFileName is unqualified (that is, if a drive designation and path are not included), InstallShield searches for the file in the Windows folder. If the file does not exist, it is created in the specified folder; if a path is not included in file name, the file is created in the Windows folder. If the file name is qualified with a path that does not exist, AddProfString fails.
szSectionName	Specifies the name of a section in the .ini file section. The profile string is inserted at the end of that section. If the section does not exist, InstallShield creates it. The section name should *not* be enclosed within delimiting brackets ([ ]). Note that the profile string is inserted even if the key specified by szKeyName already exists in that section.
szKeyName	Specifies the name of the key to insert. The value of this parameter will appear to the left of the equal sign in the profile string (szKeyName = szValue).
szValue	Specifies the value to assign to the key. The value of this parameter will appear to the right of the equal sign in the profile string (szKeyName = szValue).

Return Values

Table 4 ▪ AddProfString Return Values

Return Value	Description
0	AddProfString successfully added the specified profile string to the .ini file.
< 0	AddProfString was unable to add the profile string.

Additional Information

- AddProfString does not use the Windows API to change the .ini files. The Windows API cannot handle the types of changes possible with AddProfString.
- Changes made to .ini files can be logged for uninstallation. However, there are some important restrictions to be aware of. For more information, see Uninstalling Initialization (.ini) File Entries.

AddProfString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions AddProfString and GetProfString.
 *
 * This script adds a profile string to a file;  then it
 * retrieves and displays the string that was added.
 *
 * Note: The first time you run this script, it will create a
 *       file named ISExampl.ini in the root of drive C.  You
 *       can delete that file when you have finished analyzing
 *       this script.
 *
\*---------------------------------------------------------*/

#define EXAMPLE_INI "C:\\ISExampl.ini"

// The new section, key, and value to add to the file.
#define NEW_SECTION "New Section"
#define NEW_KEY     "New Key"
#define NEW_VALUE   "Test"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AddProfString(HWND);

function ExFn_AddProfString(hMSI)
    STRING svResult;
begin

    // Add the profile string to the file.
    if (AddProfString (EXAMPLE_INI, NEW_SECTION, NEW_KEY, NEW_VALUE) != 0) then
        // Display an error message if the string could not be added.
        MessageBox ("AddProfString failed.", SEVERE);
    else
        // Retrieve the value of a key from the file.
        if (GetProfString (EXAMPLE_INI, NEW_SECTION, NEW_KEY, svResult) != 0) then
            // Display an error message if the string could not be retrieved.
            MessageBox ("GetProfString failed.", SEVERE);
        else
```

```
            // Display the key and its current value.
            MessageBox (NEW_KEY + "=" + svResult, INFORMATION);
        endif;
    endif;

end;
```

AdminAskPath

Project ▪ *This information applies to InstallScript MSI projects.*

The **AdminAskPath** function displays a dialog that prompts the end user to enter the path to a destination location for an administrative installation (when the end user runs an InstallScript MSI project `Setup.exe` with the `/a` argument).

Syntax

```
AdminAskPath ( szMsg, szDefaultPath, svResultPath );
```

Parameters

Table 5 ▪ AdminAskPath Parameters

Parameter	Description
szMsg	Specifies the message to display in this dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szDefaultPath	Specifies the default path to display in the edit field. The end user can modify this string. The default implementation of OnAdminInstallUIBefore passes INSTALLDIR in this parameter.
svResultPath	Returns the resulting path, regardless of whether the user accepts the default path, modifies it, or selects an alternate path from the Choose Folder dialog. The default implementation of OnAdminInstallUIBefore passes INSTALLDIR in this parameter.

Return Values

Table 6 ▪ AdminAskPath Return Values

Return Value	Description
NEXT (1)	Indicates that the user clicked the Next button.
BACK (12)	Indicates that the user clicked the Back button.

Additional Information

AdminAskPath uses the **AskPath** dialog, and it uses the same dialog resources as **AskPath**. Therefore, any changes you make to the layout of **AskPath** in the Dialog Editor are reflected in **AdminAskPath**.

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

AdminAskPath Example

Project ▪ *This information applies to InstallScript MSI projects.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates the AdminAskPath function.
//
//  In the OnAdminInstallUIBefore event of an InstallScript MSI project,
//  prompt the user for the target directory into which files should be
//  uncompressed and copied.
```

```
//
//---------------------------------------------------------------------------

function OnAdminInstallUIBefore( )
    int nResult;

begin
Dlg_SdWelcome:
    SdWelcome("", "");

Dlg_AdminAskPath:
    // prompt the user for the target path, storing it in INSTALLDIR
    nResult = AdminAskPath("", INSTALLDIR, INSTALLDIR);
    if (nResult = BACK) goto Dlg_SdWelcome;

    // prepare the status dialog
    SetStatusExStaticText(SdLoadString(IDS_IFX_STATUSEX_STATICTEXT_FIRSTUI));
    Enable(STATUSEX);
end;
```

AskDestPath

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **AskDestPath** function displays a dialog that enables the end user to specify a destination folder for the files to be installed by your installation. The dialog also includes a Browse button that enables the end user to select an existing folder on the system.

To open the Choose Folder dialog from the Choose Destination Location dialog, the end user must click the Browse button. The Choose Folder dialog displays a list of all available folders. The end user can select an existing folder or enter a new folder name. If the end user enters the name of a folder that does not exist, a message box opens to enable the end user to create the folder.

Note *▪ Installations that run in silent mode should create the new folder if it does not exist before calling AskDestPath. This ensures that the confirmation dialog is not displayed. Without this step, two response files are required to handle the two possible conditions.*

The folder selected by the end user must be writable; non-writable folders are not accepted. If you want the end user to be able to select folders that are not writable, call the AskPath function instead.

Syntax

```
AskDestPath ( szTitle, szMsg, svDir, nReserved );
```

Parameters

Table 7 ▪ AskDestPath Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title Choose Destination Location, pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To pass multiple lines of static text in this parameter, insert newline escape sequences (\n) where needed to break the line. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the default path to display when the dialog is opened; returns the path to the folder selected by the end user.  ***Note ▪*** *If the default folder specified by svDir does not already exist on the end user's system, it is not created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder that you intend to use before calling FeatureMoveData (which creates the folder if necessary), you must call ExistsDir when AskDestPath returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user's system. Note that FeatureTransferData is called automatically in an installation running an event-based script.*
nReserved	The value of this parameter must be 0 (zero).

Return Values

Table 8 ▪ AskDestPath Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

AskDestPath Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AskDestPath function.
 *
 * This script calls AskDestPath to get the path to the location
 * where the installation will install files. That path is then
 * displayed in a message box.
 *
\*---------------------------------------------------------*/

#define TITLE_TEXT  "AskDestPath Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AskDestPath(HWND);

function ExFn_AskDestPath(hMSI)
    STRING  szTitle, szMsg, svDir;
    NUMBER  nReturn;
begin

    // Set a default path for the installation.
    svDir = INSTALLDIR;

    // Get a destination directory. Pass a null string in the
    // second parameter to display the default message.
    nReturn = AskDestPath (TITLE_TEXT, "", svDir, 0);

    if (nReturn < 0) then
        // Report the error.
        MessageBox ("AskDestPath failed.", SEVERE);
    elseif (nReturn = NEXT) then
        // Display the selected destination directory name.
        MessageBox ("You selected " + svDir + ".", INFORMATION);
    endif;

end;
```

AskOptions

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **AskOptions** function formats and displays a dialog that prompts the end user to select one or more options. The dialog displays up to nine selection controls—either check boxes or option buttons—depending on the value of nValue.

The default title for this dialog is Select Features. To change the contents of the title bar, call SetDialogTitle before calling AskOptions.

Note ▪ *You cannot use the PlaceWindow function in conjunction with the AskOptions function. By default, the dialog appears in the center of the desktop, unless the background window mode is enabled. If the installation is in window mode, the dialog appears in the center of the background window.*

Syntax

```
AskOptions ( nValue, szMsg, szText1, bvCheck1, szText2, bvCheck2[, szTextn, bvCheckn] [,..., ...] );
```

Parameters

Table 9 ▪ AskOptions Parameters

Parameter	Description
nValue	Specifies the type of controls to display. Pass one of the following predefined constants in this parameter: • **EXCLUSIVE**—Specifies option buttons, which enable the end user to select only one option. • **NONEXCLUSIVE**—Specifies check boxes, which enable the end user to select more than one option.
szMsg	Specifies the message to display in the dialog. You can use this message to describe the options and/or ask the user to choose one or more options. If the message is too long for one line, use newline escape sequences (\n) to insert line breaks.  ***Note ▪*** *Your operating system dictates the maximum message string length.By default, the display of szMsg text is limited to two lines by the AskOptions dialog resource in _Isres.dll. To display more than two lines of szMsg text, you can create a custom dialog from the AskOptions dialog.*
szText1	Specifies a text label to display next to the first check box or option button. The maximum number of characters that can be displayed depends on the font you use; be sure to check that the string specified fits in the static text field of the dialog. If the string does not fit, either shorten it or call SdAskOptions instead. To create an accelerator key, insert an ampersand (&) before the character you want to designate for that purpose. The character is displayed with an underline to indicate its function. For example, to make Alt + C the accelerator key for Custom, pass "&Custom"; to make Alt + S the accelerator key for Custom, pass "Cu&stom."
bvCheck1	Specifies the initial status of the first check box or option button when the dialog is opened; returns the status of the first check box or option button when the dialog is closed. The following constants are passed and returned in this parameter: • **TRUE**—The first check box or option button is selected. • **FALSE**—The first check box or option button is not selected.
szText2	Specifies a text label to display next to the second check box or option button. The maximum number of characters that can be displayed depends on the font you use; be sure to check that the string specified fits in the static text field of the dialog. If the string does not fit, either shorten it or call SdAskOptions instead. Create an accelerator in the same manner as you did for szText1.

Table 9 ▪ AskOptions Parameters (cont.)

Parameter	Description
bvCheck2	Specifies the initial status of the second check box or option button when the dialog is opened; returns the status of the second check box or option button when the dialog is closed. The following constants are passed and returned in this parameter: • **TRUE**—The first check box or option button is selected. • **FALSE**—The first check box or option button is not selected. Up to seven additional options can be defined. Each additional option is indicated by a pair of parameters—a string parameter that defines a label and a number variable that indicates the state of the option when AskOptions returns. To set the initial state of an option, assign TRUE or FALSE to the number variable before calling AskOptions.  ***Note ▪*** *If nValue is EXCLUSIVE and the initial state of more than one option is set to TRUE, AskOptions preselects the first option in the parameter list that is set to TRUE.*

Return Values

Table 10 ▪ AskOptions Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button. The states of the controls are returned in the individual bvCheck variables.
BACK (12)	Indicates that the end user clicked the Back button. The states of the controls are returned in the individual bvCheck variables.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

AskOptions Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the AskOptions function.
 *
 * The AskOptions dialog is displayed twice. First, it is
 * displayed with check boxes; then it is displayed with option
 * buttons.  The example shows the maximum number of options
 * allowed--nine.
 *
\*---------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AskOptions(HWND);

function ExFn_AskOptions(hMSI)
    STRING szMsg, szText1, szText2, szText3, szText4, szText5;
    STRING szText6, szText7, szText8, szText9;
    NUMBER nReturn, nValue,  nvCheck1, nvCheck2, nvCheck3, nvCheck4;
    NUMBER nvCheck5, nvCheck6, nvCheck7, nvCheck8, nvCheck9;
begin

    szMsg = "Select from the options below.";

    szText1 = "Option 1";
    szText2 = "Option 2";
    szText3 = "Option 3";
    szText4 = "Option 4";
    szText5 = "Option 5";
    szText6 = "Option 6";
    szText7 = "Option 7";
    szText8 = "Option 8";
    szText9 = "Option 9";

    nvCheck1 = TRUE;
    nvCheck2 = FALSE;
    nvCheck3 = FALSE;
    nvCheck4 = FALSE;
    nvCheck5 = FALSE;
    nvCheck6 = FALSE;
    nvCheck7 = FALSE;
    nvCheck8 = FALSE;
    nvCheck9 = FALSE;

    // Display the check box (NONEXCLUSIVE) dialog.
    nValue = NONEXCLUSIVE;

    AskOptions (nValue, szMsg,
                szText1, nvCheck1,
                szText2, nvCheck2,
                szText3, nvCheck3,
                szText4, nvCheck4,
                szText5, nvCheck5,
                szText6, nvCheck6,
                szText7, nvCheck7,
```

```
                szText8, nvCheck8,
                szText9, nvCheck9);

    // Display the option button (EXCLUSIVE) dialog.
    nValue = EXCLUSIVE;
    AskOptions (nValue, szMsg,
                szText1, nvCheck1,
                szText2, nvCheck2,
                szText3, nvCheck3,
                szText4, nvCheck4,
                szText5, nvCheck5,
                szText6, nvCheck6,
                szText7, nvCheck7,
                szText8, nvCheck8,
                szText9, nvCheck9);

end;
```

AskPath

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **AskPath** function displays a dialog that prompts the end user to enter the path to a destination location. The dialog contains a single-line edit field in which you can display a default path. The end user has three options:

- Accept the default path.
- Edit the default path.
- Display the Choose Folder dialog to select a folder.

To open the Choose Folder dialog, the end user must click the Browse button. The Choose Folder dialog displays a list of all available folders. The end user can select an existing folder or enter a new folder name. If the end user enters the name of a folder that does not exist, the folder is created.

Caution *▪ AskPath does not verify the existence of the path entered by the end user. After calling AskPath, call CreateDir to create the path.*

Note *▪ You cannot use the PlaceWindow function in conjunction with the AskPath function. By default, the dialog opens in the center of the desktop, unless the background window mode is enabled. If the installation is in window mode, the dialog opens in the center of the background window.*

The default title for the dialog is Choose Destination Location. To change the title, call SetDialogTitle before calling AskPath.

The AskPath function accepts the name of a folder that exists but is not writable. To limit the end user's selection to writable folders, call the AskDestPath function instead.

Syntax

```
AskPath ( szMsg, szDefPath, svResultPath );
```

Parameters

Table 11 ▪ AskPath Parameters

Parameter	Description
szMsg	Specifies the message to display in this dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szDefPath	Specifies the default path to display in the edit field. The end user can modify this string.
svResultPath	Returns the resulting path, regardless of whether the user accepts the default path, modifies it, or selects an alternate path from the Choose Folder dialog. AskPath adds a backslash to the end of the path before placing it into svResultPath. If necessary, that backslash can be removed by calling StrRemoveLastSlash after AskPath returns. If the user clicks the Back button, the value of svResultPath will be unpredictable. Therefore, if you are using the same variable for both szDefPath and svResultPath, be sure to reinitialize that variable when the return value from AskPath is BACK. ***Note ▪*** *The edit field displayed in the dialog scrolls to accommodate long strings. Because the number of characters that can be entered into the edit field is not limited, you should declare the variable passed in svResultPath without an explicit size. If the string variable is not large enough to store the text entered by the user, the string is truncated and an error message is displayed. Because this function appends a backslash and a NULL terminator to the end of the string, the size of the string must be at least two characters longer than the path entered by the user.*

Return Values

Table 12 ▪ AskPath Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button; svResultPath is set to a null string ("").

Additional Information

AdminAskPath uses the **AskPath** dialog, and it uses the same dialog resources as **AskPath**. Therefore, any changes you make to the layout of **AskPath** in the Dialog Editor are reflected in **AdminAskPath**.

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

AskPath Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AskPath function.
 *
 * This script obtains the path to a folder on the
 * end user's computer.  If the path does not exist, it creates
 * a folder at that location if indicated by the
 * end user.  Finally, it displays the selected path.
 *
\*---------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AskPath(HWND);

function ExFn_AskPath(hMSI)
    STRING szMsg, svResultPath[101];
    BOOL bTargetDirOk;
begin

    // Disable the Back button in installation dialogs.
    Disable (BACKBUTTON);

    // Create the message to display in the AskPath dialog.
    szMsg = "Specify a folder for the application.";

    // Initialize valid path indicator.
    bTargetDirOk = FALSE;

    repeat
        // Get a path from the user.  The default path is
        // the current value of the system variable INSTALLDIR.
        if (AskPath (szMsg, INSTALLDIR, svResultPath) = NEXT) then
            // Does the path entered by the user exist on the
            // target system?
            if (ExistsDir (svResultPath) = 0) then
                // If it exists, set indicator to exit the loop.
                bTargetDirOk = TRUE;
            else
                // If the path doesn't exists, ask if it should be created.
                 if (AskYesNo ("Folder does not exist. Create it?",YES) = YES) then
                    // Attempt to create the folder (directory).
                    if (CreateDir (svResultPath) = 0) then
                        // If the folder was created, set indicator to exit the loop.
```

```
                    bTargetDirOk = TRUE;
                else
                    // Inform the end user that the folder was not created.
                    MessageBox ("Unable to create " + svResultPath, WARNING);
                endif;
            endif;
        endif;
    endif;
until bTargetDirOk;

// Display the name of the target folder.
MessageBox ("The target folder is " + svResultPath, INFORMATION);

// You'd also enable the Back button for subsequent dialogs.
Enable (BACKBUTTON);

end;
```

AskText

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **AskText** function displays a dialog that contains one static text field and one edit box. Specify default text for the static text field in the parameter szQuestion. Specify default text for the edit box in the parameter szDefault.

Note *▪ You cannot use the PlaceWindow function in conjunction with the AskText function. By default, the dialog appears in the center of the desktop, unless the background window mode is enabled. If the installation is in window mode, the dialog opens in the center of the background window.*

The default title of this dialog is Enter Information. To change the contents of the title bar, call SetDialogTitle before calling AskText.

Syntax

```
AskText ( szQuestion, szDefault, svResult );
```

Parameters

Table 13 ▪ AskText Parameters

Parameter	Description
szQuestion	Specifies the question or statement to display. If the length of the string in this parameter exceeds the width of the static text field, one or more line breaks will be inserted into the string so that it displays on multiple lines in the dialog. If you prefer, you can format the string manually by inserting one or more newline escape sequences (\n) into it. This parameter does not have a default value.
szDefault	Specifies the default text for the edit box. The edit box scrolls, if necessary, to accommodate a long string.
svResult	Returns the text entered by the end user when the Next button is clicked to close the dialog. If the user clicks the Back button, the value of svResult will be unpredictable. Therefore, if you are using the same variable for both szDefault and svResult, be sure to reinitialize that variable when the return value from AskText is BACK. ***Note ▪*** *The string variable that you pass in svResult must be large enough to accommodate the text entered into the edit box. For that reason, you should use the autosize method to declare the variable.*

Return Values

Table 14 ▪ AskText Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

The dialog that is displayed by the AskText function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

AskText Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AskText function.
 *
 * This script gets a company name from the end user.
 *
\*---------------------------------------------------------*/

#define MSG_TEXT        "Please enter your company name."
#define DEFAULT_COMPANY "My Software Company"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AskText(HWND);

function ExFn_AskText(hMSI)
    STRING svCompany, szTitle;
    NUMBER nResult;
begin

    // Get the company name.
    nResult = AskText (MSG_TEXT, DEFAULT_COMPANY, svCompany);

    if nResult = NEXT then
        // Display the company name that was entered by the user.
        MessageBox ("Company: " + svCompany, INFORMATION);
    endif;

end;
```

AskYesNo

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **AskYesNo** function presents a message box that displays a question that the end user can answer by clicking a Yes or No button. The **AskYesNo** message box contains four items:

- Question mark icon
- Question text
- Yes button
- No button

Note ▪ *The default title is* **Question**. *To change the contents of the title bar, call SetDialogTitle before calling* **AskYesNo**.

The **AskYesNo** *message box is created by a direct call to the corresponding Windows API function, which displays a system modal dialog. Once a modal dialog is displayed, it retains focus until the end user closes it.*

Windows displays this dialog; therefore, the installation cannot change the text of the buttons on the dialog. Windows displays the button text—"Yes" and "No" on English-based systems—in the language of the operating system; no manual localization of this text is required. If you need to display a more flexible dialog, call a Windows API function directly or use a custom dialog.

Syntax

```
AskYesNo ( szQuestion, nDefault );
```

Parameters

Table 15 ▪ AskYesNo Parameters

Parameter	Description
szQuestion	Specifies the question to display in the message box. If the message is too large to fit on one line, embed newline escape characters (\n) in the message to insert line breaks.
nDefault	Specifies the button that is selected by default. Pass one of the following predefined constants in this parameter: • **YES**—The Yes button is highlighted when the dialog opens. • **NO**—The No button is highlighted when the dialog opens.

Return Values

Table 16 ▪ AskYesNo Return Values

Return Value	Description
YES (1)	Indicates that the user clicked the Yes button.
NO (0)	Indicates that the user clicked the No button.

Additional Information

The dialog that is displayed by the AskYesNo function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

AskYesNo Example

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

Note *▪ To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the AskYesNo function.
 *
 * This script asks the user whether or not to display the
 * ReadMe file.  If yes, the script launches the Windows
 * Notepad to open a ReadMe file.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable and a valid
 *       text file on the target system.
 *
\*---------------------------------------------------------*/

#define PROGRAM "C:\\Windows\\Notepad.exe"
#define PARAM   "C:\\Windows\\Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_AskYesNo(HWND);

function ExFn_AskYesNo(hMSI)
begin

    // Display the AskYesNo dialog.  The default is set to Yes.
    if (AskYesNo("Installation complete. Would you like to read the Readme " +
                "file now?", YES) = YES) then
        LaunchApp(PROGRAM, PARAM);
    endif;

end;
```

BatchAdd

The **BatchAdd** function inserts a SET command or other DOS command into a batch file that has been loaded into memory with BatchFileLoad. The parameter nOptions allows you to add the new command as the first or last statement in the file, replace an existing statement with the new command, or specify that the new command be added before or after an existing statement.

Before calling BatchAdd, you must call BatchFileLoad to load the file to be modified into memory. After you modify the file, call BatchFileSave to save it to disk.

Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.

Syntax

```
BatchAdd ( szKey, szValue, szRefKey, nOptions );
```

Parameters

Table 17 ▪ BatchAdd Parameters

Parameter	Description
szKey	Specifies the keyword to add to the batch file. PATH, TEMP, and MYENV are examples of valid keys for this parameter.
szValue	Specifies the value of the key to be added to the batch file. This string must be no longer than 512 bytes; passing a string longer than 512 bytes will cause an installation error. To add a longer string, use the FileGrep and FileInsertLine functions.  ***Caution ▪*** *Batch files do not support long paths completely. If you are using this function to add a line that contains a long path, call LongPathToShortPath to convert the long path to its short path equivalent before adding it to the string to be placed in the batch file. For information on long paths and long file names, refer to Long File Name Format.*
szRefKey	Specifies the reference key relative to which you are adding szKey in the batch file.

Table 17 ▪ BatchAdd Parameters (cont.)

Parameter	Description
nOptions	Specifies where in the file to insert the line. Pass one of the following predefined constants in this parameter: • **BEFORE—**The statement is added before the first line that contains szRefKey. If szRefKey is a null string (""), the statement is added as the first line of the file. • **AFTER—**The statement is added after the last line that contains szRefKey. If szRefKey is a null string (""), the statement is added as the last line of the file. • **REPLACE—**The statement replaces an existing line in the file. If multiple lines with same key exist, only the last line is replaced. If szKey does not exist in the file, a new line will be added after szRefKey. If szRefKey is a null string (""), the new line is added as the last line of the file. When the statement to be added is not a SET command, pass a null string ("") in szKey, pass the complete command in szValue, and use the OR operator to combine the constant COMMAND with one of the other option constants, as shown below: `BatchAdd("", "PAUSE", "", COMMAND | AFTER);`  ***Note ▪*** *BatchAdd automatically adds the DOS keyword SET to the beginning of the statement to be inserted unless you use the OR operator to combine the constant COMMAND with the value you pass in nOptions. If you do not explicitly specify REPLACE in nOptions, the specified statement is added even if a duplicate line exists in the batch file.*

Return Values

Table 18 ▪ BatchAdd Return Values

Return Value	Description
0	BatchAdd successfully added a SET statement or other command to the batch file.
< 0	BatchAdd was unable to add the SET statement or other command to the batch file.

Additional Information

An InstallScript reference key is either an environment variable, a DOS command, or a program file name. Environment variables are keywords such as PATH, COMSPEC, LIB, or other predefined or user-defined identifiers. The value of an environment variable is established by using the DOS SET command. Statements that appear in a batch file must be either DOS commands, program names (with or without command-line parameters), or comments. Refer to your operating system manual for a detailed definition of commands and environment variables.

BatchAdd Example

The following example applies to:

InstallScript/InstallScript MSI Installations

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchAdd function.
 *
 * This example script adds three statements to a batch file.
 * First, it adds a PATH statement.  Next, it adds a command to
 * set the environment variable EXENV.  Then it adds a command
 * to launch SHARE.EXE, placing it before the existing command
 * to start Windows.  Finally, it backs up the original file
 * and saves the edited file under its original name.
 *
 * If any of the calls to BatchAdd fails, the setup exits
 * without saving changes to the batch file.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, that file should include the following
 *       lines:
 *
 *       PATH=C:\Windows
 *       Win
 *
\*---------------------------------------------------------*/
```

```
#define EXAMPLE_BAT "C:\\ISEXAMPL.BAT"
#define EXAMPLE_BAK "ISEXAMPL.BAK"

    STRING szPath;

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
   function OnBegin()
   begin

    // Load the batch file to be edited.
    if (BatchFileLoad (EXAMPLE_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE_BAT+".", SEVERE);
        abort;
    endif;

    // Add a SET PATH command that appends the value of an existing
    // search path to C:\EXAPP\BIN.
    szPath = "C:\\EXAPP\\BIN;%PATH%";

    if (BatchAdd ("PATH", szPath, "PATH", AFTER) < 0) then
        MessageBox ("First call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Add the line SET EXENV = C:\OTHERAPP\BIN.  If the
    // environment variable EXENV already exists in the batch
    // file, the last SET EXENV statement is replaced.
    szPath = "C:\\OTHERAPP\\BIN";

    if (BatchAdd ("EXENV", szPath, "EXENV", REPLACE) < 0) then
        MessageBox ("Second call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Add the command SHARE.EXE before the command WIN.
    if (BatchAdd ("", "SHARE.EXE", "WIN", BEFORE | COMMAND) < 0) then
        MessageBox ("Third call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Save the updated file; back up the original file.
    if (BatchFileSave(EXAMPLE_BAK) < 0) then
        MessageBox ("Unable to save " + EXAMPLE_BAK + ".", SEVERE);
    else
        MessageBox ("Batch file saved. Backup created.",INFORMATION);
    endif;

end;
```

The following example applies to:

Basic MSI Installations

Tip ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchAdd function.
 *
 * This example script adds three statements to a batch file.
 * First, it adds a PATH statement.  Next, it adds a command to
 * set the environment variable EXENV.  Then it adds a command
 * to launch SHARE.EXE, placing it before the existing command
 * to start Windows.  Finally, it backs up the original file
 * and saves the edited file under its original name.
 *
 * If any of the calls to BatchAdd fails, the setup exits
 * without saving changes to the batch file.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, that file should include the following
 *       lines:
 *
 *       PATH=C:\Windows
 *       Win
 *
\*---------------------------------------------------------*/

#define EXAMPLE_BAT "C:\\ISEXAMPL.BAT"
#define EXAMPLE_BAK "ISEXAMPL.BAK"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_BatchAdd(HWND);

function ExFn_BatchAdd(hMSI)
    STRING szPath;
begin

    // Load the batch file to be edited.
    if (BatchFileLoad (EXAMPLE_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE_BAT+".", SEVERE);
        abort;
    endif;

    // Add a SET PATH command that appends the value of an existing
    // search path to C:\EXAPP\BIN.
    szPath = "C:\\EXAPP\\BIN;%PATH%";

    if (BatchAdd ("PATH", szPath, "PATH", AFTER) < 0) then
```

```
        MessageBox ("First call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Add the line SET EXENV = C:\OTHERAPP\BIN.  If the
    // environment variable EXENV already exists in the batch
    // file, the last SET EXENV statement is replaced.
    szPath = "C:\\OTHERAPP\\BIN";

    if (BatchAdd ("EXENV", szPath, "EXENV", REPLACE) < 0) then
        MessageBox ("Second call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Add the command SHARE.EXE before the command WIN.
    if (BatchAdd ("", "SHARE.EXE", "WIN", BEFORE | COMMAND) < 0) then
        MessageBox ("Third call to BatchAdd failed", WARNING);
        abort;
    endif;

    // Save the updated file; back up the original file.
    if (BatchFileSave(EXAMPLE_BAK) < 0) then
        MessageBox ("Unable to save " + EXAMPLE_BAK + ".", SEVERE);
    else
        MessageBox ("Batch file saved. Backup created.",INFORMATION);
    endif;

end;
```

BatchDeleteEx

The **BatchDeleteEx** function deletes lines in a batch file that contain the value specified in szKey.

Note ▪ *Before calling BatchDeleteEx, you must call BatchFileLoad to load the file to be modified into memory. After you modify the file, call BatchFileSave to save it to disk.*

Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.

Syntax

```
BatchDeleteEx ( szKey, nOptions );
```

Parameters

Table 19 ▪ BatchDeleteEx Parameters

Parameter	Description
szKey	Specifies the reference keyword that identifies the line or lines to be deleted.
nOptions	Indicates whether szKey specifies an environment variable in a SET statement or a command. Pass one of the following predefined constants in this parameter: • **0**—Specifies that szKey is an environment variable in a SET statement. An environment variable is either a predefined identifier (such as PATH, COMSPEC, and LIB), or a user-defined identifier. For example, the following statement would be deleted if the value of szKey was "LIBPATH" and nOptions was set to 0: `SET LIBPATH=C:\Lang\Lib` • **COMMAND**—Specifies that szKey is either a DOS command or a program file name.

Return Values

Table 20 ▪ BatchDeleteEx Return Values

Return Value	Description
0	BatchDeleteEx successfully deleted lines containing the specified value.
< 0	BatchFileLoad was unable to delete lines containing the specified value.

BatchDeleteEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the BatchDeleteEx function.
 *
 * This example script deletes lines from a batch file.  First,
 * it calls BatchFileLoad to load the file.  Next, it deletes
 * all lines with a PATH command.  Then it deletes all lines
 * that reference MyApp.exe (for example, C:\MyApps\MyApp.exe).
 * Finally, it backs up the original file and saves the
 * edited file under its original name.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, that file should include the
 *       following lines:
 *
 *       SET PATH=C:\Windows
 *       C:\MyApps\MyApp.exe
 *
\*------------------------------------------------------------*/

#define EXAMPLE_BAT "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_BatchDeleteEx(HWND);

function ExFn_BatchDeleteEx(hMSI)
    STRING szBackupFile;
begin

    // Load or create the batch file to be edited.
    if (BatchFileLoad (EXAMPLE_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE_BAT + ".", SEVERE);
        abort;
    endif;

    // Delete all SET PATH= commands.
    BatchDeleteEx ("PATH", 0);

    // Delete all lines with references to MyApp.exe.
    BatchDeleteEx ("MyApp.exe", COMMAND);

    // Save the edited batch file.
    if (BatchFileSave("Example.bak") < 0) then
        MessageBox ("Unable to save " + EXAMPLE_BAT + ".", SEVERE);
    else
        MessageBox ("Batch file saved.",INFORMATION);
    endif;

end;
```

BatchFileLoad

The **BatchFileLoad** function loads a copy of the specified batch file into memory so that other advanced batch file functions can be called to operate on the file. Specify the name of the batch file you want to edit in szBatchFile or pass a null string ("") in szBatchFile to edit the default batch file, which is set initially by InstallShield to the bootup Autoexec.bat file used by the system.

Note that you can call BatchFileLoad to create a new batch file. To do so, pass in szBatchFile the name of a file that does not exist. Then call other batch functions to edit the new file. Finally, call BatchFileSave to save the new file to disk.

Note ▪ *Before using any of the advanced batch file functions, you must call BatchFileLoad to load the file to be modified into memory. After you modify the file, call BatchFileSave to save it to disk. To obtain the fully qualified file name of the batch file that will be used by default in the installation script, call BatchGetFileName. To specify a different batch file to be used by default in the installation script, call BatchSetFileName.*

Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.

Syntax

```
BatchFileLoad ( szBatchFile );
```

Parameters

Table 21 ▪ BatchFileLoad Parameters

Parameter	Description
szBatchFile	Specifies the fully qualified name of the batch file to load into memory. To load the current default batch file, pass a null string (""). If you specify a file in this parameter, that file becomes the default batch file. After calling this function, you can use all of the advanced batch file functions to manipulate this file. To create a new batch file with BatchFileLoad, pass in szBatchFile the name of a file that does not exist. Then call other batch functions to edit the new file.

Return Values

Table 22 ▪ BatchFileLoad Return Values

Return Value	Description
0	BatchFileLoad successfully initialized the batch file buffer. If szConfigFile specified an existing batch file, the file was loaded into the buffer; otherwise, an empty buffer was created.
< 0	BatchFileLoad was unable to initialize the batch file buffer.

BatchFileLoad Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchFileLoad and BatchFileSave functions.
 *
 * This example script shows how to open a batch file for
 * editing, how to create a backup of the original file, and
 * how to save and close the edited file.
 *
```

```
 * To demonstrate how the file backup feature of BatchFileSave
 * prevents the overwriting of existing files, this script loads
 * and saves two different batch files.  The first batch file is
 * backed up with a specific file name.  The second is backed up
 * with a wildcard extension so that BatchFileSave will
 * generate a unique file extension consisting of three digits.
 *
 * Note: Before running this script, create two batch files
 *       (ISExamp1.bat and ISExamp2.bat) in the root of drive C.
 *       For best effect, you should delete or move any other
 *       files named ISExamp1.* or ISExamp2.*.
 *
\*------------------------------------------------------------*/

// Names of batch files and backup files used in this example.
#define EXAMPLE1 "ISExamp1"
#define EXAMPLE2 "ISExamp2"

// Full names of batch files.
#define EXAMPLE1_BAT "C:\\" + EXAMPLE1 + ".bat"
#define EXAMPLE2_BAT "C:\\" + EXAMPLE2 + ".bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_BatchFileLoad(HWND);

function ExFn_BatchFileLoad(hMSI)
begin

    // Load EXAMPLE1_BAT.
    if (BatchFileLoad (EXAMPLE1_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE1_BAT + ".", SEVERE);
        abort;
    endif;

    // Use other batch file functions here to edit the first file.
    // Back up the original file with the extension "bak"; save the
    // edited file under its original name.  If ISExamp1.bak already
    // exists, BatchFileSave will generate a numbered extension.
    if (BatchFileSave (EXAMPLE1 + ".bak") < 0) then
        MessageBox ("Unable to save " + EXAMPLE1_BAT + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE1_BAT + " saved.",INFORMATION);
    endif;

    // Load EXAMPLE2_BAT.
    if (BatchFileLoad (EXAMPLE2_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE2_BAT + ".", SEVERE);
        abort;
    endif;

    // Use other batch file functions here to edit the second file.
    // Back up the original batch file with a numbered extension
    // and save the edited file under its original name.
```

```
    if (BatchFileSave (EXAMPLE2 + ".*") < 0) then
        MessageBox ("Unable to save " + EXAMPLE2_BAT + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE2_BAT + " saved.",INFORMATION);
    endif;

end;
```

BatchFileSave

The **BatchFileSave** function saves to disk a batch file that has been loaded into memory with the function BatchFileLoad. The file is saved under its original name. If a file name is specified in szBackupFile, the original file is renamed with that file name before the edited file is written to disk. If szBackupFile contains a null string (""), the original file is replaced with the modified file. If you do not call BatchFileSave when you are finished modifying a batch file with advanced batch file functions, all modifications will be lost.

Note ▪ *Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.*

Syntax

```
BatchFileSave ( szBackupFile );
```

Parameters

Table 23 ▪ BatchFileSave Parameters

Parameter	Description
szBackupFile	Specifies whether a backup copy of the original file as it existed before editing should be saved. • If no backup file should be created, specify a null string in this parameter. • If the original file should be backed up with a specific name, pass that file name in this parameter. The file name must be unqualified (that is, do not specify a drive and/or path). Note that if a file with the specified name already exists, BatchFileSave will generate a unique file extension, as described in the next bullet item. • If the original file should be backed up with an installation-generated file extension, specify the wildcard character "" as the file extension (for example, "Batch."). The installation will then assign a numeric value, starting at 001, as the extension. If a file already exists with that extension, the extension's value will be increased by one until a unique file name is created. Once the backup has been created, InstallShield stores the backup file name in the system variable INFOFILENAME.  ***Note ▪*** *If the batch file specified by the last call to BatchFileLoad did not exist, then the backup file is identical to the batch file created by the call to BatchFileSave. If szBackupFile specifies the name of the original batch file, then a backup file is not created.*

Return Values

Table 24 ▪ BatchFileSave Return Values

Return Value	Description
0	BatchFileSave successfully saved the batch file in memory to disk.
< 0	BatchFileSave was unable to save the batch file to disk.

BatchFileSave Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchFileLoad and BatchFileSave functions.
 *
 * This example script shows how to open a batch file for
 * editing, how to create a backup of the original file, and
 * how to save and close the edited file.
 *
 * To demonstrate how the file backup feature of BatchFileSave
 * prevents the overwriting of existing files, this script loads
 * and saves two different batch files.  The first batch file is
 * backed up with a specific file name.  The second is backed up
 * with a wildcard extension so that BatchFileSave will
 * generate a unique file extension consisting of three digits.
 *
 * Note: Before running this script, create two batch files
 *       (ISExamp1.bat and ISExamp2.bat) in the root of drive C.
 *       For best effect, you should delete or move any other
 *       files named ISExamp1.* or ISExamp2.*.
 *
\*---------------------------------------------------------*/

// Names of batch files and backup files used in this example.
#define EXAMPLE1 "ISExamp1"
#define EXAMPLE2 "ISExamp2"

// Full names of batch files.
#define EXAMPLE1_BAT "C:\\" + EXAMPLE1 + ".bat"
#define EXAMPLE2_BAT "C:\\" + EXAMPLE2 + ".bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_BatchFileSave(HWND);

function ExFn_BatchFileSave(hMSI)
begin

    // Load EXAMPLE1_BAT.
    if (BatchFileLoad (EXAMPLE1_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE1_BAT + ".", SEVERE);
        abort;
    endif;

    // Use other batch file functions here to edit the first file.
    // Back up the original file with the extension "bak"; save the
    // edited file under its original name.  If ISExamp1.bak already
    // exists, BatchFileSave will generate a numbered extension.
    if (BatchFileSave (EXAMPLE1 + ".bak") < 0) then
        MessageBox ("Unable to save " + EXAMPLE1_BAT + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE1_BAT + " saved.",INFORMATION);
    endif;

    // Load EXAMPLE2_BAT.
    if (BatchFileLoad (EXAMPLE2_BAT) < 0) then
        MessageBox ("Unable to load " + EXAMPLE2_BAT + ".", SEVERE);
        abort;
    endif;

    // Use other batch file functions here to edit the second file.
    // Back up the original batch file with a numbered extension
    // and save the edited file under its original name.
    if (BatchFileSave (EXAMPLE2 + ".*") < 0) then
        MessageBox ("Unable to save " + EXAMPLE2_BAT + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE2_BAT + " saved.",INFORMATION);
    endif;

end;
```

BatchFind

The **BatchFind** function searches a batch file for one or more occurrences of the reference key specified in szRefKey. If you specify the constant RESTART in nOptions, the first occurrence of the reference key is returned. To find the next occurrence of szRefKey, call this function repeatedly with nOptions set to CONTINUE.

Note ▪ *Before calling BatchFind, you must call BatchFileLoad to load the file to be modified into memory. After you modify the file, call BatchFileSave to save it to disk.*

Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.

Syntax

```
BatchFind ( szRefKey, svResult, nOptions );
```

Parameters

Table 25 ▪ BatchFind Parameters

Parameter	Description
szRefKey	Specifies the reference key to search for. The reference key can be an environment variable, a DOS command, or a program name. If the reference key is a file name and you do not specify a file extension, the function returns all reference keys with the base file name. For example, if you specify Win.com, the search looks for this reference key only. If you specify Win, the reference keys Win.exe, Win.dll, Win.sys, and so on will be returned if they exist in the batch file.
svResult	Specifies the value of the reference key that was found in the batch file.
nOptions	Specifies where to start the search; pass one of the following predefined constants in this parameter: • **CONTINUE**—Starts the search from the current position in the batch file. • **RESTART**—Starts the search from the beginning of the batch file. When the reference key you are searching for is a DOS command or program name (not an environment variable), use the OR operator to combine the constant COMMAND with CONTINUE or RESTART, as shown below: `BatchFind ("SCAN.EXE", svResult, COMMAND | RESTART);`

Return Values

Table 26 ▪ BatchFind Return Values

Return Value	Description
0	BatchFind successfully found the value of szRefKey and returned it in svResult.
< 0	BatchFind was unable to find the value of szRefKey and return it in svResult.

BatchFind Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchFind function.
 *
 * This example script searches a batch file and reports whether
 * or not the file includes a command that references SHARE.EXE.
 * It then finds and displays all PATH and SET PATH statements.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat and store it in the root of
 *       drive C. The batch file should include a command
 *       to launch Share.exe, and it should contain at least
 *       one PATH or SET PATH= statement.
 *
\*---------------------------------------------------------*/

#define TARGET_BATCH "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_BatchFind(HWND);

function ExFn_BatchFind(hMSI)
    STRING svResult;
    NUMBER nResult;
begin

    // Load the target batch file.
    if (BatchFileLoad (TARGET_BATCH ) < 0) then
        MessageBox ("Unable to load " + TARGET_BATCH  + ".", SEVERE);
        abort;
    endif;

    // Check for a SHARE.EXE command.
    nResult = BatchFind ("SHARE.EXE", svResult, COMMAND);

    if (nResult < 0) then
        MessageBox ("SHARE.EXE command not found.", WARNING);
    else
        MessageBox ("SHARE.EXE command found.", INFORMATION);
    endif;

    // Find the first PATH or SET PATH= statement.  Pass RESTART in
    // the third parameter to begin searching at the top of the file.
    nResult = BatchFind ("PATH", svResult, RESTART);
```

```
    if (nResult < 0) then
        MessageBox ("PATH command not found.", WARNING);
    else

        // Loop while PATH commands are found.
        while (nResult = 0)
            MessageBox (svResult, INFORMATION);

            // Find the next PATH command.  Pass CONTINUE in the
            // third parameter to continue the search with the
            // statement that follows the last match.
            nResult = BatchFind ("PATH", svResult, CONTINUE);
        endwhile;

        MessageBox ("No more PATH commands.", WARNING);

    endif;

end;
```

BatchGetFileName

The **BatchGetFileName** function retrieves the fully qualified name of the default batch file, which is set initially by InstallShield to the bootup Autoexec.bat file used by the system. To specify a different batch file to be used by default in the script, call BatchSetFileName.

Note ▪ *Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.*

Syntax

```
BatchGetFileName ( svFileName );
```

Parameters

Table 27 ▪ BatchGetFileName Parameters

Parameter	Description
svFileName	Returns the fully qualified name of the default batch file in svFileName.

Return Values

Table 28 ▪ BatchGetFileName Return Values

Return Value	Description
0	BatchGetFileName successfully retrieved the fully qualified name of the default batch file.
< 0	BatchGetFileName was unable to retrieve the fully qualified name of the default batch file.

BatchGetFileName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchGetFileName and BatchSetFileName
 * functions.
 *
 * This example script retrieves the fully qualified name of the
 * default batch file, which initially is the Autoexec.bat file
 * on the boot drive. It then makes C:\ISExampl.bat the default
 * batch file. Finally, it retrieves the name of the default
 * batch file again to show that it has been changed.
 *
\*---------------------------------------------------------*/

#define DEFAULT_BATCH_FILE "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_BatchGetFileName(HWND);

function ExFn_BatchGetFileName(hMSI)
    STRING svFilename;
```

```
begin

    // Get the name of the default batch file.
    if (BatchGetFileName (svFilename) < 0) then
        // Report the error; then abort.
        MessageBox ("First call to BatchGetFileName failed.", SEVERE);
        abort;
    else
        // Display the name of the default batch file.
        MessageBox ("The default batch file is " + svFilename + ".",
                    INFORMATION);
    endif;

    // Make C:\ISExampl.bat the default batch file.
    if (BatchSetFileName(DEFAULT_BATCH_FILE) < 0) then
        // Report the error.
        MessageBox ("Unable to set new default batch file.", SEVERE);
    else

        // Verify that the default batch file has been changed.
        if (BatchGetFileName(svFilename) < 0) then
            // Handle an error.
            MessageBox ("Second call to BatchGetFileName failed.", SEVERE);
        else
            // Display the name of the default batch file.
            MessageBox ("Now the default batch file is " + svFilename + ".",
                        INFORMATION);
        endif;

    endif;

end;
```

BatchMoveEx

The **BatchMoveEx** function moves the line specified by szMove from one location to another in a batch file. The parameter nOptions specifies whether to position the line at the beginning or end of the batch file, or before or after the line specified by szRefKey.

Note ▪ *Before calling BatchMoveEx, you must call BatchFileLoad to load the file to be modified into memory. After you modify the file, call BatchFileSave to save it to disk.*

Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.

Syntax

```
BatchMoveEx ( szMove, szRefKey, nOptions, nMoveOption );
```

Parameters

Table 29 ▪ BatchMoveEx Parameters

Parameter	Description
szMove	Specifies the reference key that identifies the line to be moved.
szRefKey	Specifies the key that identifies the reference line used to position the line being moved. If szRefKey is a null string (“”), the line specified by szMove is moved to the beginning or end of the file, depending on the value of nOptions.
nOptions	Specifies where to move the line. Pass one of the following predefined constants in this parameter: ● **BEFORE—**The line specified by szMove is moved before the line containing the reference key in szRefKey. If szRefKey is a null string (“”), the line specified by szMove is moved to the beginning of the file. ● **AFTER—**The line specified by szMove is moved after the line containing the reference key in szRefKey. If szRefKey is a null string (“”), the line specified by szMove is moved to the end of the file. When the reference key you are searching for is a DOS command or program name (not an environment variable), use the OR operator to combine the constant COMMAND with BEFORE or AFTER, as shown below: `BatchMoveEx (“PATH”, “SCAN.EXE”, BEFORE | COMMAND, 0);`
nMoveOption	Specifies whether szMove is a command or an environment variable. Pass one of the following predefined constants in this parameter: ● **0—**Specifies that szMove is an environment variable. ● **COMMAND—**Specifies that szMove is a command.

Return Values

Table 30 ▪ BatchMoveEx Return Values

Return Value	Description
0	BatchMoveEx successfully moved the specified line in the batch file.
< 0	BatchMoveEx was unable to move the line in the batch file.

BatchMoveEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchMoveEx function.
 *
 * This example script moves lines within a batch file.  First,
 * it calls BatchFileLoad to load the file.  Next, it moves
 * the first PATH command to the end of the file.  Then it
 * moves the first statement that references Share.exe ahead
 * of the statement that launches Windows.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, the first line in that file should
 *       be a PATH command; the next statement should
 *       launch Windows;  the last statement should execute
 *       Share.exe.
 *
\*---------------------------------------------------------*/

#define TARGET_BATCH "C:\\ISExampl.bat"
#define BACKUP_BATCH "ISExampl.bak"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_BatchMoveEx(HWND);

function ExFn_BatchMoveEx(hMSI)
begin

    // Load the batch file to be edited.
    if BatchFileLoad (TARGET_BATCH) < 0 then
        MessageBox ("Unable to load " + TARGET_BATCH+".", SEVERE);
```

```
        abort;
    endif;

    // Move the PATH statement to the end of the file.
    if (BatchMoveEx ("PATH", "", AFTER, 0) < 0) then
        MessageBox ("Unable to move PATH statement.", SEVERE);
    else
        MessageBox ("PATH statement moved to end of file.", INFORMATION);
    endif;

    // Move the SHARE.EXE command before the WIN statement.
    if (BatchMoveEx ("SHARE.EXE", "WIN", BEFORE|COMMAND, COMMAND) < 0) then
        MessageBox ("Unable to move SHARE.EXE statement.", SEVERE);
    else
        MessageBox ("SHARE.EXE statement moved before WIN statement.",
                    INFORMATION);
    endif;

    // Save the updated file; back up the original file.
    if BatchFileSave (BACKUP_BATCH) < 0 then
        MessageBox ("Unable to save " + BACKUP_BATCH+".", SEVERE);
    else
        MessageBox ("Batch file saved. Backup created.", INFORMATION);
    endif;

end;
```

BatchSetFileName

The **BatchSetFileName** function specifies the name of the batch file to be used by Ez batch file functions and by BatchFileLoad when it is called with a null string ("") as its parameter. In InstallScript, this file is referred to as the default batch file. During installation initialization, the default batch file is set to the bootup Autoexec.bat file used by the system.

BatchSetFileName simply assigns the name of the default batch file. It does not verify that the specified file exists, nor does it load the file into memory. Because of this, the function will succeed even if the file name is invalid or the specified file does not exist. An invalid file name causes subsequent Ez batch file and advanced batch file functions to fail.

Note ▪ *Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.*

Syntax

```
BatchSetFileName ( szBatchFile );
```

Parameters

Table 31 ▪ BatchSetFileName Parameters

Parameter	Description
szBatchFile	Specifies the fully qualified name of the batch file to be used by default in the installation script.

Return Values

Table 32 ▪ BatchSetFileName Return Values

Return Value	Description
0	BatchSetFileName successfully set the specified file as the default batch file.
< 0	BatchSetFileName was unable to set the file as the default batch file.

BatchSetFileName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the BatchGetFileName and BatchSetFileName
 * functions.
 *
 * This example script retrieves the fully qualified name of the
 * default batch file, which initially is the Autoexec.bat file
 * on the boot drive. It then makes C:\ISExampl.bat the default
 * batch file. Finally, it retrieves the name of the default
 * batch file again to show that it has been changed.
 *
\*---------------------------------------------------------*/

#define DEFAULT_BATCH_FILE "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_BatchSetFileName(HWND);

function ExFn_BatchSetFileName(hMSI)
```

```
    STRING svFilename;
begin

    // Get the name of the default batch file.
    if (BatchGetFileName (svFilename) < 0) then
        // Report the error; then abort.
        MessageBox ("First call to BatchGetFileName failed.", SEVERE);
        abort;
    else
        // Display the name of the default batch file.
        MessageBox ("The default batch file is " + svFilename + ".",
                    INFORMATION);
    endif;

    // Make C:\ISExampl.bat the default batch file.
    if (BatchSetFileName(DEFAULT_BATCH_FILE) < 0) then
        // Report the error.
        MessageBox ("Unable to set new default batch file.", SEVERE);
    else

        // Verify that the default batch file has been changed.
        if (BatchGetFileName(svFilename) < 0) then
            // Handle an error.
            MessageBox ("Second call to BatchGetFileName failed.", SEVERE);
        else
            // Display the name of the default batch file.
            MessageBox ("Now the default batch file is " + svFilename + ".",
            INFORMATION);
        endif;

    endif;

end;
```

CalculateAndAddFileCost

The **CalculateAndAddFileCost** function determines the cost of the specified file and adds it to the current value of nvCostHigh and/or nvCostLow. This allows you to calculate and add up the cost of multiple files by calling the function multiple times in a loop. Set nvCostHigh and nvCostLow to zero before calling the function to determine the cost of a single file. This function is typically used when you need to determine the cost of file of a known size so this cost can then be passed to FeatureAddCost.

Note ▪ *Note that this function does not actually set any information to be used directly by the installation. You must call FeatureAddCost (as appropriate) after calling this function to add the additional cost to an existing feature.*

Syntax

```
CalculateAndAddFileCost ( nFileSizeHigh, nFileSizeLow, szTargetDir, nClusterSize, nvCostHigh, nvCostLow
    );
```

Parameters

Table 33 ▪ CalculateAndAddFileCost Parameters

Parameter	Description
nFileSizeHigh	The upper 31 bits of the file size (in bytes). Typically retrieved using GetFileInfo.
nFileSizeLow	The lower 31 bits of the file size (in bytes). Typically retrieved using GetFileInfo.
szTargetDir	If nClusterSize is 0, the target folder for the file. This path is used to determine the cluster size of the target drive. If nClusterSize is non-zero, this parameter is ignored.
nClusterSize	Specifies the cluster size of the target drive. If this parameter is 0, the function determines this information from szTargetDir.
nvCostHigh	The upper 31 bits of the installation cost (in bytes) of this file is added to the current value of this variable.
nvCostLow	The lower 31 bits of the installation cost (in bytes) of this file is added to the current value of this variable.

Return Values

Table 34 ▪ CalculateAndAddFileCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

CallDLLFx

Tip ▪ *The CallDLLFx function is supported only for compatibility with scripts created in previous versions of InstallShield. Consider using the more flexible method described in Calling a .dll File Function instead of using the* **CallDLLFx** *function.*

The **CallDLLFx** function calls a function within a specified .dll file.

Syntax

```
CallDLLFx ( szDLL, szFunction, lvValue, svValue );
```

The function called must use the following fixed definition, where hwnd is the main window handle for the main InstallShield window:

```
LONG APIENTRY YourFunction (HWND hwnd, LPLONG lpIValue, LPSTR lpszValue);
```

Parameters

Table 35 ▪ CallDLLFx Parameters

Parameter	Description
szDLL	Specifies the fully qualified file name of the .dll file that contains the function to execute.
szFunction	Specifies the name of the function in the .dll file specified in szDLL.
lvValue	Specifies a long integer variable to pass by reference to the .dll function.
svValue	Specifies a string variable to pass to the .dll function.

Return Values

The CallDLLFx function returns a long integer from the function in the .dll file.

CallDLLFx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
*
* InstallShield Example Script
*
* Demonstrates the CallDLLFx function.
*
* Note: This script requires that the constant DLL_FILE be set
*       to the fully qualified name of a .dll file that contains
*       a function called Test whose format matches the
*       prototype declaration below.  That function should
*       modify the values passed in the third and fourth
*       parameters and then return those values in the same
*       parameters.
*
\*---------------------------------------------------------*/
```

```
#define ID_NEXT   1   // Return value if user clicks 'Next' button
#define ID_CANCEL 2   // Return value if user clicks 'Cancel' button
#define ID_BACK   4   // Return value if user clicks 'Back' button


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CallDLLFx(HWND);

function ExFn_CallDLLFx(hMSI)
    INT    nValue, nResult;
    STRING szString, szResult, szDLL, szValue, szReturn;
begin

// Set the setup window title.
SetTitle ("CallDLLFx Example", 18, WHITE);

// Set the location of the .dll.
szDLL = SUPPORTDIR ^ "MYDLL.DLL";

// Set up parameters for call to .dll function.
nValue   = 3000;
szString = "Test String";

// Show inputs to users.
SprintfBox (INFORMATION,  "", "Before - nValue: %i , szString: %s",
nValue, szString);

// Call .dll function; pass by value.
nResult = CallDLLFx(szDLL, "Test", nValue, szString);

// Show values returned by .dll function.
SprintfBox(INFORMATION,  "", "Returned - nValue: %i , szString: %s",
nValue, szString);

end;
```

ChangeDirectory

The **ChangeDirectory** function sets the current directory.

Note ▪ *After you call ChangeDirectory to make a specified directory the current directory, that directory cannot be deleted. Before you can delete that directory, you must call ChangeDirectory again to set a different current directory.*

Syntax

```
ChangeDirectory ( szPath );
```

Parameters

Table 36 ▪ ChangeDirectory Parameters

Parameter	Description
szPath	Specifies the name of the directory to set as the current directory. That name can be either a fully qualified directory name or a UNC path; it must not include a trailing backslash. If necessary, call StrRemoveLastSlash before calling ChangeDirectory. ***Note ▪*** *When you are specifying a file in your script, always specify the full path (using the appropriate InstallShield system variable, for example, SRCDIR) rather than depend on the current folder having the appropriate value. The script internally executes code that can change the current folder, so its value may not be what you expect.*

Return Values

Table 37 ▪ ChangeDirectory Return Values

Return Value	Description
0	ChangeDirectory successfully set the specified directory as the current directory.
< 0	ChangeDirectory was unable to set the specified directory as the current directory.

ChangeDirectory Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ChangeDirectory function.
 *
 * This example script makes the Windows folder the current
 * directory and then launches NotePad to display the file
```

```
 * Readme.txt.
 *
\*-----------------------------------------------------------*/
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ChangeDirectory(HWND);

function ExFn_ChangeDirectory(hMSI)
begin

// Make the Windows folder the default directory.  Note that
// the InstallShield system variable WINDIR points
// to the Windows folder.


ChangeDirectory (WINDIR);
// Launch Notepad to view the Windows Readme.txt file.
   LaunchApp ("Notepad.exe", "Readme.txt" );

end;
```

CharReplace

The **CharReplace** function replaces all instances of the character cFind with cReplace in the string svString, except characters whose string index is less than nStart. The string index of the first character in a string is 0.

Syntax

```
CharReplace ( svString, cFind, cReplace, nStart );
```

Parameters

Table 38 ▪ CharReplace Parameters

Parameter	Description
svString	Specifies the string whose characters will be replaced, and returns the modified string.
cFind	Specifies the character to be replaced. Use the STRTOCHAR function to specify a char literal as cFind; for example: `CharReplace( svString, STRTOCHAR('a'), STRTOCHAR('e'), nStart );`
cReplace	Specifies the character to replace cFind. Use the STRTOCHAR function to specify a char literal as cReplace; for example: `CharReplace( svString, STRTOCHAR('a'), STRTOCHAR('e'), nStart );`
nStart	Specifies the string index at which to begin searching for cFind. Note that the string index of the first character in svString is 0 (zero). If you want to replace all instances of cFind in svString, specify 0 for nStart.

Return Values

Table 39 ▪ CharReplace Return Values

Return Value	Description
X	The total number of replacements of cFind by cReplace.
< ISERR_SUCCESS	The function failed to replace the characters.

Additional Information

cFind or cReplace can be null characters ('\0'). To handle null-delimited strings, specify cFind or cReplace as StrToChar('\0'); note that the constant NULL is 0, not '\0', and cannot be used to specify the null character. When cFind or cReplace is '\0', CharReplace automatically sets the last two characters of the string buffer to '\0' before returning; therefore, the size of the string (which should be set explicitly) should be at least the number of characters to be stored plus two.

CharReplace Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
```

```
//
//  Demonstrates the CharReplace function.
//
//  This sample shows a sample path string before and after replacing
//  every backslash character with a forward slash.
//
//---------------------------------------------------------------------------

function OnBegin( )
    STRING path_to_convert;
begin

// example path to convert
path_to_convert = FOLDER_COMMON_APPDATA;

MessageBox("Path before conversion: " + path_to_convert,
    INFORMATION);

// replace backslashes with forward slashes
CharReplace(path_to_convert,
    STRTOCHAR('\\'), STRTOCHAR('/'), 0);

MessageBox("Path after conversion: " + path_to_convert,
    INFORMATION);

end;
```

CloseFile

The **CloseFile** function closes a file that has been opened with a call to OpenFile. You cannot read from or write to a file after you close it.

Syntax

```
CloseFile ( nvFileHandle );
```

Parameters

Table 40 ▪ CloseFile Parameters

Parameter	Description
nvFileHandle	Specifies the handle of the file to be closed.

Return Values

Table 41 ▪ CloseFile Return Values

Return Value	Description
0	Indicates that the function successfully closed the file.
< 0	Indicates that the function was unable to close the file.

CloseFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the OpenFile and CloseFile functions.
 *
 * OpenFile is called to open a file, which is then read into
 * a list.  The file is then closed and the list is displayed.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference an existing file
 *       in an existing directory.
 *
\*---------------------------------------------------------*/

#define EXAMPLE_FILE "Readme.txt"
#define EXAMPLE_DIR "C:\\Windows"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CloseFile(HWND);

function ExFn_CloseFile(hMSI)
    STRING  svLine;
```

```
    NUMBER  nvFileHandle;
    LIST    listID;
begin

    // Set the file mode to normal.
    OpenFileMode (FILE_MODE_NORMAL);

    // Open the text file.
    if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_FILE) < 0) then
        MessageBox ("OpenFile failed.", SEVERE);
        abort;
    endif;

    // Create an empty string list.
    listID = ListCreate (STRINGLIST);

    // Read lines from the text file into the string list.
    while GetLine (nvFileHandle, svLine) = 0
        ListAddString (listID, svLine, AFTER);
    endwhile;

    // Close the file.
    if (CloseFile (nvFileHandle) < 0) then
        MessageBox ("CloseFile failed.", SEVERE);
    endif;

    // Display the text that was read from the file.
    SdShowInfoList ("","",listID);

end;
```

CmdGetHwndDlg

The **CmdGetHwndDlg** function retrieves the window handle of the dialog identified by szDialogName. The dialog already must have been defined with **EzDefineDialog** or **DefineDialog** and initialized by calling **WaitOnDialog**.

CmdGetHwndDlg is typically called in the DLG_INIT routine for a custom dialog. The handle of the dialog is assigned to a HWND variable to be used by other functions that need it.

Note ▪ *When a dialog is initialized with the* **WaitOnDialog** *function, a window handle is assigned to it; that handle is associated with the dialog only until it is closed by a call to EndDialog. If you call* **WaitOnDialog** *to open a dialog that has been opened and closed previously in your script, you must call* **CmdGetHwndDlg** *again to get the new handle. The old handle is no longer valid.*

Syntax

```
CmdGetHwndDlg ( szDialogName );
```

Parameters

Table 42 ▪ CmdGetHwdDlg Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog that has been defined with **EzDefineDialog** or **DefineDialog**.

Return Values

Table 43 ▪ CmdGetHwdDlg Return Values

Return Value	Description
> 0	The window handle of the dialog that was specified by szDialogName.
< 0	**CmdGetHwndDlg** was unable to retrieve the handle. Verify that szDialogName refers to a dialog that has been properly defined and initialized.

CmdGetHwndDlg Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CmdGetHwndDlg function.
 *
 * This example displays a custom dialog.  On initialization
 * of the dialog, the script calls CmdGetHwndDlg to retrieve
 * the dialog's window handle so that it can perform the
 * following operations:
 *
 * -- Change the text of the window's title bar.
 * -- Disable and enable buttons in the dialog.
 * -- Send messages to maximize and restore the dialog window.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the
 * built-in function SdBitmap.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in the
 * installation, it can be used in a script as a custom dialog.
 * Note that the script changes the static text of the dialog's
 * Back and Next buttons to fit the requirements of the example.
 *
\*---------------------------------------------------------*/
```

```
// Dialog controls
#define RES_DIALOG_ID       12027   // ID of the custom dialog
#define RES_PBUT_RESTORE        1   // ID of dialog's Next button
#define RES_PBUT_CANCEL         9   // ID of dialog's Cancel button
#define RES_PBUT_MAXIMIZE      12   // ID of dialog's Back button

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CmdGetHwndDlg(HWND);

function ExFn_CmdGetHwndDlg(hMSI)
    STRING szDialogName;
    NUMBER nResult, nCmdValue, hwndDlg;
    BOOL bDone;
    HWND hwndDlg;
begin

    // Specify a name to identify the custom dialog in
    // this installation.
    szDialogName = "CustomDialog";

    // Define the dialog. Pass a null string in the second parameter
    // to get the dialog from _ISUSER.DLL or _ISRES.DLL. Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the loop.
    bDone = FALSE;

    // Loop until done.
    repeat
        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog (szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable
                // states for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
```

```
                SdGeneralInit(szDialogName, hwndDlg, 0, "");

                // Set the static text of the buttons.
                CtrlSetText (szDialogName, RES_PBUT_MAXIMIZE, "&Maximize");
                CtrlSetText (szDialogName, RES_PBUT_RESTORE, "&Restore");

                // Disable the Restore button using a call from Winsub.
                _WinSubEnableControl (hwndDlg, RES_PBUT_RESTORE, 0);
            case RES_PBUT_RESTORE:
                // Restore the window to its normal size.
                SendMessage (hwndDlg, WM_SYSCOMMAND, SC_RESTORE, 0);

                // Disable the Restore button using a call from Winsub.
                _WinSubEnableControl (hwndDlg, RES_PBUT_RESTORE, 0);

                // Enable the Maximize button using a call from Winsub.
                _WinSubEnableControl (hwndDlg, RES_PBUT_MAXIMIZE, 1);
            case RES_PBUT_MAXIMIZE:
                // Maximize the dialog's window.
                SendMessage (hwndDlg, WM_SYSCOMMAND, SC_MAXIMIZE, 0);

                // Disable the Maximize button using a call from Winsub.
                _WinSubEnableControl (hwndDlg, RES_PBUT_MAXIMIZE, 0);

                // Enable the Restore button using a call from Winsub.
                _WinSubEnableControl (hwndDlg, RES_PBUT_RESTORE, 1);
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

CoCreateObject

Project ▪ *This information applies to InstallScript projects.*

The **CoCreateObject** function initializes the COM object named by szProgID and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.

Syntax

```
CoCreateObject ( szProgID );
```

Parameters

Table 44 ▪ CoCreateObject Parameters

Parameter	Description
szProgID	Specifies the program ID of the COM object to be initialized.

Return Values

The reference can be assigned to a variable of type OBJECT by using the set keyword.

Additional Information

- To check whether the object was initialized successfully, call the IsObject function.
- Any object variable can be released by setting the object variable to the value of NOTHING or reassigning the object with the **CoCreateObject**, **CoCreateObjectDotNet**, **CoGetObject**, or **DotNetCoCreateObject** functions. However, this does not automatically unload the library referenced by the object. You must call the Windows API, CoFreeLibrary, manually to free the library. Otherwise, the library remains loaded until the installation finishes. For more information, see Extending Your Installation with COM Objects.

CoCreateObjectDotNet

Project ▪ *The following project types support the* **CoCreateObjectDotNet** *function:*

- *InstallScript*
- *InstallScript MSI*
- *Basic MSI with InstallScript custom actions*

The **CoCreateObjectDotNet** function has been deprecated. Calling this function is the same as calling the **DotNetCoCreateObject** function with a null string ("") for the szAppDomain parameter.

For more information, see DotNetCoCreateObject.

CoGetObject

Project ▪ *This information applies to InstallScript projects.*

The **CoGetObject** function returns a reference to the specified COM object (as Visual Basic's GetObject function does); that reference can be assigned to a variable of type OBJECT by using the set keyword.

Syntax

```
CoGetObject ( szFilename, szProgID );
```

Parameters

Table 45 ▪ CoGetObject Parameters

Parameter	Description
szFilename	Specifies the fully qualified name of the COM object. This parameter can be a null string ("") if szProgID is non-null.
szProgID	Specifies the program ID of the COM object. This parameter can be a null string ("") if szFilename is non-null.

Return Values

- A reference that can be assigned to a variable of type OBJECT by using the set keyword.
- Any object variable can be released by setting the object variable to the value of NOTHING or reassigning the object with the **CoCreateObject**, **CoCreateObjectDotNet**, **CoGetObject**, or **DotNetCoCreateObject** functions. However, this does not automatically unload the library referenced by the object. You must call the Windows API, CoFreeLibrary, manually to free the library. Otherwise, the library remains loaded until the installation finishes. For more information, see Extending Your Installation with COM Objects.

Additional Information

To check whether the object was initialized successfully, call the IsObject function.

CoGetObject Example

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CoGetObject function.
 *
 * This example shows how to create a virtual
 * directory on IIS server.
 *
\*---------------------------------------------------------*/

#include "ifx.h"

#define VIRTUALDIR "My Virtual Dir"
#define VIRTUALDIRPATH "c:\inetpub\wwwroot\MyDir"

function OnBegin()
OBJECT objIIS_Root, objVirtDir;

begin

  set objIIS_Root = CoGetObject("IIS://localhost/W3SVC/1/Root", "");
  if (IsObject(objIIS_Root)) then
```

```
      try
        set objVirtDir = objIIS_Root.Create("IISWebVirtualDir", VIRTUALDIR);
        if (IsObject(objVirtDir)) then
          objVirtDir.Path = VIRTUALDIRPATH;
          objVirtDir.AccessRead = TRUE;
          objVirtDir.AccessScript = TRUE;
          objVirtDir.SetInfo();
          objVirtDir.AppCreate(TRUE);
          objVirtDir.SetInfo();
       endif;
    catch
      MessageBox("Unable to create Virual Directory.", INFORMATION);
    endcatch;
  endif;

end;
```

ConfigAdd

The **ConfigAdd** function adds a statement to the system configuration file that has been loaded into memory with ConfigFileLoad. You can specify the position of the statement relative to a reference key, or you can add the statement as the first or last line of the file. You can also replace an existing line in the file.

Note ▪ *Before calling ConfigAdd, you must first call ConfigFileLoad to load the system configuration file into memory. After you edit the file, call ConfigFileSave to save the file.*

Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling ConfigFileLoad, you cannot use the Ez configuration file functions until you call ConfigFileSave to save your changes.

Syntax

```
ConfigAdd ( szKey, szValue, szRefKey, nOptions );
```

Parameters

Table 46 ▪ ConfigAdd Parameters

Parameter	Description
szKey	Specifies the keyword in the statement that is being added to the system configuration file.
szValue	Specifies the value of the keyword that is being added to the system configuration file.
szRefKey	Specifies the reference key relative to which you are adding szKey in the system configuration file. If you pass a null string ("") in this parameter, the line is added as the first or last line in the file, depending on which predefined constant is passed in nOptions.
nOptions	Specifies whether the line is to be added before or after the line containing the reference key, or whether the line replaces an existing line. Pass one of the following predefined constants in this parameter: • **BEFORE**—The statement is added before the line containing szRefKey. If szRefKey is a null string (""), the statement is added as the first line of the file. • **AFTER**—The statement is added after the line containing szRefKey. If szRefKey is a null string (""), the statement is added as the last line of the file. • **REPLACE**—The statement replaces an existing line in the file. If multiple lines with same key exist, only the last line is replaced. If a line to be replaced does not exist in the file, the new line is added as the last line of the file.

Return Values

Table 47 ▪ ConfigAdd Return Values

Return Value	Description
0	ConfigAdd successfully added the statement to the specified system configuration file.
< 0	ConfigAdd was unable to add the statement to the specified system configuration file.

Additional Information

When the ConfigAdd function replaces a line in a system configuration file, it compares the reference keys in the

two lines. A reference key is a substring that identifies the line. For example, in the following statement, the reference key is Kybrd.drv.

```
DEVICE=C:\Windows\System\Kybrd.drv /1024 /C:345
```

In the next statement, the reference key is PATH:

```
SET PATH=C:\Windows;C:\Windows\System
```

ConfigAdd Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigAdd function.
 *
 * This example script adds two statements to a configuration
 * file.  First, it calls ConfigFileLoad to load the file for
 * editing.  Next, it adds a DEVICE statement.  Then it adds a
 * DEVICEHIGH statement.  Finally, it backs up the original file
 * and saves the edited file.
 *
 * Note: Before running this script, create a configuration
 *       file named ISExampl.sys in the root of drive C.
 *       That file should include the following lines:
 *
 *       DEVICE=C:\Exapp\Exapp.sys
 *       DEVICE=C:\Otherapp.exe
 *
\*---------------------------------------------------------*/

#define EXAMPLE_SYS "C:\\ISExampl.sys"
#define EXAMSYS_BAK "ISExampl.bak"

   // Variables to pass as parameters to ConfigAdd.

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigAdd(HWND);

function ExFn_ConfigAdd(hMSI)
   STRING szKey, szValue, szRefKey;
begin

    // Load the target config file into memory.
    if ConfigFileLoad (EXAMPLE_SYS) < 0 then
        MessageBox ("Unable to load " + EXAMPLE_SYS + ".", SEVERE);
        abort;
    endif;
```

```
    // Set up parameters for the first call to ConfigAdd.
    szKey    = "DEVICE";
    szValue  = "C:\\Exapp\\Exapp2.sys";
    szRefKey = "Exapp.sys";

    // Add the line DEVICE=C:\Exapp\Exapp2.SYS before the first
    // statement that references Exapp.sys.
    if (ConfigAdd (szKey, szValue, szRefKey, BEFORE) < 0) then
        MessageBox ("First call to ConfigAdd failed.", WARNING);
        abort;
    endif;

    // Set up parameters for the second call to ConfigAdd.
    szKey    = "DEVICEHIGH";
    szValue  = "C:\\Otherapp\\Otherapp.exe";
    szRefKey = "Otherapp.exe";

    // Replace the last existing line that references OtherApp.exe
    // with the statement DEVICEHIGH=C:\Otherapp\Otherapp.exe.
    if (ConfigAdd (szKey, szValue, szRefKey, REPLACE) < 0) then
        MessageBox ("Second call to ConfigAdd failed.", WARNING);
        abort;
    endif;

    // Backup the original file and save the edited file.
    if ConfigFileSave (EXAMSYS_BAK) < 0 then
        MessageBox ("Unable to save " + EXAMPLE_SYS + ".", SEVERE);
    else
        MessageBox (EXAMPLE_SYS + " was updated and saved.",INFORMATION);
    endif;

end;
```

ConfigDelete

The **ConfigDelete** function removes lines from the system configuration file that has been loaded into memory by a call to ConfigFileLoad. The parameter szKey specifies a reference key that identifies the lines to be deleted. After using advanced configuration functions to edit a system configuration file, you must call ConfigFileSave to save your changes.

Note ▪ *Do not mix the Ez batch file functions with the advanced batch file functions. After calling BatchFileLoad, you cannot use Ez batch file functions until you have called BatchFileSave to save the file.*

Syntax

```
ConfigDelete ( szKey );
```

Parameters

Table 48 ▪ ConfigDelete Parameters

Parameter	Description
szKey	Specifies the reference key that identifies the line or lines to delete. Common reference keys include Himem.sys, FILES, and STACKS.

Return Values

Table 49 ▪ ConfigDelete Return Values

Return Value	Description
0	ConfigDelete successfully deleted the lines containing the reference key from the system configuration file.
< 0	ConfigDelete was unable to delete the specified lines.

ConfigDelete Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigDelete function.
 *
 * This example script deletes statements from a configuration
 * file.  First, it calls ConfigFileLoad to load the file for
 * editing.  Next, it deletes lines that contain a FILES
 * statement.  Finally, it backs up the original file and
 * saves the edited file.
 *
 * Note: Before running this script, create a configuration
 *       file named ISExampl.sys in the root of drive C.
 *       That file should include at least one FILES statement.
 *
\*---------------------------------------------------------*/

#define TARGET_CONFIG  "C:\\ISExampl.sys"
#define BACKUP_CONFIG  "ISExampl.bak"

// Include Ifx.h for built-in InstallScript function prototypes.
```

```
#include "Ifx.h"

   export prototype ExFn_ConfigDelete(HWND);

function ExFn_ConfigDelete(hMSI)
    STRING szMsg;
begin

    // Load the target config file to be edited.
    if (ConfigFileLoad (TARGET_CONFIG) < 0) then
        MessageBox ("Unable to load " + TARGET_CONFIG + ".", SEVERE);
        abort;
    endif;

    // Remove all lines in the file that contain the key "FILES".
    if (ConfigDelete ("FILES") < 0) then
        MessageBox ("ConfigDelete failed.", SEVERE);
    else
        // Back up the original file and save the edited file.
        if ConfigFileSave (BACKUP_CONFIG) < 0 then
            MessageBox ("Unable to save " + TARGET_CONFIG + ".", SEVERE);
        else
            MessageBox (TARGET_CONFIG + " was updated and saved.",INFORMATION);
        endif;
    endif;

end;
```

ConfigFileLoad

The **ConfigFileLoad** function loads a copy of the specified system configuration file into memory so that other advanced configuration file functions can be called to operate on the file. Specify the name of the system configuration file you want to edit in szConfigFile or pass a null string ("") in szConfigFile to edit the default system configuration file, which is set initially by the installation to the bootup `Config.sys` file that is used by the system.

Note ▪ *Before using any of the advanced configuration file functions, you must first call* **ConfigFileLoad** *to load the system configuration file into memory. After you modify the file, call ConfigFileSave to save it to disk. To obtain the fully qualified name of the default system configuration file, call ConfigGetFileName. To make another file the default system configuration file, call ConfigSetFileName.*

Note that you cannot call **ConfigFileLoad** *to create a new configuration file. To create a new configuration file, use CreateFile and CloseFile; this creates an empty file. Then use* **ConfigFileLoad** *and other functions to load and modify the file as needed.*

Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the **ConfigFileLoad** *function, you cannot use the Ez configuration file functions until you use the* **ConfigFileSave** *function to save your changes.*

Syntax

```
ConfigFileLoad ( szConfigFile );
```

Parameters

Table 50 ▪ ConfigFileLoad Parameters

Parameter	Description
szConfigFile	Specifies the fully qualified name of the system configuration file to load into memory. To load the default system configuration file, pass a null string ("") in this parameter.

Return Values

Table 51 ▪ ConfigFileLoad Return Values

Return Value	Description
0	ConfigFileLoad successfully initialized the configuration file buffer. If szConfigFile specified an existing configuration file, the file was loaded into the buffer; otherwise, an empty buffer was created.
< 0	ConfigFileLoad was unable to initialize the configuration file buffer.

ConfigFileLoad Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigFileLoad and ConfigFileSave functions.
 *
 * This example script shows how to open a configuration file
 * for editing, how to create a backup of the original file,
 * and how to save and close the edited file.
 *
 * To demonstrate how the file backup feature of ConfigFileSave
 * prevents the overwriting of existing files, this script loads
 * and saves two different configuration files.  The first file
 * is backed up with a specific file name.  The second is backed
 * up with a wildcard extension so that ConfigFileSave will
 * generate a unique file extension consisting of three digits.
 *
 * Note: Before running this script, create two files
 *       (ISExamp1.sys and ISExamp2.sys) in the root of
 *       drive C.  For best effect, you should delete or
 *       move any other files named ISExamp1.* or ISExamp2.*.
```

```
 *
\*------------------------------------------------------------*/

// Names of Config files and backup files used in this example.
#define EXAMPLE1 "ISEXAMP1"
#define EXAMPLE2 "ISEXAMP2"

// Full names of Config files.
#define EXAMPLE1_SYS "C:\\" + EXAMPLE1 + ".sys"
#define EXAMPLE2_SYS "C:\\" + EXAMPLE2 + ".sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigFileLoad(HWND);

function ExFn_ConfigFileLoad(hMSI)
begin

    // Load EXAMPLE1_SYS.
    if (ConfigFileLoad (EXAMPLE1_SYS) < 0) then
        MessageBox ("Unable to load " + EXAMPLE1_SYS + ".", SEVERE);
        abort;
    endif;

    // Use other Config functions here to edit the first file.

    // Back up the original file with the extension 'bak'; save the
    // edited file under its original name.  If ISExamp1.bak already
    // exists, ConfigFileSave will generate a numbered extension.
    if (ConfigFileSave (EXAMPLE1 + ".bak") < 0) then
        MessageBox ("Unable to save " + EXAMPLE1_SYS + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE1_SYS + " saved.",INFORMATION);
    endif;

    // Load EXAMPLE2_SYS.
    if (ConfigFileLoad (EXAMPLE2_SYS) < 0) then
        MessageBox ("Unable to load " + EXAMPLE2_SYS + ".", SEVERE);
        abort;
    endif;

    // Use other Config file functions here to edit the second file.

    // Back up the original Config file with a numbered extension
    // and save the edited file under its original name.
    if (ConfigFileSave (EXAMPLE2 + ".*") < 0) then
        MessageBox ("Unable to save " + EXAMPLE2_SYS + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE2_SYS + " saved.",INFORMATION);
    endif;

end;
```

ConfigFileSave

The **ConfigFileSave** function saves to disk a system configuration file that has been loaded into memory with the function ConfigFileLoad. The file is saved under its original name. If a file name is specified in szBackupFile, the original file is renamed with that file name before the edited file is written to disk. If szBackupFile contains a null string (""), the original file is replaced with the modified file. If you do not call ConfigFileSave when you are finished modifying a system configuration file with advanced configuration file functions, all modifications will be lost.

Note ▪ *Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.*

Syntax

```
ConfigFileSave ( szBackupFile );
```

Parameters

Table 52 ▪ ConfigFileSave Parameters

Parameter	Description
szBackupFile	Specifies whether or not a backup copy of the original file as it existed before editing should be saved, according to the following criteria: • If no backup file should be created, specify a null string in this parameter. • If the original file should be backed up with a specific name, pass that file name in this parameter. The file name must be unqualified (that is, do not specify a drive and/or path). Note that if a file with the specified name already exists, ConfigFileSave generates a unique file extension, as described in the next bullet item. • If the original file should be backed up with an installation-generated file extension, specify the wildcard character (*) as the file extension (for example, "Config.*"). The installation then assigns a numeric value, starting at 001, as the extension. If a file already exists with that extension, the extension's value is increased by one until a unique file name is created. Once the backup has been created, InstallShield stores the backup file name in the system variable INFOFILENAME.

Return Values

Table 53 ▪ ConfigFileSave Return Values

Return Value	Description
0	ConfigFileSave successfully wrote the file from memory to disk.
< 0	ConfigFileSave was unable to write the file to disk.

ConfigFileSave Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the ConfigFileLoad and ConfigFileSave functions.
 *
 * This example script shows how to open a configuration file
 * for editing, how to create a backup of the original file,
 * and how to save and close the edited file.
 *
 * To demonstrate how the file backup feature of ConfigFileSave
 * prevents the overwriting of existing files, this script loads
 * and saves two different configuration files.  The first file
 * is backed up with a specific file name.  The second is backed
 * up with a wildcard extension so that ConfigFileSave will
 * generate a unique file extension consisting of three digits.
 *
 * Note: Before running this script, create two files
 *       (ISExamp1.sys and ISExamp2.sys) in the root of
 *       drive C.  For best effect, you should delete or
 *       move any other files named ISExamp1.* or ISExamp2.*.
 *
\*---------------------------------------------------------*/

// Names of Config files and backup files used in this example.
#define EXAMPLE1 "ISEXAMP1"
#define EXAMPLE2 "ISEXAMP2"

// Full names of Config files.
#define EXAMPLE1_SYS "C:\\" + EXAMPLE1 + ".sys"
#define EXAMPLE2_SYS "C:\\" + EXAMPLE2 + ".sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigFileSave(HWND);

function ExFn_ConfigFileSave(hMSI)
begin

    // Load EXAMPLE1_SYS.
    if (ConfigFileLoad (EXAMPLE1_SYS) < 0) then
        MessageBox ("Unable to load " + EXAMPLE1_SYS + ".", SEVERE);
        abort;
    endif;

    // Use other Config functions here to edit the first file.

    // Back up the original file with the extension 'bak'; save the
    // edited file under its original name.  If ISExamp1.bak already
    // exists, ConfigFileSave will generate a numbered extension.
    if (ConfigFileSave (EXAMPLE1 + ".bak") < 0) then
        MessageBox ("Unable to save " + EXAMPLE1_SYS + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE1_SYS + " saved.",INFORMATION);
    endif;

    // Load EXAMPLE2_SYS.
    if (ConfigFileLoad (EXAMPLE2_SYS) < 0) then
```

```
        MessageBox ("Unable to load " + EXAMPLE2_SYS + ".", SEVERE);
        abort;
    endif;

    // Use other Config file functions here to edit the second file.

    // Back up the original Config file with a numbered extension
    // and save the edited file under its original name.
    if (ConfigFileSave (EXAMPLE2 + ".*") < 0) then
        MessageBox ("Unable to save " + EXAMPLE2_SYS + ".", SEVERE);
        abort;
    else
        MessageBox (EXAMPLE2_SYS + " saved.",INFORMATION);
    endif;

end;
```

ConfigFind

The **ConfigFind** function searches a system configuration file that has been loaded into memory with the function ConfigFileLoad. The parameter szRefKey is a reference key that specifies the search target in that file. If the reference key is found, its value is returned in svResult. To find all occurrences of szRefKey, call this function repeatedly with nOptions set to CONTINUE. To restart the search from the top of the file, specify the constant RESTART in nOptions. After you edit the file, call ConfigFileSave to save it.

Note ▪ *Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.*

Syntax

```
ConfigFind (szRefKey, svResult, nOptions);
```

Parameters

Table 54 ▪ ConfigFind Parameters

Parameter	Description
szRefKey	Specifies the reference key to search for. If the reference key is a file name without a file extension, all file extensions are included in the search. For example, if you specify Win.com, the search looks only for that reference key. If you specify WIN, the files Win.exe, Win.dll, Win.sys, etc., are all returned.
svResult	Returns the value of the reference key that was found in the system configuration file.
nOptions	Indicates whether to start the search from the beginning of the file or to continue from where the previous search was terminated. Pass one of the following predefined constants in this parameter: • **RESTART—**Starts the search from the beginning of the file. • **CONTINUE—**Starts the search from the current position in the system configuration file. • **COMMAND—**Indicates that the reference key in szRefKey is a command, not an environment variable. The constant COMMAND can be joined with the constant RESTART or the constant CONTINUE by using the bitwise OR operator (|), as in the following example: `ConfigFind("Vga.drv", svResult, CONTINUE | COMMAND);`  ***Note ▪*** *A system configuration file can contain both environment variables and commands. To distinguish between environment variables and commands with the same name, use the constant COMMAND to specify that you are looking for executable commands.*

Return Values

Table 55 ▪ ConfigFind Return Values

Return Value	Description
0	ConfigFind successfully found the specified reference key and returned it in svResult.
< 0	ConfigFind was unable to find the specified reference key.

ConfigFind Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigFind function.
 *
 * This example script searches a batch file and reports whether
 * or not the file includes a BUFFERS command.  It then finds
 * and diplays all commands that reference Abc44.sys.
 *
 * Note: Before running this script, create a configuration
 *       file called ISExampl.sys and store it in the root
 *       of drive C.  The configuration file should include
 *       the following lines:
 *
 *       DEVICE=C:\Abc44.sys /e:300
 *       DEVICE=C:\Abc44.sys /s:off
 *       BUFFERS=50
 *
\*---------------------------------------------------------*/

#define EXAMPLE_SYS "C:\\ISExampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigFind(HWND);

function ExFn_ConfigFind(hMSI)
    STRING svResult;
    NUMBER nResult;
begin

    // Load EXAMPLE_SYS.
    if (ConfigFileLoad (EXAMPLE_SYS) < 0) then
```

```
        MessageBox ("Unable to load " + EXAMPLE_SYS + ".", SEVERE);
        abort;
    endif;

    // Check for a BUFFERS command. RESTART is passed in the
    // third parameter to begin searching at the top of the file.
    nResult = ConfigFind("BUFFERS", svResult, RESTART);

    if (nResult < 0) then
        MessageBox ("BUFFERS command not found.", WARNING);
    else
        MessageBox (svResult, INFORMATION);
    endif;

    // Find the first command that references Abc44.sys.
    nResult = ConfigFind ("Abc44.sys", svResult, COMMAND | RESTART);

    if nResult < 0 then
        MessageBox ("The file Abc44.sys is not referenced.", WARNING);
    else

        // Loop while matching statements are found.
        while nResult = 0
            // Display the matching statement.
            MessageBox (svResult, INFORMATION);

            // Find the next statement that references Abc44.sys.
            nResult = ConfigFind ("Abc44.sys", svResult, CONTINUE);
        endwhile;

        MessageBox ("No more matches on Abc44.sys.", WARNING);

    endif;

end;
```

ConfigGetFileName

The **ConfigGetFileName** function retrieves the fully qualified name of the default system configuration file, which is set initially by InstallShield to the Config.sys file that was executed when the target system was started. To specify a different batch file to be used by default in the script, call ConfigSetFileName.

Note ▪ *Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.*

Syntax

```
ConfigGetFileName (svFileName);
```

Parameters

Table 56 ▪ ConfigGetFileName Parameters

Parameter	Description
svFileName	Returns the fully qualified name of the default system configuration file. ***Note ▪*** *In rare circumstances, InstallShield might not be able to determine the fully qualified name of the default configuration file. In that case, svFileName is a null string ("").*

Return Values

Table 57 ▪ ConfigGetFileName Return Values

Return Value	Description
0	ConfigGetFileName successfully retrieved the fully qualified name of the default system configuration file.
< 0	ConfigGetFileName was unable to retrieve the fully qualified name of the default system configuration file.

ConfigGetFileName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigGetFileName and ConfigSetFileName
 * functions.
 *
 * This example script retrieves the fully qualified name of the
 * default configuration file, which initially is the Config.sys
 * file on the boot drive.  It then makes C:\ISExampl.sys the
 * default configuration file.  Finally, it retrieves the name of
 * the default configuration file again to show that it has been
 * changed.
 *
```

```
\*---------------------------------------------------------*/

#define DEFAULT_CONFIG_FILE "C:\\ISExampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigGetFileName(HWND);

function ExFn_ConfigGetFileName(hMSI)
    STRING svFilename;
begin

    // Get and display the name of the default configuration file.
    if (ConfigGetFileName (svFilename) < 0) then
        // Report the error; then terminate.
        MessageBox ("First call to ConfigGetFileName failed.", SEVERE);
        abort;
    else
        // Display the name of the default configuration file.
        MessageBox ("The default configuration file is " + svFilename + ".",
                    INFORMATION);
    endif;

    // Make C:\ISExampl.sys the default configuration file.
    if (ConfigSetFileName (DEFAULT_CONFIG_FILE) < 0) then
        // Report the error.
        MessageBox ("Unable to set new default configuration file.", SEVERE);
    else

        // Verify that the default configuration file has been changed.
        if (ConfigGetFileName (svFilename) = 0) then
            // Display the name of the default configuration file.
            MessageBox ("Now the default configuration file is " + svFilename +
                        ".", INFORMATION);
        else
            // Report the error.
            MessageBox ("Second call to ConfigGetFileName failed.", SEVERE);
        endif;

    endif;

end;
```

ConfigGetInt

The **ConfigGetInt** function retrieves the integer value of a reference key from a system configuration file that has been loaded into memory with the function ConfigFileLoad. ConfigGetInt retrieves values from commands that have only one value to the right of the equal sign (=).

Note ▪ *ConfigGetInt does not work on a command that has more than one value. For example, ConfigGetInt recognizes the statement FILES=20 and returns the number 20, but it does not recognize the statement STACKS=9,128.*

Before calling ConfigGetInt, you must first call ConfigFileLoad to load the system configuration file into memory. After you edit the file, call ConfigFileSave to save the file.

Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.

Syntax

```
ConfigGetInt ( szKey, nvValue );
```

Parameters

Table 58 ▪ ConfigGetInt Parameters

Parameter	Description
szKey	Specifies the reference key of the statement from which to retrieve the integer value.
nvValue	Returns the integer value of the reference key.

Return Values

Table 59 ▪ ConfigGetInt Return Values

Return Value	Description
0	ConfigGetInt successfully retrieved the integer value.
< 0	ConfigGetInt was unable to retrieve the integer value.

ConfigGetInt Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the ConfigGetInt and ConfigSetInt functions.
 *
 * This example script gets the current value of the FILES
 * command from a configuration file.  If a FILES command is not
 * found, the command FILES=40 is added to the file.  If a FILES
 * command is found, its value is tested. If the value is less
 * than 40, the command is replaced with the command FILES=40.
 *
 * Note: Before running this script, create a configuration file
 *       called ISExampl.sys in the root directory of drive C.
 *       That file should include the following line:
 *
 *       FILES=20;
 *
\*------------------------------------------------------------*/


#define EXAMPLE_SYS "C:\\ISExampl.sys"
#define EXAMPLE_BAK "ISExampl.bak"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigGetInt(HWND);

function ExFn_ConfigGetInt(hMSI)
    NUMBER nvValue;
    BOOL   bFileChanged;
begin

    // Load the configuration file.
    if (ConfigFileLoad (EXAMPLE_SYS) < 0) then
        MessageBox ("Unable to load " + EXAMPLE_SYS + ".", SEVERE);
        abort;
    endif;

    // Initialize indicator to show if file was updated.
    bFileChanged = FALSE;

    // Find the command "FILES" in the configuration file.
    if (ConfigGetInt ("FILES", nvValue) < 0) then

        // No FILES command found. Add FILES command.
        if ConfigAdd ("FILES", "40", "", AFTER) = 0 then
            MessageBox ("FILES=40 added to " + EXAMPLE_SYS + ".", INFORMATION);
            bFileChanged = TRUE;
        else
            MessageBox ("FILES command not found. Unable to update " +
                        EXAMPLE_SYS + ".", SEVERE);
        endif;

    else

        // FILES command found.
        if (nvValue >= 40) then
            // FILES command setting is ok.
```

```
            SprintfBox (INFORMATION, "ConfigGetInt Example",
                        "FILES=%d; no change required.", nvValue);
        else

            // FILES command needs to be changed.
            if (ConfigSetInt ("FILES", 40) < 0) then
                MessageBox ("Unable to update "+EXAMPLE_SYS + ".", SEVERE);
            else
                MessageBox ("The FILES setting was changed to 40.", INFORMATION);
                bFileChanged = TRUE;
            endif;

        endif;

    endif;

    // If the file was edited, save it.
    if bFileChanged then

        // Back up the original file with the extension 'bak'; save the
        // edited file under its original name.  If ISExamp1.bak already
        // exists, ConfigFileSave will generate a numbered extension.
        if (ConfigFileSave (EXAMPLE_BAK) < 0) then
            MessageBox ("Unable to save " + EXAMPLE_SYS + ".", SEVERE);
        else
            MessageBox (EXAMPLE_SYS + " saved.",INFORMATION);
        endif;

    endif;

end;
```

ConfigMove

The **ConfigMove** function moves a line in a system configuration file that has been loaded into memory with the function ConfigFileLoad. The line can be moved to the first or last position in the file or before or after a specific line in the file.

Note ▪ *Before calling the ConfigMove function, you must first call ConfigFileLoad to load the Config.sys file into memory. After you edit the file, call ConfigFileSave to save the file.*

Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.

Syntax

```
ConfigMove ( szMove, szRefKey, nOptions );
```

Parameters

Table 60 ▪ ConfigMove Parameters

Parameter	Description
szMove	Specifies the line to move.
szRefKey	Specifies the key that identifies the reference line used to position the line to be moved. The position of the line to be moved is determined by the value of nOptions.
nOptions	Specifies whether you are moving the line in szMove before or after the line that contains the reference key in szRefKey. Pass one of the following predefined constants in this parameter: • **BEFORE—**The line specified by szMove is placed before the line containing szRefKey. If szMove is a null string (""), the line is placed before the first line in the system configuration file. • **AFTER—**The line specified by szMove is placed after the line containing szRefKey. If szMove is a null string (""), the line is placed after the last line in the system configuration file.

Return Values

Table 61 ▪ ConfigMove Return Values

Return Value	Description
0	ConfigMove successfully moved the specified line in the system configuration file.
< 0	ConfigMove was unable to move the line.

ConfigMove Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the ConfigMove function.
 *
 * This example script moves lines in a configuration file.
 * First, it calls ConfigFileLoad to load the file.  Next, it
 * moves the FILES statement to the end of the file.  Then,
 * it moves the BUFFERS statement to the end of the file.
 * Next, it moves the statement referencing Himem.sys before
 * the DOS statement. Finally, it backs up the original file
 * and saves the edited file.
 *
 * Note: Before running this script, create a configuration
 *       file called ISExampl.sys in the root of drive C.
 *       That file should include the following lines:
 *
 *       FILES=50
 *       DOS=HIGH,UMB
 *       DEVICE=C:\WINDOWS\SETVER.EXE
 *       BUFFERS=50
 *       Device=C:\Windows\Himem.sys
 *
\*------------------------------------------------------------*/

#define TARGET_CONFIG "C:\\ISExampl.sys"
#define BACKUP_CONFIG "ISExampl.bak"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigMove(HWND);

function ExFn_ConfigMove(hMSI)
begin

    // Load the configuration file to be edited.
    if ConfigFileLoad (TARGET_CONFIG) < 0 then
        MessageBox ("Unable to load " + TARGET_CONFIG + ".", SEVERE);
        abort;
    endif;

    // Move the FILES statement to the end of the file.
    if (ConfigMove ("FILES", "", AFTER) < 0) then
        MessageBox ("Unable to move FILES statement.", SEVERE);
    else
        MessageBox ("FILES statement moved to the end of the file.",
                    INFORMATION);
    endif;

    // Move the BUFFERS statement to the end of the file.
    if (ConfigMove ("BUFFERS", "", AFTER) < 0) then
        MessageBox ("Unable to move BUFFERS statement.", SEVERE);
    else
        MessageBox ("BUFFERS statement moved to the end of the file.",
                    INFORMATION);
    endif;
```

```
    // Move the Himem.sys statement before the DOS statement.
    if (ConfigMove ("Himem.sys", "DOS", BEFORE) < 0) then
        MessageBox ("Unable to move Himem.sys statement.", SEVERE);
    else
        MessageBox ("Himem.sys statement moved before DOS statement.",
                    INFORMATION);
    endif;

    // Save the updated file; back up the original file.
    if ConfigFileSave (BACKUP_CONFIG) < 0 then
        MessageBox ("Unable to save " + BACKUP_CONFIG+".", SEVERE);
    else
        MessageBox ("Config file saved. Backup created.",INFORMATION);
    endif;

end;
```

ConfigSetFileName

The **ConfigSetFileName** function specifies the fully qualified name of the file you want to use as the default system configuration file. During installation initialization, the installation identifies the Config.sys file that was executed when the target system was started and makes it the default system configuration file. If this is the only system configuration file your installation will edit, it is unnecessary to call this function. Ez configuration files will use that file and the advanced configuration function ConfigFileLoad will open that file when its parameter is a null string ("").

However, if you want to use Ez configuration file functions to modify a configuration file other than the bootup Config.sys file, you must call ConfigSetFileName to change the default system configuration file. For example, suppose you wanted to create a Config.sys file on the target system that would not be used at bootup time. You can set a file name in the application directory. Ez configuration file functions would operate on that file. If you call ConfigFileLoad with a null parameter, that file is loaded into memory, where it can be edited with advanced file functions.

Caution ▪ *The ConfigSetFileName function does not load a system configuration file into memory. You must use ConfigFileLoad to load a file into memory.*

ConfigSetFileName does not validate the file name you specify. If you specify an invalid file name, all future configuration file functions fail.

Note ▪ *Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.*

Syntax

```
ConfigSetFileName ( szConfigFile );
```

Parameters

Table 62 ▪ ConfigSetFileName Parameters

Parameter	Description
szConfigFile	Specifies the fully qualified name of the file to set as the default system configuration file.

Return Values

Table 63 ▪ ConfigSetFileName Return Values

Return Value	Description
0	ConfigSetFileName successfully retrieved the specified system configuration file.
< 0	ConfigSetFileName was unable to retrieve the specified file.

ConfigSetFileName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigGetFileName and ConfigSetFileName
 * functions.
 *
 * This example script retrieves the fully qualified name of the
 * default configuration file, which initially is the Config.sys
 * file on the boot drive.  It then makes C:\ISExampl.sys the
 * default configuration file.  Finally, it retrieves the name of
 * the default configuration file again to show that it has been
 * changed.
 *
\*---------------------------------------------------------*/

#define DEFAULT_CONFIG_FILE "C:\\ISExampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ConfigSetFileName(HWND);

function ExFn_ConfigSetFileName(hMSI)
```

```
    STRING svFilename;
begin

    // Get and display the name of the default configuration file.
    if (ConfigGetFileName (svFilename) < 0) then
        // Report the error; then terminate.
        MessageBox ("First call to ConfigGetFileName failed.", SEVERE);
        abort;
    else
        // Display the name of the default configuration file.
        MessageBox ("The default configuration file is " + svFilename + ".",
                    INFORMATION);
    endif;

    // Make C:\ISExampl.sys the default configuration file.
    if (ConfigSetFileName (DEFAULT_CONFIG_FILE) < 0) then
        // Report the error.
        MessageBox ("Unable to set new default configuration file.", SEVERE);
    else

        // Verify that the default configuration file has been changed.
        if (ConfigGetFileName (svFilename) = 0) then
            // Display the name of the default configuration file.
            MessageBox ("Now the default configuration file is " + svFilename +
                        ".", INFORMATION);
        else
            // Report the error.
            MessageBox ("Second call to ConfigGetFileName failed.", SEVERE);
        endif;

    endif;

end;
```

ConfigSetInt

The **ConfigSetInt** function changes a specified integer value in a system configuration file that has been loaded into memory with the function ConfigFileLoad. ConfigSetInt sets values in commands that have only one value to the right of the equal sign (=).

Note ▪ *This function does not work on a command that has more than one value. For example, ConfigSetInt recognizes the statement FILES=20 and can change 20 to another value, but it does not recognize the statement STACKS=9,128.*

Before calling ConfigSetInt, you must first call ConfigFileLoad to load the system configuration file into memory. After you edit the file, call ConfigFileSave to save the file.

Do not mix the Ez configuration file functions with the advanced configuration file functions. After calling the ConfigFileLoad function, you cannot use the Ez configuration file functions until you use the ConfigFileSave function to save your changes.

Syntax

```
ConfigSetInt ( szKey, nValue );
```

Parameters

Table 64 ▪ ConfigSetInt Parameters

Parameter	Description
szKey	Specifies the reference keyword of the command whose integer value is to be set.
nValue	Specifies the integer value you want to set for the command in szKey.

Return Values

Table 65 ▪ ConfigSetInt Return Values

Return Value	Description
0	ConfigSetInt successfully set the specified integer in the system configuration file.
< 0	ConfigSetInt was unable to set the specified integer.

ConfigSetInt Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ConfigGetInt and ConfigSetInt functions.
 *
 * This example script gets the current value of the FILES
 * command from a configuration file.  If a FILES command is not
 * found, the command FILES=40 is added to the file.  If a FILES
 * command is found, its value is tested. If the value is less
 * than 40, the command is replaced with the command FILES=40.
 *
 * Note: Before running this script, create a configuration file
 *       called ISExampl.sys in the root directory of drive C.
 *       That file should include the following line:
 *
 *       FILES=20;
```

```
 *
\*------------------------------------------------------------*/


#define EXAMPLE_SYS "C:\\ISExampl.sys"
#define EXAMPLE_BAK "ISExampl.bak"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ConfigSetInt(HWND);

function ExFn_ConfigSetInt(hMSI)
    NUMBER nvValue;
    BOOL   bFileChanged;
begin

    // Load the configuration file.
    if (ConfigFileLoad (EXAMPLE_SYS) < 0) then
        MessageBox ("Unable to load " + EXAMPLE_SYS + ".", SEVERE);
        abort;
    endif;

    // Initialize indicator to show if file was updated.
    bFileChanged = FALSE;

    // Find the command "FILES" in the configuration file.
    if (ConfigGetInt ("FILES", nvValue) < 0) then

        // No FILES command found. Add FILES command.
        if ConfigAdd ("FILES", "40", "", AFTER) = 0 then
            MessageBox ("FILES=40 added to " + EXAMPLE_SYS + ".", INFORMATION);
            bFileChanged = TRUE;
        else
            MessageBox ("FILES command not found. Unable to update " +
                        EXAMPLE_SYS + ".", SEVERE);
        endif;

    else

        // FILES command found.
        if (nvValue >= 40) then
            // FILES command setting is ok.
            SprintfBox (INFORMATION, "ConfigGetInt Example",
                       "FILES=%d; no change required.", nvValue);
        else

            // FILES command needs to be changed.
            if (ConfigSetInt ("FILES", 40) < 0) then
                MessageBox ("Unable to update "+EXAMPLE_SYS + ".", SEVERE);
            else
                MessageBox ("The FILES setting was changed to 40.", INFORMATION);
                bFileChanged = TRUE;
            endif;

        endif;
```

```
    endif;

    // If the file was edited, save it.
    if bFileChanged then

        // Back up the original file with the extension 'bak'; save the
        // edited file under its original name.  If ISExamp1.bak already
        // exists, ConfigFileSave will generate a numbered extension.
        if (ConfigFileSave (EXAMPLE_BAK) < 0) then
            MessageBox ("Unable to save " + EXAMPLE_SYS + ".", SEVERE);
        else
            MessageBox (EXAMPLE_SYS + " saved.",INFORMATION);
        endif;

    endif;

end;
```

ConvertSizeToUnits

The **ConvertSizeToUnits** function converts the size specified through nSizeSrcHigh and nSizeSrcLow in nUnitsSrc into nvSizeTargetHigh and nvSizeTargetLow in nUnitsTarget. You can also use this function to determine the best units to use for a particular size value that is not known until the setup is run.

Syntax

```
ConvertSizeToUnits ( nSizeSrcHigh, nSizeSrcLow, nUnitsSrc, nvSizeTargetHigh, nvSizeTargetLow,
    nvUnitsTarget );
```

Parameters

Table 66 ▪ CovertSizeToUnits Parameters

Parameter	Description
nSizeSrcHigh	Specifies the upper 31 bits of the size to be converted.
nSizeSrcLow	Specifies the lower 31 bits of the size to be converted.
nUnitsSrc	The units of nSizeSrcHigh and nSizeSrcLow. Specify one of the following values: ● **BYTES**—The value is in bytes. ● **KBYTES**—The value is in kilobytes. ● **MBYTES**—The value is in megabytes. ● **GBYTES**—The value is in gigabytes. ● **TBYTES**—The value is in terabytes.
nvSizeTargetHigh	Returns the upper 31 bits of converted size.
nvSizeTargetLow	Returns the lower 31 bits of converted size.
nUnitsTarget	Specifies (and returns if -1 is specified) the units of nvSizeTargetHigh and nvSizeTargetLow. Specify one of the following values. (You can also specify -1 or any negative value. In this case, the function sets nUnitsTarget to the smallest units that ensures that nvSizeTargethigh is 0): ● **BYTES**—The value is in bytes. ● **KBYTES**—The value is in kilobytes. ● **MBYTES**—The value is in megabytes. ● **GBYTES**—The value is in gigabytes. ● **TBYTES**—The value is in terabytes.

Return Values

Table 67 ▪ ConvertSizeToUnits Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.

Table 67 ▪ ConvertSizeToUnits Return Values (cont.)

Return Value	Description
< ISERR_SUCCESS	Indicates that the function was not successful.
ISERR_INVALID_ARG	Indicates that either nSizeSrcHigh or nSizeSrcLow is negative.

ConvertWinHighLowSizeToISHighLowSize

The **ConvertWinHighLowSizeToISHighLowSize** function converts the unsigned 64-bit Windows size specified through nSizeWinHigh and nSizeWinLow to the corresponding 62-bit InstallShield high and low size value.

Syntax

```
ConvertWinHighLowSizeToISHighLowSize ( nSizeWinHigh, nSizeWinLow, nvSizeISHigh, nvSizeISLow);
```

Parameters

Table 68 ▪ ConvertWinHighLowSizeToISHighLowSize Parameters

Parameter	Description
nSizeWinHigh	Specifies the upper 31 bits of the Windows 64-bit size value.
nSizeWinLow	Specifies the lower 31 bits of the Windows 64-bit size value.
nSizeISHigh	Returns the upper 31 bits of the InstallShield 62-bit size value.
nSizeISLow	Returns the lower 31 bits of the InstallShield 62-bit size value.

Return Values

Table 69 ▪ ConvertWinHighLowSizeToISHighLowSize Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

CopyBytes

The **CopyBytes** function copies a specified number of bytes from one string to another string. You can specify the offset indices into the source and destination strings. CopyBytes is useful for working with binary files.

Syntax

```
CopyBytes ( svDest, nIndexDest, svSrc, nIndexSrc, nCount );
```

Parameters

Table 70 ▪ CopyBytes Parameters

Parameter	Description
svDest	Specifies the destination string.
nIndexDest	Specifies the offset index (starting point) in the destination string at which location the bytes are to be inserted. The first byte in the string is at position 0.
svSrc	Specifies the source string. Do not pass an autosized string whose size is greater than 256 characters. Instead, declare the string with an explicit size. For more information about string sizing, see String Size and Autosize.
nIndexSrc	Specifies the offset index (starting point) in the source string at which location bytes begin to be copied. The first byte in the string is at position 0.
nCount	Specifies the total number of bytes you want to copy from svSrc to svDest. This value must be no larger than the size of svSrc - 1. For example, if svSrc was declared with a size of 512 (giving it a maximum string length of 511), then the value passed in nCount must be 511 or less.

Return Values

Table 71 ▪ CopyBytes Return Values

Return Value	Description
0	CopyBytes successfully copied a specified number of bytes from one string to another.
< 0	CopyBytes was unable to copy the bytes.

CopyBytes Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function,*

execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CopyBytes function.
 *
 * This example script retrieves the current date from the
 * target system.  Then, it copies the year from the date and
 * displays the year to the end user.
 *
\*---------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CopyBytes(HWND);

function ExFn_CopyBytes(hMSI)
    STRING svDate, svYear;
    NUMBER nvResult, nIndexDate, nIndexYear, nCount;
begin

    // Get the date from the target system.
    GetSystemInfo (DATE, nvResult, svDate);

    // Set up parameters to pass to CopyBytes. The year is
    // in the last four bytes of svDate.
    nIndexYear  = 0;
    nCount      = 4;
    nIndexDate  = StrLength(svDate) - nCount;

    // Copy the four bytes representing the year into svYear.
    if (CopyBytes (svYear, nIndexYear, svDate, nIndexDate, nCount) < 0) then
        // Report an error.
        MessageBox ("CopyBytes failed.", SEVERE);
    else
        // Display the year.
        MessageBox ("The year is " + svYear, INFORMATION);
    endif;

end;
```

CopyCHARArrayToISStringArray

Description

The **CopyCHARArrayToISStringArray** function copies the strings from an existing array of ANSI character strings (pointed to by pCHARArray) to the existing string array specified by vArray.

Syntax

```
CopyCHARArrayToISStringArray ( vArray, pCHARArray );
```

Parameters

Table 72 ▪ CopyCHARArrayToISStringArray Parameters

Parameter	Description
vArray	Specifies the string array to which you want to copy strings.
pCHARArray	Specifies a pointer to an array of pointers to ANSI character strings. Typically, this pointer is returned by a previous call to GetCHARArrayFromISStringArray.

Return Values

Table 73 ▪ CopyCHARArrayToISStringArray Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

Additional Information

If pCHARArray was returned by a previous call to GetCHARArrayFromISStringArray, be careful when modifying strings contained in the array. Since the length of the strings contained in string arrays are managed internally by the setup, if you change the length of a string the entire string will not be copied back to the original array when you call CopyCHARArrayToISStringArray.

CopyFile

The **CopyFile** function creates a copy of the file specified by szSrcFile. The new file is given the name specified by szTargetFile. You must specify the name of the file that you want to copy onto the target location in the szTargetFile parameter of this function in order for the function to work.

If you use this function to transfer files to WINSYSDIR64, you must first disable file system redirection using WOW64FSREDIRECTION. Otherwise, files being transferred to WINSYSDIR64 are incorrectly redirected to the 32-bit SysWOW64 folder. Since some Windows functionality that could be used by the installation requires that redirection be enabled to work, Windows documentation recommends that you disable redirection only for as long as necessary. It is recommended that you then enable file system redirection as soon as you have completed transferring the necessary files to WINSYSDIR64. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.

Tip ▪ *It is strongly recommended that you disable the Cancel button using the* **Disable** *function before calling the* **CopyFile** *function if the status dialog is displayed during the copy. If you do not disable the Cancel button and the end user cancels during the copy file operation, the OnCancelling event handler is not called. Instead, the copy file operation returns a failure error code, which your script must handle by calling the appropriate event and then*

relaunching the copy file operation. You can enable and disable the Cancel button using the Enable and Disable functions.

Note ▪ *For file transfer, XCopyFile is an alternative to* **CopyFile**. **XCopyFile** *can perform version checking, mark locked .dll and .exe files for update after system restart, and increment registry reference counters for shared .dll and .exe files. You can also use* **XCopyFile** *to include subdirectories.*

If you use unqualified file names and set values for SRCDIR and TARGETDIR when using **CopyFile**, *save the current values using VarSave before calling* **CopyFile** *and then restore them using VarRestore.*

If the target directory does not exist, **CopyFile** *creates it.*

You cannot rename groups of files by using wildcards with **CopyFile**. *You can, however, rename a single file using* **CopyFile**.

Syntax

```
CopyFile ( szSrcFile, szTargetFile );
```

Parameters

Table 74 ▪ CopyFile Parameters

Parameter	Description
szSrcFile	Specify the name of the file to copy. If the file name is qualified—that is, if it includes a path—**CopyFile** copies the file from the specified location. If szSrcFile contains an unqualified file name—without path information—**CopyFile** copies from the directory that is identified by the system variable SRCDIR. To copy groups of files, use wild card characters in this parameter. You can specify a valid URL in this parameter. If you pass a CGI or ASP request (for example, "http://www.mydomain.net/login.asp?name=Me&pwd=wow"), the response is sent to the file that is specified in the szTargetFile parameter. When passing a URL, do not include wildcard characters. To check the validity of a URL, call the following: `Is (VALID_PATH, szURL);`
szTargetFile	Specify the name to give to the copy of the file that is identified by szSrcFile. If the file name is qualified—if it includes a path—**CopyFile** copies the file to the location specified by the path. If szSrcFile contains an unqualified file name—without path information—the copy is created in the directory specified by the system variable TARGETDIR (in InstallScript installations) or INSTALLDIR (in Basic MSI and InstallScript MSI installations). If the target directory does not exist, it is created. You cannot specify a URL in this parameter. If you do, the function fails and returns ISERR_INVALID_ARG.  ***Note ▪*** *When a wildcard character is included in the file name that is specified by szSrcFile, the file name part of szTargetFile is not ignored; instead, the szTargetFile value is treated as the target path to which each source file is copied to with its existing name. For example, the following code copies files to a folder named* `File.txt` *on the D drive:* `CopyFile ("C:\\*.*", "D:\\File.txt");` *If szTargetFile specifies an unqualified file name, the files are copied to the directory that is specified by TARGETDIR (in InstallScript installations) or* `INSTALLDIR` *(in Basic MSI and InstallScript MSI installations). For that reason,* **CopyFile** *cannot be used to copy and rename a group of files. The source and target directories must be different when szSrcFile contains one or more wildcard characters.*

Return Values

Table 75 ▪ CopyFile Return Values

Return Value	Description
0	Indicates that the function successfully copied the files from source to target directory.
ISERR_INVALID_ARG	Indicates that an invalid argument was passed to the function.
All other negative values	Indicates that the function was unable to copy the requested file. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

After you modify .ini files with WriteProfString or WriteProfInt, you must flush the cache buffer under before using **CopyFile**. All .ini files are cached. This behavior can cause a delay in writing changes to the specified files. This delay can interfere with subsequent file operations. To avoid this problem, call **WriteProfString** with null parameters to force Windows to write the data to the .ini file immediately, as shown below:

```
WriteProfString ("C:\\Test.ini", "Windows",
"KeyboardDelay", "100");

// null string ("") for all four parameters
WriteProfString ("", "", "", "");

// CopyFile should now have access to updated file.
CopyFile ("C:\\Test.ini", "C:\\Temp\\Test.ini");
```

CopyFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CopyFile function.
 *
 * This script copies files in the directory specified by
 * SOURCE_DIR to the directory specified by TARGET_DIR.
 *
 * Note: Before running this script, you must set the
 *       preprocessor constants to existing paths on
 *       the target system.
 *
\*---------------------------------------------------------*/
```

```
#define  SOURCE_DIR "C:\\Source"
#define  TARGET_DIR "C:\\Target"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CopyFile(HWND);

function ExFn_CopyFile(hMSI)
    NUMBER nResult;
begin

    // Copy all files in the source directory, including files
    // in subdirectories, to the target directory.
    nResult = CopyFile(SOURCE_DIR ^ "*.*", TARGET_DIR ^ "*.*");

    // Report the results of the copy operation.
    switch (nResult)
        case 0:
            MessageBox ("Files successfully copied.", INFORMATION);
        case COPY_ERR_CREATEDIR:
            MessageBox ("A target directory could not be created.", SEVERE);
        case COPY_ERR_MEMORY:
            MessageBox ("Insufficient memory.", SEVERE);
        case COPY_ERR_NODISKSPACE:
            MessageBox ("Insufficint disk space.", SEVERE);
        case COPY_ERR_OPENINPUT:
            MessageBox ("Unable to open the input files in "+ SOURCE_DIR +".",
                        SEVERE);
        case COPY_ERR_OPENOUTPUT:
            MessageBox ("Unable to copy the source files.", SEVERE);
        case COPY_ERR_TARGETREADONLY:
            MessageBox ("A target file already exists and cannot be overwritten.",
                        SEVERE);
        default:
            MessageBox ("An unspecified error occurred.", SEVERE);
    endswitch;

end;
```

CreateDir

The **CreateDir** function creates one or more subdirectories on the target drive. You can use a path that contains subdirectories on more than one level, such as `C:\Programs\Winapps\Myapp`. If any subdirectory in the path does not exist, CreateDir creates it. For example, if neither `C:\Programs\Winapps` nor `C:\Programs\Winapps\Myapp` exists, CreateDir creates both subdirectories.

Caution ▪ *CreateDir fails under the following conditions:*

- *The path is illegal.*
- *The drive or any subdirectory in the path is write-protected.*
- *The drive name is invalid.*

- *You do not have network privileges to create subdirectories.*

Syntax

```
CreateDir ( szDirPath );
```

Parameters

Table 76 ▪ CreateDir Parameters

Parameter	Description
szDirPath	Specifies the fully qualified path of the subdirectory to create. Separate each level in the path with a backslash by using the backslash escape character (\\).

Return Values

Table 77 ▪ CreateDir Return Values

Return Value	Description
0	Indicates either that the function successfully created the specified directory on the target drive or that the specified directory already exists.
< 0	Indicates that the directory does not already exist and that the function was unable to create it. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

CreateDir Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateDir function.
 *
 * The user is asked to input a valid directory.  If the
 * specified directory does not exist, CreateDir is called to
 * create it.  Then CreateDir is called again to create a
```

```
 * multilevel directory structure beneath the specified
 * directory.
 *
\*------------------------------------------------------------*/

#define DEFAULT_DIR "C:\\ISExampl"
#define SUBDIRS     "N_Dir\\A_Dir"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CreateDir(HWND);

function ExFn_CreateDir(hMSI)
    STRING svPath;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Prompt user for a directory to be created.
    AskPath ("Please enter a valid path.", DEFAULT_DIR, svPath);

    // Check to see if that directory already exists.
    if (ExistsDir (svPath) != EXISTS) then

        // The directory does not exist; create it.
        if (CreateDir (svPath) < 0) then
            // Report the error; then abort.
            MessageBox ("Unable to create directory", SEVERE);
            abort;
        else
            // Report success
            SprintfBox (INFORMATION, "CreateDir", "%s created.", svPath);
        endif;

    endif;

    // Create an entire multilevel directory structure
    // beneath the selected directory.
    if (CreateDir (svPath ^ SUBDIRS) < 0) then
        MessageBox ("Failed to create subdirectories beneath" + svPath +".",
                    WARNING);
    else
        SprintfBox (INFORMATION, "CreateDir", "%s created beneath %s.", SUBDIRS,
                    svPath);
    endif;

end;
```

CreateFile

The **CreateFile** function creates a new file. If a file with the same name exists, CreateFile overwrites it. Before you create a file with CreateFile, you must set the file mode with OpenFileMode.

CreateFile leaves the newly created file open in read/write (binary file) or append (text file) mode so you can read from or write to the file using other functions such as GetLine, ReadBytes, WriteLine, and WriteBytes. To write to an existing file, you must first open the file in FILE_MODE_APPEND mode using the OpenFileMode and OpenFile functions.

Note ▪ *In addition to read/write or append mode, all newly created files automatically open in OF_SHARE_DENY_NONE mode. This means that the files are opened without denying other programs read or write access to the files. This mode has its roots in the Windows API OpenFile.*

When you finish reading from and writing to a file, you must close the file using the CloseFile function.

Syntax

```
CreateFile ( nvFileHandle, szPath, szFileName );
```

Parameters

Table 78 ▪ CreateFile Parameters

Parameter	Description
nvFileHandle	Returns the handle of the new file.
szPath	Specifies the fully qualified path of the subdirectory in which to create the new file.  ***Note ▪*** *CreateFile fails if the folder specified in szPath does not exist. You can test for the existence of a folder by calling ExistsDir and create a folder by calling CreateDir.*
szFileName	Specifies the name of the file to create.

Return Values

Table 79 ▪ Return Values

Return Value	Description
0	Indicates that the function successfully created the new file.
< 0	Indicates that the function was unable to create the specified file.

Additional Information

The actions of the CreateFile function are not logged for uninstallation when logging is enabled. If you want a file that is created by CreateFile to be logged for uninstallation, transfer a starter file with the file name you want to the target system using XCopyFile while logging is enabled. You enable and disable logging with the Enable and Disable functions. XCopyFile actions are logged when logging is enabled, so the starter file is logged for uninstallation. After transferring the logged starter file, you can write to or overwrite the logged starter file using CreateFile and other file-related functions. The file name must remain unchanged; otherwise, it is not found during uninstallation.

CreateFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the CreateFile and WriteLine functions.
 *
 * CreateFile is called to create a file to store a string.  The
 * string is written into the file by the WriteLine function.
 *
 * Note: Before running this script, set the preprocessor
 *       constant EXAMPLE_DIR so that it references an existing
 *       directory on the target system.  Note that if the file
 *       specified by EXAMPLE_FILE already exists, it will be
 *       overwritten.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR  "C:\\"
#define EXAMPLE_FILE "ISExampl.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CreateFile(HWND);

function ExFn_CreateFile(hMSI)
    STRING  szTitle, szMsg;
    NUMBER  nvFileHandle;
begin

    // Set the file mode to append.
    OpenFileMode (FILE_MODE_APPEND);

    // Create a new file and leave it open.
    if (CreateFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_FILE) < 0) then
        // Report the error.
        MessageBox ("CreateFile failed.", SEVERE);
        abort;
    else
        // Set the message to write to the file.
        szMsg = "This line was appended by an example InstallShield script.";

        // Append the message to the file.
        if (WriteLine(nvFileHandle, szMsg) < 0) then
            // Report the error.
            MessageBox ("WriteLine failed.", SEVERE);
        else
            // Report success.
            szTitle = "CreateFile & WriteLine";
            szMsg   = "Successfully created and wrote to %s.";
            SprintfBox (INFORMATION, szTitle, szMsg, EXAMPLE_FILE);
        endif;

    endif;

    // Close the file.
    CloseFile (nvFileHandle);
```

```
end;
```

CreateInstallationInfo

In an event-based script, the **CreateInstallationInfo** function is called automatically after the First UI Before event. It uses the system variables IFX_KEYPATH_PRODUCT_INFO and IFX_PRODUCT_KEY to create an application information key and a per application paths key for the program you are installing. The application information key is created immediately as a result of calling CreateInstallationInfo. The per application paths key is not created until a subsequent call to RegDBSetItem sets a [Path] or [DefaultPath] value under that key.

CreateInstallationInfo provides the product name for display in the Welcome dialog as well as the company name, product name, and version number that MaintenanceStart uses to initialize the uninstallation log file. MaintenanceStart will fail if CreateInstallationInfo is not called before it in the script.

Call CreateInstallationInfo only once in a setup. If you are launching multiple installations using DoInstall, each installation can of course have its own call to CreateInstallationInfo.

CreateInstallationInfo is a special registry-related function, designed to work with certain predefined registry keys. For more information, see Special Registry-Related Functions.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
CreateInstallationInfo ( );
```

Parameters

None

Return Values

Table 80 ▪ CreateInstallationInfo Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that the function failed to create one or more of the registry keys You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

- You must call CreateInstallationInfo before calling RegDBSetItem or RegDBGetItem. See the descriptions of those functions for further information.
- The per application paths key is not actually created until RegDBSetItem is called to set a value under that key.
- CreateInstallationInfo no longer fails when IFX_COMPANY_NAME, IFX_PRODUCT_NAME, or IFX_PRODUCT_VERSION are empty. CreateInstallationInfo fails if a remote registry is connected, IFX_KEYPATH_PRODUCT_INFO is empty, or the application information registry key cannot be created.

CreateObject

Project ▪ *In InstallScript projects, the* **CreateObject** *function has been replaced by the CoCreateObject.*

The **CreateObject** function initializes the registered COM object named by szProgID and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.

To check whether the object was initialized successfully, you can use the keywords try–catch–endcatch for more control over exception handling for COM objects.

Note ▪ *The COM object must be registered on the target system in order for CreateObject to work.*

Syntax

```
CreateObject ( szProgID );
```

Parameters

Table 81 ▪ CreateObject Parameters

Parameter	Description
szProgID	Specifies the ProgID of the COM object to be initialized.

Return Values

A reference that can be assigned to a variable of type OBJECT by using the set keyword.

CreateProgramFolder

The **CreateProgramFolder** function creates a new folder on the target system. The folder is created in the Start Programs menu.

Syntax

```
CreateProgramFolder ( szFolderName );
```

Parameters

Table 82 ▪ CreateProgramFolder Parameters

Parameter	Description
szFolderName	Specifies the name of the folder to add to the target system.

Return Values

Table 83 ▪ CreateProgramFolder Return Values

Return Value	Description
0	Indicates that the function successfully added the folder to the target system or that the folder already existed.
< 0	Indicates that the function was unable to add the specified program folder.

CreateProgramFolder Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateProgramFolder function.
 *
 * This script creates a program folder named ExampleFolder on
 * the target system.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CreateProgramFolder(HWND);

function ExFn_CreateProgramFolder(hMSI)
    STRING  szFolderName, szTitle, szMsg;
begin

    // Set up parameters for call to CreateProgramFolder.
    szFolderName = "ExampleFolder";
    szTitle      = "CreateProgramFolder";
```

```
    szMsg        = "%s created successfully.";

    // Create the program folder.
    if (CreateProgramFolder (szFolderName) < 0) then
        MessageBox ("Unable to create program folder", SEVERE);
    else
        SprintfBox (INFORMATION, szTitle, szMsg, szFolderName);
    endif;

end;
```

CreateRegistrySet

The **CreateRegistrySet** function creates the registry entries specified by one or all registry sets in the current media that are *not* associated with a particular component. (The name of the current media is stored in the system variable MEDIA.)

It is not necessary to call **CreateRegistrySet** for registry sets that are associated with one or more components since this function has no effect on the these registry sets. Registry entries stored in registry sets that are associated with components are created when the component itself is installed (for example, via a **FeatureTransferData** call).

Note ▪ *When you enable the REGDB_OPTION_WOW64_64KEY option, this affects where registry entries from registry sets are created. For example, if this option is enabled when you call the* **CreateRegistrySet** *function, the registry set is created in the 64-bit part of the registry. Note that this includes the default registry set which is created during file transfer immediately after the* **OnMoving** *event returns, and registry sets associated with components which are automatically created when the component is installed. Therefore, to avoid the data from these registry sets being created in the 64-bit portion of the registry unintentionally, it is recommended that you set this option only during the calling of the appropriate registry APIs in your script, then disable the option before continuing with the script.*

Syntax

```
CreateRegistrySet (szRegistrySet);
```

Parameters

Table 84 ▪ CreateRegistrySet Parameters

Parameter	Description
szRegistrySet	Specifies the name of a registry set that is *not* associated with a particular component in the current media. To create all registry sets that are defined in the current media and are not associated with a particular component, pass a null string ("") in this parameter.

Return Values

Table 85 ▪ CreateRegistrySet Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that an unspecified error has occurred.

Additional Information

- The value of the system variable MEDIA is set to 'DATA' during setup initialization. If you change the value of this variable to refer to a script-created feature set, you must change the value back to 'DATA' before calling **CreateRegistrySet**.
- If a registry set is associated only with components that are not included in the built media (because either they are not included in any features, they are included only in features whose Include in Build property is set to No, or they are included only in features that you have excluded from the built media using the Release Wizard's Features panel), the registry set's entries are not automatically created during file transfer and can be installed by a call to **CreateRegistrySet**.

CreateRegistrySet Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShellObjects and CreateRegistrySet
 * functions.
 *
 * Note: To run this example, you must create a project that
 *       specifies registry entries and shell objects in the
 *       Resources pane of the IDE.
 *
\*---------------------------------------------------------------*/


 export prototype ExFn_CreateRegistrySet(HWND);
```

```
function ExFn_CreateRegistrySet(hMSI)
    NUMBER ndisk;
    STRING szPassword;
    STRING svDir;
begin

    // Set the default target for copying files.
    svDir = "C:\\temp";

    // Get a target location from the user.
    AskDestPath ("", "", svDir, 0);

    // Assign the specified target location to
    // the corresponding system variable.
    INSTALLDIR = svDir;

    // Enable the progress indicator.
    SetStatusWindow (0, "");
    Enable (STATUS);
    StatusUpdate (ON, 100);

    // Transfer files.
    if (ComponentMoveData (MEDIA,ndisk,0) < 0 ) then
        MessageBox ("Error in moving data", SEVERE);
        abort;
    endif;

    // Create the Registry sets that were defined in the Resources pane.
    if (CreateRegistrySet ("") < 0) then
        MessageBox ("Unable to create registry set.", SEVERE);
        abort;
    endif;

    // Create the Shell objects that were defined in the Resources pane.
    if (CreateShellObjects ("") < 0) then
        MessageBox ("Unable to create shell objects.", SEVERE);
        abort;
    endif;

end;
```

CreateShellObjects

The **CreateShellObjects** function creates shortcuts that are included in the current media, but are *not* associated with a particular component. The function also creates the folders that contain the created shortcuts if they do not already exist on the target system. (The name of the current media is stored in the system variable MEDIA.)

It is not necessary to call CreateShellObjects for shortcuts that are associated with one or more components because this function has no effect on these shortcuts. Shortcuts that are associated with components are created when the component itself is installed (for example, via a FeatureTransferData call). When the shortcuts are created, the folders containing the shortcuts will also be created, if necessary.

Caution ▪ *This function will have no effect if called from an InstallShield object's script. The creation of shell objects is not supported in an InstallShield Object project.*

Note ▪ *CreateShellObjects will not create an empty folder on the target system: If a folder in the Shortcuts view is empty, this function will not create it. This restriction also applies to the shortcuts and corresponding folders that are automatically created when you call FeatureTransferData. To create an empty folder, call the CreateProgramFolder function in your script.*

Syntax

```
CreateShellObjects (szReserved);
```

Parameters

Table 86 ▪ CreateShellObjects Parameters

Parameter	Description
szReserved	Pass a null string (“”) in this parameter. No other value is allowed.

Return Values

Table 87 ▪ CreateShellObjects Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that an unspecified error has occurred.

Additional Information

The value of the system variable MEDIA is set to 'DATA' during setup initialization. If you change the value of this variable to refer to a script-created component set, you must change the value back to 'DATA' before calling CreateShellObjects.

This function should be called only after FeatureTransferData has been called.

CreateShellObjects Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShellObjects and CreateRegistrySet
```

```
 * functions.
 *
 * Note: To run this example, you must create a project that
 *       specifies registry entries and shell objects in the
 *       Resources pane of the IDE.
 *
\*---------------------------------------------------------------*/


   export prototype ExFn_CreateShellObjects(HWND);

function ExFn_CreateShellObjects(hMSI)
    NUMBER ndisk;
    STRING szPassword;
    STRING svDir;
begin

    //Set the default target for copying files.
    svDir = "C:\\temp";

    // Get a target location from the user.
    AskDestPath ("","",svDir,0);

    // Assign the specified target location to
    // the corresponding system variable.
    INSTALLDIR = svDir;

    // Enable the progress indicator.
    SetStatusWindow (0, "");
    Enable (STATUS);
    StatusUpdate (ON, 100);

    // Transfer files.
    if (ComponentMoveData (MEDIA,ndisk,0) < 0 ) then
        MessageBox ("Error in moving data",SEVERE);
        abort;
    endif;

    //Create the Registry sets that were defined in the Resources pane.
    if (CreateRegistrySet ("") < 0) then
        MessageBox ("Unable to create registry set.",SEVERE);
        abort;
    endif;

    //Create the Shell objects that were defined in the Resources pane.
    if (CreateShellObjects ("") < 0) then
        MessageBox ("Unable to create shell objects.",SEVERE);
        abort;
    endif;

end;
```

CreateShortcut

The **CreateShortcut** function lets you perform tasks such as the following:

- Add a shortcut or program folder to locations such as the Start menu, the Programs menu, or the desktop. Use the szShortcutFolder parameter to specify the appropriate location for the shortcut.
- Create a cascading submenu on the Startup menu, and include a shortcut in the submenu.
- Set Windows Shell properties for a shortcut to configure behavior such as disabling the ability to pin the shortcut to the Start menu.

Note ▪ *The shortcut target must be present on the target system before* **CreateShortcut** *can be called.*

CreateShortcut *does not support the creation of Internet shortcuts.*

Syntax

```
CreateShortcut (szShortcutFolder, szName, szCommandLine, szWorkingDir, szIconPath, nIcon, szShortCutKey,
    nFlag);
```

Parameters

Table 88 ▪ CreateShortcut Parameters

Parameter	Description
szShortcutFolder	Specify the name of the folder that should contain the shortcut, or specify the name of the program folder that you want to create. If the folder does not exist, the installation creates it. For this parameter, you can specify a subfolder in a multi-level cascading menu. If the subfolder does not exist, **CreateShortcut** creates the subfolder and, if necessary, its parent folders. To add the shortcut to a specific folder, specify the fully qualified path—for example: `C:\\ProgramData\\Microsoft\\Windows\\Start Menu\\Programs` To add a shortcut to the Programs menu on the Start menu, you can pass a null string ("") in this parameter. You can pass one of the following InstallScript system variables in this parameter: ● **FOLDER_DESKTOP**—Adds the shortcut to the desktop. ● **FOLDER_STARTUP**—Adds the shortcut to the Startup menu. ● **FOLDER_STARTMENU**—Adds the shortcut to the Start menu. ● **FOLDER_PROGRAMS**—Adds the shortcut to the Start\Programs menu. You can also specify a path relative to a folder that is identified by an InstallScript system variable—for example: `FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"`
szName	Specify the name of the shortcut. Calling **CreateShortcut** to add a shortcut to a program folder also creates a link file in the links directory that is specified by szCommandLine. Note that Windows Shell does not allow the following characters in names: /, \, :, ?, <, >, or |.
szCommandLine	Specify one of the following: ● The fully qualified name of the executable file that is associated with the shortcut, including any command-line parameters. This is added to the Target value on the shortcut's Properties dialog box. To add a shortcut to the Start Programs menu, enter the fully qualified path of the links directory, which is where your application stores its icon link files. ● The fully qualified path if szName is a subfolder.  ***Caution ▪*** *If the command line includes a long file name, it must be enclosed in quotes. Command-line parameters, however, should not be surrounded with quotation marks. For that reason, it is advisable to build the szCommandLine string from two separate strings.*

Table 88 ▪ CreateShortcut Parameters (cont.)

Parameter	Description
szWorkingDir	Specify the working directory for the shortcut target. If szName is a subfolder, this parameter is not applicable. **CreateShortcut** writes this directory in the Start In box on the Shortcut tab of the shortcut's Properties dialog box. If you pass a null string ("") in this parameter, the function leaves this Start In box blank, and the path in the Target box is used.  ***Caution ▪*** *Do not call* **LongPathToQuote** *to enclose this path in quotation marks. InstallShield automatically encloses these paths in quotation marks.*
szIconPath	Specify the fully qualified path to the file that contains the icon that you want to be displayed for the shortcut. If szItemName is a subfolder, this parameter is not applicable.  ***Caution ▪*** *Do not call* **LongPathToQuote** *to enclose this path in quotation marks. InstallShield automatically encloses these paths in quotation marks.*
nIcon	Specify the icon index in the executable file that is specified by szIconPath. An icon index of 0 refers to the first icon in the file, an icon index of 1 refers to the second icon, and so on. If you are not using an icon, specify ***0*** in this parameter. If szName is a subfolder, this parameter is not applicable.
szShortCutKey	Specify the shortcut key (in the form of a string) that you want to be assigned to your shortcut. You can set szShortCutKey for the shortcut so that end users can press the appropriate hot keys to launch the shortcut. For example, if you want end users to be able to launch the product by pressing the CTRL key, the ALT key, and then the 1 key on the numeric keyboard, pass "Ctrl + Alt + 1" in this parameter. If szName is a subfolder, this parameter is not applicable.

Table 88 ▪ CreateShortcut Parameters (cont.)

Parameter	Description
nFlag	Pass one or more of the following predefined constants in this parameter. To pass two or more predefined constants in this parameter, combine those constants with the bitwise OR operator (|). • **CS_OPTION_FLAG_REPLACE_EXISTING**—Replace an existing shortcut. • **CS_OPTION_FLAG_RUN_MAXIMIZED**—The target of the shortcut is maximized when launched. • **CS_OPTION_FLAG_RUN_MINIMIZED**—The target of the shortcut is minimized when launched. • **CS_OPTION_FLAG_PREVENT_PINNING**—Do not allow the shortcut to be pinned to the Start menu or taskbar on Windows 7 or later systems. This option hides the context menu commands that enable end users to pin the shortcut to the taskbar and to the Start menu. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. • **CS_OPTION_FLAG_NO_NEW_INSTALL_HIGHLIGHT**—Do not highlight the shortcut as newly installed after end users install your product on Windows 7 or later systems. This has the same effect as clearing the **Highlight newly installed programs** check box in the Customize Start Menu dialog box for an individual item on a target system. You may want to use this option for shortcuts that are for tools and secondary products that are part of your installation. • **CS_OPTION_FLAG_NO_STARTSCREEN_PIN**—Do not pin the shortcut to the Start screen by default on Windows 8 target systems. If you pass this constant, the installation sets a Windows Shell property that was introduced in Windows 8. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. • **NULL**—Indicates no options. For more information on CS_OPTION_FLAG_PREVENT_PINNING and CS_OPTION_FLAG_NO_STARTSCREEN_PIN, see the Additional Information section.

Return Values

Table 89 ▪ CreateShortcut Return Values

Return Value	Description
0	Indicates that the function successfully added or replaced the shortcut in the specified folder and associated the executable file with it.
< 0	Indicates that the function was unable to add or replace the shortcut and associate the executable file with it. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

Note the following details about two of the nFlag constants.

CS_OPTION_FLAG_PREVENT_PINNING

If you configure the shortcut to prevent pinning to the taskbar and the Start menu, the target of the shortcut is ineligible for inclusion in the most frequently used list on the Start menu.

Shortcuts that contain certain strings cannot be pinned to the taskbar or the Start menu, and they cannot be displayed in the most frequently used list. Examples are:

- Documentation
- Help
- Install
- Remove
- Setup
- Support

CS_OPTION_FLAG_NO_STARTSCREEN_PIN

Note that Windows 8 maintains information about shortcut pinning to the Start screen after a shortcut is removed by uninstalling the application. Therefore, the CS_OPTION_FLAG_NO_STARTSCREEN_PIN constant has no effect on the target system if the shortcut has already been installed on it. Thus, when you are testing this functionality, ensure that you test on a clean machine—one on which this shortcut and its target have never been installed.

CreateShortcut Examples

The following examples demonstrate how to use **CreateShortcut**:

- Place a shortcut to an executable file on the Start menu and the Start Programs menu. (**CreateShortcut** Example 1)
- Create a cascading submenu on the Startup menu and add a shortcut to the menu. (**CreateShortcut** Example 2)

- Place a subfolder on the desktop and a shortcut pointing to an executable file in the new folder. (**CreateShortcut** Example 3)

CreateShortcut Example 1

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShortcut function.
 *
 * This example places a shortcut to an executable file on the
 * Start menu and the Start Programs menu.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable file and
 *       a valid text file on the target system.
 *
\*---------------------------------------------------------*/

#define PROGRAM "C:\\Windows\\Notepad.exe"
#define PARAM   "C:\\Windows\\Readme.txt"

function OnFirstUIAfter()
    STRING szShortcutFolder, szName, szCommandLine, szWorkingDir;
    STRING szShortCutKey, szProgram, szParam, szIconPath;
    NUMBER nIcon;
begin

    // Set up parameters for call to CreateShortcut.
    szShortcutFolder = FOLDER_STARTMENU;
    szName      = "Notepad Example 1";
    szProgram       = PROGRAM;
    szParam         = PARAM;

    LongPathToQuote (szProgram, TRUE);

    LongPathToShortPath (szParam);

    szCommandLine = szProgram + " " + szParam;
    szWorkingDir  = "";
    szIconPath    = "";
    nIcon         = 0;
    szShortCutKey = "";

    // Add a shortcut to the Start menu.
    if (CreateShortcut (szShortcutFolder, szName, szCommandLine, szWorkingDir, szIconPath,
                        nIcon, szShortCutKey, CS_OPTION_FLAG_REPLACE_EXISTING) < 0) then
        MessageBox ("CreateShortcut failed.", SEVERE);
```

```
    else
        SprintfBox (INFORMATION, "CreateShortcut", "%s created successfully.",
                    szName);
    endif;

    szShortcutFolder = "";
    szName           = "Another Notepad Example";

    // Add a shortcut to the Programs menu.
    if (CreateShortcut (szShortcutFolder, szName, szCommandLine, szWorkingDir, szIconPath,
                        nIcon, szShortCutKey, CS_OPTION_FLAG_REPLACE_EXISTING) < 0) then
        MessageBox ("CreateShortcut failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "CreateShortcut", "%s created successfully.",
                    szName);
    endif;

end;
```

CreateShortcut Example 2

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShortcut function.
 *
 * This example creates a cascading submenu on the Startup menu
 * and adds a shortcut for an executable file to it.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable file and a
 *       valid text file on the target system.
 *
\*---------------------------------------------------------*/

#define PROGRAM "C:\\Windows\\Notepad.exe"
#define PARAM   "C:\\Windows\\Readme.txt"

function OnFirstUIAfter()
    STRING  szShortcutFolder, szName, szCommandLine, szWorkingDir;
    STRING  szIconPath, szShortCutKey, szProgram, szParam;
    NUMBER  nIcon, nFlag, nResult;
begin

    // Set the fully qualified name of the Startup submenu.
    szShortcutFolder = FOLDER_STARTUP ^ "SubMenu Example";

    // Construct the shortcut’s command-line property.
```

```
    szProgram  = PROGRAM;
    szParam    = PARAM;

    LongPathToQuote (szProgram, TRUE);

    LongPathToShortPath (szParam);

    szCommandLine = szProgram + " " + szParam;

    // Set up the shortcut's other properties to pass to CreateShortcut.
    szName        = "Notepad Example2";
    szWorkingDir  = "";
    szIconPath    = "";
    nIcon         = 0;
    szShortCutKey = "";
    nFlag         = CS_OPTION_FLAG_REPLACE_EXISTING|CS_OPTION_FLAG_RUN_MAXIMIZED;

    // Add the shortcut to the submenu; create the submenu if necessary.
    nResult = CreateShortcut (szShortcutFolder, szName, szCommandLine,
                              szWorkingDir, szIconPath, nIcon,
                              szShortCutKey, nFlag);

    // Report the results.
    if (nResult < 0) then
        MessageBox ("CreateShortcut failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "CreateShortcut", "%s created successfully.",
                    szName);
    endif;

end;
```

CreateShortcut Example 3

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShortcut function.
 *
 * This example places a subfolder on the desktop and a shortcut
 * pointing to an executable file in the new folder. The folder is
 * a shortcut that points to an actual directory. From this
 * folder, the end user can launch a shortcut that runs the program.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable file and a valid
 *       text file on the target system.
 *
```

```
\*-----------------------------------------------------------*/

#define FOLDER     "C:\\Windows\\"
#define PROGRAM    "C:\\Windows\\Notepad.exe"
#define PARAM      "C:\\Windows\\Readme.txt"

function OnFirstUIAfter()
    STRING  szShortcutFolder, szName, szCommandLine, szWorkingDir;
    STRING  szIconPath, szShortCutKey;
    STRING  szProgram, szParam, szFolderDir;
    NUMBER  nIcon, nFlag, nResult;
begin

   // szShortcutFolder is the Desktop on the local system.
   szShortcutFolder = FOLDER_DESKTOP;
   szName           = "Example folder 3";

   // Create the folder to which the folder icon will point.
   szFolderDir = FOLDER ^ szName;
   CreateDir(szFolderDir);

   // The command line for the folder icon must be the folder path, and
   // it must be enclosed in quotation marks if the path is longer than
   // eight characters.

   szCommandLine = szFolderDir;
   LongPathToQuote(szCommandLine, TRUE);

   szWorkingDir  = "";
   szIconPath    = "";
   nIcon         = 0;
   szShortCutKey = "";
   nFlag         = CS_OPTION_FLAG_REPLACE_EXISTING|CS_OPTION_FLAG_RUN_MINIMIZED;

   // Create the folder shortcut, and show the folder it points to.
   nResult = CreateShortcut (szShortcutFolder, szName, szCommandLine,
                             szWorkingDir, szIconPath, nIcon, szShortCutKey,
                             nFlag);

   if (nResult < 0) then
      MessageBox ("CreateShortcut failed.", SEVERE);
   else
      SprintfBox (INFORMATION, "CreateShortcut", "%s created successfully.",
                  szName);
   endif;

   // Display the folder just created.
   ShowProgramFolder (szFolderDir, SW_SHOW);

   // Add the example shortcut to the newly created folder.
   szShortcutFolder = szFolderDir;
   szName           = "Notepad Example 3";

   // Make sure the white space is not seen as a delimiter.
   szProgram       = PROGRAM;
   LongPathToQuote (szProgram, TRUE);
```

```
   szParam = PARAM;
   LongPathToShortPath (szParam);

   szCommandLine = szProgram + " " + szParam;
   szWorkingDir  = "";
   szIconPath    = "";
   nResult = CreateShortcut (szShortcutFolder, szName, szCommandLine,
                             szWorkingDir, szIconPath, nIcon, szShortCutKey,
                             nFlag);

   if (nResult < 0) then
      MessageBox ("CreateShortcut failed.", SEVERE);
   else
      SprintfBox (INFORMATION, "CreateShortcut", "%s created successfully.",
                  szName);
   endif;

end;
```

CreateShortcutFolder

The **CreateShortcutFolder** function creates a new folder on the target system. The folder is created on the Start Programs menu. If the folder already exists, it is highlighted.

Syntax

```
CreateShortcutFolder (szShortcutFolder);
```

Parameters

Table 90 ▪ CreateShortcutFolder Parameters

Parameter	Description
szShortcutFolder	Specify the name of the folder to add to the target system.

Return Values

Table 91 ▪ CreateShortcutFolder Return Values

Return Value	Description
0	Indicates that the function successfully added the folder to the target system or that the folder already existed.
< 0	Indicates that the function was unable to add the specified program folder.

CreateShortcutFolder Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CreateShortcutFolder function.
 *
 * This script creates a program folder named ExampleFolder
 * on the target system.
 *
\*---------------------------------------------------------------*/

function OnFirstUIAfter()
    STRING  szShortcutFolder, szTitle, szMsg;
begin

    // Set up parameters for call to CreateShortcutFolder.
    szShortcutFolder = "ExampleFolder";
    szTitle      = "CreateShortcutFolder";
    szMsg        = "%s created successfully.";

    // Create the program folder.
    if (CreateShortcutFolder (szShortcutFolder) < 0) then
        MessageBox ("Unable to create program folder", SEVERE);
    else
        SprintfBox (INFORMATION, szTitle, szMsg, szShortcutFolder);
    endif;
```

```
end;
```

CtrlClear

The **CtrlClear** function clears the contents of various controls; it deletes the contents of a single- or multi-line edit field, static text field, single- or multi-selection list box, or the edit field of a combo box in a custom dialog.

Syntax

```
CtrlClear ( szDialogName, nControlID );
```

Parameters

Table 92 ▪ CtrlClear Parameters

Parameter	Description
szDialogName	Specifies the name of the dialog that contains the control to be deleted.
nControlID	Specifies the control ID of the dialog identified by szDialogName.

Return Values

Table 93 ▪ CtrlClear Return Values

Return Value	Description
0	CtrlClear successfully deleted the contents of the specified control.
< 0	CtrlClear was unable to delete the contents of the dialog.

CtrlClear Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlClear, CtrlGetText, and CtrlSetText
 * functions.
 *
```

```
 * This example script displays a custom dialog that contains
 * edit boxes for a user name, company name, and serial number.
 * It also contains three buttons: Clear All, Done, and Cancel.
 * On initialization of the dialog, the script calls
 * CtrlSetText to place default text into each edit control.
 *
 * Button Operations
 *
 * Clear All      Calls CtrlClear to clear all edit boxes.
 *
 * Done           Calls CtrlGetText to retrieve edit box values.
 *                If all fields contain data, the dialog
 *                closes and the values from the edit boxes are
 *                displayed in a message box.
 *
 * Cancel         Closes the dialog.  Edit box values are
 *                not retrieved or displayed.
 *
 * The "custom" dialog used in this script is actually the
 * Sd dialog that is displayed by the built-in function
 * SdRegisterUserEx. Because this dialog is stored
 * in the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Initial values to display in the edit boxes.
#define USER_NAME    "Your Name"
#define COMPANY_NAME "Your Company"
#define SERIAL_NUM   "123"

// Dialog and control IDs.
#define RES_DIALOG_ID     12002   // ID of the custom dialog
#define RES_EDIT_NAME       301   // ID of the User Name edit box
#define RES_EDIT_COMPANY    302   // ID of the Company Name edit box
#define RES_EDIT_SERIAL     303   // ID of the Serial Number edit box
#define RES_PBUT_DONE         1   // ID of dialog's Next button
#define RES_PBUT_CANCEL       9   // ID of dialog's Cancel button
#define RES_PBUT_CLEAR       12   // ID of dialog's Back button

   STRING szDialogName, svName, svCompany, svSerial;
   NUMBER nResult, nCmdValue;
   BOOL bDone;
   HWND hwndDlg;

#include "ifx.h"

function OnBegin()
begin

   // Specify a name to identify the custom dialog in this installation.
   szDialogName   = "CustomDialog";

   // Define the dialog.  Pass a null string in the second parameter
   // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
```

```
// string in the third parameter because the dialog is identified
// by its ID in the fourth parameter.
nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

if (nResult < 0) then
   // Report an error; then terminate.
   MessageBox ("Error in defining dialog", SEVERE);
   abort;
endif;

// Initialize the indicator used to control the loop.
bDone = FALSE;

// Loop until done.
repeat

   // Display the dialog and return the next dialog event.
   nCmdValue = WaitOnDialog (szDialogName);

   // Respond to the event.
   switch (nCmdValue)

      case IDCANCEL:
         // The user clicked the window's Close button.
         Do (EXIT);

      case DLG_ERR:
         MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
         abort;

      case DLG_INIT:
         // Initialize the back, next, and cancel button enable/disable states
         // for this dialog and replace %P, %VS, %VI with
         // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
         // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
         hwndDlg = CmdGetHwndDlg(szDialogName);
         SdGeneralInit(szDialogName, hwndDlg, 0, "");

         // Set the static text of the buttons.
         CtrlSetText (szDialogName, RES_PBUT_CLEAR, "Clear &All");
         CtrlSetText (szDialogName, RES_PBUT_DONE, "&Done");

         // Initialize the edit controls.
         CtrlSetText (szDialogName, RES_EDIT_NAME, USER_NAME);
         CtrlSetText (szDialogName, RES_EDIT_COMPANY, COMPANY_NAME);
         CtrlSetText (szDialogName, RES_EDIT_SERIAL, SERIAL_NUM);

      case RES_PBUT_CLEAR:
         // Clear all edit controls.
         CtrlClear (szDialogName, RES_EDIT_NAME);
         CtrlClear (szDialogName, RES_EDIT_COMPANY);
         CtrlClear (szDialogName, RES_EDIT_SERIAL);

      case RES_PBUT_DONE:
         // Retrieve the text from edit boxes.
         CtrlGetText (szDialogName, RES_EDIT_NAME, svName);
```

```
            CtrlGetText (szDialogName, RES_EDIT_COMPANY, svCompany);
            CtrlGetText (szDialogName, RES_EDIT_SERIAL, svSerial);

            // Verify that all three boxes have data.
            if (StrLength (svName) = 0) ||
               (StrLength (svCompany) = 0) ||
               (StrLength (svSerial) = 0) then
                  MessageBox ("All fields must be completed.", WARNING);
            else
               bDone = TRUE;
            endif;

         case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        endswitch;

   until bDone;

   // Close the dialog.
   EndDialog (szDialogName);

   // Free the dialog from memory.
   ReleaseDialog (szDialogName);

   // If the dialog was closed with the Done button,
   // display the text from the edit controls.
   if (nCmdValue = RES_PBUT_DONE) then
      SprintfBox (INFORMATION, "User Info",
                  "Name: %s\n\nCompany: %s\n\nSerial: %s",
                  svName, svCompany,svSerial);
   endif;

end;
```

CtrlDir

The **CtrlDir** function fills a list box or a combo box control with a file listing that matches the specified path or file name in szDir. You can include names of files, subdirectories, and disk drives in the listing. The CtrlDir function works only with custom dialogs.

Syntax

```
CtrlDir ( szDialogName, nControlID, szDir, nItems );
```

Parameters

Table 94 ▪ CtrlDir Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog.
nControlID	Specifies the resource ID of the list box or combo box control.
szDir	Specifies the fully qualified path or file name, which may include wildcard characters.
nItems	Specifies the type of listing to display in the control. Pass one or more of the following predefined constants in this parameter. To include more than one type of element, combined these constants with the bitwise OR operator (|): • **DLG_DIR_FILE—**Creates a list of files matching the file specification szDir. • **DLG_DIR_DIRECTORY—**Creates a list of subdirectories that exist in the path specification szDir. • **DLG_DIR_DRIVE—**Creates a list of drives.

Return Values

Table 95 ▪ CtrlDir Return Values

Return Value	Description
0	CtrlDir successfully filled the specified control in a dialog.
< 0	CtrlDir was unable to fill the specified control.

CtrlDir Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the CtrlDir function.
 *
 * This example script displays a file listing in a custom
 * dialog.  The directory listing is created by a call to
 * CtrlDir, which builds the list and places it into the
 * custom dialog's list box control.  The user can then select
 * an item from the list with the keyboard or mouse.  If the
 * dialog is closed with the Next button, the selected item
 * is displayed in a message box.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSetupTypeEx.  Because this dialog is stored
 * in the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*----------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID        12033   // ID of the custom dialog
#define RES_PBUT_NEXT            1   // ID of Next button
#define RES_PBUT_CANCEL          9   // ID of Cancel button
#define RES_PBUT_BACK           12   // ID of Back button
#define RES_DIALOG_LISTBOX     401   // ID of list box
#define RES_STA_MSG_ABOVE      710   // ID of static message above list
#define RES_STA_MSG_BELOW      711   // ID of static message below list

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlDir(HWND);

function ExFn_CtrlDir(hMSI)
    STRING  szDialogName, svSelection;
    NUMBER  nResult, nCmdValue;
    BOOL    bDone;
    HWND    hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName    = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    // Report an error; then terminate.
    if (nResult < 0) then
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the loop.
```

```
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the messages that appear above and below the list box.
            CtrlSetText (szDialogName, RES_STA_MSG_ABOVE,
                        "Files found in the root directory of the Windows drive:");
            CtrlSetText (szDialogName, RES_STA_MSG_BELOW,
                        "Select a file; then click the Next button");

            // Create a list of all files in the root directory of the
            // drive on which Windows resides and put it into the dialog's
            // list box control.
            if (CtrlDir (szDialogName, RES_DIALOG_LISTBOX, WINDISK^"*.*",
                        DLG_DIR_FILE) < 0) then
                MessageBox ("CtrlDir failed.", SEVERE);
                bDone = TRUE;
            endif;
        case RES_PBUT_CANCEL:
             // The user clicked the Cancel button.
             Do (EXIT);
        case RES_PBUT_NEXT:
              // Get the current selection so it can be displayed.
              CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection);
              bDone = TRUE;
        case RES_PBUT_BACK:
              bDone = TRUE;
    endswitch;

until bDone;

// Close the dialog.
EndDialog (szDialogName);

// Free the dialog from memory;
ReleaseDialog (szDialogName);
```

```
    // If the Next button was used to close the dialog,
    // display the item that was selected from the list box.
    if (nCmdValue = RES_PBUT_NEXT) then
        MessageBox ( "You selected " + svSelection, INFORMATION);
    endif;

end;
```

CtrlGetCurSel

The **CtrlGetCurSel** function retrieves the currently selected item from a single-selection list box or combo box control in a custom dialog. Call CtrlGetMultCurSel to retrieve items from multi-selection list boxes.

Syntax

```
CtrlGetCurSel ( szDialogName, nControlID, svText );
```

Parameters

Table 96 ▪ CtrlGetCurSel Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog that contains the item to be retrieved.
nControlID	Specifies the resource ID of the single-selection list box or combo box control.
svText	Returns the item currently selected with the control specified by nControlID.

Return Values

Table 97 ▪ CtrlGetCurSel Return Values l

Return Value	Description
0	CtrlGetCurSel successfully retrieved the currently selected item from the dialog.
< 0	CtrlGetCurSel was unable to retrieve the selected item.

CtrlGetCurSel Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlGetCurSel and CtrlSetCurSel functions.
 *
 * This example script displays a custom dialog that has an
 * edit box and a list box.  After the dialog is initialized,
 * the script places the names of folders that reside in the
 * root of the Windows disk into the dialog's list box.  It
 * then calls CtrlSetCurSel to make "Windows" the selected folder.
 *
 * Each time the user selects a folder name from the list box,
 * the script calls CtrlGetCurSel to get the selected item so
 * that it can be placed into the edit box.  When the dialog
 * is closed with the Done button, the currently selected item
 * is displayed in a message box.
```

```
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSelectFolder.  Because this dialog is stored
 * in the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// The folder that will be preselected in the list box.
#define PRESELECTED_FOLDER "windows"

// Dialog and control IDs.
#define RES_DIALOG_ID       12008  // ID of the custom dialog
#define RES_PBUT_NEXT           1  // ID of Next button
#define RES_PBUT_CANCEL         9  // ID of Cancel button
#define RES_PBUT_BACK          12  // ID of Back button
#define RES_DIALOG_EDITBOX    301  // ID of the edit box
#define RES_DIALOG_LISTBOX    401  // ID of the list box
#define RES_STA_DESC          710  // ID of the text at top of dialog

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlGetCurSel(HWND);

function ExFn_CtrlGetCurSel(hMSI)
    STRING  szDialogName, svSelection, szDesc;
    NUMBER  nResult, nCmdValue;
    BOOL    bDone;
    HWND    hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from_isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog (szDialogName);

        // Respond to the event.
```

```
switch (nCmdValue)
    case DLG_CLOSE:
        // The user clicked the window's Close button.
        Do (EXIT);
    case DLG_ERR:
        MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
        abort;
    case DLG_INIT:
        // Initialize the back, next, and cancel button enable/disable states
        // for this dialog and replace %P, %VS, %VI with
        // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
        // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
        hwndDlg = CmdGetHwndDlg(szDialogName);
        SdGeneralInit(szDialogName, hwndDlg, 0, "");

        // Set the window title.
        SetWindowText (hwndDlg, "Select Folder");

        // Set the message that appears at the top of the dialog.
        szDesc = "Specify an existing folder from the root of drive "
                 + WINSYSDISK + "\nThen press Next to continue.";
        CtrlSetText (szDialogName,  RES_STA_DESC, szDesc);

        // Fill the dialog's list box with the names of all folders
        // that reside in the root of the Windows drive.
        CtrlDir (szDialogName, RES_DIALOG_LISTBOX,
                WINSYSDISK + "\\*.*", DLG_DIR_DIRECTORY);

        // Select the preselected folder.
        CtrlSetCurSel (szDialogName, RES_DIALOG_LISTBOX,
                       PRESELECTED_FOLDER);

        // Put the name of the preselected folder into the edit box.
        CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, PRESELECTED_FOLDER);
    case RES_DIALOG_LISTBOX:
        // Get the current listbox selection.
        CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection);

        // Strip off the brackets.
        StrSub (svSelection, svSelection, 1, StrLength(svSelection) - 2);

        // Put the current selection in the edit box.
        CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);
    case RES_PBUT_BACK:
        bDone = TRUE;
    case RES_PBUT_NEXT:
        // Get the selection from the edit box.
        CtrlGetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);

        // Verify that the edit box contains the name of a
        // folder that exists in the root of the Windows disk.
        if Is (PATH_EXISTS, WINSYSDISK + "\\"+ svSelection) then
            bDone = TRUE;
        else
            MessageBox ("Folder does not exist.", WARNING);
        endif ;
```

```
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
        endswitch;

    until bDone;

    // Close the custom dialog.
    EndDialog (szDialogName);

    // Remove the custom dialog from memory.
    ReleaseDialog (szDialogName);

    // If the edit box was closed with the Done button,
    // display the selected item.
    if (nCmdValue = RES_PBUT_NEXT) then
        MessageBox ("You selected " + svSelection + ".", INFORMATION);
    endif;

end;
```

CtrlGetDlgItem

The **CtrlGetDlgItem** function retrieves the window handle of a control in a custom dialog. **CtrlGetDlgItem** is similar to the Windows API **GetDlgItem**, except that with **CtrlGetDlgItem**, you can specify the InstallScript dialog name instead of the dialog's window handle.

Syntax

```
CtrlGetDlgItem (byval string szDialogName, byval HWND hDialog, byval number nCtrlId);
```

Parameters

Table 98 ▪ CtrlGetDlgItem Parameters

Parameter	Description
szDialogName	Specify the name of the dialog that contains the control whose handle is being retrieved. The dialog must already exist when the function is called. If hDialog is not a null string (""), you can specify a null string for szDialogName.
hDialog	Specify the window handle of the dialog that contains the control whose handle is being retrieved. The dialog must already exist when the function is called. If you specify a string (""), **CtrlGetDlgItem** determines the dialog's handle by calling **CmdGetHwndDlg** using szDialogName.
nCtrlId	Specify the ID of the control whose window handle you want to retrieve.

Return Values

CtrlGetDlgItem returns the window handle of the control or NULL if the control does not exist or an error occurred. **GetExtendedErrInfo** may return additional error information.

Additional Information

If you are making multiple calls to **CtrlGetDlgItem** to look up multiple controls, it is recommended that you call **CmdGetHwndDlg** to get the handle of the dialog and pass it to each function call. If you are looking up the window handle of a single control, it is recommended that you specify the dialog name and specify hDialog as a null string ("").

CtrlGetMLEText

The **CtrlGetMLEText** function retrieves the contents of a multi-line edit field control in a custom dialog. InstallShield places each line of the multi-line edit field into a string list identified by listID. Call CtrlGetText to retrieve the contents of a single-line edit field control.

Syntax

```
CtrlGetMLEText ( szDialogName, nControlID, listID );
```

Parameters

Table 99 ▪ CtrlGetMLEText Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog that contains the multi-line edit control whose contents are to be retrieved.
nControlID	Specifies the resource ID of the multi-line edit control.
listID	Returns a string list of the lines in the edit field identified by nControlID. The string list identified by listID must already have been initialized by a call to ListCreate.

Return Values

Table 100 ▪ CtrlGetMLEText Return Values

Return Value	Description
0	CtrlGetMLEText successfully retrieved the contents of a multi-line edit field.
< 0	CtrlGetMLEText was unable to retrieve the contents of the control.

CtrlGetMLEText Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetMLEText and CtrlGetMLEText functions.
 *
 * This example script displays a custom dialog that contains
 * a multi-line edit box.  The script creates a list of all
 * program folders on the target system and then calls
 * CtrlSetMLEText to place that list into the dialog's multi-
 * line edit box.  The dialog also contains a Save button that
 * enables the end user to save the folder names to a text file.
 * When that option is selected, the script calls CtrlGetMLEText
 * to get the folder names from the multi-line edit box.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdShowInfoList.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
```

```
 * dialog.
 *
 * Notes: The multi-line edit box is defined as read-only
 *        in the resource; its contents cannot be edited.
 *
 *        The script changes the static text of the dialog
 *        box's Next button and disables the Back button in order
 *        to make the dialog fit the needs of the example.
 *
 *        The function GetGroupNameList may return an error
 *        if the target system is running under a shell other
 *        than the Explorer shell.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID        12007   // ID of the custom dialog
#define RES_PBUT_BACK           12   // ID of Next button
#define RES_PBUT_DONE            9   // ID of Cancel button
#define RES_PBUT_SAVE            1   // ID of Back button
#define RES_DIALOG_EDITBOX     301   // ID of edit box
#define RES_TEXT               711   // ID of text above edit box

// Description to display above the multi-line edit box.
#define DESC_TEXT "Click Save to store the list of program folder names in a disk file."

// The program names will be saved in the root of the current
// drive if the end user clicks the Save button.
#define FOLDER_LIST_FILE "\\ISExampl.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlGetMLEText(HWND);

function ExFn_CtrlGetMLEText(hMSI)
    STRING szDialogName;
    NUMBER nCmdValue, nResult;
    BOOL   bSave, bDone;
    LIST   listFolders;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
```

```
endif;

// Initialize indicator used to control the while loop.
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            bDone = TRUE;
        case DLG_ERR:
            MessageBox ("Dialog failed", SEVERE);
            bDone = TRUE;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "View Program Folders");

            // Disable the Back button using a call from Winsub.
            _WinSubEnableControl (hwndDlg, RES_PBUT_BACK, 0);

            //Set the dialog's static text.
            CtrlSetText (szDialogName, RES_TEXT, DESC_TEXT);
            CtrlSetText (szDialogName, RES_PBUT_SAVE, "&Save");
            CtrlSetText (szDialogName, RES_PBUT_DONE, "&Done");

            // Create a string list to store the program folder names.
            listFolders = ListCreate (STRINGLIST);

            if (listFolders = LIST_NULL) then
                MessageBox ("Unable to create list.", SEVERE);
                bDone = TRUE;
            else
                // Get the folder names into a list.
                nResult = GetGroupNameList (listFolders);

                if (nResult = 0) then
                    // Put the folder names into the
                    // dialog's multi-line edit box.
                    nResult = CtrlSetMLEText (szDialogName, RES_DIALOG_EDITBOX,
                                              listFolders);
                elseif (nResult != 0) then
                    // Handle error from GetGroupNameList or CtrlSetMLEText.
                    MessageBox ("Unable to create folder name list.", SEVERE);
```

```
                        bDone = TRUE;
                    endif;

                    // Destroy the listID string list.
                    ListDestroy (listFolders);
                endif;
            case RES_PBUT_SAVE :
                // Initialize indicator to save program file names.
                bSave = FALSE;

                if (AskYesNo("Save list as " + FOLDER_LIST_FILE + "?", YES)) then
                    // Check for existing file.
                    if (Is (FILE_EXISTS, FOLDER_LIST_FILE) = 1) then
                        // Query end user to overwrite existing file.
                        if (AskYesNo ("Overwrite existing " + FOLDER_LIST_FILE +
                                    "?", YES)) then
                            bSave = TRUE;
                        endif;
                    else
                        bSave = TRUE;
                    endif;
                endif;

                if bSave = TRUE then
                    // Create a string list to store list from dialog.
                    listFolders = ListCreate (STRINGLIST);

                    if (listFolders = LIST_NULL) then
                        MessageBox ("Unable to create list.", SEVERE);
                    else
                        // Get the folder names from the
                        // dialog's multi-line edit box.
                        nResult = CtrlGetMLEText (szDialogName, RES_DIALOG_EDITBOX,
                                                  listFolders);
                        // Save the list to a text file.
                        ListWriteToFile (listFolders, FOLDER_LIST_FILE);

                        // Destroy the listID string list.
                        ListDestroy (listFolders);
                    endif;
                endif;
            case RES_PBUT_DONE:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the custom dialog.
    EndDialog (szDialogName);

    // Remove the custom dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

CtrlGetMultCurSel

The **CtrlGetMultCurSel** function retrieves the currently selected lines from a multi-selection list box control, that is, a list box control with the LBS_MULTIPLESEL style. (This function does not support extended selection list box controls, that is, list box controls with the LBS_EXTENDEDSEL style.) Each selected line of the multi-selection list box is placed into a string list identified by listID. To retrieve selected text from a single-selection list box control, call CtrlGetCurSel. CtrlGetMultCurSel is for use only with custom dialogs.

Syntax

```
CtrlGetMultCurSel ( szDialogName, nControlID, listID );
```

Parameters

Table 101 ▪ CtrlGetMultCurSel Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog that contains the list box control whose contents are to be retrieved.
nControlID	Specifies the resource ID of the multi-line edit control.
listID	Returns the lines of the list box identified by nControlID. The string list identified by listID must already have been initialized by a call to ListCreate.

Return Values

Table 102 ▪ CtrlGetMultCurSel Return Values

Return Value	Description
0	CtrlGetMultCurSel successfully retrieved the currently selected items.
< 0	CtrlGetMultCurSel was unable to retrieve the items.

CtrlGetMultCurSel Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetMultCurSel and CtrlGetMultCurSel
 * functions.
 *
 * This script retrieves the names of all program folders
 * on the target system and places them in a list.  When the
 * dialog is initialized, the CtrlSetList function sets this
 * list to be displayed in the list box.  The CtrlSetMultCurSel
 * function is then called to highlight the user-selected
 * folder.
 *
 * This list is then destroyed.  A new list is created when the
 * Next button is clicked.  CtrlGetMultCurSel then retrieves the
 * elements in the list box and assigns them to this new string
 * list.  This list is then displayed in an Sd dialog.
 *
 * Note: In order for this script to run properly, you must set
 *       the RES_DIALOG_ID and RES_DIALOG_LISTBOX constants to a
 *       dialog and list box created in _isuser.dll.
 *
 *       The GetGroupNameList function used in this example may
 *       return an error if the target system is running under a
 *       shell other than Explorer.
 *
\*---------------------------------------------------------------*/

// Dialog control IDs.
#define RES_DIALOG_ID               // ID of dialog itself
#define RES_PBUT_NEXT            1  // ID of Next button
#define RES_PBUT_CANCEL          9  // ID of Cancel button
#define RES_PBUT_BACK           12  // ID of Back button
#define RES_DIALOG_LISTBOX          // ID of list box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CtrlGetMultCurSel(HWND);

function ExFn_CtrlGetMultCurSel(hMSI)
    STRING szDialogName, szDLL, szTitle, szMsg;
    STRING szText, szDefFolder, svResultFolder;
    NUMBER nCmdValue, nResult, nControlID, nSelectFlag;
    BOOL bDone;
    LIST listID, listFolders;
    HWND hwndDlg;
begin

    Disable(BACKBUTTON);

    szDialogName = "CtrlSetMultCurSel";
    szDLL        = "";

    // Define the dialog.  Pass a null string in the second parameter
```

```
// to get the dialog from _isuser.dll or _isres.dll.  Pass a null
// string in the third parameter because the dialog is identified
// by its ID in the fourth parameter.
nResult = EzDefineDialog (szDialogName, szDLL, "", RES_DIALOG_ID);

if (nResult < 0) then
    MessageBox ("Error in defining dialog", SEVERE);
    bDone = TRUE;
else
    bDone = FALSE;
endif;

// Create the listID string list.
listID = ListCreate (STRINGLIST);

if (listID = LIST_NULL) then
   MessageBox ("Unable to create list.", SEVERE);
else
   MessageBox ("listID created.", INFORMATION);
endif;

// Retrieve the program folder names into a list.
GetGroupNameList (listID);

// Retrieve a folder name from the user.
szTitle = "CtrlGetMultCurSel & CtrlSetMultCurSel";
SelectFolder (szTitle, szDefFolder, svResultFolder);

// Loop until done.
while (bDone = FALSE)

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.",SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // The following sets the list box to the list of program folders.
            nControlID = RES_DIALOG_LISTBOX;
            CtrlSetList (szDialogName, nControlID, listID);

            szText = svResultFolder;
            nSelectFlag = TRUE;

            //Set the user-selected folder to be highlighted.
            if (CtrlSetMultCurSel (szDialogName, nControlID, szText,
```

```
                                nSelectFlag) < 0) then
                    MessageBox ("CtrlSetMultCurSel failed.", SEVERE);
                endif;

                // Destroy the listID string list.
                ListDestroy (listID);
                MessageBox ("listID destroyed.", INFORMATION);
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                // Create the listFolders string list.
                listFolders = ListCreate (STRINGLIST);

                if (listFolders = LIST_NULL) then
                    MessageBox ("Unable to create list.", SEVERE);
                else
                    MessageBox ("listFolders created.", INFORMATION);
                endif;

                // Retrieve the highlighted elements in the list box, and
                // put them into the listFolders string list.
                if (CtrlGetMultCurSel (szDialogName, nControlID,
                                       listFolders) < 0) then
                    MessageBox ("CtrlGetMultCurSel failed.", SEVERE);
                else
                    MessageBox ("CtrlGetMultCurSel successful.", INFORMATION);
                endif;

                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
            case RES_PBUT_CANCEL:
                // The user clicked the window's Cancel button.
                Do (EXIT);
        endswitch;

    endwhile;

    szMsg   = "The following are the elements highlighted in the list box:";

    // Display the list of elements highlighted.
    SdShowInfoList (szTitle, szMsg, listFolders);

    // Remove listFolders string list from memory.
    ListDestroy (listFolders);
    MessageBox ("listFolders destroyed.", INFORMATION);

    // Close the dialog.
    EndDialog (szDialogName);

    // Remove the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

CtrlGetState

The **CtrlGetState** function gets the current state of a check box or option button control from a custom dialog.

Syntax

```
CtrlGetState ( szDialogName, nControlID );
```

Parameters

Table 103 ▪ CtrlGetState Parameters

Parameter	Description
szDialogName	Specifies the name of the dialog that contains the control.
nControlID	Specifies the resource ID of the check box or option button control whose state is to be retrieved.

Return Values

Table 104 ▪ CtrlGetState Return Values

Return Value	Description
BUTTON_CHECKED (-1001)	The check box or option button is selected.
BUTTON_UNCHECKED (-1002)	The check box or option button is not selected.
DLG_ERR (-1)	CtrlGetState was unable to determine the state of the control.

CtrlGetState Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlGetState and CtrlSetState functions.
 *
 * This example script displays a custom dialog that contains
 * four check boxes.  The script calls CtrlSetState to set the
 * first two check boxes to checked.  The last two are unchecked
 * by default.  When the end user clicks the Next button, the
```

```
 * script calls CtrlGetState to retrieve the state of each
 * each check box.  The script then displays a message box that
 * reports which check boxes were checked.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdAskOptions.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define  RES_DIALOG_ID     12020   // ID of the custom dialog
#define  RES_PBUT_NEXT         1   // ID of Next button
#define  RES_PBUT_CANCEL       9   // ID of Cancel button
#define  RES_PBUT_BACK        12   // ID of Back button
#define  ID_OP1_CHECK        501   // ID of Option 1 check box
#define  ID_OP2_CHECK        502   // ID of Option 2 check box
#define  ID_OP3_CHECK        503   // ID of Option 3 check box
#define  ID_OP4_CHECK        504   // ID of Option 4 check box
#define  ID_STA_DESC         711   // ID of static text description


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CtrlGetState(HWND);

function ExFn_CtrlGetState(hMSI)
    STRING  szDialogName, szMsg;
    NUMBER  nResult, nCmdValue, hwndDlg;
    BOOL    bDone;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "ExDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the loop.
    bDone = FALSE;

    repeat
```

```
    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "Select Options");

            // Set static text description displayed above check boxes.
            CtrlSetText (szDialogName, ID_STA_DESC,
                        "Select and/or clear options. Then click Next.");

            // Options are cleared by default, so select Options 1 and 2.
            if (CtrlSetState (szDialogName, ID_OP1_CHECK, BUTTON_CHECKED) < 0) then
                MessageBox ("First call to CtrlSetState failed.", SEVERE);
                bDone = TRUE;
            elseif (CtrlSetState(szDialogName, ID_OP2_CHECK, BUTTON_CHECKED) <  0) then
                MessageBox ("Second call to CtrlSetState failed.", SEVERE);
                bDone = TRUE;
            endif;

        case RES_PBUT_NEXT:
            bDone = TRUE;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case RES_PBUT_BACK:
            bDone = TRUE;
    endswitch;

until bDone;

// Build message if end user clicked the Next button.
if (nCmdValue = RES_PBUT_NEXT) then
    // Start building the message to display to the end user.
    szMsg = "You selected the following items:\n\n";

    // If first option is selected, add line to message.
    if (CtrlGetState (szDialogName, ID_OP1_CHECK) = BUTTON_CHECKED) then
        szMsg = szMsg + "Option 1\n";
    endif;
```

```
            // If second option is selected, add line to message.
            if (CtrlGetState (szDialogName, ID_OP2_CHECK) = BUTTON_CHECKED) then
                szMsg = szMsg + "Option 2\n";
            endif;

            // If third option is selected, add line to message.
            if (CtrlGetState (szDialogName, ID_OP3_CHECK) = BUTTON_CHECKED) then
                szMsg = szMsg + "Option 3\n";
            endif;

            // If fourth option is selected, add line to message.
            if (CtrlGetState (szDialogName, ID_OP4_CHECK) = BUTTON_CHECKED) then
                szMsg = szMsg + "Option 4\n";
            endif;
        endif;

        // Close the custom dialog.
        EndDialog (szDialogName);

        // Remove the custom dialog from memory.
        ReleaseDialog (szDialogName);

        // Display message if dialog was closed with Next button.
        if (nCmdValue = RES_PBUT_NEXT) then
            MessageBox (szMsg, INFORMATION);
        endif;

    end;
```

CtrlGetSubCommand

The **CtrlGetSubCommand** function retrieves the action performed on a control in a custom dialog. For example, CtrlGetSubCommand can tell you if the user single-clicked or double-clicked a list box or combo box control. It can also tell you when the contents of an edit field have changed.

Advanced developers can call CmdGetHwndDlg to handle additional information.

Syntax

```
CtrlGetSubCommand (szDialogName);
```

Parameters

Table 105 ▪ CtrlGetSubCommand Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog.

Return Values

Table 106 ▪ CtrlGetSubCommand Return Values

Return Value	Description
EDITBOX_CHANGE (-1007)	The contents of the edit box have changed.
LISTBOX_ENTER (-1008)	The user double-clicked a list box item.
LISTBOX_SELECT (-1009)	The user single-clicked a list box item.

CtrlGetSubCommand Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlGetSubCommand function.
 *
 * This example script displays a list of program groups in
 * the list box of a custom dialog.  It then responds to events
 * from the edit box and list box as follows:
 *
 * Single-click in list box:  Selected item is put into edit box.
 *
 * Double-click in list box:  Double-clicked item is stored for
 *                            later display and dialog is closed.
 *
 * Change in edit box value:  The default system sound is played.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSelectFolder.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/
```

```
// Dialog and control IDs.
#define RES_DIALOG_ID        12008    // ID of custom dialog
#define RES_PBUT_NEXT            1    // ID of Next button
#define RES_PBUT_CANCEL          9    // ID of Cancel button
#define RES_PBUT_BACK           12    // ID of Back button
#define RES_DIALOG_EDITBOX     301    // ID of edit box
#define RES_DIALOG_LISTBOX     401    // ID of list box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CtrlGetSubCommand(HWND);

function ExFn_CtrlGetSubCommand(hMSI)
    STRING szDialogName, svSelection;
    NUMBER nResult, nCmdValue, nSubCommand;
    BOOL   bDone, bSelected;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize indicators used to control the while loop
    // and indicate whether an item was selected.
    bDone = FALSE;
    bSelected = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog (szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
```

```
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");

                // Place a list of folders into the dialog's list box.
                if (CtrlPGroups (szDialogName, RES_DIALOG_LISTBOX) < 0) then
                    MessageBox ("CtrlPGroups failed.", SEVERE);
                endif;
            case RES_DIALOG_LISTBOX:
                // Get the event.
                nSubCommand = CtrlGetSubCommand (szDialogName);

                if (nSubCommand = LISTBOX_SELECT) then
                    // Single-click:  Put the selected item in the edit box.
                    CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection );
                    CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, svSelection );
                elseif (nSubCommand = LISTBOX_ENTER) then
                    // Double-click:  Get the selected item and set
                    // indicator to exit.
                    CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection );
                    bSelected = TRUE;
                    bDone = TRUE;
                endif;
            case RES_DIALOG_EDITBOX:
                // Get the event.
                nSubCommand = CtrlGetSubCommand (szDialogName);

                // Play default system sound if the edit box contents have changed.
                if (nSubCommand = EDITBOX_CHANGE) then
                    MessageBeep (0);
                endif;
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                // Get the current selection from the edit box.
                CtrlGetText (szDialogName, RES_DIALOG_EDITBOX, svSelection );
                bSelected = TRUE;
                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

    if bSelected then
        // Display the name of the selected folder.
```

```
        MessageBox ("You selected " + svSelection +".",INFORMATION);
    endif;

end;
```

CtrlGetText

The **CtrlGetText** function retrieves the text from an edit field, static text field, or button control of a custom dialog. To retrieve the text from multi-line edit field controls, call CtrlGetMLEText.

Syntax

```
CtrlGetText ( szDialogName, nControlID, svText );
```

Parameters

Table 107 ▪ CtrlGetText Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog that contains the field or control whose text is to be retrieved.
nControlID	Specifies the resource ID of the edit field, static text field, or button control.
svText	Returns the text from the control or field identified by nControlID.

Return Values

Table 108 ▪ CtrlGetText Return Values

Return Value	Description
0	CtrlGetText successfully retrieved the contents of the control.
< 0	CtrlGetText was unable to retrieve the contents.

CtrlGetText Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
```

```
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetText, CtrlGetText, and CtrlSelectText
 * functions.
 *
 * This example script displays a custom dialog with two
 * edit boxes to obtain a user name and company name.  The
 * script calls CtrlSetText to place initial values into the
 * edit boxes and CtrlSelectText to select the contents of the
 * first edit box.  When the user clicks the Next button, the
 * script calls CtrlGetText to retrieve the contents of the edit
 * boxes so that they can be displayed in a message box after
 * the custom dialog is closed.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdRegisterUser.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12001   // ID of custom dialog
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button
#define RES_EDITNAME        301   // ID of edit box
#define RES_EDITCOMPANY     302   // ID of edit box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CtrlGetText(HWND);

function ExFn_CtrlGetText(hMSI)
    STRING szDialogName, svName, svCompany;
    NUMBER nResult, nCmdValue;
    BOOL   bDone;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
```

```
    abort;
endif;

// Initialize indicator used to control the loop.
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Put initial values into the edit boxes.
            CtrlSetText (szDialogName, RES_EDITNAME, "Your name");
            CtrlSetText (szDialogName, RES_EDITCOMPANY, "Your company");

            // Select the Name edit box.
            CtrlSelectText (szDialogName, RES_EDITNAME);
        case RES_PBUT_NEXT:
            // Get the contents of the edit boxes.
            CtrlGetText (szDialogName, RES_EDITNAME, svName);
            CtrlGetText (szDialogName, RES_EDITCOMPANY, svCompany);

            // Verify that both edit boxes have data.
            if (StrLength(svName) = 0) || (StrLength(svCompany) = 0) then
                MessageBox ("Both fields must be completed.", INFORMATION);
            else
                bDone = TRUE;
            endif;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case RES_PBUT_BACK:
            bDone = TRUE;
    endswitch;

until bDone;

// Close the dialog.
EndDialog (szDialogName);
```

```
    // Remove the dialog from memory.
    ReleaseDialog (szDialogName);

    // If dialog is closed with Next button, display name and company.
    if nCmdValue = RES_PBUT_NEXT then
        MessageBox (svName + "\n" + svCompany, INFORMATION);
    endif;

end;
```

CtrlGetUrlForLinkClicked

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **CtrlGetUrlForLinkClicked** function retrieves the URL for a link that an end user clicked.

Tip *▪ To learn how to add links to dialogs in InstallScript and InstallScript MSI projects, see Using an HTML Control on a Dialog.*

Syntax

```
CtrlGetUrlForLinkClicked (byval string szDialogName, byval number nControlID, byref string svText);
```

Parameters

Table 109 ▪ CtrlGetUrlForLinkClicked Parameters

Parameter	Description
szDialogName	Specify the name of the dialog that contains the HTML control.
nControlID	Specify the control ID of the HTML control. This ID is the same as the ID of the static control that was converted into an HTML control.
svText	Specify the string variable to return the link URL text.

Return Values

Table 110 ▪ CtrlGetUrlForLinkClicked Return Values

Return Value	Description
0	**CtrlGetUrlForLinkClicked** was able to determine the link that the end user clicked.
ISERR_GEN_FAILURE	**CtrlGetUrlForLinkClicked** was unable to determine the link that an end user clicked. This function returns this value if the specified control ID is not for an HTML control.

CtrlGetUrlForLinkClicked Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates how to use an HTML control with the
//  CtrlGetUrlForLinkClicked and CtrlSetText functions
//
//  To use this sample script:
//  1. Add a custom dialog to your project.
//  2. Add a static text control to the dialog.
//
//---------------------------------------------------------------------------


#define MY_HYPERLINK1 1401

function MyCustomDialog(szTitle, szMsg)
    STRING  szDlg, szTemp, szUrl;
```

```
    NUMBER  nId, nMessage, nTemp, nSdDialog;
    HWND    hwndDlg;
    BOOL    bDone;

begin

    // Specify a name to identify the custom dialog in this installation.
    szDlg = "CustomName";

    while (!bDone)

        nId = WaitOnDialog( szDlg );

        switch(nId)
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDlg);
            SdGeneralInit(szDlg, hwndDlg, 0, "");

            // Put the corresponding Info in the List Field
            if( szMsg != "" ) then
                SdSetStatic(szDlg, SD_STA_MSG, szMsg);
            endif;

            SdSetDlgTitle(szDlg, hwndDlg, szTitle);

            CtrlSetText(szDlg, MY_HYPERLINK1,
                "[html]<style type=\"text/css\">html,body {padding:0; margin:0;} *
                {font-size: 8pt; font-family: \"MS Sans Serif\";}</style>
                <a href=\"http://www.MyWebSite.com\">
                Visit my Web site</a>");

        case MY_HYPERLINK1:
            CtrlGetUrlForLinkClicked(szDlg, MY_HYPERLINK1, szUrl);
            MessageBox("Hyperlink clicked: " + szUrl, 0);

            // TO DO: Add additional case statements as needed.

        default:
            // check standard handling
            if (SdIsStdButton( nId ) && SdDoStdButton( nId )) then
                bDone = TRUE;
            endif;
        endswitch;

    endwhile;
end;
```

See Also

Creating New Custom Dialogs in InstallScript and InstallScript MSI Projects
Using an HTML Control on a Dialog

CtrlPGroups

The **CtrlPGroups** function places a list of existing program folders in a list box or combo box control. This function is for use only with custom dialogs.

Syntax

```
CtrlPGroups ( szDialogName, nControlID );
```

Parameters

Table 111 ▪ CtrlPGroups Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog that contains the control to use.
nControlID	Specifies the resource ID of a list box or combo box control.

Return Values

Table 112 ▪ CtrlPGroups Return Values

Return Value	Description
0	CtrlPGroups successfully placed the specified list of program folders in the control.
< 0	CtrlPGroups was unable to place the specified list of program folders in the control.

CtrlPGroups Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlPGroups function.
 *
 * This example script displays a custom dialog that has an
 * edit box and a list box.  After the dialog is initialized,
 * the script calls CtrlPGroups to create a list of program
 * folder names and place that list into the dialog's list box.
 *
```

```
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSelectFolder.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12008    // ID of custom dialog
#define RES_PBUT_NEXT         1    // ID of Next button
#define RES_PBUT_CANCEL       9    // ID of Cancel button
#define RES_PBUT_BACK        12    // ID of Back button
#define RES_DIALOG_EDITBOX  301    // ID of edit box
#define RES_DIALOG_LISTBOX  401    // ID of list box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlPGroups(HWND);

function ExFn_CtrlPGroups(hMSI)
    STRING szDialogName, svSelection;
    NUMBER nResult, nCmdValue, nControlID;
    BOOL   bDone;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize indicator used to control the while loop.
    bDone = FALSE;

    // Loop until done.
    repeat

         // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog (szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
```

```
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");

                // Place a list of folders into the dialog's list box.
                if (CtrlPGroups (szDialogName, RES_DIALOG_LISTBOX) < 0) then
                    MessageBox ("CtrlPGroups failed.", SEVERE);
                    bDone = TRUE;
                endif;
            case RES_DIALOG_LISTBOX:
                // Get the current list box selection.
                CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection);

                // Put the current selection in the edit box.
                CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                // Get the current value of the edit box.
                CtrlGetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);

                // Verify that the edit box contains the name of an
                // existing program folder.
                if CtrlSetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection) =
0 then
                    bDone = TRUE;
                else
                    MessageBox ("Program folder does not exist.", WARNING);
                endif;
            case RES_PBUT_BACK:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

    // If the edit box was closed with the Done button,
    // display the selected item.
    if (nCmdValue = RES_PBUT_NEXT) then
        MessageBox ( "You selected " + svSelection + ".", INFORMATION);
    endif;
```

```
end;
```

CtrlSelectText

The **CtrlSelectText** function selects all the text in an edit field or the edit field of a combo box. If the control is a multi-line edit field, this function selects all the text on all lines. This function is for use only with custom dialogs.

Syntax

```
CtrlSelectText ( szDialogName, nControlID );
```

Parameters

Table 113 ▪ CtrlSelectText Parameters

Parameter	Description
szDialogName	Specifies the name of a valid dialog that contains the edit field to be selected.
nControlID	Specifies the resource ID of the edit field or combo box control to be selected.

Return Values

Table 114 ▪ CtrlSelectText Return Values

Return Value	Description
0	CtrlSelectText successfully selected all the text in the field.
< 0	CtrlSelectText was unable to select the text.

CtrlSelectText Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
*
* InstallShield Example Script
*
* Demonstrates the CtrlSetText, CtrlGetText, and CtrlSelectText
* functions.
*
* This example script displays a custom dialog with two
```

```
 * edit boxes to obtain a user name and company name.  The
 * script calls CtrlSetText to place initial values into the
 * edit boxes and CtrlSelectText to select the contents of the
 * first edit box.  When the user clicks the Next button, the
 * script calls CtrlGetText to retrieve the contents of the edit
 * boxes so that they can be displayed in a message box after
 * the custom dialog is closed.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdRegisterUser.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12001   // ID of custom dialog
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button
#define RES_EDITNAME        301   // ID of edit box
#define RES_EDITCOMPANY     302   // ID of edit box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSelectText(HWND);

function ExFn_CtrlSelectText(hMSI)
    STRING szDialogName, svName, svCompany;
    NUMBER nResult, nCmdValue;
    BOOL   bDone;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize indicator used to control the loop.
    bDone = FALSE;

    // Loop until done.
```

```
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Put initial values into the edit boxes.
            CtrlSetText (szDialogName, RES_EDITNAME, "Your name");
            CtrlSetText (szDialogName, RES_EDITCOMPANY, "Your company");

            // Select the Name edit box.
            CtrlSelectText (szDialogName, RES_EDITNAME);
        case RES_PBUT_NEXT:
            // Get the contents of the edit boxes.
            CtrlGetText (szDialogName, RES_EDITNAME, svName);
            CtrlGetText (szDialogName, RES_EDITCOMPANY, svCompany);

            // Verify that both edit boxes have data.
            if (StrLength(svName) = 0) || (StrLength(svCompany) = 0) then
                MessageBox ("Both fields must be completed.", INFORMATION);
            else
                bDone = TRUE;
            endif;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case RES_PBUT_BACK:
            bDone = TRUE;
    endswitch;

until bDone;

// Close the dialog.
EndDialog (szDialogName);

// Remove the dialog from memory.
ReleaseDialog (szDialogName);

// If dialog is closed with Next button, display name and company.
if nCmdValue = RES_PBUT_NEXT then
    MessageBox (svName + "\n" + svCompany, INFORMATION);
```

```
    endif;

end;
```

CtrlSetCurSel

The **CtrlSetCurSel** function searches the specified list or combo box control for a string. If the string is found, CtrlSetCurSel selects (highlights) the item. Call CtrlSetMultCurSel for multi-selection list box and combo box controls. The CtrlSetCurSel function is for use only with custom dialogs.

Syntax

```
CtrlSetCurSel ( szDialogName, nControlID, szText );
```

Parameters

Table 115 ▪ CtrlSetCurSel Parameters

Parameter	Description
szDialogName	Specifies the name of a valid custom dialog that contains the control to be searched.
nControlID	Specifies the resource ID of the control that contains the search string.
szText	Specifies the search string. If the string is found, it is selected (highlighted).

Return Values

Table 116 ▪ CtrlSetCurSel Return Values

Return Value	Description
0	CtrlSetCurSel successfully found and selected the specified string.
< 0	CtrlSetCurSel was unable to find and select the specified string.

CtrlSetCurSel Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlGetCurSel and CtrlSetCurSel functions.
 *
 * This example script displays a custom dialog that has an
 * edit box and a list box.  After the dialog is initialized,
 * the script places the names of folders that reside in the
 * root of the Windows disk into the dialog's list box.  It
 * then calls CtrlSetCurSel to make "Windows" the selected folder.
 *
 * Each time the user selects a folder name from the list box,
 * the script calls CtrlGetCurSel to get the selected item so
 * that it can be placed into the edit box.  When the dialog
 * is closed with the Done button, the currently selected item
 * is displayed in a message box.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSelectFolder.  Because this dialog is stored
 * in the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// The folder that will be preselected in the list box.
#define PRESELECTED_FOLDER "windows"

// Dialog and control IDs.
#define RES_DIALOG_ID       12008  // ID of the custom dialog
#define RES_PBUT_NEXT           1  // ID of Next button
#define RES_PBUT_CANCEL         9  // ID of Cancel button
#define RES_PBUT_BACK          12  // ID of Back button
#define RES_DIALOG_EDITBOX    301  // ID of the edit box
#define RES_DIALOG_LISTBOX    401  // ID of the list box
#define RES_STA_DESC          710  // ID of the text at top of dialog

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_CtrlSetCurSel(HWND);

function ExFn_CtrlSetCurSel(hMSI)
    STRING  szDialogName, svSelection, szDesc;
    NUMBER  nResult, nCmdValue;
    BOOL    bDone;
    HWND    hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from_isuser.dll or _isres.dll.  Pass a null
```

```
// string in the third parameter because the dialog is identified
// by its ID in the fourth parameter.
nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

if (nResult < 0) then
    // Report an error; then terminate.
    MessageBox ("Error in defining dialog", SEVERE);
    abort;
endif;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "Select Folder");

            // Set the message that appears at the top of the dialog.
            szDesc = "Specify an existing folder from the root of drive "
                     + WINSYSDISK + "\nThen press Next to continue.";
            CtrlSetText (szDialogName,  RES_STA_DESC, szDesc);

            // Fill the dialog's list box with the names of all folders
            // that reside in the root of the Windows drive.
            CtrlDir (szDialogName, RES_DIALOG_LISTBOX,
                    WINSYSDISK + "\\*.*", DLG_DIR_DIRECTORY);

            // Select the preselected folder.
            CtrlSetCurSel (szDialogName, RES_DIALOG_LISTBOX,
                           PRESELECTED_FOLDER);

            // Put the name of the preselected folder into the edit box.
            CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, PRESELECTED_FOLDER);
        case RES_DIALOG_LISTBOX:
            // Get the current list box selection.
            CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svSelection);

            // Strip off the brackets.
```

```
                StrSub (svSelection, svSelection, 1, StrLength(svSelection) - 2);

                // Put the current selection in the edit box.
                CtrlSetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);
            case RES_PBUT_BACK:
                bDone = TRUE;
            case RES_PBUT_NEXT:
                // Get the selection from the Edit box.
                CtrlGetText (szDialogName, RES_DIALOG_EDITBOX, svSelection);

                // Verify that the edit box contains the name of a
                // folder that exists in the root of the Windows disk.
                if Is (PATH_EXISTS, WINSYSDISK + "\\"+ svSelection) then
                    bDone = TRUE;
                else
                    MessageBox ("Folder does not exist.", WARNING);
                endif ;
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
        endswitch;

    until bDone;

    // Close the custom dialog.
    EndDialog (szDialogName);

    // Remove the custom dialog from memory.
    ReleaseDialog (szDialogName);

    // If the edit box was closed with the Done button,
    // display the selected item.
    if (nCmdValue = RES_PBUT_NEXT) then
        MessageBox ("You selected " + svSelection + ".", INFORMATION);
    endif;

end;
```

CtrlSetFont

The **CtrlSetFont** function specifies a font for a control in a custom dialog. Call this function from within the DLG_INIT routine of the dialog message processing loop.

Syntax

```
CtrlSetFont ( szDialogName, hFont, nControlID );
```

Parameters

Table 117 ▪ CtrlSetFont Parameters

Parameter	Description
szDialogName	Specifies the name of a valid dialog.
hFont	Specifies the handle of a font that has been created by a call to GetFont
nControlID	Specifies the resource ID of the control whose font is to be set. To set the font for all the controls in the dialog, pass the predefined constant ALLCONTROLS in this parameter.

Return Values

Table 118 ▪ CtrlSetFont Return Values

Return Value	Description
0	CtrlSetFont successfully set the requested font in a dialog.
< 0	CtrlSetFont was unable to set the font in the requested dialog.

CtrlSetFont Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetFont and CtrlSetFont functions.
 *
 * This example script calls GetFont to retrieve the handles
 * of four fonts.  These handles are then passed to CtrlSetFont
 * to set the font of the static text fields in a custom dialog
 * box.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield dialog that is displayed by the built-in
 * function SetupType.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
```

```
 * dialog.
 *
\*-----------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     10203   // ID of the custom dialog
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_TEXT_1          202   // ID of first static text box

#define RES_TEXT_2          210   // ID of second static text box
#define RES_TEXT_3          220   // ID of third static text box
#define RES_TEXT_4          230   // ID of fourth static text box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSetFont(HWND);

function ExFn_CtrlSetFont(hMSI)
    STRING szDialogName;
    NUMBER nResult, nCmdValue;
    HWND   hFont1, hFont2, hFont3, hFont4, hwndDldg;
    BOOL   bDone;
begin

    // Get the handle of the fonts to use for the static text
    // that is displayed by the custom dialog.
    hFont1 = GetFont("Arial", 14, STYLE_BOLD);
    hFont2 = GetFont("Times New Roman", 11, STYLE_ITALIC);
    hFont3 = GetFont("Arial", 10, STYLE_BOLD);
    hFont4 = GetFont("Courier New", 9, STYLE_NORMAL);

    if (hFont1 = 0 || hFont2 = 0 || hFont3 = 0 || hFont4 = 0) then
        // Report an error; then terminate.
        MessageBox ("Unable to get all fonts. ", SEVERE);
        abort;
    endif;

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll. Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.

    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog.", SEVERE);
        abort;
    endif;

    // Initialize indicator used to control the while loop.
```

```
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
         case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
         case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the font and text for static text box 1.
            if (CtrlSetFont (szDialogName, hFont1, RES_TEXT_1) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_1,
                             "This text is set in 14-point Arial bold.");
            else
                CtrlSetText (szDialogName, RES_TEXT_1,
                    "Unable to set font for first static text box.");
            endif;

            // Set font and text for static text box 2.
            if (CtrlSetFont (szDialogName, hFont2, RES_TEXT_2) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_2,
                             "This text is set in 11-point Times New Roman italic.");
            else
                CtrlSetText (szDialogName, RES_TEXT_2,
                             "Unable to set font for second static text box.");
            endif;

            // Set font and text for static text box 3.
            if (CtrlSetFont (szDialogName, hFont3, RES_TEXT_3) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_3,
                             "This text is set in 10-point Arial bold.");
            else
                CtrlSetText (szDialogName, RES_TEXT_3,
                             "Unable to set font for third static text box.");
            endif;

            // Set font and text for static text box 4.
            if (CtrlSetFont (szDialogName, hFont4, RES_TEXT_4) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_4,
                             "This text is set in 9-point Courier New.");
            else
```

```
                    CtrlSetText (szDialogName, RES_TEXT_4,
                                 "Unable to set font for fourth static text box.");
               endif;
          case RES_PBUT_NEXT:
               bDone = TRUE;
          case RES_PBUT_CANCEL:
               // The user clicked the Cancel button.
               Do (EXIT);
     endswitch;

until bDone;

// Close the dialog
EndDialog (szDialogName);

// Free the dialog from memory
ReleaseDialog (szDialogName);

end;
```

CtrlSetList

The **CtrlSetList** function places the contents of a string list into the specified single- or multi-selection list box or combo box control. Any pre-existing contents are replaced with the items contained in listID. InstallShield places each element of the string list into each element of the list box or combo box control.

Syntax

```
CtrlSetList (szDialogName, nControlID, listID);
```

Parameters

Table 119 ▪ CtrlSetList Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog that contains the list box or combo box.
nControlID	Specifies the resource ID of the list box or combo box.
listID	Specifies the name of a string list that contains the elements to be copied into the list box or combo box control.

Return Values

Table 120 ▪ CtrlSetList Return Values

Return Value	Description
0	CtrlSetList successfully placed the contents of the string list into the control.
< 0	CtrlSetList was unable to place the contents of the string list into the control.

CtrlSetList Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetList function.
 *
 * This example script displays a custom dialog that
 * contains a list box.  After the dialog is initialized,
 * the script calls CtrlSetList to place a list of
 * InstallShield background color constants into the custom dialog’s
 * list box.
 *
 * The user can view the background that corresponds to a
 * color constant either by double-clicking the constant or by
 * selecting it and clicking the Set button.
 *
```

```
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdSetupTypeEx.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog. Note that the script changes the dialog's
 * static text and disables the Back button to make the dialog
 * meet the requirements of the example.
 *
\*------------------------------------------------------------*/

// Dialog controls.
#define RES_DIALOG_ID        12033   // ID of the custom dialog
#define RES_PBUTTON_SET          1   // ID of Next button
#define RES_PBUTTON_DONE         9   // ID of Cancel button
#define RES_PBUTTON_BACK        12   // ID of Back button
#define RES_DIALOG_LISTBOX     401   // ID of edit box.
#define RES_TEXT_ABOVE         710   // ID of text above edit box
#define RES_TEXT_BELOW         711   // ID of text below edit box

// Description to display above and below the multi-line edit box.
#define DESC_TEXT_ABOVE "View the background colors that can be produced with InstallShield's predefined
constants."
#define DESC_TEXT_BELOW "To change the background color, select a color; then click the Set button. Or
double-click the color name."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    // Script-defined function to create color list.
    prototype CreateColorList ();

    // Script-defined functions to change background color.
    prototype SetBackgroundColor (STRING);

   export prototype ExFn_CtrlSetList(HWND);

function ExFn_CtrlSetList(hMSI)
    STRING szDialogName, svCurSel;
    NUMBER nCmdValue, nResult;
    BOOL   bDone;
    LIST   listBackgroundColors;
    HWND   hwndDlg;
begin

    Enable ( BACKGROUND );

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);
```

```
if (nResult < 0) then
    // Report an error; then terminate.
    MessageBox ("Error in defining dialog", SEVERE);
    abort;
endif;

// Call script-defined function to create color list.
listBackgroundColors = CreateColorList ();

if (listBackgroundColors = LIST_NULL) then
    MessageBox ("Unable to create list of background colors", SEVERE);
    abort;
endif;

// Initialize indicator used to control the loop.
bDone = FALSE;

repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            bDone = TRUE;
        case DLG_ERR:
            MessageBox ("Dialog failed", SEVERE);
            bDone = TRUE;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "View Program Folders");

            //Set the dialog's static text.
            CtrlSetText (szDialogName, RES_TEXT_ABOVE, DESC_TEXT_ABOVE);
            CtrlSetText (szDialogName, RES_TEXT_BELOW, DESC_TEXT_BELOW);
            CtrlSetText (szDialogName, RES_PBUTTON_SET, "&Set");
            CtrlSetText (szDialogName, RES_PBUTTON_DONE, "&Done");

             // Disable the Back button using a call from Winsub.
            _WinSubEnableControl (hwndDlg, RES_PBUTTON_BACK, 0);

            // Place the list of colors into the dialog's list box.
            nResult = CtrlSetList (szDialogName, RES_DIALOG_LISTBOX,
                                   listBackgroundColors);
            if (nResult != 0) then
                // Handle error from CtrlSetList.
                MessageBox ("Unable to create folder name list.", SEVERE);
```

```
                    bDone = TRUE;
                endif;

                // Destroy the color list.
                ListDestroy (listBackgroundColors);
            case RES_DIALOG_LISTBOX:
                // If the end user double-clicked a color, display it.
                if (CtrlGetSubCommand (szDialogName) = LISTBOX_ENTER) then
                    CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svCurSel);
                    SetBackgroundColor (svCurSel);
                endif;
            case RES_PBUTTON_DONE:
                bDone = TRUE;
            case RES_PBUTTON_SET :
                // Display the selected color.
                CtrlGetCurSel (szDialogName, RES_DIALOG_LISTBOX, svCurSel);
                SetBackgroundColor (svCurSel);
        endswitch;

    until bDone;

end;

/*---------------------------------------------------------------*\
 *
 * Script-defined functions begin here.
 *
\*---------------------------------------------------------------*/

// CreateColorList returns a list of background color constants.
function CreateColorList ()
  LIST listBkColors;
begin
  // Create a list to hold the colors constants;
  listBkColors = ListCreate (STRINGLIST);

  // Build the list of color constants.
  if (listBkColors != LIST_NULL) then
    ListAddString (listBkColors, "BK_BLUE", AFTER);
    ListAddString (listBkColors, "BK_GREEN", AFTER);
    ListAddString (listBkColors, "BK_MAGENTA", AFTER);
    ListAddString (listBkColors, "BK_ORANGE", AFTER);
    ListAddString (listBkColors, "BK_RED", AFTER);
    ListAddString (listBkColors, "BK_YELLOW", AFTER);
    ListAddString (listBkColors, "BK_SOLIDBLACK", AFTER);
    ListAddString (listBkColors, "BK_SOLIDBLUE", AFTER);
    ListAddString (listBkColors, "BK_SOLIDGREEN", AFTER);
    ListAddString (listBkColors, "BK_SOLIDMAGENTA", AFTER);
    ListAddString (listBkColors, "BK_SOLIDORANGE", AFTER);
    ListAddString (listBkColors, "BK_SOLIDPINK", AFTER);
    ListAddString (listBkColors, "BK_SOLIDRED", AFTER);
    ListAddString (listBkColors, "BK_SOLIDWHITE", AFTER);
    ListAddString (listBkColors, "BK_SOLIDYELLOW", AFTER);
  endif;

  // Return the pointer to the list.
```

```
  return listBkColors;
end;

// SetBackgroundColor sets the background to the color
// specified by szColor.
function SetBackgroundColor (szColor)
  NUMBER nColor;
begin
  // Determine which color the end user selected.
  if szColor = "BK_BLUE" then
    nColor = BK_BLUE;
  elseif szColor = "BK_GREEN" then
    nColor = BK_GREEN;
  elseif szColor = "BK_MAGENTA" then
    nColor = BK_MAGENTA;
  elseif szColor = "BK_ORANGE" then
    nColor = BK_ORANGE;
  elseif szColor = "BK_RED" then
    nColor = BK_RED;
  elseif szColor = "BK_YELLOW" then
    nColor = BK_YELLOW;
  elseif szColor = "BK_SOLIDBLACK" then
    nColor = BK_SOLIDBLACK;
  elseif szColor = "BK_SOLIDBLUE" then
    nColor = BK_SOLIDBLUE;
  elseif szColor = "BK_SOLIDGREEN" then
    nColor = BK_SOLIDGREEN;
  elseif szColor = "BK_SOLIDMAGENTA" then
    nColor = BK_SOLIDMAGENTA;
  elseif szColor = "BK_SOLIDORANGE" then
    nColor = BK_SOLIDORANGE;
  elseif szColor = "BK_SOLIDPINK" then
    nColor = BK_SOLIDPINK;
  elseif szColor = "BK_SOLIDRED" then
    nColor = BK_SOLIDRED;
  elseif szColor = "BK_SOLIDWHITE" then
    nColor = BK_SOLIDWHITE;
  elseif szColor = "BK_SOLIDYELLOW" then
    nColor = BK_SOLIDYELLOW;
  endif;

  // Set the background to the selected color.
  SetColor (BACKGROUND, nColor);
end;
```

CtrlSetMLEText

The **CtrlSetMLEText** function sets the text of a multi-line edit box control. InstallShield separately places each string in listID into the multi-line edit box control. This function is for use only with custom dialogs.

Syntax

```
CtrlSetMLEText ( szDialogName, nControlID, listID );
```

Parameters

Table 121 ▪ CtrlSetMLEText Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog.
nControlID	Specifies the resource ID of the multi-line edit box control in the dialog.
listID	Specifies the name of a valid string list that contains the elements to be copied into the multi-line edit control.

Return Values

Table 122 ▪ CtrlSetMLEText Return Values

Return Value	Description
0	CtrlSetMLEText set the text into the control.
< 0	CtrlSetMLEText was unable to set the text in the control.

CtrlSetMLEText Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetMLEText and CtrlGetMLEText functions.
 *
 * This example script displays a custom dialog that contains
 * a multi-line edit box.  The script creates a list of all
 * program folders on the target system and then calls
 * CtrlSetMLEText to place that list into the dialog's multi-
 * line edit box.  The dialog also has a Save button that
 * enables the end user to save the folder names to a text file.
 * When that option is selected, the script calls CtrlGetMLEText
 * to get the folder names from the multi-line edit box.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdShowInfoList.  Because this dialog is stored
 * in the file _isres.dll, which is already compressed in
```

```
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * Notes: The multi-line edit box is defined as read-only
 *        in the resource; its contents cannot be edited.
 *
 *        The script changes the static text of the dialog
 *        box's Next button and disables the Back button to
 *        make the dialog fit the needs of the example.
 *
 *        The function GetGroupNameList may return an error
 *        if the target system is running under a shell other
 *        than the Explorer shell.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID        12007   // ID of the custom dialog
#define RES_PBUT_BACK           12   // ID of Next button
#define RES_PBUT_DONE            9   // ID of Cancel button
#define RES_PBUT_SAVE            1   // ID of Back button
#define RES_DIALOG_EDITBOX     301   // ID of edit box
#define RES_TEXT               711   // ID of text above edit box

// Description to display above the multi-line edit box.
#define DESC_TEXT "Click Save to store the list of program folder names in a disk file."

// The program names will be saved in the root of the current
// drive if the end user clicks the Save button.
#define FOLDER_LIST_FILE "\\ISExampl.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSetMLEText(HWND);

function ExFn_CtrlSetMLEText(hMSI)
    STRING szDialogName;
    NUMBER nCmdValue, nResult;
    BOOL   bSave, bDone;
    LIST   listFolders;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
```

```
    abort;
endif;

// Initialize indicator used to control the while loop.
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            bDone = TRUE;
        case DLG_ERR:
            MessageBox ("Dialog failed", SEVERE);
            bDone = TRUE;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "View Program Folders");

            // Disable the Back button using a call from Winsub.
            _WinSubEnableControl (hwndDlg, RES_PBUT_BACK, 0);

            //Set the dialog's static text.
            CtrlSetText (szDialogName, RES_TEXT, DESC_TEXT);
            CtrlSetText (szDialogName, RES_PBUT_SAVE, "&Save");
            CtrlSetText (szDialogName, RES_PBUT_DONE, "&Done");

            // Create a string list to store the program folder names.
            listFolders = ListCreate (STRINGLIST);

            if (listFolders = LIST_NULL) then
                MessageBox ("Unable to create list.", SEVERE);
                bDone = TRUE;
            else
                // Get the folder names into a list.
                nResult = GetGroupNameList (listFolders);

                if (nResult = 0) then
                    // Put the folder names into the
                    // dialog's multi-line edit box.
                    nResult = CtrlSetMLEText (szDialogName, RES_DIALOG_EDITBOX,
                                              listFolders);
                elseif (nResult != 0) then
                    // Handle error from GetGroupNameList or CtrlSetMLEText.
```

```
                    MessageBox ("Unable to create folder name list.", SEVERE);
                    bDone = TRUE;
                endif;

                // Destroy the listID string list.
                ListDestroy (listFolders);
            endif;
        case RES_PBUT_SAVE :
            // Initialize indicator to save program file names.
            bSave = FALSE;

            if (AskYesNo("Save list as " + FOLDER_LIST_FILE + "?", YES)) then
                // Check for existing file.
                if (Is (FILE_EXISTS, FOLDER_LIST_FILE) = 1) then
                    // Query end user to overwrite existing file.
                    if (AskYesNo ("Overwrite existing " + FOLDER_LIST_FILE +
                                "?", YES)) then
                        bSave = TRUE;
                    endif;
                else
                    bSave = TRUE;
                endif;
            endif;

            if bSave = TRUE then
                // Create a string list to store list from dialog.
                listFolders = ListCreate (STRINGLIST);

                if (listFolders = LIST_NULL) then
                    MessageBox ("Unable to create list.", SEVERE);
                else
                    // Get the folder names from the
                    // dialog's multi-line edit box.
                    nResult = CtrlGetMLEText (szDialogName, RES_DIALOG_EDITBOX,
                                              listFolders);
                    // Save the list to a text file.
                    ListWriteToFile (listFolders, FOLDER_LIST_FILE);

                    // Destroy the listID string list.
                    ListDestroy (listFolders);
                endif;
            endif;
        case RES_PBUT_DONE:
            bDone = TRUE;
    endswitch;

until bDone;

// Close the custom dialog.
EndDialog (szDialogName);

// Remove the custom dialog from memory.
ReleaseDialog (szDialogName);

end;
```

CtrlSetMultCurSel

The **CtrlSetMultCurSel** function searches the specified multi-selection list or combo box control. If nSelectFlag is set to TRUE, CtrlSetMultCurSel selects (highlights) the item when it is found. This function is for use only with custom dialogs.

Syntax

```
CtrlSetMultCurSel (szDialogName, nControlID, szText, nSelectFlag);
```

Parameters

Table 123 ▪ CtrlSetMultCurSel Parameters

Parameter	Description
szDialogName	Specifies the name of a custom dialog.
nControlID	Specifies the resource ID of the multi-selection list box control in the dialog.
szText	Specifies the search string.
nSelectFlag	Indicates whether or not to select an item when CtrlSetMultCurSel finds it. Pass one of the following predefined constants in this parameter: • **TRUE—**Indicates that the item is to be selected. • **FALSE—**Indicates that the item is not to be selected.

Return Values

Table 124 ▪ CtrlSetMultCurSel Return Values

Return Value	Description
0	CtrlSetMultCurSel successfully found the text in the control and either selected it or did not select it, as indicated in nSelectFlag.
< 0	CtrlSetMultCurSel was unable to find the text in the control.

CtrlSetMultCurSel Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetMultCurSel and CtrlGetMultCurSel
 * functions.
 *
```

```
 * This script retrieves the names of all program folders
 * on the target system and places them in a list.  When the
 * dialog is initialized, the CtrlSetList function sets this
 * list to be displayed in the list box.  The CtrlSetMultCurSel
 * function is then called to select the user-selected
 * folder.
 *
 * This list is then destroyed.  A new list is created when the
 * Next button is clicked.  CtrlGetMultCurSel then retrieves the
 * elements in the list box and assigns them to this new string
 * list.  This list is then displayed in an Sd dialog.
 *
 * Note: In order for this script to run properly, you must set
 *       the RES_DIALOG_ID and RES_DIALOG_LISTBOX constants to a
 *       dialog and list box created in _isuser.dll.
 *
 *       The GetGroupNameList function used in this example may
 *       return an error if the target system is running under a
 *       shell other than the Explorer shell.
 *
\*---------------------------------------------------------------*/

// Dialog controls.
#define RES_DIALOG_ID               // ID of dialog
#define RES_PBUT_NEXT            1  // ID of Next button
#define RES_PBUT_CANCEL          9  // ID of Cancel button
#define RES_PBUT_BACK           12  // ID of Back button
#define RES_DIALOG_LISTBOX          // ID of list box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSetMultCurSel(HWND);

function ExFn_CtrlSetMultCurSel(hMSI)
    STRING szDialogName, szDLL, szTitle, szMsg;
    STRING szText, szDefFolder, svResultFolder;
    NUMBER nCmdValue, nResult, nControlID, nSelectFlag;
    BOOL bDone;
    LIST listID, listFolders;
    HWND hwndDlg;
begin

    Disable(BACKBUTTON);

    szDialogName = "CtrlSetMultCurSel";
    szDLL        = "";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, szDLL, "", RES_DIALOG_ID);

    if (nResult < 0) then
        MessageBox ("Error in defining dialog", SEVERE);
```

```
    bDone = TRUE;
else
    bDone = FALSE;
endif;

// Create the listID string list.
listID = ListCreate (STRINGLIST);

if (listID = LIST_NULL) then
   MessageBox ("Unable to create list.", SEVERE);
else
   MessageBox ("listID created.", INFORMATION);
endif;

// Retrieve the program folder names into a list.
GetGroupNameList (listID);

// Retrieve a folder name from the user.
szTitle = "CtrlGetMultCurSel & CtrlSetMultCurSel";
SelectFolder (szTitle, szDefFolder, svResultFolder);

// Loop until done.
while (bDone = FALSE)

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.",SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // The following sets the list box to the list of program folders.
            nControlID = RES_DIALOG_LISTBOX;
            CtrlSetList (szDialogName, nControlID, listID);

            szText = svResultFolder;
            nSelectFlag = TRUE;

            //Set the user-selected folder to be highlighted.
            if (CtrlSetMultCurSel (szDialogName, nControlID, szText,
                                   nSelectFlag) < 0) then
                MessageBox ("CtrlSetMultCurSel failed.", SEVERE);
            endif;

            // Destroy the listID string list.
            ListDestroy (listID);
            MessageBox ("listID destroyed.", INFORMATION);
```

```
                case DLG_CLOSE:
                    // The user clicked the window's Close button.
                    Do (EXIT);
                case RES_PBUT_NEXT:
                    // Create the listFolders string list.
                    listFolders = ListCreate (STRINGLIST);

                    if (listFolders = LIST_NULL) then
                        MessageBox ("Unable to create list.", SEVERE);
                    else
                        MessageBox ("listFolders created.", INFORMATION);
                    endif;

                    // Retrieve the highlighted elements in the list box and
                    // put them into the listFolders string list.
                    if (CtrlGetMultCurSel (szDialogName, nControlID,
                                           listFolders) < 0) then
                        MessageBox ("CtrlGetMultCurSel failed.", SEVERE);
                    else
                        MessageBox ("CtrlGetMultCurSel successful.", INFORMATION);
                    endif;

                    bDone = TRUE;
                case RES_PBUT_BACK:
                    bDone = TRUE;
                case RES_PBUT_CANCEL:
                    // The user clicked the window's Cancel button.
                    Do (EXIT);
            endswitch;

        endwhile;

        szMsg   = "The following are the elements highlighted in the list box:";

        // Display the list of elements highlighted.
        SdShowInfoList (szTitle, szMsg, listFolders);

        // Remove listFolders string list from memory.
        ListDestroy (listFolders);
        MessageBox ("listFolders destroyed.", INFORMATION);

        // Close the dialog.
        EndDialog (szDialogName);

        // Remove dialog from memory.
        ReleaseDialog (szDialogName);

    end;
```

CtrlSetState

The **CtrlSetState** function sets the current state of a check box or option button control in a custom dialog. You can set certain characteristics of option buttons and check boxes when you create them using a resource or dialog editor. If you experience difficulties with the behavior of a button control, check the characteristics of the control in the editor.

Syntax

```
CtrlSetState ( szDialogName, nControlID, nState );
```

Parameters

Table 125 ▪ CtrlSetState Parameters

Parameter	Description
szDialogName	Specifies the name of a dialog that contains the check box or option button control.
nControlID	Specifies the resource ID of the check box or option button control.
nState	Specifies the new state of the button control. Pass one of the following predefined constants in this parameter: • **BUTTON_CHECKED**—Sets the button's state to CHECKED. • **BUTTON_UNCHECKED**—Sets the button's state to UNCHECKED.

Return Values

Table 126 ▪ CtrlSetState Return Values

Return Value	Description
0	CtrlSetState successfully set the state of the check box or option button control.
< 0	CtrlSetState was unable to set the state of the control.

CtrlSetState Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlGetState and CtrlSetState functions.
 *
 * This example script displays a custom dialog that contains
 * four check boxes.  The script calls CtrlSetState to set the
 * first two check boxes to checked.  The last two are unchecked
 * by default.  When the end user clicks the Next button, the
 * script calls CtrlGetState to retrieve the state of each
```

```
 * each check box.  The script then displays a message box that
 * reports which check boxes were selected.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog  that is displayed by the built-in
 * function SdAskOptions.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define  RES_DIALOG_ID     12020   // ID of the custom dialog
#define  RES_PBUT_NEXT         1   // ID of Next button
#define  RES_PBUT_CANCEL       9   // ID of Cancel button
#define  RES_PBUT_BACK        12   // ID of Back button
#define  ID_OP1_CHECK        501   // ID of Option 1 check box
#define  ID_OP2_CHECK        502   // ID of Option 2 check box
#define  ID_OP3_CHECK        503   // ID of Option 3 check box
#define  ID_OP4_CHECK        504   // ID of Option 4 check box
#define  ID_STA_DESC         711   // ID of static text description


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSetState(HWND);

function ExFn_CtrlSetState(hMSI)
    STRING  szDialogName, szMsg;
    NUMBER  nResult, nCmdValue, hwndDlg;
    BOOL    bDone;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "ExDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the loop.
    bDone = FALSE;

    repeat

        // Display the dialog and return the next dialog event.
```

```
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the window title.
            SetWindowText (hwndDlg, "Select Options");

            // Set static text description displayed above check boxes.
            CtrlSetText (szDialogName, ID_STA_DESC,
                        "Select and/or clear options.  Then click Next.");

            // Options are cleared by default, so select Options 1 and 2.
            if (CtrlSetState (szDialogName, ID_OP1_CHECK, BUTTON_CHECKED) < 0) then
                MessageBox ("First call to CtrlSetState failed.", SEVERE);
                bDone = TRUE;
            elseif (CtrlSetState(szDialogName, ID_OP2_CHECK, BUTTON_CHECKED) <  0) then
                MessageBox ("Second call to CtrlSetState failed.", SEVERE);
                bDone = TRUE;
            endif;

        case RES_PBUT_NEXT:
            bDone = TRUE;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case RES_PBUT_BACK:
            bDone = TRUE;
    endswitch;

until bDone;

// Build message if end user clicked Next button.
if (nCmdValue = RES_PBUT_NEXT) then
    // Start building the message to display to the end user.
    szMsg = "You selected the following items:\n\n";

    // If first option is selected, add line to message.
    if (CtrlGetState (szDialogName, ID_OP1_CHECK) = BUTTON_CHECKED) then
        szMsg = szMsg + "Option 1\n";
    endif;

    // If second option is selected, add line to message.
```

```
        if (CtrlGetState (szDialogName, ID_OP2_CHECK) = BUTTON_CHECKED) then
            szMsg = szMsg + "Option 2\n";
        endif;

        // If third option is selected, add line to message.
        if (CtrlGetState (szDialogName, ID_OP3_CHECK) = BUTTON_CHECKED) then
            szMsg = szMsg + "Option 3\n";
        endif;

        // If fourth option is selected, add line to message.
        if (CtrlGetState (szDialogName, ID_OP4_CHECK) = BUTTON_CHECKED) then
            szMsg = szMsg + "Option 4\n";
        endif;
    endif;

    // Close the custom dialog.
    EndDialog (szDialogName);

    // Remove the custom dialog from memory.
    ReleaseDialog (szDialogName);

    // Display message if dialog was closed with Next button.
    if (nCmdValue = RES_PBUT_NEXT) then
        MessageBox (szMsg, INFORMATION);
    endif;

end;
```

CtrlSetText

The **CtrlSetText** function sets the text of a single-line edit field, static text field, or button control in a custom dialog. To set the text in multi-line edit fields, call CtrlSetMLEText.

Syntax

```
CtrlSetText ( szDialogName, nControlID, szText );
```

Parameters

Table 127 ▪ CtrlSetText Parameters

Parameter	Description
szDialogName	Specify the name of the dialog that you want to modify.
nControlID	Specify the resource ID of the single-line edit field, static text field, or button control in which text is to be set.
szText	Specify the text to place in the control.  ***Tip ▪*** *If you want the control to be an HTML control, you can specify* **[html]** *at the beginning of the szText value. To learn more, see Using an HTML Control on a Dialog.*

Return Values

Table 128 ▪ CtrlSetText Return Values

Return Value	Description
0	CtrlSetText successfully set the text in the control.
ISERR_GEN_FAILURE	CtrlSetText was unable to set the text in the control.

CtrlSetText Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the CtrlSetText, CtrlGetText, and CtrlSelectText
 * functions.
 *
 * This example script displays a custom dialog with two
 * edit boxes to obtain a user name and company name.  The
 * script calls CtrlSetText to place initial values into the
 * edit boxes and CtrlSelectText to select the contents of the
 * first edit box.  When the user clicks the Next button, the
 * script calls CtrlGetText to retrieve the contents of the edit
 * boxes so that they can be displayed in a message box after
 * the custom dialog is closed.
 *
```

```
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdRegisterUser.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12001   // ID of custom dialog
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button
#define RES_EDITNAME        301   // ID of edit box
#define RES_EDITCOMPANY     302   // ID of edit box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_CtrlSetText(HWND);

function ExFn_CtrlSetText(hMSI)
    STRING szDialogName, svName, svCompany;
    NUMBER nResult, nCmdValue;
    BOOL   bDone;
    HWND   hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize indicator used to control the loop.
    bDone = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog (szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
```

```
                    // The user clicked the window's Close button.
                    Do (EXIT);
                case DLG_ERR:
                    MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                    abort;
                case DLG_INIT:
                    // Initialize the back, next, and cancel button enable/disable states
                    // for this dialog and replace %P, %VS, %VI with
                    // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                    // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                    hwndDlg = CmdGetHwndDlg(szDialogName);
                    SdGeneralInit(szDialogName, hwndDlg, 0, "");

                    // Put initial values into the edit boxes.
                    CtrlSetText (szDialogName, RES_EDITNAME, "Your name");
                    CtrlSetText (szDialogName, RES_EDITCOMPANY, "Your company");

                    // Select the Name edit box.
                    CtrlSelectText (szDialogName, RES_EDITNAME);
                case RES_PBUT_NEXT:
                    // Get the contents of the edit boxes.
                    CtrlGetText (szDialogName, RES_EDITNAME, svName);
                    CtrlGetText (szDialogName, RES_EDITCOMPANY, svCompany);

                    // Verify that both edit boxes have data.
                    if (StrLength(svName) = 0) || (StrLength(svCompany) = 0) then
                        MessageBox ("Both fields must be completed.", INFORMATION);
                    else
                        bDone = TRUE;
                    endif;
                case RES_PBUT_CANCEL:
                    // The user clicked the Cancel button.
                    Do (EXIT);
                case RES_PBUT_BACK:
                    bDone = TRUE;
            endswitch;

        until bDone;

        // Close the dialog.
        EndDialog (szDialogName);

        // Remove the dialog from memory.
        ReleaseDialog (szDialogName);

        // If dialog is closed with Next button, display name and company.
        if nCmdValue = RES_PBUT_NEXT then
            MessageBox (svName + "\n" + svCompany, INFORMATION);
        endif;

    end;
```

DefineDialog

The **DefineDialog** function defines a custom dialog. Call this function instead of EzDefineDialog when you need to specify a dialog attribute that cannot be specified with **EzDefineDialog**.

Note ▪ DefineDialog *does not display the custom dialog. To display a custom dialog, you must call WaitOnDialog.*

Syntax

```
DefineDialog ( szDialogName, hInstance, szDLLName, nDialogID, szDialogID, nReserved, hwndOwner,
    lMsgLevel );
```

Parameters

Table 129 ▪ DefineDialog Parameters

Parameter	Description
szDialogName	Specifies the name to associate with the dialog identified by szDialogID or nDialogID. To process this dialog, use this name in subsequent calls to custom dialog functions. Note that the dialog's name is case-sensitive; you must use it exactly as you have specified it in this parameter.
hInstance	Specifies the instance handle of the .dll file in which the dialog resides. If you specify the fully qualified name of the .dll file in szDLLName, you can specify 0 in this parameter. To obtain the instance handle of a .dll file, call the Microsoft Windows API **LoadLibrary**.
szDLLName	Specifies the name of the .dll file that contains the dialog resource. If this name is not qualified (that is, if you do not specify the drive and path with the file name), the InstallScript engine searches for the .dll file in the Windows folder. If it is not found there, the InstallScript engine searches the folders that are specified in the search path. When the dialog is located in `_isuser.dll`, you can specify a null string ("") in this parameter; the InstallScript engine automatically checks `_isuser.dll` if this parameter is specified as a null string ("").  ***Note ▪*** *When you use a .dll file other than* `_isres.dll` *or* `_isuser.dll`*, you must call UseDLL to load the .dll file before calling* **DefineDialog***. To unload the .dll file from memory, call UnUseDLL after calling ReleaseDialog.*
nDialogID	Specifies the dialog's resource ID if you use a number rather than a string to identify the resource. This parameter is used only when szDialogID is a null string (""). It is recommended that you use nDialogID rather than szDialogID to identify the dialog resource.

Table 129 ▪ DefineDialog Parameters (cont.)

Parameter	Description
szDialogID	Specifies the dialog's resource ID if you use a string rather than a number to identify the resource. If this parameter is a null string (""), nDialogID is used to identify the dialog resources. It is recommended that you use nDialogID rather than szDialogID to identify the dialog resource.  ***Note ▪*** *If you created the dialog in the Dialogs view, the dialog is created with a string ID; therefore, you must specify this name as the szDialogID parameter to define the dialog.* *If you override an existing dialog in the Dialogs view, the dialog has a numeric ID, and you must specify the ID in the nDialogID parameter.* *If you want to use numeric IDs in all cases—which is what is recommended—you must edit the dialog in the Dialogs view to change the ISResourceID property of the created dialog to the desired Dialog ID instead of 0. Note that if you do this, the dialog name is no longer used when the dialog is created; it is used only in the Dialogs view in InstallShield to identify the dialog. The dialog is built with the correct numeric ID.*
nReserved	Pass zero in this parameter. No other value is allowed.
hwndOwner	Specifies the window handle of the owner window. Specify HWND_INSTALL in this parameter to make the main installation window the owner of the dialog.
lMsgLevel	This parameter specifies which windows messages will be sent to the dialog. You must use the OR operator (|) to combine one of the following constants with the constant DLG_CENTERED. • **DLG_MSG_STANDARD**—Filters out most Windows messages; only those directly related to the dialog's controls are passed to the dialog. • **DLG_MSG_ALL**—Passes most Windows messages.

Return Values

Table 130 ▪ DefineDialog Return Values

Return Value	Description
0	**DefineDialog** successfully defined the dialog.
DLG_ERR_ALREADY_EXISTS (-3)	Indicates that you are trying to define a dialog that has already been defined in the installation script. You cannot define two dialogs with the same name.
DLG_ERR (-1)	Indicates an unspecified error condition.

DefineDialog Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DefineDialog, EndDialog, and ReleaseDialog
 * functions.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap.  The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * In order to use this dialog as a custom dialog, the
 * script first defines it by calling DefineDialog.  It then
 * displays the dialog by calling WaitOnDialog.  When an event
 * ends dialog processing, EndDialog is called to close the
 * dialog.  Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_DefineDialog(HWND);

function ExFn_DefineDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Define the name of a dialog to pass as first
    // parameter to DefineDialog.
    szDialogName = "ExampleDialog";

    // DefineDialog's second parameter will be 0 because the
    // .dll file is in _isres.dll.
    hInstance = 0;

    // DefineDialog's third parameter will be null; installation will
    // search for the dialog in _isuser.dll and _isres.dll.
    szDLLName = "";

    // DefineDialog's fifth parameter will be null because the
    // dialog is identified by its ID in the fourth parameter.
    szDialog = "";

    // This value is reserved and must be 0.
    hwndParent = 0;

    // Define the dialog. The installation's main window will own the
    // dialog (indicated by HWND_INSTALL in parameter 7).
    nResult  = DefineDialog (szDialogName, hInstance, szDLLName,
                             RES_DIALOG_ID, szDialog, hwndParent,
                             HWND_INSTALL, DLG_MSG_STANDARD|DLG_CENTERED);

    // Check for an error.
    if (nResult < 0) then
        MessageBox ("An error occurred while defining the dialog.", SEVERE);
        bDone = TRUE;
        abort;
    endif;

   // Initialize the indicator used to control the while loop.
   bDone = FALSE;

   // Loop until done.
   repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
```

```
                case DLG_CLOSE:
                    // The user clicked the window's Close button.
                    Do (EXIT);
                case DLG_ERR:
                    MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                    abort;
                case DLG_INIT:
                    // Initialize the back, next, and cancel button enable/disable states
                    // for this dialog and replace %P, %VS, %VI with
                    // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                    // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                    hwndDlg = CmdGetHwndDlg(szDialogName);
                    SdGeneralInit(szDialogName, hwndDlg, 0, "");

                case RES_PBUT_CANCEL:
                    // The user clicked the Cancel button.
                    Do (EXIT);
                case RES_PBUT_NEXT:
                    bDone = TRUE;
                case RES_PBUT_BACK:
                    bDone = TRUE;
                // check standard handling
                if (SdIsStdButton( nCmdValue ) && SdDoStdButton( nCmdValue )) then
                    bDone = TRUE;
                endif;
            endswitch;

        until bDone;

        // Close the dialog.
        EndDialog (szDialogName);

        // Free the dialog from memory.
        ReleaseDialog (szDialogName);

    end;
```

DeinstallSetReference

The **DeinstallSetReference** function is obsolete.

If you want to check whether a file is locked during uninstallation, write script code that calls the **IsFlag** function with the FILE_LOCKED constant for the nIsFlag parameter and that responds as needed.

Syntax

```
DeinstallSetReference (szReferenceFile);
```

DeinstallStart

The **DeinstallStart** function is obsolete. Installations create the required registry keys to enable uninstallation.

Syntax

```
DeinstallStart (szObsolete, svObsolete, szObsolete, lReserved);
```

Delay

The **Delay** function delays the execution of a script by a specified number of seconds. Other tasks running simultaneously with InstallShield proceed normally while InstallShield is delayed.

Syntax

```
Delay ( nSeconds );
```

Delay Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Delay function.
 *
 * First, SdShowMsg is called to display a message box and Delay
 * is called to pause the script for three seconds.  Then the
 * message box is removed and Delay is called again to pause for
 * two seconds.  Finally, another message is displayed for three
 * seconds.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Delay(HWND);

function ExFn_Delay(hMSI)
begin

    SdShowMsg ("This message will be displayed for three seconds.", TRUE);

    Delay (3);

    SdShowMsg ("", FALSE);

    Delay (2);

    SdShowMsg ("This is another message that will be displayed for a mere " +
               "three seconds.", TRUE);

    Delay (3);
```

```
end;
```

DeleteCHARArray

Description

The **DeleteCHARArray** function deletes the array of pointers to which pCHARArray points.

Syntax

```
DeleteCHARArray ( pCHARArray );
```

Parameters

Table 131 ▪ DeleteCHARArray Parameters

Parameter	Description
pCHARArray	Specifies a pointer to an array of pointers to ANSI character strings. Typically, this pointer is returned by a previous call to GetCHARArrayFromISStringArray.

Return Values

Table 132 ▪ DeleteCHARArray Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

DeleteDir

The **DeleteDir** function deletes a subdirectory. Depending on the value you use in the parameter nFlag, you can delete a subdirectory only if it is empty, delete a subdirectory even if it contains files, or delete an entire root directory. Set nFlag with extreme caution.

Note ▪ *Note the following restrictions:*

- *You cannot use DeleteDir to delete the current directory.*
- *You cannot delete files on a network system where you lack the appropriate rights.*
- *DeleteDir cannot delete read-only, hidden, or system files.*
- *If DeleteDir encounters a read-only file, the function can fail after having deleted only some of the files in the subdirectory.*

Syntax

```
DeleteDir( szDir, nFlag );
```

Parameters

Table 133 ▪ DeleteDir Parameters

Parameter	Description
szDir	Specifies the fully qualified name of the directory to delete.
nFlag	Specifies deletion options. Pass one of the following predefined constants in this parameter: • **ALLCONTENTS—**Deletes the directory in szDir, including all subdirectories and files beneath it. The directory you are deleting must be a subdirectory and cannot be a root directory of the drive. • **ONLYDIR—**Deletes the directory in szDir only if it is empty. Otherwise, the function fails. • **ROOT—**Deletes the directory in szDir even if it is the root directory. If szDir is a root directory, DeleteDir will delete everything on the disk.

Return Values

Table 134 ▪ DeleteDir Return Values

Return Value	Description
0	Indicates that the function successfully deleted the subdirectory.
< 0	Indicates that the function was unable to delete the subdirectory.

DeleteDir Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteDir function.
 *
 * First, CreateDir is called to create a directory.  Then,
 * DeleteDir is called to delete it.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR "C:\\Newdir"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_DeleteDir(HWND);

function ExFn_DeleteDir(hMSI)
begin

    // Create a directory.
    if (CreateDir (EXAMPLE_DIR) != 0) then
        // Report the error; then terminate.
        MessageBox ("Unable to create directory.", SEVERE);
    else

        // Report success.
        MessageBox (EXAMPLE_DIR + " was created.", INFORMATION);

        // Delete the directory.  If the directory is not
        // empty, it is not deleted.
        if (DeleteDir (EXAMPLE_DIR, ONLYDIR) = 0) then
            // Report success.
            MessageBox (EXAMPLE_DIR + " was deleted.", INFORMATION);
        else
            MessageBox ("Unable to delete directory.", SEVERE);
        endif;

    endif;

end;
```

DeleteFile

The **DeleteFile** function deletes one or more files.

Project ▪ *In a Basic MSI or InstallScript MSI project, this functionality might be better achieved by using the Windows Installer RemoveFiles action. For more information, see the Windows Installer Help.*

Note ▪ *Note the following:*

- *You cannot use* **DeleteFile** *to delete files on a network system where you lack the appropriate rights.*
- **DeleteFile** *cannot delete read-only, hidden, or system files.*
- *You can use wild-card characters with FindFile to locate files and then delete them with* **DeleteFile**.

Syntax

```
DeleteFile ( szFile );
```

Parameters

Table 135 ▪ DeleteFile Parameters

Parameter	Description
szFile	Specifies the names of the files to delete. If szFile specifies a fully qualified file name, that is, if it includes a path, **DeleteFile** will delete the file from specified directory. If szFile contains an unqualified file name, that is, without path information, **DeleteFile** deletes the file from the directory that is specified by the system variable TARGETDIR (in InstallScript installations) or INSTALLDIR (in Basic MSI and InstallScript MSI installations). You can include wildcard characters in szFile to delete more than one file.

Return Values

Table 136 ▪ DeleteFile Return Values

Return Value	Description
0	Indicates that the function successfully deleted the specified file or files.
ISERR_PATH_NOT_FOUND (0x80070003)	The specified path was not found.
ISERR_FILE_NOT_FOUND (0x80070004)	The specified file was not found or no files matched the specified wildcard.
All other negative values	Indicates that the function was unable to delete one or more of the specified files. In the case of multiple files, only the error for the last file that could not be deleted is returned. The system variable ERRORFILENAME contains a semicolon delimited list of the files that could not be deleted. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

DeleteFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteFile function.
 *
```

```
 * First, DeleteFile is called to delete a specified file from a
 * directory.  Then it is called again to delete all files with
 * the extention "sys" from the same directory.
 *
 * Note: Before running this script, create a directory named
 *       ISExampl in the root of drive C.  Then create a file
 *       named ISExampl.txt in that directory.  Finally, create
 *       two or more files with the extension "sys" in that
 *       directory. These files will be deleted by the script.
 *
\*---------------------------------------------------------------*/

#define DEL_DIR       "C:\\ISExampl"
#define DEL_FILE      "ISExampl.txt"
#define DEL_SYS_FILES "*.sys"
#define TITLE_TEXT    "DeleteFile example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_DeleteFile(HWND);

function ExFn_DeleteFile(hMSI)
   STRING szMsg;
begin

    // Delete the file specified by DEL_FILE from the target directory.
    if (DeleteFile (DEL_DIR ^ DEL_FILE) < 0) then
        MessageBox ("First call to DeleteFile failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "%s was delete from %s.",
                        DEL_FILE, DEL_DIR);
    endif;

    // Delete the files specified by DEL_SYS_FILES
    // from the target directory.
    if (DeleteFile (DEL_SYS_FILES) < 0) then
        MessageBox ("Second call to DeleteFile failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT,
                    "All files matching %s were delete from %s.",
                    DEL_SYS_FILES, DEL_DIR);
    endif;

end;
```

DeleteFolderIcon

The DeleteShortcut function supersedes the **DeleteFolderIcon** function.

The **DeleteFolderIcon** function removes a shortcut from a folder.

Note ▪ **DeleteFolderIcon** *cannot be used for Internet shortcuts.*

Syntax

```
DeleteFolderIcon ( szProgramFolder, szItemName );
```

Parameters

Table 137 ▪ DeleteFolderIcon Parameters

Parameter	Description
szProgramFolder	Specifies the name of the folder that contains the shortcut to remove.
szItemName	Specifies the name of the shortcut to delete.

Return Values

Table 138 ▪ DeleteFolderIcon Parameters

Return Value	Description
0	Indicates that the function successfully deleted the specified shortcut. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.
< 0	Indicates that the function was unable to delete the shortcut.

DeleteFolderIcon Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteFolderIcon and DeleteProgramFolder
 * functions.
 *
 * This script deletes the 'Notepad Example' icon from the
 * 'Example folder' folder.  DeleteProgramFolder is then
 * called again to delete this folder.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid folder and icon
 *       on the target system.  To easily create this example
 *       folder and icon, run the AddFolderIcon example #3.
 *
\*---------------------------------------------------------------*/
```

```
#define FOLDER "C:\\Windows\\Example folder"
#define ICON   "Notepad Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_DeleteFolderIcon(HWND);

function ExFn_DeleteFolderIcon(hMSI)
begin

    // Display the folder.
    ShowProgramFolder (FOLDER, SW_SHOW);
    Delay (3);

    // Delete the 'Notepad Example' icon.
    if (DeleteFolderIcon (FOLDER, ICON) < 0) then
        MessageBox ("DeleteFolderIcon failed.", SEVERE);
    endif;

    // Delete the 'Example folder' icon.
    if (DeleteProgramFolder (FOLDER) < 0) then
        MessageBox ("DeleteProgramFolder failed.", SEVERE);
    endif;

end;
```

DeleteProgramFolder

The DeleteShortcutFolder function supersedes the **DeleteProgramFolder** function.

The **DeleteProgramFolder** function deletes a program folder (that is, a subfolder of the Start menu's Programs folder) and its contents, including all shortcuts and all of the program folder's subfolders and their contents. DeleteProgramFolder cannot delete the Programs folder.

Tip ▪ *In a Windows Installer based or InstallScript MSI project, this functionality is possibly better achieved by using the Windows Installer RemoveFolders action. Or, if you are simply uninstalling, the MSI engine handles the removal of all files and folders created during the setup. For more information on the RemoveFolders action, see the Windows Installer Help.*

Syntax

```
DeleteProgramFolder ( szFolderName );
```

Parameters

Table 139 ▪ DeleteProgramFolder Parameters

Parameter	Description
szFolderName	Specifies the name of the folder to remove.

Return Values

Table 140 ▪ DeleteProgramFolder Return Values

Return Value	Description
0	Indicates that the function successfully removed the specified folder.
< 0	Indicates that the function was unable to remove the folder. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

DeleteProgramFolder Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteFolderIcon and DeleteProgramFolder
 * functions.
 *
 * This script deletes the 'Notepad Example' icon from the
 * 'Example folder' folder.  DeleteProgramFolder is then
 * called again to delete this folder.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid folder and icon
 *       on the target system.  To easily create this example
 *       folder and icon, run the AddFolderIcon example #3.
 *
\*---------------------------------------------------------------*/

#define FOLDER "C:\\Windows\\Example folder"
#define ICON   "Notepad Example"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_DeleteProgramFolder(HWND);

function ExFn_DeleteProgramFolder(hMSI)
begin

    // Display the folder.
    ShowProgramFolder (FOLDER, SW_SHOW);
    Delay (3);

    // Delete the 'Notepad Example' icon.
    if (DeleteFolderIcon (FOLDER, ICON) < 0) then
        MessageBox ("DeleteFolderIcon failed.", SEVERE);
    endif;

    // Delete the 'Example folder' icon.
    if (DeleteProgramFolder (FOLDER) < 0) then
        MessageBox ("DeleteProgramFolder failed.", SEVERE);
    endif;

end;
```

DeleteShortcut

The **DeleteShortcut** function removes a shortcut from a folder.

Note ▪ **DeleteShortcut** *cannot be used for Internet shortcuts.*

Syntax

```
DeleteShortcut (szShortcutFolder, szName);
```

Parameters

Table 141 ▪ DeleteShortcut Parameters

Parameter	Description
szShortcutFolder	Specify the name of the folder that contains the shortcut that you want to remove.
szName	Specify the name of the shortcut that you want to remove.

Return Values

Table 142 ▪ DeleteShortcut Parameters

Return Value	Description
0	Indicates that the function successfully deleted the specified shortcut. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.
< 0	Indicates that the function was unable to delete the shortcut.

DeleteShortcut Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteShortcut and DeleteShortcutFolder
 * functions.
 *
 * This script deletes the Notepad Example 3 shortcut from the
 * Example folder 3 folder. DeleteShortcutFolder is then
 * called again to delete this folder.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid folder and shortcut
 *       on the target system. To easily create this example
 *       folder and shortcut, run the CreateShortcut example 3.
 *
\*---------------------------------------------------------------*/

#define FOLDER "C:\\Windows\\Example folder 3"
#define SHORTCUT "Notepad Example 3"
```

```
function OnFirstUIAfter()
begin

    // Display the folder.
    ShowProgramFolder (FOLDER, SW_SHOW);
    Delay (3);

    // Delete the Notepad Example 3 shortcut.
    if (DeleteShortcut (FOLDER, SHORTCUT) < 0) then
        MessageBox ("DeleteShortcut failed.", SEVERE);
    endif;

    // Delete the Example folder 3 shortcut.
    if (DeleteShortcutFolder (FOLDER) < 0) then
        MessageBox ("DeleteShortcutFolder failed.", SEVERE);
    endif;

end;
```

DeleteShortcutFolder

The **DeleteShortcutFolder** function removes a shortcut folder (that is, a subfolder of the Start menu's Programs folder) and its contents, including all shortcuts and all of the shortcut folder's subfolders and their contents. **DeleteShortcutFolder** cannot remove the Programs folder.

Tip ▪ *In a Basic MSI or InstallScript MSI project, this functionality is possibly better achieved by using the Windows Installer RemoveFolders action. Or, if you are simply uninstalling, the Windows Installer engine handles the removal of all files and folders that were created during the installation. For more information on the RemoveFolders action, see the Windows Installer Help.*

Syntax

```
DeleteShortcutFolder ( szFolderName );
```

Parameters

Table 143 ▪ DeleteShortcutFolder Parameters

Parameter	Description
szFolderName	Specify the name of the folder to remove.

Return Values

Table 144 ▪ DeleteShortcutFolder Return Values

Return Value	Description
0	Indicates that the function successfully removed the specified folder.
< 0	Indicates that the function was unable to remove the folder. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

DeleteShortcutFolder Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DeleteShortcut and DeleteShortcutFolder
 * functions.
 *
 * This script deletes the Notepad Example 3 shortcut from the
 * Example folder 3 folder. DeleteShortcutFolder is then
 * called again to delete this folder.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid folder and shortcut
 *       on the target system. To easily create this example
 *       folder and shortcut, run the CreateShortcut example 3.
 *
\*---------------------------------------------------------------*/

#define FOLDER "C:\\Windows\\Example folder 3"
#define SHORTCUT "Notepad Example 3"

function OnFirstUIAfter()
```

```
begin

    // Display the folder.
    ShowProgramFolder (FOLDER, SW_SHOW);
    Delay (3);

    // Delete the Notepad Example 3 shortcut.
    if (DeleteShortcut (FOLDER, SHORTCUT) < 0) then
        MessageBox ("DeleteShortcut failed.", SEVERE);
    endif;

    // Delete the Example folder 3 shortcut.
    if (DeleteShortcutFolder (FOLDER) < 0) then
        MessageBox ("DeleteShortcutFolder failed.", SEVERE);
    endif;

end;
```

DeleteWCHARArray

Description

The **DeleteWCHARArray** function deletes the array of pointers to which pCHARArray points.

Syntax

```
DeleteWCHARArray ( pCHARArray );
```

Parameters

Table 145 ▪ DeleteWCHARArray Parameters

Parameter	Description
pCHARArray	Specifies a pointer to an array of pointers to Unicode character strings. Typically, this pointer is returned by a previous call to GetWCHARArrayFromISStringArray.

Return Values

Table 146 ▪ DeleteWCHARArray Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

DialogSetFont

The **DialogSetFont** function sets the font for InstallScript dialogs that are displayed at run time. This function affects built-in InstallScript dialogs and custom InstallScript dialogs (that is, dialogs that are defined through EzDefineDialog or DefineDialog). This function does not affect dialogs that are displayed by calling the Windows API function MessageBox, which are displayed in the font specified by the user for message boxes (specified using the Windows Control panel). This function does not affect the text in the title bar of any dialog; the font of dialog title bars is set by Windows.

Syntax

```
DialogSetFont (szFontName, nFontSize, nReserved);
```

Parameters

Table 147 ▪ DialogSetFont Parameters

Parameter	Description
szFontName	Specifies the font to be used—for example, “Times New Roman”.
nFontSize	Specifies the font size—for example, 10.
nReserved	Pass 0 (zero) in this parameter. No other value is allowed.

Return Values

DialogSetFont always returns 0 (zero). If the function cannot change the font, dialog text is displayed in the system font.

Additional Information

When changing the font of InstallShield dialogs, use a font that you know is available on any system that the setup is running on. Also, be sure to test the setup on a variety of screen resolutions to ensure that the font works correctly.

DialogSetInfo

Edition ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI (in event-driven InstallScript—not in InstallScript custom actions)*

The **DialogSetInfo** function changes the following display elements in run-time dialogs:

- The image to be displayed
- The style of the check boxes used to obtain end-user selections
- The precision of the values that indicate available hard drive space

You must call **DialogSetInfo** each time that you want to change a particular aspect of a single dialog. Changes that are made by a call to **DialogSetInfo** remain in effect for the remainder of the installation or until they are changed again by a subsequent call to **DialogSetInfo**.

Note ▪ *If your script calls* **DialogSetInfo** *before calling any of the Sd dialog functions, the call to* **DialogSetInfo** *must be preceded by a call to SdInit. If it is not, the call to* **DialogSetInfo** *has no effect.*

Syntax

```
DialogSetInfo ( nInfoType, szInfoString, nParameter );
```

Parameters

Table 148 ▪ DialogSetInfo Parameters

Parameter	Description
nInfoType	Specifies the display feature to be modified. Pass one of the following predefined constants in this parameter: • **DLG_INFO_USEDECIMAL**—By default, the values displayed to indicate feature sizes, available disk space, and required disk space are rounded to the nearest kilobyte or megabyte. Pass this constant when you want these values displayed to the nearest tenth of a kilobyte or megabyte. The following dialogs are affected by this parameter: **FeatureDialog**, **SdFeatureDialog**, **SdFeatureDialog2**, **SdFeatureDialogAdv**, and **SdFeatureMult**. • **DLG_INFO_KUNITS**—By default, the values displayed to indicate feature sizes, available disk space, and required disk space are displayed as a measurement in megabytes. Pass this constant to display these measurements in kilobytes. The following dialogs are affected by this parameter: **FeatureDialog**, **SdFeatureDialog**, **SdFeatureDialog2**, **SdFeatureDialogAdv**, and **SdFeatureMult**. • **DLG_INFO_ALTIMAGE**—Specifies an alternate bitmap to be displayed in the dialog. If nParameter is set to DLG_INFO_ALTIMAGE_VERIFY_BMP or TRUE, szInfoString should specify the image to be displayed in the dialog. This parameter applies to all dialogs that display the standard installation image on the left side of the dialog. For more information, see the nParameter description. Display effects that have been set with SetDisplayEffect do not apply to alternate images, which are always displayed without any special effects. • **DLG_INFO_ALTIMAGE_HIDPI**—Specifies a high DPI image to be displayed in the dialog. High DPI image types supported include BMP, GIF, JPEG, PNG, and TIFF. For best results, in order to ensure the image is centered and shifted to the right of the header, use images with an aspect ratio of 2.5:1, similar to the images shipped with InstallShield (where the actual logo portion of the image is approximately half of the image width and the other half is transparent), and note the following image sizing recommendations: • For a 100% scaled image, your image should be 180x75 • For a 200% scaled image, your image should be 360x150 • For a 250% scaled image, your image should be 450x187, etc. If transparency is required, image types that support transparency (such as PNG) should be used and szInfoString should specify the name of the image to be displayed (optionally including the path) in the dialog. This parameter applies to all dialogs that display the standard installation image on the left side of the dialog. When DLG_INFO_ALTIMAGE_HIDPI is passed in nInfoType, the following parameter values are expected: szInfoString and nParameter. For more information, see the szInfoString and nParameter descriptions. Display effects that have been set with SetDisplayEffect do not apply to alternate images, which are always displayed without any special effects.

Table 148 ▪ DialogSetInfo Parameters (cont.)

Parameter	Description
szInfoString	When DLG_INFO_ALTIMAGE is passed in nInfoType, this parameter specifies the file name of an alternate bitmap to display and, optionally, a set of bitmap attributes. If bitmap attributes are included, the string passed in this parameter should be formatted as follows: `"bitmap file name;transparent flag;3-D flag;<unused>;background color"` ● **Bitmap file name**—Specifies the name of the bitmap file. If the file name is unqualified (that is, if it does not include a drive designation and path), the installation searches for the bitmap in SUPPORTDIR. ● **Transparent flag**—Indicates whether to display the bitmap transparently. When this flag is 1 (true), all portions of the bitmap that are magenta (RGB Value: 255,0,255) will be displayed transparently. The default for this parameter is 0 (non-transparent). ● **3-D flag**—Indicates whether to add a 3-D border around the edges of the static field that contains the bitmap. The default for this parameter is 0 (no 3D border). ● **<unused>**—This portion of the formatted string is ignored, but it must be included. That is, the formatted string must contain four semicolons, with two semicolons between the 3-D flag and the background color. ● **Background color**—Indicates the color to use for the background of the static text field. Note that this color will be visible only if the bitmap is smaller than the static text field in which it appears or if the transparent flag is set to 1 and the bitmap has transparent areas. The background color must be expressed as an RGB value, that is, as three numeric values separated by commas. The following example will display the bitmap from the file `MyBitmap.bmp`, which is located in the SUPPORTDIR folder. The bitmap is placed on a black background and has a three-dimensional border. Any parts of the bitmap that are magenta are displayed in the background color of black. `SUPPORTDIR ^ "MyBitmap.bmp" + ";1;1;;0,0,0"` Note that the standard bitmap measures 57 x 53. An alternate bitmap should be about this size as well. If the bitmap is larger than this size, it will be centered vertically within the title area, and the right side of the bitmap will be aligned with the right side of the dialog. (In the Welcome, SdWelcome, and SdFinish dialogs, the right side of the bitmap will be aligned with the right side of the larger image within which the bitmap appears.) The left side of the bitmap will extend as far to the left of the dialog as necessary. Any part of the bitmap that extends below the title area of the dialog will be clipped. If the bitmap is smaller than 57 x 53 it will be will displayed correctly, but it will not be resized or extended. When DLG_INFO_ALTIMAGE_HIDPI is passed in nInfoType, this parameter specifies the file name of a high DPI image to display, optionally including the path. If no path to the file is specific, the file is assumed to be in SUPPORTDIR. If this file does not exist, DialogSetInfo returns ISERR_FILE_NOT_FOUND. This parameter is ignored when the default image is being restored or when nInfoType is not DLG_INFO_ALTIMAGE or DLG_INFO_ALTIMAGE_HIDPI.

Table 148 ▪ DialogSetInfo Parameters (cont.)

Parameter	Description
nParameter	Operates in conjunction with nInfoType to specify dialog features. When nInfoType is DLG_INFO_ALTIMAGE, pass one of the following predefined constants to specify which bitmap to display: ● **DLG_INFO_ALTIMAGE_VERIFY_BMP**—Specifies that the bitmap that is indicated by szInfoString should be used in subsequent dialogs. Before this bitmap is used, the installation checks for the existence of the bitmap. ● **DLG_INFO_ALTIMAGE_REVERT_IMAGE (-1)**—Specifies that subsequent dialogs should display the default bitmap. The installation does not check for the existence of a bitmap. ● **TRUE**—Specifies that the bitmap that is indicated by szInfoString should be used in subsequent dialogs. The installation does not check for the existence of the bitmap. When nInfoType is DLG_INFO_ALTIMAGE_HIDPI, nParameter specifies the DPI scaling percentage. For example, pass 200 for a 200% image scale, 150 for a 150% scale, etc. The minimum supported scaling value is 25. If 0 is passed for this value, no image is displayed. If DLG_INFO_ALTIMAGE_REVERT_IMAGE is passed, the previous image used is displayed. When nInfoType is either DLG_INFO_KUNITS or DLG_INFO_USEDECIMAL, pass one of the following predefined constants to specify how sizes should be displayed: ● **TRUE**—Specifies that sizes should be displayed as indicated by nInfoType. ● **FALSE**—Specifies that sizes should be displayed in the default style.

Return Values

Table 149 ▪ DialogSetInfo Return Values

Return Value	Description
ISERR_SUCCESS (0)	The function successfully set the specified style. If DLG_INFO_ALTIMAGE_VERIFY_BMP was passed in nParameter, this return value also indicates that the bitmap was found.
< ISERR_SUCCESS (< 0)	An unspecified error occurred when the function attempted to set the dialog information.
ISERR_FILE_NOT_FOUND (0x80070004)	The image that was indicated by szInfoString was not found.

Additional Information

To preview the effects of a call to **DialogSetInfo** in an InstallScript installation, run the Dialog Sampler (which is available from the Tools menu's InstallScript submenu), change the attributes of the dialogs (by clicking the Attributes button), then examine the changes in dialogs such as **SdFeatureMult**.

DialogSetInfo Example

***Edition** ▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI (in event-driven InstallScript—not in InstallScript custom actions)*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DialogSetInfo function.
 *
 * This script calls AskText twice.  On the first call the
 * AskText dialog displays the default bitmap.  Then
 * DialogSetInfo is called to specify an alternate bitmap;
 * that bitmap is then displayed on the second call to AskText.
 *
 * Note: Before running this script, set the defined constant
 *       FULL_BMP_PATH so that it references a bitmap file
 *       included in the Support Files/Billboards view.
 *
\*---------------------------------------------------------------*/

#define FULL_BMP_PATH SUPPORTDIR ^ "MyBitmap.bmp"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

function OnBegin()
    STRING  szText, szMsg, szBmpPath;
    STRING  svReturnText;
    NUMBER  nReturn;
begin

start:

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Display the AskText dialog with its default bitmap.
    szText  = "Default Bitmap.";
    szMsg   = "The bitmap on the left is the default.";
    nReturn = AskText (szMsg, szText, svReturnText);

    // Enable the Back button.
    Enable (BACKBUTTON);

    szBmpPath = FULL_BMP_PATH;

    // Set the alternate bitmap for the AskText dialog.
    DialogSetInfo (DLG_INFO_ALTIMAGE, szBmpPath, TRUE);

    // Set the text for display in the AskText dialog.
```

```
    szText = "Alternate Bitmap.";
    szMsg  = "The bitmap on the left is a custom bitmap.  This alternate " +
             "bitmap was displayed using the DLG_INFO_ALTBITMAP option in " +
             "DialogSetInfo.";

    // Display the AskText dialog with the alternate
    // bitmap.
    nReturn = AskText (szMsg, szText, svReturnText);

    // Handle Back button.
    if (nReturn = BACK) then
        // Restore the default bitmap setting.
        DialogSetInfo (DLG_INFO_ALTIMAGE, "", DLG_INFO_ALTIMAGE_REVERT_IMAGE);
        goto start;
    endif;

end;
```

Dialog Styles

Four different dialog styles are available:

- CHECKBOX Dialog Style
- CHECKBOX95 Dialog Style
- CHECKMARK Dialog Style
- CHECKLINE Dialog Style

CHECKBOX Dialog Style

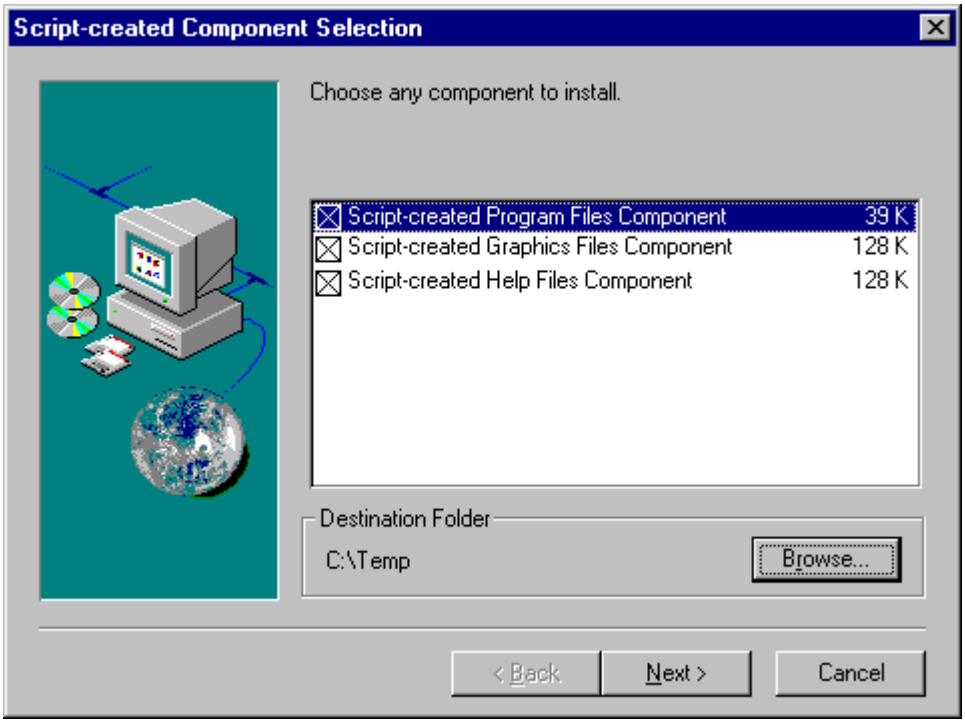

Figure 1: CHECKBOX Dialog Style

CHECKBOX95 Dialog Style

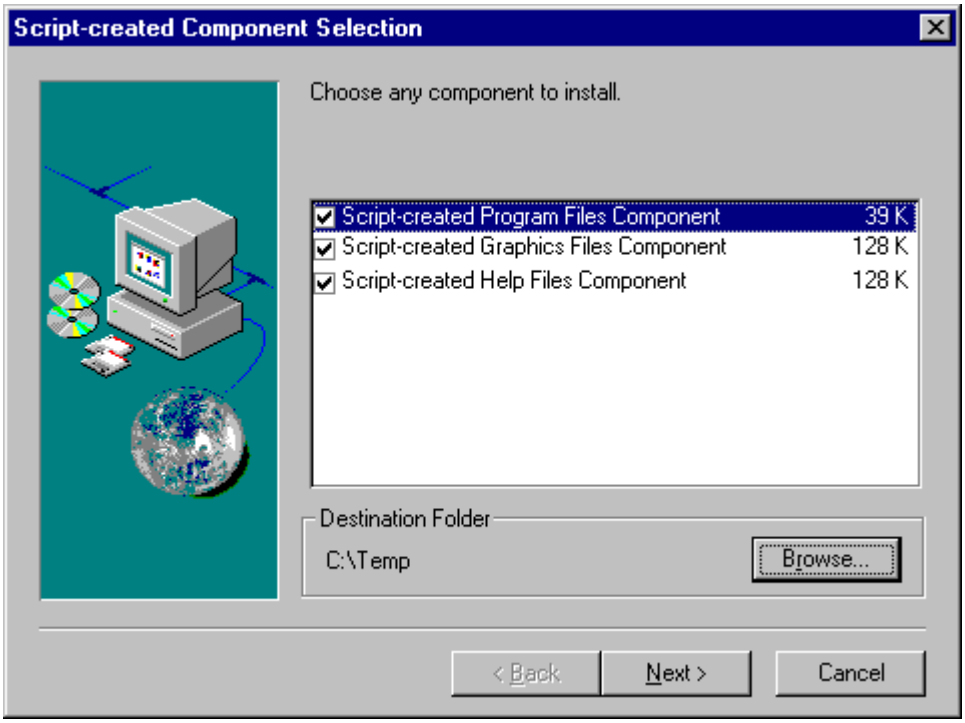

Figure 2: CHECKBOX95 Dialog Style

CHECKMARK Dialog Style

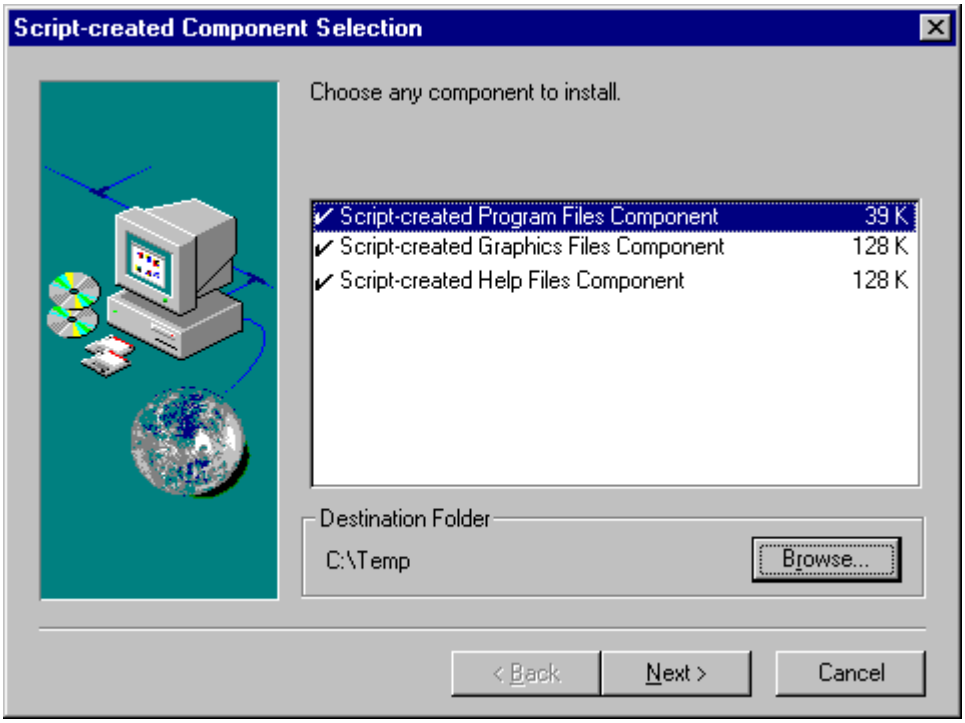

Figure 3: CHECKMARK Dialog Style

CHECKLINE Dialog Style

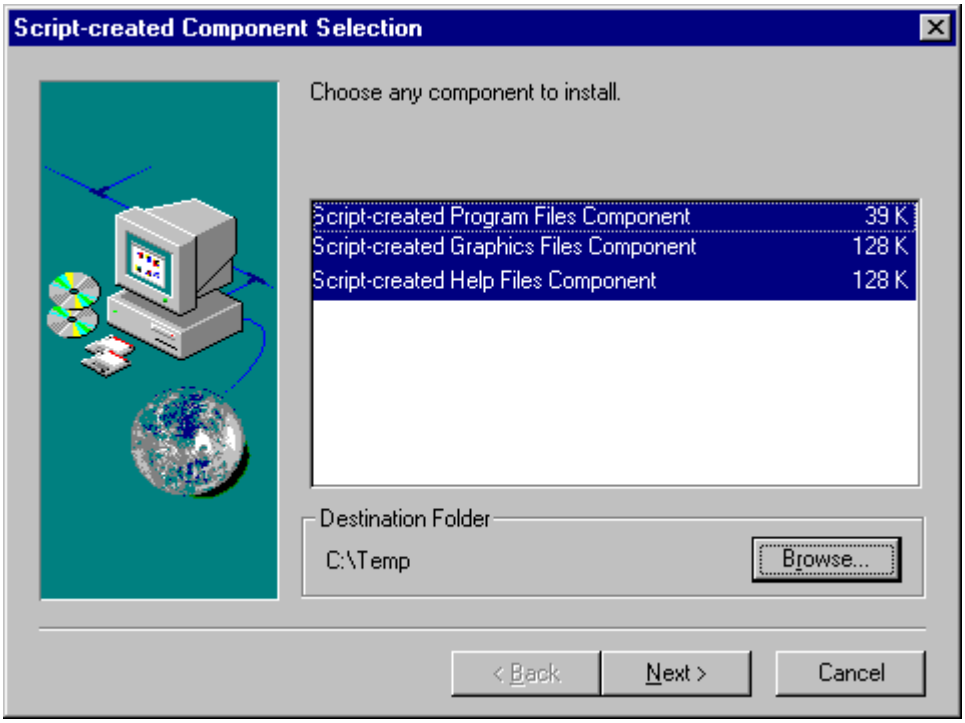

Figure 4: CHECKLINE Dialog Style

DIFxDriverPackageGetPath

Project ▪ *This function applies to InstallScript projects only. This function is not required in InstallScript MSI projects since DIFx can be called by the Windows Installer in those projects.*

The **DIFxDriverPackageGetPath** function retrieves the fully qualified path to a driver store .inf file.

Note ▪ *This function calls the DIFxAPI function DriverPackageGetPath. See the DIFxAPI documentation for additional details regarding this function and its parameters and return values.*

Syntax

```
DIFxDriverPackageGetPath( byval string szDriverPackageInfPath, byref string svDestInfPath, byval number
    nISFlags );
```

Parameters

Table 150 ▪ DIFxDriverPackageGetPath Parameters

Parameter	Description
szDriverPackageInfPath	Specifies the fully qualified path to a driver package .inf file for which to retrieve the corresponding driver store .inf file.
svDestInfPath	Specifies the fully qualified path of the driver store .inf file that corresponds to the driver package .inf file supplied by DriverPackageInfPath.
nISFlags	Specifies InstallScript-specific flags. The following flags are available: • **0**—Default behavior • **ISDIFX_OPTION_DONT_RESOLVE_TEXTSUBS**—By default, the function resolves any text substitutions found in szDriverPackageInfPath. However, if this flag is specified, text substitutions are not resolved.

Return Values

Table 151 ▪ DIFxDriverPackageGetPath Return Values

Return Value	Description
ISERR_SUCCESS	The function was successful.
< ISERR_SUCCESS	The function failed. If the return value from **DriverPackageGetPath** is a Win32 error (a positive return value), ISERR_WIN_BASE is added to the error to ensure that it is < ISERR_SUCCESS. You can use the following code to get the original Win32 error, if desired: `if( nResult & ISERR_WIN_BASE ) then` `nResult = nResult - ISERR_WIN_BASE;` `endif;` For a list of specific errors, see DIFxAPI Errors (InstallScript Projects).

Additional Information

For more information on DIFx and DIFxAPI, see the MSDN Library.

DIFxDriverPackageInstall

Project ▪ *This function applies to InstallScript projects only. This function is not required in InstallScript MSI projects since DIFx can be called by the Windows Installer in those projects.*

The **DIFxDriverPackageInstall** function installs a driver package in the driver store and then installs the driver in the system. If all of the files associated with the driver are in a single component or you can guarantee that all appropriate driver files will be installed when this component's Installed event is called, then the recommended place for calling this function is in the component containing the DIFx driver's Installed event. Otherwise, call this function in the installation's OnMoved event.

If uninstall logging is enabled when this function is called, the driver installed by this function is logged for uninstallation and is automatically removed by the OnUninstallingDIFxDriverFile event when the application is removed.

Note ▪ *This function calls the DIFxAPI function DriverPackageInstall. See the DIFxAPI documentation for additional details regarding this function and its parameters and return values.*

Syntax

```
DIFxDriverPackageInstall( byval string szDriverPackageInfPath, byval number nFlags, byval number
    nISFlags  );
```

Parameters

Table 152 ▪ DIFxDriverPackageInstall Parameters

Parameter	Description
szDriverPackageInfPath	String that supplies the fully qualified path to the driver package .inf file of the driver package to install.
nFlags	One or more flags that control the installation operation. In most cases you can specify 0 because the installer will automatically add the appropriate flags. The following additional flags can be specified manually:  ***Note ▪*** *These flags are defined by and passed directly to the Flags parameter of the DIFxAPI function DriverPackageInstall. See the DIFxAPI documentation for additional information regarding these flags.* ● **DRIVER_PACKAGE_REPAIR**—Re-installs the specified driver package in the driver store even if the driver package is already installed. This flag is specified automatically in repair mode. ● **DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT**—(Applies only to PnP function drivers) Preinstalls and installs the driver only if the driver package is a better match to a device in the device tree. ● **DRIVER_PACKAGE_FORCE**—(Applies only to PnP function drivers) By default, installs a new driver for device only if the new driver is a better match for the device than the driver currently installed for the device. If you specify this flag, the function preinstalls and installs the specified driver package even if the driver package currently installed for a device is a better match for the device than the specified driver package. ● **DRIVER_PACKAGE_SILENT**—Suppresses the display of user dialogs. If a user interaction is required to continue the installation, for example, in response to a driver signing dialog, the installation operation fails without displaying a user message. The function returns an error code that indicates the cause of the failure. ● **DRIVER_PACKAGE_LEGACY_MODE**—Preinstalls and installs unsigned driver packages and driver packages that cannot be completely preinstalled because there are files that cannot be found.

Table 152 ▪ DIFxDriverPackageInstall Parameters (cont.)

Parameter	Description
nISFlags	Specifies InstallScript-specific flags. The following flags are available: • **0**—Default behavior • **ISDIFX_OPTION_DONT_ASSOCIATE**—By default, associates the installed driver with the application being installed. If this flag is specified the driver is not associated with any application. • **ISDIFX_OPTION_NO_REPAIR**—By default, the function automatically adds the DRIVER_PACKAGE_REPAIR flag when calling the **DriverPackagePreinstall** function if REINSTALLMODE is TRUE. If this flag is specified, DRIVER_PACKAGE_REPAIR is not added automatically. However, it is passed if it is specified in nFlags. • **ISDIFX_OPTION_LOG_IN_DRIVER_PACKAGE_PATH**—By default, the function logs the installed driver for uninstallation in the installed driver cache. If this flag is specified, the driver is logged in the package path instead. • **ISDIFX_OPTION_DONT_RESOLVE_TEXTSUBS**—By default, the function resolves any text substitutions found in szDriverPackageInfPath. However, if this flag is specified, text substitutions are not resolved.

Return Values

Table 153 ▪ DIFxDriverPackageInstall Return Values

Return Value	Description
ISERR_SUCCESS	The function was successful.
< ISERR_SUCCESS	The function failed. If the return value from **DriverPackageInstall** is a Win32 error (a positive return value), ISERR_WIN_BASE is added to the error to ensure that it is < ISERR_SUCCESS. You can use the following code to get the original Win32 error, if desired: `if( nResult & ISERR_WIN_BASE ) then` `nResult = nResult - ISERR_WIN_BASE;` `endif;` For a list of specific errors, see DIFxAPI Errors (InstallScript Projects).

Additional Information

- For more information on DIFx and DIFxAPI, see the MSDN Library.
- When a driver is installed by **DIFxDriverPackageInstall** or uninstalled by **DIFxDriverPackageUninstall**, the driver is associated with the application being installed by the installation by default. This association can be disabled by specifying ISDIFX_OPTION_DONT_ASSOCIATE. These functions use the following script variables to determine the application to associate:

- ISDIFXAPPID
- IFX_PRODUCT_DISPLAY_NAME
- IFX_PRODUCT_NAME
- IFX_COMPANY_NAME

DIFxDriverPackagePreinstall

Project ▪ *This function applies to InstallScript projects only. This function is not required in InstallScript MSI projects since DIFx can be called by the Windows Installer in those projects.*

The **DIFxDriverPackagePreinstall** function preinstalls a driver package for a Plug and Play (PnP) function driver in the driver store and installs the .inf file for the driver package in the system .inf file directory. If all of the files associated with the driver are in a single component or you can guarantee that all appropriate driver files will be installed when this component's Installed event is called, then the recommended place for calling this function is in the component containing the DIFx driver's Installed event. Otherwise, call this function in the installation's OnMoved event.

If uninstall logging is enabled when this function is called, the driver pre-installed by this function is logged for uninstallation and is automatically removed by the OnUninstallingDIFxDriverFile event when the application is removed.

Note ▪ *This function calls the DIFxAPI function DriverPackagePreinstall. See the DIFxAPI documentation for additional details regarding this function and its parameters and return values.*

Syntax

```
DIFxDriverPackagePreinstall( byval string szDriverPackageInfPath, byval number nFlags, byval number
    nISFlags );
```

Parameters

Table 154 ▪ DIFxDriverPackagePreinstall Parameters

Parameter	Description
szDriverPackageInfPath	String that supplies the fully qualified path to the driver package .inf file of the driver package to pre-install.
nFlags	One or more flags that control the installation operation. In most cases, specify 0 to have the installer automatically add the appropriate flags. The following additional flags can be specified manually:  ***Note ▪*** *These flags are defined by and passed directly to the Flags parameter of the DIFxAPI function DriverPackagePreinstall. See the DIFxAPI documentation for additional information regarding these flags.* ● **DRIVER_PACKAGE_REPAIR**—Re-installs the specified driver package in the driver store even if the driver package is already installed. This flag is specified automatically in repair mode. ● **DRIVER_PACKAGE_ONLY_IF_DEVICE_PRESENT**—(Applies only to PnP function drivers) Preinstalls and installs the driver only if the driver package is a better match to a device in the device tree. ● **DRIVER_PACKAGE_FORCE**—(Applies only to PnP function drivers) By default, installs a new driver for device only if the new driver is a better match for the device than the driver currently installed for the device. If you specify this flag, the function preinstalls and installs the specified driver package even if the driver package currently installed for a device is a better match for the device than the specified driver package. ● **DRIVER_PACKAGE_SILENT**—Suppresses the display of user dialogs. If a user interaction is required to continue the installation, for example, in response to a driver signing dialog, the installation operation fails without displaying a user message. The function returns an error code that indicates the cause of the failure. ● **DRIVER_PACKAGE_LEGACY_MODE**—Preinstalls and installs unsigned driver packages and driver packages that cannot be completely preinstalled because there are files that cannot be found.

Table 154 ▪ DIFxDriverPackagePreinstall Parameters (cont.)

Parameter	Description
nISFlags	Specifies InstallScript-specific flags. The following flags are available: • **0**—Default behavior • **ISDIFX_OPTION_NO_REPAIR**—By default, the function automatically adds the DRIVER_PACKAGE_REPAIR flag when calling **DriverPackagePreinstall** if REINSTALLMODE is TRUE. If this flag is specified, DRIVER_PACKAGE_REPAIR is not added automatically. However, it is passed if it is specified in nFlags. • **ISDIFX_OPTION_LOG_IN_DRIVER_PACKAGE_PATH**—By default, the function logs the installed driver for uninstallation in the installed driver cache. If this flag is specified, the driver is logged in the package page instead. • **ISDIFX_OPTION_DONT_RESOLVE_TEXTSUBS**—By default, the function resolves any text substitutions found in **szDriverPackageInfPath**. If this flag is specified, text substitutions are not resolved.

Return Values

Table 155 ▪ DIFxDriverPackagePreinstall Return Values

Return Value	Description
ISERR_SUCCESS	The function was successful.
< ISERR_SUCCESS	The function failed. If the return value from **DriverPackagePreinstall** is a Win32 error (a positive return value), ISERR_WIN_BASE is added to the error to ensure that it is < ISERR_SUCCESS. You can use the following code to get the original Win32 error, if desired: `if( nResult & ISERR_WIN_BASE ) then` `nResult = nResult - ISERR_WIN_BASE;` `endif;` For a list of specific errors, see DIFxAPI Errors (InstallScript Projects).

Additional Information

For more information on DIFx and DIFxAPI, see the MSDN Library.

DIFxDriverPackageUninstall

Project *▪ This function applies to InstallScript projects only. This function is not required in InstallScript MSI projects since DIFx can be called by the Windows Installer in those projects.*

The **DIFxDriverPackageUninstall** function uninstalls the specified driver package from the system and removes the driver package from the driver store.

It is not necessary to call this function explicitly for drivers installed with **DIFxDriverPackageInstall** or **DIFxDriverPackagePreinstall** while uninstall logging is enabled as these drivers are automatically removed by the OnUninstallingDIFxDriverFile event.

Note *▪ This function calls the DIFxAPI function DriverPackageUninstall. See the DIFxAPI documentation for additional details regarding this function and its parameters and return values.*

Syntax

```
DIFxDriverPackageUninstall( byval string szDriverPackageInfPath, byval number nFlags, byval number
    nISFlags );
```

Parameters

Table 156 ▪ DIFxDriverPackageUninstall Parameters

Parameter	Description
szDriverPackageInfPath	String that supplies the fully qualified path to the driver package .inf file of the driver package to pre-install.
nFlags	One or more flags that control the installation operation. In most cases, specify 0 to have the installer automatically add the appropriate flags. The following additional flags can be specified manually:  ***Note ▪*** *These flags are defined by and passed directly to the Flags parameter of the DIFxAPI function DriverPackageUninstall. See the DIFxAPI documentation for additional information regarding these flags.* ● **DRIVER_PACKAGE_FORCE**—(Applies only to PnP function drivers) By default, installs a new driver for device only if the new driver is a better match for the device than the driver currently installed for the device. If you specify this flag, the function preinstalls and installs the specified driver package even if the driver package currently installed for a device is a better match for the device than the specified driver package. ● **DRIVER_PACKAGE_SILENT**—Suppresses the display of user dialogs. If a user interaction is required to continue the installation, for example, in response to a driver signing dialog, the installation operation fails without displaying a user message. The function returns an error code that indicates the cause of the failure. ● **DRIVER_PACKAGE_DELETE_FILES**—Removes the binary files from a system that were copied to the system when the driver package was installed. The function removes a binary file from the system only if the binary file is identical to the corresponding binary file in the driver store.  ***Caution ▪*** *Use this flag with caution. Only use this flag if you can verify that a binary file in the system is not required by any other driver package or application.*
nISFlags	Specifies InstallScript-specific flags. The following flags are available: ● **0**—Default behavior ● **ISDIFX_OPTION_DONT_ASSOCIATE**—By default, the function associates the installed driver with the application being installed. If this flag is specified, the driver is not associated with any application. ● **ISDIFX_OPTION_DONT_RESOLVE_TEXTSUBS**—By default, the function resolves any text substitutions found in szDriverPackageInfPath. If this flag is specified, text substitutions are not resolved.

Return Values

Table 157 ▪ DIFxDriverPackageUninstall Return Values

Return Value	Description
ISERR_SUCCESS	The function was successful.
< ISERR_SUCCESS	The function failed. If the return value from **DriverPackageUninstall** is a Win32 error (a positive return value), ISERR_WIN_BASE is added to the error to ensure that it is < ISERR_SUCCESS. You can use the following code to get the original Win32 error, if desired: `if( nResult & ISERR_WIN_BASE ) then` `nResult = nResult - ISERR_WIN_BASE;` `endif;` For a list of specific errors, see DIFxAPI Errors (InstallScript Projects).

Additional Information

- For more information on DIFx and DIFxAPI, see the MSDN Library.
- When a driver is installed by **DIFxDriverPackageInstall** or uninstalled by **DIFxDriverPackageUninstall**, the driver is associated with the application being installed by the installation by default. This association can be disabled by specifying ISDIFX_OPTION_DONT_ASSOCIATE. These functions use the following script variables to determine the application to associate:
  - ISDIFXAPPID
  - IFX_PRODUCT_DISPLAY_NAME
  - IFX_PRODUCT_NAME
  - IFX_COMPANY_NAME

Disable

The **Disable** function deactivates the user interface object or setup feature specified by the parameter nConstant.

If your script calls the **Disable** function to disable the Next or Back button, that button is disabled in all dialogs displayed after that function call. To re-enable the Next or Back button, you must call Enable with the corresponding constant.

Syntax

```
Disable ( nConstant );
```

Parameters

Table 158 ▪ Disable Parameters

Parameter	Description
nConstant	Specifies the user interface object or operational feature to disable. Pass one of the following predefined constants in this parameter: • **BACKBUTTON**—Disables (grays out) the Back button that is displayed in some built-in dialogs. The Back button is enabled by default. • **BACKGROUND**—Disables and hides the installation's main background window. Note that this parameter has no effect when the installation is in full-screen mode. • **BILLBOARD**—Suppresses the display of billboards during an installation. • **CANCELBUTTON**—Disables (grays out) the Cancel button that is displayed in some built-in dialogs. • **DIALOGCACHE**—Disables the dialog cache mechanism. For more information about dialog caching, see Enable.  ***Note ▪*** *DIALOGCACHE has no effect on dialogs that do not have a Next or Back button.* • **DLL_DIRECTORY_SUPPORTDIR**—Disables the predefined constant will remove the support folder from the DLL load search path. • **HOURGLASS**—Causes the mouse cursor to change from the "Busy" cursor (an hourglass by default), to a normal cursor (a pointer by default).

Table 158 ▪ Disable Parameters (cont.)

Parameter	Description
nConstant (cont.)	• **LOGGING**—Disables the logging of uninstallation information so that no information is recorded in the uninstallation log file. Note that logging is enabled automatically by default. If you need to disable logging, it is recommended that you do so by calling **Disable** with the LOGGING constant immediately before performing operations that should not be logged for uninstallation. Then you can re-enable logging by calling **Enable** with the LOGGING constant. For more information about logging, see InstallScript Functions that Are Logged for Uninstallation.  ***Tip ▪*** *To prevent changes that are made by a component from being undone during uninstallation, select No for the Uninstall setting of a component in an InstallScript project, or select Yes for the Permanent setting of a component in an InstallScript MSI project.* • **NEXTBUTTON**—Disables (grays out) the Next button that is displayed in some built-in InstallScript dialogs. On most dialogs, the Next button is enabled by default.  ***Note ▪*** *Calling* **Disable** *with the NEXTBUTTON constant has no effect on the* **SdCustomerInformation**, **SdCustomerInformationEx**, **SdRegisterUser**, *or* **SdRegisterUserEx** *dialogs since they enable and disable the Next button internally.* • **PCRESTORE**—Disables System Restore compatibility, which is enabled by default. • **REGISTRYFUNCTIONS_USETEXTSUBS**—Disables text substitutions in strings that are passed to registry functions; this is enabled by default. Use this option when working with registry function strings that contain opening angle brackets (<) and closing angle brackets (>) but that should not be interpreted as text substitutions. • **SELFREGISTERBATCH**—Disables the “batch method” for registering files copied with XCopyFile and the SELFREGISTER constant. The batch method is enabled by default. When the batch method is disabled, files are registered immediately when copied with **XCopyFile** and the SELFREGISTER constant. If the batch method is enabled, registration is postponed until data transfer takes place.

Table 158 ▪ Disable Parameters (cont.)

Parameter	Description
nConstant (cont.)	• **SERVICE_DIFX_32**—Disables DIFx support for 32-bit platforms. • **SERVICE_DIFX_AMD64**—Disables DIFx support for AMD 64-bit platforms. • **SERVICE_DIFX_IA64**—Disables DIFx support for Itanium 64-bit platforms. • **SERVICE_ISFONTREG**—Disables global font registration. For details, see Installing Fonts Through InstallScript and InstallScript Object Projects. Global font registration is enabled by default; once it is disabled, it cannot be re-enabled from the script. • **STATUS**—Disables and hides the progress indicator (status bar). • **STATUSBBRD**—Disables and hides the progress dialog that includes a billboard. • **STATUSDLG**—Disables and hides the dialog style progress indicator (status bar). • **STATUSEX**—Disables the display of the default Setup Status dialog. • **STATUSOLD**—Disables and hides the old style progress indicator (status bar). • **UPDATE_SERVICE_INSTALL**—This constant is obsolete. • **USE_LOADED_SKIN**—Intended for use with custom dialogs that will not work with dialog skins (for example, dialogs that are not the standard size); not recommended for use with built-in dialogs. Disables the use of the skin that you specified in the Specify Skin setting on the Build tab for the release in the Releases view. (If you selected the **<Do not use any skin> option** in that setting, this constant has no effect.) Disabling of the skin applies only to dialogs that are displayed after you call `Disable(USE_LOADED_SKIN);` in your InstallScript code. To disable skin use for a custom dialog, you must call `Disable(USE_LOADED_SKIN);` before calling **WaitOnDialog**. To re-enable skin use, call `Enable(USE_LOADED_SKIN);` in your script.  ***Project ▪*** *The USE_LOADED_SKIN constant is applicable to InstallScript projects.* • **WOW64FSREDIRECTION**—Disables 64-bit Windows file system redirection. You may need to do this before installing files to the WINSYSDIR64 destination. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.

Return Values

Table 159 ▪ Disable Return Values

Return Value	Description
0	Indicates that the function successfully disabled the user interface object or setup feature specified by the parameter nConstant.
< 0	Indicates that the function was unable to disable the user interface object or setup feature specified by the parameter nConstant.

Disable Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Disable and Enable functions.
 *
 * This script displays two dialogs.  In the first box, the
 * Back button is disabled.  In the second box, the Next button
 * is disabled and the Back button enabled.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Disable(HWND);

function ExFn_Disable(hMSI)
begin

start:

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // The following displays a dialog with the Back button disabled.
    SetupType ("", "", "", TYPICAL, 0);

    // Enable the Back button,
    Enable (BACKBUTTON);

    // Next button is disabled.
    Disable (NEXTBUTTON);

    // The following displays a dialog with only the Back button enabled.
    if (SetupType ("", "", "", TYPICAL, 0) = BACK) then
        // If the Back button is pressed, the Next button is enabled.
        Enable (NEXTBUTTON);
        goto start;
    endif;
```

```
end;
```

Do

The **Do** function executes the currently defined EXIT and HELP handlers, giving you greater control over these handlers, which are normally executed only when the user presses the F1 key (HELP) or the Cancel button (EXIT). Using the **Do** function, you can execute EXIT or HELP handlers in response to custom dialog events or to any user input from built-in dialogs. You can also use the **Do** function during script development to test your EXIT and HELP handlers.

The **Do** function can also register queued self-registering files. Files are queued for registration using the "batch method" for installing self-registering files. When you call `Do(SELFREGISTRATIONPROCESS)`, the installation carries out self-registration of all queued files, even if one of them fails. (Note that when you call FeatureTransferData, `Do(SELFREGISTRATIONPROCESS)` is called automatically after the files are installed but before the **FeatureTransferData** call returns. If you use an event-based script, the **FeatureTransferData** function is called by the default code for the **OnMoveData** event handler function.)

Syntax

```
Do (nOperation);
```

Parameters

Table 160 ▪ Do Parameters

Parameter	Description
nOperation	Specifies the type of operation to perform. Pass one of the following predefined constants in this parameter: • **EXIT**—Initiates the Exit operation. If no EXIT handler is defined, the default Exit dialog is displayed. • **HELP**—Initiates the Help operation. If no HELP handler is defined, the function takes no action. • **SELFREGISTRATIONPROCESS**—Registers all self-registering files that have been queued for registration.

Return Values

Table 161 ▪ Do Return Values

Return Value	Description
0	The **Do** function successfully initiated the specified operation.
< 0	The **Do** function was unable to initiate the specified operation.

Additional Information

- The **Do** function allows the currently defined HELP and EXIT handlers to execute without the end user pressing F1. The **Do** function also provides more versatility than the goto statement, which can be used to call HELP and EXIT handler labels. The goto statement cannot be used in all circumstances, but the **Do** function can be called virtually anytime. For more information on default and custom HELP and EXIT handlers, see HandlerEx.
- If **Do** fails for any reason, it returns -1. The names of the files that failed to self-register are stored in the InstallScript system variable ERRORFILENAME, and each is separated by a semicolon (;).

Do Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Do function.
 *
```

```
 * This script calls Do to test the HELP and EXIT handler.
 *
 * Note: Before running this script, set the preprocessor
 *       constant so that it references a valid
 *       help file on the target system.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

#define HELPFILE WINDIR^"Help\\Windows.chm"

    export prototype ExFn_Do(HWND);

function ExFn_Do(hMSI)
begin

    // Install the exit handler.
    HandlerEx (EXIT, Exit_Handler);

    // Install the help handler.
    HandlerEx (HELP, Help_Handler);

    // Execute loop forever -- or until user aborts.
    while (TRUE)
        if (AskYesNo ("View the help?", NO) = YES) then
            // Execute the help handler.
            Do (HELP);
        endif;

        // Execute the exit handler.
        Do (EXIT);
    endwhile;

// The exit handler.
Exit_Handler:

    // Ask for confirmation to abort.
    if (AskYesNo ("Do you really want to exit?", NO) = YES) then
        abort;
    else
        // Continue if not sure.
        return;
    endif;

// The help handler.
Help_Handler:

    // Display the help.
    LaunchApplication (HELPFILE, "", "", SW_SHOW, INFINITE, LAAW_OPTION_WAIT);
    return;

end;
```

DoInstall

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **DoInstall** function launches another InstallShield installation that has a valid setup executable file (.exe). The second installation is executed immediately when this function is called. The third parameter, nOptions, specifies various options, including whether the installation should wait until the launched application terminates before continuing.

Note *▪* **DoInstall** *cannot be used directly to launch a .msi file. In addition, because* **DoInstall** *adds command-line parameters that are specific to InstallShield installations,* **DoInstall** *should not be used to launch a non-InstallShield installation. To launch a non-InstallShield installation, use the* **LaunchAppllication** *function.*

Syntax

```
DoInstall ( byval string szSetupExe, byval string szCmdLine, byval number nOptions );
```

Parameters

Table 162 ▪ DoInstall Parameters

Parameter	Description
szSetupExe	Specifies the fully qualified name—including a drive designation and complete path—of the setup executable file to be launched. Alternatively, you can specify the compiled script file of the installation to be launched. For InstallScript MSI installations, you can specify the installation's .msi package. Note that in order to be able to use **DoInstall**, your installation must include a valid setup executable file named `Setup.exe`, or an alternative name, as described in Additional Information.
szCmdLine	Specifies the command line for the launched installation. You can specify any valid startup InstallShield command line for this parameter. Note that **DoInstall** automatically adds some command-line switches, depending on the nOptions specified. ***Note*** *▪ Unlike with previous versions of InstallShield, if you are passing command-line parameters to a child InstallScript MSI installation, you must pass these options through the `/z` parameter (as when launching the installation directly).*

Table 162 ▪ DoInstall Parameters (cont.)

Parameter	Description
nOptions	Specifies options for launching the installation. You can specify any valid LaunchApplication option, including: • LAAW_OPTION_NOWAIT • LAAW_OPTION_WAIT You can also specify some additional options that apply only to **DoInstall**: • **DOINSTALL_OPTION_NOHIDEPROGRESS**—Specifies that the entire initialization user interface, including the initial progress dialog and splash screen (if any), should be displayed for the child installation. If this option is not specified, **DoInstall** automatically hides the initialization user interface of the child installation by using the `/hide_progress` option. • **DOINSTALL_OPTION_NOHIDESPLASH**—Specifies that the splash screen (if any) should be displayed for the child installation that is being launched. • **DOINSTALL_OPTION_NOLANGSWITCH**—Specifies that the `/l` switch will not be specified. By default, **DoInstall** adds the `/l` switch to szCmdLine so that the launched installation runs in the same language as the launching installation. Note that if the child installation does not support the language in which the parent installation is running (as determined by calling **Is(LANGUAGE_SUPPORTED)**), the `/l` switch is not added. • **DOINSTALL_OPTION_NOSETBATCHINSTALL**—Specifies that **DoInstall** should not use the LAAW_OPTION_SET_BATCH_INSTALL option to determine whether the child installation performed actions that require a reboot. Thus, BATCH_INSTALL for the parent installation will not be changed by **DoInstall**, regardless of the actions of the child installation. By default, DoInstall automatically uses the LAAW_OPTION_SET_BATCH_INSTALL option. You can combine these constants by using the bitwise OR operator (|). Note that combining DOINSTALL_OPTION_NOSETBATCHINSTALL with LAAW_OPTION_SET_BATCH_INSTALL may lead to unexpected results.

Return Values

Table 163 ▪ DoInstall Return Values

Return Value	Description
0	If **DoInstall** was called with LAAW_OPTION_WAIT as the third argument, the installation launched by **DoInstall** terminated successfully. 0 is always returned when **DoInstall** is called with LAAW_OPTION_NOWAIT as the third argument. Control resumes in the calling installation with the statement that follows the **DoInstall** function.
ISERR_SETUP_CANCELED (0x80042000)	The InstallScript installation launched by **DoInstall** with LAAW_OPTION WAIT as the third argument exited with the abort keyword. This usually indicates that the user canceled the installation.
-3	The InstallScript MSI installation launched by **DoInstall** with LAAW_OPTION WAIT as the third argument exited with the abort keyword. This usually indicates that the user canceled the installation.
All other negative values	An unspecified error has occurred. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

- By default, **DoInstall** automatically attempts to launch the specified setup executable file. If a non-executable file name is specified in szSetupExe, the function attempts to launch `Setup.exe` in the specified folder. If the installation's executable file has a name other than *Setup*, the launched installation's `Setup.ini` file must have the new name of `Setup.exe` in the [Startup] section's LauncherName key.

  

  Project **▪** *If you specify a value for the* ***Setup File Name*** *setting for a release in the Releases view of an InstallScript MSI project and then build the release, InstallShield automatically adds file name value to* `Setup.ini`*. If you rename the setup launcher executable file in an InstallScript project, you must add the name to the* `Setup.ini` *file manually.*

- When the installation is run from any removable media, such as a CD or a DVD, the `Setup.exe` file on Disk1 may not be available during the entire installation. (If `Setup.exe` becomes unavailable while it is running, the operating system sometimes displays a prompt to request that the end user insert the correct disk, and this may cause the installation to fail.) Therefore, to avoid this problem, the `Setup.exe` file is copied to a Temp folder, and the installation is relaunched from there. The original `Setup.exe` then terminates. However, when this happens, **DoInstall** behaves as if the installation has completed, and it does not wait.

  To avoid this issue, you may want to use the `/clone_wait` parameter when you are launching the child installation; when this occurs, the launched installation keeps the original launched process running, and the parent installation then waits. Note, however, that this may cause problems if the original CD containing `Setup.exe` is not available throughout the entire installation. This includes multiple-CD installations, where the first CD is not available during some parts of the installation.

The only other way to avoid this problem is to add code that determines the ID of the child processes of the launched process and wait for the child process to complete.

DoInstall Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DoInstall function.
 *
 * This example script runs the MessageBox example script
 * using the DoInstall function.
 *
 * Note: To make this example work correctly you must also do
 *       the following:
 *
 *       1.   Create a second setup project.  This setup will be
 *            launched by the DoInstall function. This project
 *            should include an up-to-date built release.
 *
 *       2.   Create a new folder named 'Second' in the disk1
 *            folder of this setup.
 *
 *       3.   Copy the disk# folder(s) from the second setup
 *            into the newly created 'Second' folder.
 *
 *      The second setup should then be launched successfully.
 *
\*---------------------------------------------------------------*/

#define SECOND_INSTALL_PATH SRCDIR ^ "Second\\Disk1"
#define SECOND_INSTALL_FILENAME "Setup.exe"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_DoInstall(HWND);

function ExFn_DoInstall(hMSI)
    NUMBER nReturn;
    STRING szTemp;
begin

    MessageBox ("About to launch the second setup.", INFORMATION);

    // Launch the second setup.
    nReturn = DoInstall (SECOND_INSTALL_PATH ^ SECOND_INSTALL_FILENAME, "",
                         LAAW_OPTION_WAIT);
```

```
    if ( nReturn = 0) then
        // Report successful second setup launch.
        MessageBox("The second setup was launched successfully.", INFORMATION);
    else
        // Report failure to launch second setup.
        SprintfBox(SEVERE, "", "DoInstall failed with a return code of %d.", nReturn);
    endif;

end;
```

DotNetCoCreateObject

Project *▪ The following project types support the* **DotNetCoCreateObject** *function:*

- *InstallScript*
- *InstallScript MSI*
- *Basic MSI with InstallScript custom actions*

The **DotNetCoCreateObject** function calls functions in .NET assemblies without the assembly being registered for COM interoperability. This function lets you specify the .NET application domain in which the .NET assemblies should be loaded and run. Each object created with this function is associated with a single class in a single .NET assembly. If you want to access multiple classes in the same assembly, you must create a separate object for each class.

Important *▪ The assembly does not have to be registered as a COM component, but the assembly must be built to be compatible with COM interoperability. Assemblies built with Visual Studio .NET 2003 and earlier are automatically built with this compatibility. However, projects created with Visual Studio 2005 must manually specify [assembly: ComVisible(true)] in the appropriate file.*

Syntax

```
DotNetCoCreateObject ( byval string szAssemblyPathFile, byval string szAssemblyAndClassName, byval
    string szAppDomain );
```

Parameters

Table 164 ▪ DotNetCoCreateObject Parameters

Parameter	Description
szAssemblyPathFile	Specifies the full path and file name of the .NET assembly that contains the appropriate class.
szAssemblyAndClassName	Specifies the assembly and class name.  ***Note ▪*** *This value is the same as the szProgId parameter if the assembly is registered for COM interoperability using the* **CoCreateObject** *function.*
szAppDomain	Specifies the .NET application domain to load and run the assembly in. If the specified application domain does not exist in the installation process, it is created; otherwise, the existing application domain is used. This is true if you call **DotNetCoCreateObject** multiple times with the same szAppDomain. If you specify a null string ("") for this parameter or call **CoCreateObjectDotNet** instead of **DotNetCoCreateObject**, the assembly is loaded into the default application domain after the installation completes; thus, the .NET assembly file is locked until the installation has finished. For more information on .NET application domains, see the .NET Framework Developer's Guide in the MSDN Library.

Return Values

The reference can be assigned to a variable of type OBJECT by using the set keyword.

Additional Information

- The **DotNetCoCreateObject** function is similar to the **CoCreateObjectDotNet** function. The only difference is that with **DotNetCoCreateObject**, you can specify the .NET application domain that should be loaded; the assembly is then run in this domain.

  For **CoCreateObjectDotNet**, the .NET assembly is loaded into the default application domain after the installation completes; thus, the .NET assembly file is locked until the installation has finished.

- Any object variable can be released by setting the object variable to the value of NOTHING or reassigning the object with the **CoCreateObject**, **CoCreateObjectDotNet**, **CoGetObject**, or **DotNetCoCreateObject** functions. However, this does not automatically unload the library referenced by the object. You must call the Windows API **CoFreeLibrary** manually to free the library. Otherwise, the library remains loaded until the installation finishes. For more information, see Extending Your Installation with COM Objects.

- This function throws an exception if the object cannot be created. This can occur if the .NET Framework is not installed on the system, or for other reasons. To handle this exception, surround calls to this function with try...catch blocks. For more information, see Exception Handling.

DotNetUnloadAppDomain

Project *▪ The following project types support the* **DotNetUnloadAppDomain** *function:*

- *InstallScript*
- *InstallScript MSI*
- *Basic MSI with InstallScript custom actions*

The **DotNetUnloadAppDomain** function unloads the specified .NET application domain and releases any assemblies that are currently loaded into the specified application domain.

Note *▪ Once an application domain is unloaded, all .NET objects that were created with* **DotNetCoCreateObject** *become invalid. Therefore, you should set these objects to NOTHING using the set command before calling* **DotNetUnloadAppDomain**.

Syntax

```
DotNetUnloadAppDomain ( byval string szAppDomain );
```

Parameters

Table 165 ▪ DotNetUnloadAppDomain Parameters

Parameter	Description
szAppDomain	Specifies the .NET application domain to be unloaded. For more information on .NET application domains, see the .NET Framework Developer's Guide in the MSDN Library.

Return Values

Table 166 ▪ DotNetUnloadAppDomain Return Values

Return Value	Description
>= ISERR_SUCCESS	The domain was successfully unloaded.
< ISERR_SUCESS	The domain was not unloaded.

Built-In Functions (E-G)

For a list of functions by category, see Built-In Functions by Category.

Enable

The **Enable** function activates the user interface object or setup feature specified by the parameter nConstant.

By default, an installation runs without a background. To enable window mode, you must call **Enable** with the BACKGROUND constant, and then again with DEFWINDOWMODE or FULLWINDOWMODE. These constants are not supported for use in Basic MSI installations.

Note ▪ *If your script calls the* **Disable** *function to disable the Next or Back button, that button is disabled in all dialogs displayed after that function call. To re-enable the Next or Back button, you must call* **Enable** *with the corresponding constant.*

Syntax

```
Enable ( nConstant );
```

Parameters

Table 1 ▪ Enable Parameters

Parameter	Description
nConstant	Specifies the user interface object or operational feature you want to enable. Pass one of the following predefined constants in this parameter: • **BACKBUTTON**—Enables the Back button that is displayed in some built-in dialogs. The Back button is enabled by default, but it can be disabled by calling the **Disable** function. • **BACKGROUND**—Displays the installation's main background window when the installation is in window mode. When installation is in full-screen mode, which is the default mode, this constant has no effect. To enable window mode, you must call **Enable** with the constant DEFWINDOWMODE or FULLWINDOWMODE. • **CANCELBUTTON**—Enables the Cancel button that is displayed in some built-in dialogs and the status dialog. • **DEFWINDOWMODE**—Configures the main background window to be a normal window with a title bar. If the background window is enabled, its appearance changes immediately. If the background window is not enabled, no change to the screen occurs until **Enable** is called with the constant BACKGROUND. • **DIALOGCACHE**—Enables the dialog cache mechanism, which eliminates the screen flash that appears between the display of dialogs. This screen flash is most noticeable in the title bar of installations running in window mode. Note that the dialog caching mechanism works only for dialogs that have BACK and NEXT buttons. Dialog caching is enabled by default.  ***Note ▪*** *DIALOGCACHE has no effect on dialogs that do not have a Next or Back button.* • **DLL_DIRECTORY_SUPPORTDIR**—Enables the predefined constant will add the support folder to the DLL load search path, so that the `UseDLL( )` can load the DLL with all dependencies from the `SUPPORTDIR`. • **FULLWINDOWMODE**—Configures the main background window to be a maximized window with a title bar. If the background window is enabled, its appearance will change immediately. If the background window is not enabled, no change to the screen will occur until **Enable** is called with the constant BACKGROUND. • **HOURGLASS**—Causes the mouse cursor to change to the "Busy" cursor, an hourglass by default. • **INDVFILESTATUS**—Enables the display (on the second line of the progress indicator) of the fully qualified file name of each file as it is transferred when **FeatureMoveData**, **CopyFile**, or **XCopyFile** is called and the progress indicator is enabled.

Table 1 ▪ Enable Parameters (cont.)

Parameter	Description
nConstant (cont.)	• **LOGGING**—Enables the logging of uninstallation information. When logging is enabled, results of operations that the InstallScript engine logs for uninstallation are recorded in the uninstallation log file and are reversed during uninstallation. Note that logging is enabled automatically by default. If you need to disable logging, it is recommended that you do so by calling **Disable** with the LOGGING constant immediately before performing operations that should not be logged for uninstallation. Then you can re-enable logging by calling **Enable** with the LOGGING constant. For more information about logging, see InstallScript Functions that Are Logged for Uninstallation. • **NEXTBUTTON**—Enables the Next button that is displayed by some built-in dialogs. On most dialogs, the Next button is enabled by default.  ***Note ▪*** *Calling* **Enable** *with the BACKBUTTON constant has no effect on the* **SdCustomerInformation**, **SdCustomerInformationEx**, **SdRegisterUser**, *or* **SdRegisterUserEx** *dialogs since they enable and disable the Next button internally.* • **PCRESTORE**—Enables System Restore compatibility, which is enabled by default. • **REGISTRYFUNCTIONS_USETEXTSUBS**—Enables text substitutions in strings that are passed to registry functions; this is enabled by default. • **SELFREGISTERBATCH**—Specifies whether to use the “batch method” for registering files copied with XCopyFile and the SELFREGISTER constant. The batch method is enabled by default. When the batch method is disabled, files are registered immediately when copied with **XCopyFile** and the SELFREGISTER constant. If the batch method is enabled, registration is postponed until data transfer takes place. • **SERVICE_DIFX_32**—Enables DIFx support for 32-bit platforms. • **SERVICE_DIFX_AMD64**—Enables DIFx support for AMD 64-bit platforms. • **SERVICE_DIFX_IA64**—Enables DIFx support for Itanium 64-bit platforms. • **STATUS**—Enables the display of the progress indicator (status bar). • **STATUSBBRD**—Enables the display of the progress dialog that includes a billboard. • **STATUSDLG**—Enables the display of the dialog style progress indicator (status bar). • **STATUSEX**—Enables the display of the standard Setup Status dialog. • **STATUSOLD**—Enables the display of the old style progress indicator (status bar), which does not have a Cancel button.

Table 1 ▪ Enable Parameters (cont.)

Parameter	Description
nConstant (cont.)	• **UPDATE_SERVICE_INSTALL**—This constant is obsolete. • **USE_LOADED_SKIN**—Intended for use with custom dialogs that will not work with dialog skins (for example, dialogs that are not the standard size); not recommended for use with built-in dialogs. Enables the use of the skin that you specified in the Specify Skin setting on the Build tab for the release in the Releases view. (If you selected the **<Do not use any skin>** option in that setting, this constant has no effect.) If you specify a skin, it is displayed by default; `Disable(USE_LOADED_SKIN);` and `Enable(USE_LOADED_SKIN);` are called internally by functions that display dialogs that cannot be displayed with a skin. Enabling of the skin applies only to dialogs that are displayed after you call `Enable(USE_LOADED_SKIN);` in your script. To enable skin use (after disabling it) for a custom dialog, you must call `Enable(USE_LOADED_SKIN);` before calling **WaitOnDialog**.  ***Project ▪*** *The USE_LOADED_SKIN constant is applicable to InstallScript projects.* • **WOW64FSREDIRECTION**—Enables 64-bit Windows file system redirection. You may need to do this after installing files to the WINSYSDIR64 destination. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.

Return Values

Table 2 ▪ Enable Return Values

Return Value	Description
0	Indicates that the function successfully enabled the user interface object or setup feature specified by the parameter nConstant.
< 0	Indicates that the function was unable to enable the user interface object or setup feature specified by the parameter nConstant.

Enable Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Disable and Enable functions.
 *
 * This script displays two dialogs. In the first box, the
 * Back button is disabled. In the second box, the Next button
 * is disabled and the Back button enabled.
 *
\*---------------------------------------------------------------*/
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Enable(HWND);

function ExFn_Enable(hMSI)
begin

start:

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // The following displays a dialog with the Back button disabled.
    SetupType ("", "", "", TYPICAL, 0);

    // Enable the Back button,
    Enable (BACKBUTTON);

    // Next button is disabled.
    Disable (NEXTBUTTON);

    // The following displays a dialog with only the Back button enabled.
    if (SetupType ("", "", "", TYPICAL, 0) = BACK) then
        // If the Back button is pressed, the Next button is enabled.
        Enable (NEXTBUTTON);
        goto start;
    endif;

end;
```

EndCurrentDialog

Project ▪ *This information applies to InstallScript projects.*

The **EndCurrentDialog** function closes the currently displayed dialog by calling EndDialog. It removes the dialog and initiates the dialog closing process.

Syntax

```
EndCurrentDialog ( );
```

Parameters

None

Return Values

Table 3 ▪ EndCurrentDialog Return Values

Return Value	Description
>= ISERR_SUCCESS	EndCurrentDialog successfully closed the dialog.
< ISERR_SUCCESS	No dialog is currently displayed.

EndDialog

The **EndDialog** function closes a custom dialog. It removes the dialog and initiates the dialog closing process. Use EndDialog when any of the following conditions exist:

- The Next button or its equivalent has been processed.
- The Cancel button or its equivalent has been processed.
- The Close system menu option has been selected. This action sends the DLG_CLOSE message.
- Any other situation in which the user ends the dialog operation.

After calling EndDialog to end a custom dialog, call the ReleaseDialog function to free the memory associated with the custom dialog.

Note ▪ *You can call WaitOnDialog to redisplay a custom dialog that was closed by a call to EndDialog provided that you have not called ReleaseDialog to remove the dialog from memory. If you call WaitOnDialog to open a dialog that has been opened and closed previously in your script, you must call CmdGetHwndDlg again to get the new handle. The old handle is no longer valid.*

Syntax

```
EndDialog ( szDialogName );
```

Parameters

Table 4 ▪ EndDialog Parameters

Parameter	Description
szDialogName	Specifies the name of the dialog to close.

Return Values

Table 5 ▪ EndDialog Return Values

Return Value	Description
0	EndDialog successfully closed the dialog.
< 0	EndDialog was unable to close the dialog.

EndDialog Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DefineDialog, EndDialog, and ReleaseDialog
 * functions.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap.  The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * In order to use this dialog as a custom dialog, the
 * script first defines it by calling DefineDialog.  It then
 * displays the dialog by calling WaitOnDialog.  When an event
 * ends dialog processing, EndDialog is called to close the
 * dialog.  Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*---------------------------------------------------------------*/
```

```
// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_EndDialog(HWND);

function ExFn_EndDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Define the name of a dialog to pass as first
    // parameter to DefineDialog.
    szDialogName = "ExampleDialog";

    // DefineDialog's second parameter will be 0 because the
    // .dll file is in _isres.dll.
    hInstance = 0;

    // DefineDialog's third parameter will be null; installation
    // will search for the dialog in _isuser.dll and _isres.dll.
    szDLLName = "";

    // DefineDialog's fifth parameter will be null because the
    // dialog is identified by its ID in the fourth parameter.
    szDialog = "";

    // This value is reserved and must be 0.
    hwndParent = 0;

    // Define the dialog. The installation's main window will own the
    // dialog (indicated by HWND_INSTALL in parameter 7).
    nResult  = DefineDialog (szDialogName, hInstance, szDLLName,
                             RES_DIALOG_ID, szDialog, hwndParent,
                             HWND_INSTALL, DLG_MSG_STANDARD|DLG_CENTERED);

    // Check for an error.
    if (nResult < 0) then
        MessageBox ("An error occurred while defining the dialog.", SEVERE);
        bDone = TRUE;
        abort;
    endif;

   // Initialize the indicator used to control the while loop.
   bDone = FALSE;

   // Loop until done.
   repeat
```

```
        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

EnterDisk

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **EnterDisk** function displays a message box that prompts the end user to insert the next disk. The system variable SRCDIR contains the default path, which is displayed on the message box. The end user can modify the default path by typing a new path and clicking OK.

EnterDisk recognizes the correct disk by searching the disk for the tag file specified by szTagFile. If the disk does not contain the tag file, the function calls the **EnterDiskError** function to display an error message box that prompts the end user to enter the correct disk. At build time, InstallShield does not automatically generate tag files in the disk image folders. To use tag files, add them to the disk image folders after the folders are built.

Note ▪ *You cannot use the PlaceWindow function in conjunction with the* **EnterDisk** *function. By default, the message box appears in the center of the desktop, unless the background window mode is enabled. If the installation is in window mode, the message box opens in the center of the background window.*

The default title is Setup Needs the Next Disk. To change the title, call SetDialogTitle before calling **EnterDisk**.

Syntax

```
EnterDisk (szMsg, szTagFile);
```

Parameters

Table 6 ▪ EnterDisk Parameters

Parameter	Description
szMsg	Specifies the message that prompts the end user to insert the proper disk.
szTagFile	Specifies the name of the tag file. **EnterDisk** searches for this file on the inserted disk. If the file is not found, the function calls the **EnterDiskError** function to display a message that asks the user to insert the correct disk. If you pass a null string ("") in this parameter, the function does not search for any file; it assumes that the correct disk is being used.

Return Values

Table 7 ▪ EnterDisk Return Values

Return Value	Description
OK (1)	Indicates that the user clicked the OK button.
< 0	Indicates that an unspecified error has occurred.

Additional Information

The dialog that is displayed by the **EnterDisk** function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

EnterDisk Example

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * This example demonstrates the EnterDisk function.
 *
 * EnterDisk is called to prompt the user to insert a disk or
 * to specify a path.  EnterDisk then searches for the tag file
 * at that location.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

    export prototype ExFn_EnterDisk(HWND);

function ExFn_EnterDisk(hMSI)
    STRING szMsg, szTagFile;
begin

    // Set up parameters for call to EnterDisk.
    szMsg     = "Please insert disk 2";
    szTagFile = "ISExampl.txt";

    // Display the EnterDisk dialog.
    EnterDisk (szMsg, szTagFile);

end;
```

EnterDiskError

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **EnterDiskError** function checks whether a specified path and file exists. The function displays an appropriate error if the file does not exist in the specified path; then it returns success or failure, depending on whether the specified file exists.

Tip ▪ **EnterDiskError** *can also check for the presence of a specific path, without a particular file.*

Syntax

```
EnterDiskError (byval string szPath, byval string szFile);
```

Parameters

Table 8 ▪ EnterDiskError Parameters

Parameter	Description
szPath	Specify the path to be checked.
szFile	Specify the name of the file to be checked. If you want **EnterDisk** to check for just the path, but not a specific file, specify a null string ("").

Return Values

Table 9 ▪ EnterDiskError Return Values

Return Value	Description
>= ISERR_SUCCESS	The specified path and file exist.
< ISERR_SUCCESS	The specified path and file do not exist.

Additional Information

Since the **EnterDiskError** function is typically called only internally by the **EnterDisk** function, it does not include any silent mode handling, other than the normal **MessageBox** silent mode handling.

By default, the dialog displays the same error message and the default message box title for the installation, regardless of the error that occurs. You can change this behavior by calling the **SetErrorTitle** and **SetErrorMsg** functions with nErrorId set as follows:

- **ERR_BOX_DISKID**—Customize the title or message displayed when the specified disk does not exist.
- **ERR_BOX_BADPATH**—Customize the title or message displayed when the specified path does not exist.
- **ERR_BOX_BADTAGFILE**—Customize the title or message displayed when the specified file does not exist. (If a null string ("") is specified for szFile, no error check occurs, and no message is displayed.)

EnterLoginInfo

Project ▪ *This information applies to the following project types.*

- *InstallScript*
- *InstallScript MSI*

The **EnterLoginInfo** function displays a dialog that enables the end user to specify a user name and password. Note that the dialog does not validate or use the specified information. In addition, the dialog does not perform any error checking for the specified information.

The **EnterLoginInfo** dialog is typically used to let the end user specify a network user name and password. The **SdLogonUserInformation** dialog is similar to the **EnterLoginInfo** dialog, but the **SdLogonUserInformation** dialog provides additional options. If your installation needs to obtain information to log into a SQL Server, **SQLServerLogin** offers additional functionality.

Syntax

```
EnterLoginInfo (byval string szMsg, byref string svUser, byref string svPassword);
```

Parameters

Table 10 ▪ EnterLoginInfo Parameters

Parameter	Description
szMsg	Specifies the static text to be displayed in the dialog. To display the default text, pass a null string ("") in this parameter.
svUser	Specifies the default value that is initially displayed in the User Name box when the function is called, and specifies the string that the end user specified when the function returns. The dialog does not allow more than 255 characters to be entered in the User Name box.
svPassword	Specifies the default value that is initially displayed in the Password box when the function is called, and specifies the string that the end user specified when the function returns. The dialog does not allow more than 255 characters to be entered in the Password box.

Return Values

Table 11 ▪ EnterLoginInfo Return Values

Return Value	Description
>= ISERR_SUCCESS	The function was successful.
< ISERR_SUCCESS	The function was not successful.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

EnterPassword

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **EnterPassword** function displays a dialog that queries the end user for a password; the characters that the end user types in the edit box are displayed as asterisks (*).

Note ▪ *To check the returned password, you can call FeatureValidate, as is done in the default code for the OnCheckMediaPassword event handler function.*

Syntax

```
EnterPassword ( szMsg, szDefault, svResult );
```

Parameters

Table 12 ▪ EnterPassword Parameters

Parameter	Description
szMsg	Specifies a message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szDefault	Specifies the text that is initially displayed in the edit box.
svResult	Returns the text that the end user enters in the edit box.

Return Values

Table 13 ▪ EnterPassword Return Values

Return Value	Description
NEXT	Indicates that the user clicked the Next button.
BACK	Indicates that the user clicked the Back button.
< ISERR_SUCCESS	Indicates that the dialog could not be displayed.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

ExistsDir

The **ExistsDir** function checks for the existence of a specified directory on the target system or the Internet.

Syntax

```
ExistsDir ( szPath );
```

Parameters

Table 14 ▪ ExistsDir Parameters

Parameters	Description
szPath	Specifies the fully qualified path of the directory to find on the target system, or the valid Uniform Resource Locator (URL) of the directory to find on the Internet. To check the validity of a URL, call Is(VALID_PATH, szURL).

Return Values

Table 15 ▪ ExistsDir Return Values

Return Value	Description
EXISTS (0)	Indicates that the specified directory exists.
NOTEXISTS (-1)	Indicates that the specified directory does not exist.
All other negative values	Indicates that the function was unable to determine whether the specified directory exists. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

ExistsDir Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ExistsDir function.
 *
 * AskPath is called to get a directory name from the user.
 * Then, ExistsDir is called to determine whether the directory
 * exists.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ExistsDir Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ExistsDir(HWND);

function ExFn_ExistsDir(hMSI)
```

```
    STRING svPath;
begin

    // Get the path to be created.
    AskPath ("Please enter a path:", "", svPath);

    // Check for the existence of the directory.
    if (ExistsDir (svPath) = EXISTS) then
        SprintfBox (INFORMATION, TITLE_TEXT, "%s already exists.", svPath);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "%s does not exist", svPath);
    endif;

end;
```

ExistsDisk

The **ExistsDisk** function checks for the existence of a specified disk drive on the target system.

Syntax

```
ExistsDisk ( szDisk );
```

Parameters

Table 16 ▪ ExistsDisk Parameters

Parameter	Description
szDisk	Specifies the letter of the disk drive.

Return Values

Table 17 ▪ ExistsDisk Return Values

Return Value	Description
EXISTS (0)	Indicates that the specified drive exists on the target system.
NOTEXISTS (-1)	Indicates that the specified drive does not exist on the target system.

ExistsDisk Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the ExistsDisk function.
 *
 * AskText is called to get a disk drive name from the user.
 * Then, ExistsDir is called to determine whether the drive
 * exists.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ExistsDisk Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ExistsDisk(HWND);

function ExFn_ExistsDisk(hMSI)
    STRING svDrive;
begin

    if (AskText ("Enter the letter of a disk drive.", "C", svDrive) = NEXT) then
        // Check for the existence of the specified drive.
        if (ExistsDisk (svDrive) = EXISTS) then
            SprintfBox (INFORMATION, TITLE_TEXT, "Drive %s exists.", svDrive);
        else
            SprintfBox (INFORMATION, TITLE_TEXT, "Drive %s does not exist",
svDrive);
        endif;
    endif;

end;
```

EzBatchAddPath

The **EzBatchAddPath** function modifies the default batch file by adding a path either to the search path in a PATH command or to the value assigned to an environment variable. Unless it is changed by a call to BatchSetFileName, the default batch file is the Autoexec.bat file that was executed by the system during the boot sequence. To determine the fully qualified name of the default batch file, call BatchGetFileName. To change the name of the batch file to be used by EzBatchAddPath, call BatchSetFileName.

Caution ▪ *EzBatchAddPath does not make a backup copy of the file it modifies.*

EzBatchAddPath can fail if the default batch file is hidden or read-only.

Note ▪ *Do not mix Ez batch file functions and advanced batch file functions. After calling BatchFileLoad to load a batch file in memory, you cannot call any of the Ez batch file functions until you call BatchFileSave to save the file.*

Syntax

```
EzBatchAddPath ( szKey, szPath, szRefDir, nPosition );
```

Parameters

Table 18 ▪ EzBatchAddPath Parameters

Parameter	Description
szKey	Specifies the name of the environment variable to modify. For example, to modify the PATH statement, specify "PATH" here. If the specified environment variable is not found in the default file batch file, a complete SET statement is created for that environment variable and inserted into the file. ***Caution ▪*** *The EzBatchAddPath function does not support long file names. Call LongPathToShortPath to convert the long path to its short path equivalent before passing it to EzBatchAddPath. For an explanation of long file names, see Long File Names.*
szPath	Specifies the path to add to the current value of the environment variable. A delimiting semicolon is inserted to separate it from other paths in the search path.
szRefDir	Specifies the reference key (a path) relative to which you are adding the new path specified by szPath. If this is a null string (""), the directory is added to the beginning or end of the search path, depending on the value of nPosition. If the path specified by szRefDir is not found in the search path, the value of szKey is added to the end.
nPosition	Specifies where in the search path to add the new path. Pass one of the following predefined constants in this parameter: • **BEFORE**—The new path is inserted before the path specified by szRefDir. If szRefDir contains a null string (""), the directory is added to the front of the search path. • **AFTER**—The new path is inserted after the path specified by szRefDir. If szRefDir contains a null string (""), the directory is added to the end of the search path.

Return Values

Table 19 ▪ EzBatchAddPath Return Values

Return Value	Description
0	EzBatchAddPath successfully added the path to the batch file.
< 0	EzBatchAddPath was unable to add the path to the batch file.

EzBatchAddPath Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzBatchAddPath function.
 *
 * First, BatchSetFileName is called to change the default batch
 * file to EXAMPLE_BATCH. Then EzBatchAddPath is then called to
 * add C:\WINDOWS to the beginning of the PATH statement.  A
 * second call to EzBatchAddPath adds C:\UTILS after the WINDOWS
 * keyword in the PATH statement.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat and store it in the root of
 *       drive C.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_BATCH "C:\\ISExampl.bat"
#define TITLE "EzBatchAddPath example"
#define MSG   "Successful.\n\n%s added to %s statement."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzBatchAddPath(HWND);

function ExFn_EzBatchAddPath(hMSI)
    STRING szKey, szPath, szRefDir;
begin

    // Set the default batch file.
    BatchSetFileName (EXAMPLE_BATCH);

    // Set up parameters for next call to EzBatchAddPath.
    szKey      = "PATH";
    szPath     = "C:\\WINDOWS";
    szRefDir   = "";

    if (EzBatchAddPath (szKey, szPath, szRefDir, BEFORE) < 0) then
        // Report the error.
        MessageBox ("EzBatchAddPath failed.", SEVERE);
    else

        // Report success.
        SprintfBox (INFORMATION, TITLE, MSG, szPath, szKey);

        // Set up parameters for next call to EzBatchAddPath.
        szKey      = "PATH";
        szPath     = "C:\\UTILS";
        szRefDir   = "WINDOWS";
```

```
        if (EzBatchAddPath (szKey, szPath, szRefDir, AFTER) < 0) then
            // Report the error.
            MessageBox ("EzBatchAddPath failed.", SEVERE);
        else
            // Report success.
            SprintfBox (INFORMATION, TITLE, MSG, szPath, szKey);
        endif;

    endif;

end;
```

EzBatchAddString

The **EzBatchAddString** function adds a line of text to the default batch file; unless it is changed by a call to BatchSetFileName, the default batch file is the Autoexec.bat file that was executed by the system during the boot sequence. To determine the fully qualified name of the default batch file, call BatchGetFileName. To change the name of the batch file to be used by EzBatchAddPath, call BatchSetFileName.

Caution ▪ *The EzBatchAddString function can fail if the default batch file is hidden or read-only.*

EzBatchAddString does not make a backup copy of the file it modifies.

Note ▪ *Do not mix Ez batch file functions and advanced batch file functions. After calling BatchFileLoad to load a batch file in memory, you cannot call any of the Ez batch file functions until you call BatchFileSave to save the file.*

Syntax

```
EzBatchAddString ( szLine, szRefKey, nOptions );
```

Parameters

Table 20 ▪ EzBatchAddString Parameters

Parameter	Description
szLine	Specifies the line of text to add to the file. Unless you specify NOSET in nOptions, this function assumes that szLine is an environment variable; the text "SET" is inserted at the front of the string before szLine is written to the default batch file.  ***Caution ▪*** *The EzBatchAddString function does not support long file names. If you are using this function to add a line that contains a long path, call LongPathToShortPath to convert the long path to its short path equivalent before adding it to the string to be placed in the batch file. For an explanation of long file names, see Long File Names.*
szRefKey	Specifies the reference key relative to which you want to add szLine in the default batch file. EzBatchAddString searches the default batch file for the reference key and places the contents of szLine before or after that line, depending on the value of nOptions.  ***Note ▪*** *EzBatchAddString looks for the appropriate reference keyword in the parameter szRefKey. For example, the keyword for an environment variable is the name of the environment variable itself.*
nOptions	Specifies the option to use. Pass one of the following predefined constants in this parameter: • **BEFORE**—szLine is added before the line containing szRefKey. If szRefKey is a null string (""), szLine is added as the first line of the file. • **AFTER**—szLine is added after the line containing szRefKey. If szRefKey is a null string (""), szLine is added as the last line of the file. • **REPLACE**—szLine replaces an existing line in the file. If multiple lines with same key exist, EzBatchAddString replaces only the last line that contains the key. • **NOSET**—Specifies that the text "SET" should not be inserted at the front of the string in szLine. • **COMMAND**—Indicates that the reference key you are searching for is a DOS command or program name (not an environment variable). The NOSET and COMMAND constants can be combined with each other or the BEFORE, AFTER, or REPLACE constants using the logical OR operator. For example, when the reference key you are searching for is a DOS command or program name (not an environment variable), use the OR operator to combine the constant COMMAND with the constant AFTER, as shown below: `EzBatchAddString (szLine, szRefKey, AFTER | COMMAND);`

Return Values

Table 21 ▪ EzBatchAddString Return Values

Return Value	Description
0	EzBatchAddString successfully added the text string to the specified batch file.
< 0	EzBatchAddString was unable to add the text string.

EzBatchAddString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzBatchAddString function.
 *
 * This script performs four operations on a batch file:
 *
 * -- First, it adds a comment line at the top of the file.
 *
 * -- Next, it adds the line "SET TEMP=C:\EXAPP3", placing it
 *    it after the PATH statement.
 *
 * -- Then, it adds the command "C:\EXAPP3\EXAPP.EXE", placing
 *    it after the "SET TEMP=C:\EXAPP3" statement.
 *
 * -- Finally, it replaces the existing PATH statement with a
 *    new PATH statement.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat and store it in the root of
 *       drive C.  For best effect, include a PATH statement
 *       in that file.
 *
\*---------------------------------------------------------------*/

#define BATCH_FILE "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzBatchAddString(HWND);

function ExFn_EzBatchAddString(hMSI)
    STRING szLine, szRefKey;
    NUMBER nOptions;
begin
```

```
    // Set the default batch file.
    BatchSetFileName (BATCH_FILE);

    // Set up parameters for next call to EzBatchAddString.
    szLine    = "rem This is the first line of the file.";
    szRefKey  = "";
    nOptions  = BEFORE|NOSET;

    // Add a comment line to the top of the batch file.
    if (EzBatchAddString (szLine, szRefKey, nOptions) < 0) then
        MessageBox ("First call to EzBatchAddString failed.", SEVERE);
    else
        MessageBox ("First call to EzBatchAddString successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzBatchAddString.
    szLine    = "TEMP=C:\\EXAPP3";
    szRefKey  = "PATH";
    nOptions  = AFTER;

    // Add a line after the PATH statement.
    if (EzBatchAddString (szLine, szRefKey, nOptions) < 0) then
        MessageBox ("Second call to EzBatchAddString failed.", SEVERE);
    else
        MessageBox ("Second call to EzBatchAddString successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzBatchAddString.
    szLine    = "C:\\EXAPP3\\EXAPP.EXE";
    szRefKey  = "TEMP";
    nOptions  = AFTER|NOSET;

    // Add a command line after the SET TEMP statement.
    if (EzBatchAddString (szLine, szRefKey, nOptions) < 0) then
        MessageBox ("Third call to EzBatchAddString failed.", SEVERE);
    else
        MessageBox ("Third call to EzBatchAddString successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzBatchAddString.
    szLine    = "PATH=C:\\;C:\\Windows";
    szRefKey  = "PATH";
    nOptions  = AFTER|NOSET|REPLACE|COMMAND;

     // Replace the PATH statement.
    if (EzBatchAddString (szLine, szRefKey, nOptions) < 0) then
        MessageBox ("Fourth call to EzBatchAddString failed.", SEVERE);
    else
        MessageBox ("Fourth call to EzBatchAddString successful.", INFORMATION);
    endif;

endprogram
```

EzBatchReplace

The **EzBatchReplace** function replaces an existing line of text in the default batch file; unless it is changed by a call to BatchSetFileName, the default batch file is the Autoexec.bat file that was executed by the system during the boot sequence. To determine the fully qualified name of the default batch file, call BatchGetFileName. To change the name of the batch file to be used by EzBatchAddPath, call BatchSetFileName.

Some common keys in a batch file are PATH, COMSPEC, TEMP, Smartdrv.exe, Win.com, and Share.exe.

Caution ▪ *The EzBatchReplace function may fail if the default batch file is hidden or read-only.*

EzBatchReplace does not make a backup copy of the file it modifies.

Note ▪ *Do not mix Ez batch file functions and advanced batch file functions. After calling BatchFileLoad to load a batch file in memory, you cannot call any of the Ez batch file functions until you call BatchFileSave to save the file.*

Syntax

```
EzBatchReplace ( szNewString );
```

Parameters

Table 22 ▪ EzBatchReplace Parameters

Parameter	Description
szNewString	Specifies the new string to insert in place of an existing line in the file. EzBatchReplace parses szNewString and determines the key of the string. It then searches the default batch file for a line that contains the same key. The function replaces the last line found with the same key. ***Caution ▪*** *The EzBatchReplace function does not support long file names. If you are using this function to replace a line that contains a long path, call LongPathToShortPath to convert the long path to its short path equivalent before replacing it in the string in the batch file. For an explanation of long file names, see Long File Names.*

Return Values

Table 23 ▪ EzBatchReplace Return Values

Return Value	Description
0	EzBatchReplace successfully replaced the line of text.
< 0	EzBatchReplace was unable to replace the line of text.

EzBatchReplace Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzBatchReplace function.
 *
 * EzBatchReplace is called to replace lines in a batch file.
 *
 * This script replaces three lines in the specified batch file.
 * First, it replaces the SET COMSPEC command.  Then it replaces
 * the PATH statement.  Finally, it replaces the command line
 * that references SMARTDRV.EXE.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat and store it in the root of
 *       drive C.  For best effect, that file should include
```

```
 *       the following lines:
 *
 *       SET COMSPEC=C:\COMMAND.COM
 *       PATH C:\
 *       SMARTDRV.EXE
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_BAT "C:\\ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzBatchReplace(HWND);

function ExFn_EzBatchReplace(hMSI)
begin

    // Set the default batch file.
    BatchSetFileName (EXAMPLE_BAT);

    // Replace the SET COMSPEC statement.
    if (EzBatchReplace ("SET COMSPEC=C:\\DOS\\COMMAND.COM") < 0) then
        MessageBox ("First call to EzBatchReplace failed.", SEVERE);
    else
        MessageBox ("First call to EzBatchReplace succeeded.", INFORMATION);
    endif;


    // Replace the PATH command.
    if (EzBatchReplace ("PATH C:\\DOS;C:\\MYAPP") < 0) then
        MessageBox ("Second call to EzBatchReplace failed.", SEVERE);
    else
        MessageBox ("Second call to EzBatchReplace succeeded.", INFORMATION);
    endif;

    // Replace the SMARTDRIVE statement.
    if (EzBatchReplace ("SMARTDRV.EXE /P 1024 /C 512") < 0) then
        MessageBox ("Third call to EzBatchReplace failed.", SEVERE);
    else
        MessageBox ("Third call to EzBatchReplace succeeded.", INFORMATION);
    endif;

end;
```

EzConfigAddDriver

The **EzConfigAddDriver** function adds a device driver statement to the default system configuration file. You can specify the position of the driver statement relative to another driver statement. For example, an application may require loading a device driver before or after the Windows Himem.sys driver.

Unless changed by a call to ConfigSetFileName, the default system configuration file is the Config.sys file that was executed by the system during the boot sequence. To make another file the default system configuration file, call ConfigSetFileName. To determine the fully qualified name of the default system configuration file, call ConfigGetFileName.

Note ▪ *Do not mix the Ez configuration file functions and the advanced configuration file functions. After calling ConfigFileLoad, you cannot call any of the Ez configuration file functions until you call ConfigFileSave to save the file.*

Syntax

```
EzConfigAddDriver ( szDriver, szRefKey, nPosition );
```

Parameters

Table 24 ▪ EzConfigAddDriver Parameters

Parameter	Description
szDriver	Specifies the fully qualified name of the driver to add to the file. If the driver already exists in one or more places in the system configuration file, this function replaces only the last occurrence of the line containing the driver.
szRefKey	Specifies the name of the device driver relative to which you are adding szDriver.
nPosition	Indicates whether szDriver is to be added before or after the driver specified by szRefKey. Pass one of the following predefined constants in this parameter: • **BEFORE**—The statement is added before the line containing szRefKey. If szRefKey contains a null string (""), the driver is inserted as the first driver in the system configuration file. • **AFTER**—The statement is added after the line containing szRefKey. If szRefKey contains a null string (""), the driver is inserted as the last driver in the system configuration file.

Return Values

Table 25 ▪ EzConfigAddDriver Return Values

Return Value	Description
0	EzConfigAddDriver successfully added the device driver statement to the file.
< 0	EzConfigAddDriver was unable to add the driver statement.

EzConfigAddDriver Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzConfigAddDriver function.
 *
 * This example calls EzConfigAddDriver to add four statements
 * to a configuration file.
 *
 * -- The first call to EzConfigAddDriver adds a new line of
 *    text after the last line.
```

```
 *
 * -- The second call adds a new line of text before the first
 *    line.
 *
 * -- The third call adds the driver C:\DRDOS\HIDOS.SYS after
 *    the key HIMEM.SYS
 *
 * -- The fourth call adds the driver EXAPP.SYS before the key
 *    HIMEM.SYS.
 *
 * Note: Before running this script, create a configuration file
 *       named ISExampl.sys in the root of drive C.  For best
 *       effect, include the following line in that file:
 *
 *       DEVICE=C:\\Himem.sys
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_SYS "C:\\ISEXampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzConfigAddDriver(HWND);

function ExFn_EzConfigAddDriver(hMSI)
    STRING szDriver, szRefKey;
begin

    // Set the default configuration file.
    ConfigSetFileName (EXAMPLE_SYS);

    // Set up parameters for next call to EzConfigAddDriver.
    szDriver  = "C:\\NEW\\MYAPP.DRV";
    szRefKey  = "";

    // Add a driver to the end of the configuration file.
    if (EzConfigAddDriver (szDriver, szRefKey, AFTER) < 0) then
        MessageBox ("First call to EzConfigAddDriver failed.", SEVERE);
    else
        MessageBox ("First call to EzConfigAddDriver successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzConfigAddDriver.
    szDriver  = "C:\\SYSTEM\\DMDRVR.BIN";
    szRefKey  = "";

    // Add a driver to the top of the configuration file.
    if (EzConfigAddDriver (szDriver, szRefKey, BEFORE) < 0) then
        MessageBox ("Second call to EzConfigAddDriver failed.", SEVERE);
    else
        MessageBox ("Second call to EzConfigAddDriver successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzConfigAddDriver.
    szDriver  = "C:\\DRDOS\\HIDOS.SYS";
```

```
    szRefKey  = "HIMEM.SYS";

    // Add the "HIDOS.SYS" driver after the "HIMEM.SYS" key.
    if (EzConfigAddDriver (szDriver, szRefKey, AFTER) < 0) then
        MessageBox ("Third call to EzConfigAddDriver failed.", SEVERE);
    else
        MessageBox ("Third call to EzConfigAddDriver successful.", INFORMATION);
    endif;

    // Set up parameters for next call to EzConfigAddDriver.
    szDriver  = "EXAPP.SYS";
    szRefKey  = "HIMEM.SYS";

    // Add the "EXAPP.SYS" driver before the "HIMEM.SYS" key.
    if (EzConfigAddDriver (szDriver, szRefKey, BEFORE) < 0) then
        MessageBox ("Fourth call to EzConfigAddDriver failed.", SEVERE);
    else
        MessageBox ("Fourth call to EzConfigAddDriver successful.", INFORMATION);
    endif;

end;
```

EzConfigAddString

The **EzConfigAddString** function adds a line of text to the default system configuration file. You can specify the position of the line you add in reference to another statement in the file.

Unless changed by a call to ConfigSetFileName, the default system configuration file is the Config.sys file that was executed by the system during the boot sequence. To make another file the default system configuration file, call ConfigSetFileName. To determine the fully qualified name of the default system configuration file, call ConfigGetFileName.

Note ▪ *Do not mix the Ez configuration file functions and the advanced configuration file functions. After calling ConfigFileLoad, you cannot call any of the Ez configuration file functions until you call ConfigFileSave to save the file.*

Syntax

```
EzConfigAddString ( szLine, szRefKey, nOptions );
```

Parameters

Table 26 ▪ EzConfigAddString Parameters

Parameter	Description
szLine	Specifies the line of text to add to the system configuration file.
szRefKey	Specifies the reference key relative to which you want to position szLine in the system configuration file. EzConfigAddString searches the system configuration file for the reference key and places the contents of the parameter szLine before or after the line containing the key, depending on which constants is passed in nOptions.
nOptions	Indicates whether the line specified by szLine is to be added before or after the line containing szRefKey. Pass one of the following predefined constants in this parameter: • **BEFORE**—The line specified by szLine is added before the line containing szRefKey. If szRefKey contains a null string (""), szLine is inserted as the first line of the system configuration file. • **AFTER**—The line specified by szLine is added after the line containing szRefKey. If szRefKey contains a null string (""), szLine is inserted as the last line of the system configuration file.

Return Values

Table 27 ▪ EzConfigAddString Return Values

Return Value	Description
0	EzConfigAddString successfully added the string to the default system configuration file.
< 0	EzConfigAddString was unable to add the text string.

EzConfigAddString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzConfigAddString function.
 *
 * This example calls EzConfigAddString to add four lines to a
```

```
 * configuration file.
 *
 * -- The first call adds a new line of text at the end of
 *    the file.
 *
 * -- The second call adds a new line of text at the top of
 *    the file.
 *
 * -- The third call adds the line FASTOPEN=512 after the key
 *    LASTDRIVE.
 *
 * -- The fourth call adds the line EXAPPHI=ON before the key
 *    EXAPPHI.SYS.
 *
 * Note: Before running this script, create a configuration
 *       file named ISExampl.sys and store it in the root of
 *       drive C.  For best effect, that file should include
 *       the following lines:
 *
 *       LASTRDRIVE=F
 *       DEVICE=Exapphi.sys
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_SYS "C:\\ISExampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzConfigAddString(HWND);

function ExFn_EzConfigAddString(hMSI)
    STRING szLine, szRefKey;
begin

    // Set the default configuration file.
    ConfigSetFileName (EXAMPLE_SYS);

    // Set up parameters for next call to EzConfigAddString.
    szLine    = "SHELL=C:\\COMMAND.COM /P /E:512";
    szRefKey = "";

    // Add a line to the end of the file.
    if (EzConfigAddString (szLine, szRefKey, AFTER) < 0) then
        MessageBox ("First call to EzConfigAddString failed.", SEVERE);
    else
        MessageBox ("First call to EzConfigAddString succeeded.", INFORMATION);
    endif;

    szLine    = "DEVICE=C:\\System\\Dmdrvr.bin";
    szRefKey = "";

    // Add a line to the top of the file.
    if (EzConfigAddString (szLine, szRefKey, BEFORE) < 0) then
        MessageBox ("Second call to EzConfigAddString failed.", SEVERE);
    else
```

```
        MessageBox ("Second call to EzConfigAddString succeeded.", INFORMATION);
    endif;

    // Set up parameters for next call to EzConfigAddString.
    szLine    = "FASTOPEN=512";
    szRefKey = "LASTDRIVE";

    // Add a line to the file after the key "LASTDRIVE".
    if (EzConfigAddString (szLine, szRefKey, AFTER) < 0) then
        MessageBox ("Third call to EzConfigAddString failed.", SEVERE);
    else
        MessageBox ("Third  call to EzConfigAddString succeeded.", INFORMATION);
    endif;

    // Set up parameters for next call to EzConfigAddString.
    szLine    = "EXAPPHI=ON";
    szRefKey  = "EXAPPHI.SYS";

    // Add a line to the file before the key "Exapphi.sys".
    if (EzConfigAddString (szLine, szRefKey, BEFORE) < 0) then
        MessageBox ("Fourth call to EzConfigAddString failed.", SEVERE);
    else
        MessageBox ("Fourth  call to EzConfigAddString succeeded.", INFORMATION);
    endif;

end;
```

EzConfigGetValue

The **EzConfigGetValue** function retrieves the numeric value of a parameter, such as FILES or BUFFERS, from the default system configuration file.

Unless changed by a call to ConfigSetFileName, the default system configuration file is the Config.sys file that was executed by the system during the boot sequence. To make another file the default system configuration file, call ConfigSetFileName. To determine the fully qualified name of the default system configuration file, call ConfigGetFileName.

Note ▪ *Do not mix the Ez configuration file functions and the advanced configuration file functions. After calling ConfigFileLoad, you cannot call any of the Ez configuration file functions until you call ConfigFileSave to save the file.*

Syntax

```
EzConfigGetValue ( szRefKey, nvValue );
```

Parameters

Table 28 ▪ EzConfigGetValue Parameters

Parameter	Description
szRefKey	Specifies the name of the parameter whose value is to be retrieved.
nvValue	Returns the numeric value of the key specified by szRefKey.

Return Values

Table 29 ▪ EzConfigGetValue Return Values

Return Value	Description
0	EzConfigGetValue successfully retrieved the value.
< 0	EzConfigGetValue was unable to retrieve the value.

EzConfigGetValue Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzConfigGetValue function.
 *
 * EzConfigGetValue is called to retrieve a value from a key in
 * the default configuration file.  Unless changed by a call to
 * ConfigSetFileName, the default configuration file is the
 * Config.sys file that resides in the root of the boot drive.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzConfigGetValue(HWND);

function ExFn_EzConfigGetValue(hMSI)
    NUMBER nvValue;
begin

    // Retrieve the numeric value of the FILES key from the
    // default configuration file.
    if (EzConfigGetValue ("FILES", nvValue) < 0) then
```

```
        // Report the error.
        MessageBox ("EzConfigGetValue failed.", SEVERE);
    else
        // Display the value of the FILES key.
        SprintfBox (INFORMATION, "EzConfigGetValue Example",
                    "FILES = %d", nvValue);
    endif;

end;
```

EzConfigSetValue

The **EzConfigSetValue** function sets the value of a command in the default system configuration file.

Unless changed by a call to ConfigSetFileName, the default system configuration file is the Config.sys file that was executed by the system during the boot sequence. To make another file the default system configuration file, call ConfigSetFileName. To determine the fully qualified name of the default system configuration file, call ConfigGetFileName.

Note ▪ *Do not mix the Ez configuration file functions and the advanced configuration file functions. After calling ConfigFileLoad, you cannot call any of the Ez configuration file functions until you call ConfigFileSave to save the file.*

Syntax

```
EzConfigSetValue (szRefKey, nValue);
```

Parameters

Table 30 ▪ EzConfigSetValue Parameters

Parameter	Description
szRefKey	Specifies the command whose value is to be changed or added in the default system configuration file. If the key does not exist in that file, it is added.
nValue	Specifies the new value of the command specified by szRefKey.

Return Values

Table 31 ▪ EzConfigSetValue Return Values

Return Value	Description
0	EzConfigSetValue successfully set the value.
< 0	EzConfigSetValue was unable to set the value.

EzConfigSetValue Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzConfigSetValue function.
 *
 * EzConfigSetValue is called to add or change the BUFFER and
 * FILES commands in the default configuration file.
 *
 * Note: The first time you run this script, it will create a
 *       file named ISExampl.sys in the root of drive C.  You
 *       may delete that file when you have finished analyzing
 *       this script.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_SYS "C:\\ISExampl.sys"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzConfigSetValue(HWND);

function ExFn_EzConfigSetValue(hMSI)
```

```
    STRING szRefKey, szMsg;
    NUMBER nValue;
begin

    // Set the default configuration file.
    ConfigSetFileName (EXAMPLE_SYS);

    // Add or change the BUFFERS command.
    if (EzConfigSetValue ("BUFFERS", 30) < 0) then
        MessageBox ("Unable to set Buffers in " + EXAMPLE_SYS + ".", SEVERE);
    else
        MessageBox ("Buffers set to 30 in " + EXAMPLE_SYS+".", INFORMATION);
    endif;

    // Add or change the FILES command.
    if (EzConfigSetValue ("FILES", 30) < 0) then
        MessageBox ("Unable to set Files in " + EXAMPLE_SYS + ".", SEVERE);
    else
        MessageBox ("Files set to 30 in " + EXAMPLE_SYS + ".", INFORMATION);
    endif;

end;
```

EzDefineDialog

The **EzDefineDialog** function defines a custom dialog.

Note ▪ *This function does not display the custom dialog. To display a custom dialog, call WaitOnDialog.*

Syntax

```
EzDefineDialog ( szDialogName, szDLLName, szDialogID, nDialogID );
```

Parameters

Table 32 ▪ EzDefineDialog Parameters

Parameter	Description
szDialogName	Specifies the name to associate with the dialog identified by szDialogID or nDialogID. To process this dialog, use this name in subsequent calls to custom dialog functions. Note that the dialog's name is case-sensitive; you must use it exactly as you have specified it in this parameter.
szDLLName	Specifies the name of the .dll file that contains the dialog resource. If this name is not qualified (that is, if you do not specify the drive and path with the file name), the InstallScript engine searches for the .dll file in the Windows folder. If it is not found there, the InstallScript engine searches the folders that are specified in the search path. When the dialog is located in `_isuser.dll`, you can specify a null string ("") in this parameter; the InstallScript engine automatically checks `_isuser.dll` if this parameter is specified as a null string ("").  ***Note ▪*** *When you use a .dll file other than* `_isres.dll` *or* `_isuser.dll`*, you must call UseDLL to load the .dll file before calling* **EzDefineDialog**. *To unload the .dll file from memory, call UnUseDLL after calling ReleaseDialog.*
szDialogID	Specifies the dialog's resource ID if you use a string rather than a number to identify the resource. If this parameter is a null string (""), nDialogID is used to identify the dialog resources. It is recommended that you use nDialogID rather than szDialogID to identify the dialog resource.  ***Note ▪*** *If you created the dialog in the Dialogs view, the dialog is created with a string ID; therefore, you must specify this name as the szDialogID parameter to define the dialog.* *If you override an existing dialog in the Dialogs view, the dialog has a numeric ID, and you must specify the ID in the nDialogID parameter.* *If you want to use numeric IDs in all cases—which is what is recommended—you must edit the dialog in the Dialogs view to change the ISResourceID property of the created dialog to the desired Dialog ID instead of 0. Note that if you do this, the dialog name is no longer used when the dialog is created; it is used only in the Dialogs view in InstallShield to identify the dialog. The dialog is built with the correct numeric ID.*
nDialogID	Specifies the dialog's resource ID if you use a number rather than a string to identify the resource. This parameter is used only when szDialogID is a null string (""). It is recommended that you use nDialogID rather than szDialogID to identify the dialog resource.

Return Values

Table 33 ▪ EzDefineDialog Return Values

Return Value	Description
0	**EzDefineDialog** successfully defined the dialog.
DLG_ERR_ALREADY_EXISTS (-3)	Indicates that you are trying to define a dialog that has already been defined in the installation script. You cannot define two dialogs with the same name.
DLG_ERR (-1)	Indicates an unspecified error condition.

EzDefineDialog Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the EzDefineDialog function.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap. The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap. Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * In order to use this custom dialog, the script first defines
 * it by calling EzDefineDialog. It then displays the dialog
 * and gets dialog events by calling WaitOnDialog. When an
 * event ends dialog processing, EndDialog is called to close
 * the dialog. Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzDefineDialog(HWND);

function ExFn_EzDefineDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the while loop.
    bDone = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                bDone = TRUE;
```

```
            case RES_PBUT_BACK:
                bDone = TRUE;
            if (SdIsStdButton( nCmdValue ) && SdDoStdButton( nCmdValue )) then
                bDone = TRUE;
            endif;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

FeatureAddCost

Project *▪ This information applies to InstallScript projects.*

The **FeatureAddCost** function specifies that the feature includes additional installation operations that should be accounted for when updating the progress bar during the installation. Specifically, the **FeatureAddCost** function adds the value of nCost to the specified feature. This function can be called anytime before calling **StatusUpdate**, but it should typically be used before displaying a feature dialog so that the dialog shows the intended size for the feature to be installed.

Important *▪ The* **FeatureAddCost** *function is supported only for file media. Use* **FeatureGetData** *or* **FeatureSetData** *to set the size of script-created features.*

Note *▪ The information specified in this function is not remembered in subsequent installations. This function should be called each time that the feature is being installed, including during repair or maintenance mode. Also, the setup engine has no way to determine whether the specified cost is for a single file or multiple files. Therefore, it does not attempt to adjust the specified size based on the cluster size of the target drive. Thus, you should use the* **GetAndAddFileCost**, **CalculateAndAddFileCost** *, or* **GetAndAddAllFilesCost** *functions to determine the cost of the file, taking into account cluster size, before calling this function.*

Syntax

```
FeatureAddCost ( szMediaSource, szFeature, szTarget, nCostHigh, nCostLow );
```

Parameters

Table 34 ▪ FeatureAddCost Parameters

Parameter	Description
szMediaSource	The media source, typically MEDIA.
szFeature	Specifies the feature to add this cost to. Note that a specific feature in the media must be specified as installation cost is calculated by feature. Cost cannot be specified for the entire media.
szTarget	Specifies the target directory for the cost specified by nCost. This value is used when determining which volume or drive this cost applies to and when displaying the size required for the feature in the feature dialog. Currently, only a single szTarget variable for custom cost is supported for each feature. If you call this function multiple times for the same feature, szTarget variable should be the same each time. Otherwise, the value specified during the last call is used for the target of all additional cost for the feature.
nCostHigh	Specifies the upper 31 bits of the additional cost to be added to the feature.
nCostLow	Specifies the lower 31 bits of the additional cost to be added to the feature.

Return Values

Table 35 ▪ FeatureAddCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function successfully added the cost.
< ISERR_SUCCESS	Indicates that the function was unable to add the cost.

FeatureAddItem

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureAddItem** function adds a feature to a script-created feature set. If a script-created feature set with the name specified by szFeatureSet does not already exist, this function creates it.

Call **FeatureAddItem** once for each feature you want to add to a given script-created feature set. You can create multiple script-created feature sets, each with a unique name (szFeatureSet parameter).

Caution ▪ *This function cannot be used with file media libraries.*

Syntax

```
FeatureAddItem ( szFeatureSet, szFeature, nDataSize, bSelected );
```

Parameters

Table 36 ▪ FeatureAddItem Parameters

Parameter	Description
szFeatureSet	Specifies the name of the script-created feature set to which an item will be added. If the script-created feature set does not exist, **FeatureAddItem** creates it.
szFeature	Specifies the name of the feature to be added. Do not use a null string (""). To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls.
nDataSize	Specifies the size in bytes of the data the feature represents. If the feature is a series of files, this parameter specifies the total uncompressed size of all the files.
bSelected	Specifies the default selection setting of the feature. Pass one of the following predefined constants in this parameter: • **TRUE**—Indicates that the feature is selected by default. If TRUE is passed to select a subfeature whose parent feature is not selected, the subfeature is not selected—despite passing TRUE in the bSelected parameter. • **FALSE**—Indicates that the feature is not selected by default.  ***Note ▪*** *Default selection settings are cleared when the user selects a feature or subfeature displayed in a dialog. If the user clears a selected feature, all of its subfeatures are cleared. If the user clears all of a feature's subfeatures, the feature's selection setting is cleared.*

Return Values

Table 37 ▪ FeatureAddItem Return Values

Return Value	Description
0	**FeatureAddItem** successfully added the item to the feature or subfeature to the script-created feature set.
< 0	**FeatureAddItem** was unable to add the item to the feature or subfeature to the script-created feature set. For additional information, call FeatureError.

Additional Information

- To display a single level of features to the end user for selection, use FeatureDialog, SdFeatureDialog, or SdFeatureDialogAdv.

- To display features and their subfeatures, use SdFeatureDialog2, SdFeatureMult, or SdFeatureTree.
- You can use **FeatureAddItem** and script-created feature sets to allow users to select from options other than file media feature options:
  1. Call **FeatureAddItem** to create a script-created feature set containing the options you want.
  2. To display those options for selection, call **SdAskOptions** or **SdAskOptionsList** with the script-created feature set name in the parameter szFeature.
  3. To determine which options were selected, call **FeatureIsItemSelected**.

FeatureAddItem Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureAddItem function.
 *
 * In this script, FeatureAddItem is called to create a
 * script-created feature set consisting of drives attached
 * to the target system. These features are displayed in an
 * SdAskOptionsList dialog so that the end user can select
 * from among the drives.
 *
\*---------------------------------------------------------------*/

LIST listDrives, listFeatures;
STRING szSaveMEDIAValue, svDrive;
LONG nResult;
BOOL bSelected;

#include "ifx.h"

function OnBegin()
begin

    // Create the list to store drive names.
    listDrives = ListCreate(STRINGLIST);

    // Add all fixed drives to the list.
    GetValidDrivesList(listDrives, FIXED_DRIVE, -1);

    // Save the value of the system variable MEDIA so it can
    // be restored for later calls to transfer data.
    szSaveMEDIAValue = MEDIA;

    // Specify a name for the script-created feature set.
    MEDIA = "Drives";

    // Put the drive names into the script-created feature set.
    nResult = ListGetFirstString(listDrives, svDrive);
    while (nResult != END_OF_LIST)
        FeatureAddItem(MEDIA, svDrive, 0, FALSE);
        nResult = ListGetNextString(listDrives, svDrive);
```

```
    endwhile;

    // Display the list of drives.  Let user select one drive.
    SdAskOptionsList("Select a Drive" ,
    "Select one of the drives attached to your system." ,
    "" , EXCLUSIVE);

    // Find the selected drive in the list.
   bSelected = FALSE;
   nResult = ListGetFirstString(listDrives, svDrive);
   bSelected = ComponentIsItemSelected (MEDIA , svDrive);
   while ((nResult != END_OF_LIST) && !bSelected);
        nResult = ListGetNextString(listDrives, svDrive);
        bSelected = ComponentIsItemSelected (MEDIA , svDrive);
    endwhile;

    // Release the list from memory.
    ListDestroy (listDrives);
    if bSelected then
        MessageBox("You selected drive " + svDrive + ".", INFORMATION);
    endif;

    // Restore MEDIA to its previous value for file transfer.
    MEDIA = szSaveMEDIAValue;

end;
```

FeatureAddUninstallCost

Project ▪ *This information applies to InstallScript projects.*

The **FeatureAddUninstallCost** function specifies that the feature includes additional uninstallation operations that must be accounted for when updating the progress bar during uninstallation. You do not have to call this function for operations that are included in the uninstallation log file. This includes operations that are handled by the **XCopyFile** function that may or may not have had to call the **FeatureAddCost** function to update the progress bar during the installation. This function is only needed for operations that were carried out by functionality other than the InstallScript engine. This function can be called anytime before calling **StatusUpdate** and can be called multiple times.

Syntax

```
FeatureAddUninstallCost ( szMediaSource, szFeature, nOps, nOpType);
```

Parameters

Table 38 ▪ FeatureAddUninstallCost Parameters

Parameter	Description
szMediaSource	The media source, typically MEDIA.
szFeature	Specifies the feature to add this cost to. Note that a specific feature in the media must be specified. Uninstallation cost is calculated by feature. Cost cannot be specified for the entire media.
nOps	The number of operations to be added.
nOpType	Indicates the type of operation. Pass one of the following predefined constants in this parameter: • **FEATURE_OPCOST_UNINSTALL_FILE**—Specifies the operation as uninstalling a file. You can also specify this constant using the value 4096. This enables you to experiment with different sizes to determine what size to use for your custom operation. • **FEATURE_OPCOST_UNINSTALL_REGORINI**—Specifies the operation as uninstalling a registry file. You can also specify this constant using the value 2048. This enables you to experiment with different sizes to determine what size to use for your custom operation. • **FEATURE_OPCOST_UNINSTALL_UNREGFILE**—Specifies the operation as unregistering a file. You can also specify this constant using the value 16384. This enables you to experiment with different sizes to determine what size to use for your custom operation.  ***Note ▪*** *You can also pass a numeric value in this parameter to indicate an operation of a specific cost. You may need to experiment with different values to determine the appropriate value for a specified custom operation. Note that the total uninstall cost added is nOps multiplied by nOpType.*

Return Values

Table 39 ▪ FeatureAddUninstallCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function successfully added the cost.
< ISERR_SUCCESS	Indicates that the function was unable to add the cost.

FeatureCompareSizeRequired

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureCompareSizeRequired** function determines whether the target folder contains enough free space for the selected features specified by szFeatureSource, which must be a file media. If the target folder does not have sufficient free space, the fully qualified folder name is returned in svTarget and the amount of required free space is returned in nvSize.

If your setup specifies a destination folder for a feature in a file library at run time, it must do so by calling FeatureSetTarget before checking for free space with **FeatureCompareSizeRequired**.

Note *▪ This function cannot be used with script-created feature sets.*

Syntax

```
FeatureCompareSizeRequired ( szFeatureSource, svTarget, nvSize );
```

Parameters

Table 40 ▪ FeatureCompareSizeRequired Parameters

Parameter	Description
szFeatureSource	You must pass the system variable MEDIA in this parameter. No other value is valid.
svTarget	Returns a null string ("") if there is sufficient free space available on the target drive. Returns the target path if there is *not* sufficient free space on the target drive.  ***Note ▪*** *The parameter svTarget is used only to return a folder name. You cannot use the parameter to specify a destination folder.* **FeatureCompareSizeRequired** *checks the drive that is indicated by the destination folder that you specified for each component in the Components view. If szFeatureSource is a file media with features to be installed in the General Application Destination, you must assign a destination path to TARGETDIR (in InstallScript installations) or INSTALLDIR (in InstallScript MSI installations) before calling* **FeatureCompareSizeRequired**. *You can obtain a destination path from an end user by calling AskDestPath or a feature dialog.*
nvSize	Returns 0 if there is sufficient free space available on the target drive. Returns the size (in bytes) required if there is *not* sufficient free space on the target drive.

Return Values

Table 41 ▪ FeatureCompareSizeRequired Return Values

Return Value	Description
0	FeatureCompareSizeRequired was successful.
< 0	FeatureCompareSizeRequired failed. Call FeatureError for additional information.

FeatureCompareSizeRequired Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureAddItem, FeatureSetData,
 * FeatureCompareSizeRequired, and SdFeatureMult functions.
```

```
 *
 * Notes: DESTDIR must reference a drive with very little space
 *        available, such as a floppy drive. Remember to put a
 *        diskette into the floppy drive before running this
 *        script.
 *
\*---------------------------------------------------------------*/

#define FEAT1           "CAD Prog. Files"
#define FEAT1SIZE       25000000
#define FEAT1DESC       "CAD program EXEs and DLLs."
#define FEAT2           "CAD Templates"
#define FEAT2SIZE       18000000
#define FEAT2DESC       "CAD template files."
#define SUBFEAT1        "Industrial"
#define SUBFEAT1SIZE    7000000
#define SUBFEAT1DESC    "CAD industrial engineering template files."
#define SUBFEAT2        "Civil"
#define SUBFEAT2SIZE    5000000
#define SUBFEAT2DESC    "CAD civil engineering template files."
#define SUBFEAT3        "Mechanical"
#define SUBFEAT3SIZE    6000000
#define SUBFEAT3DESC    "CAD mechanical engineering template files."
#define DESTDIR         "a:\\"
#define SDFEATTITLE     "Displaying Script-created Features"
#define SDFEATMSG       "Make sure all features are selected."
#define FEATSIZEERRMSG  "Make sure target drive is accessible."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureCompareSizeRequired(HWND);

function ExFn_FeatureCompareSizeRequired(hMSI)
    STRING svDir, svTarget;
    NUMBER nvSize, nData;
begin

    // Disable the Back button in setup dialogs. Disable (BACKBUTTON);
    // Make a script-created feature set that includes subfeatures
    // and give it the media name "Run-time CAD".
    MEDIA = "Run-time CAD";

    FeatureAddItem (MEDIA, FEAT1, FEAT1SIZE, TRUE);

    FeatureSetData (MEDIA, FEAT1, FEATURE_FIELD_DESCRIPTION,
                      nData, FEAT1DESC);

    FeatureAddItem (MEDIA, FEAT2, FEAT1SIZE, TRUE);

    FeatureSetData (MEDIA, FEAT2, FEATURE_FIELD_DESCRIPTION, nData, FEAT2DESC);

    FeatureAddItem (MEDIA, FEAT2 + "\\" + SUBFEAT1, SUBFEAT1SIZE, TRUE);

    FeatureSetData (MEDIA, FEAT2 + "\\" + SUBFEAT1, FEATURE_FIELD_DESCRIPTION,
                     nData, SUBFEAT1DESC);
```

```
    FeatureAddItem (MEDIA, FEAT2 + "\\" + SUBFEAT2, SUBFEAT2SIZE, TRUE);

    FeatureSetData (MEDIA, FEAT2 + "\\" + SUBFEAT2,  FEATURE_FIELD_DESCRIPTION,
                    nData, SUBFEAT2DESC);

    FeatureAddItem (MEDIA, FEAT2 + "\\" + SUBFEAT3, SUBFEAT3SIZE, TRUE);

    FeatureSetData (MEDIA, FEAT2 + "\\" + SUBFEAT3, FEATURE_FIELD_DESCRIPTION,
                    nData, SUBFEAT3DESC);

    // Display the script-created features and subfeatures.
    SdFeatureMult (SDFEATTITLE, SDFEATMSG, svDir, "");

    // Set INSTALLDIR to DESTDIR, which, if you define as a floppy drive
    // (with a diskette in it), causes FeatureCompareSizeRequired
    // to display its 'not enough space' message.
    nvSize = 0;

    INSTALLDIR = DESTDIR;

    if (FeatureCompareSizeRequired(MEDIA, svTarget, nvSize) < 0) then
        MessageBox (FEATSIZEERRMSG, SEVERE);
    endif;

end;
```

FeatureConfigureFeaturesFromSuite

Project ▪ *This information applies to InstallScript projects.*

Note ▪ *This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. It is also available in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

In addition, this function is available in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).

The **FeatureConfigureFeaturesFromSuite** function sets feature states for the current InstallScript package that is running in an Advanced UI or Suite/Advanced UI installation based on the values of the Advanced UI or Suite/Advanced UI properties **ISFeatureInstall** and **ISFeatureRemove**. The function is called by the default code in the OnSuiteInstallBefore event (for an install operation) and OnSuiteMaintBefore event (for a modify operation).

The **FeatureConfigureFeaturesFromSuite** function also lets you set the feature state for InstallScript installations that are launched as an executable package in an Advanced UI or Suite/Advanced UI installation, or that are launched directly outside an Advanced UI or Suite/Advanced UI installation. In these cases, the function sets feature states based on the **ISFeatureInstall** and **ISFeatureRemove** key-value pairs.

Syntax

```
FeatureConfigureFeaturesFromSuite (string szCommandLine);
```

Parameters

Table 42 ▪ FeatureConfigureFeaturesFromSuite Parameters

Parameter	Description
szCommandLine	Specify the command line that you want to use to set `ISFeatureInstall`, `ISFeatureRemove`, or both. Set these to a comma-delimited list of feature names as follows: `ISFeatureInstall=Feature1,Feature2 ISFeatureRemove=Feature3` In the above example, Feature1 and Feature2 are selected to be installed; Feature3 is selected to be removed, if it is present. If any features are used in the values of both properties, the features that are set for the `ISFeatureRemove` property supersede the `ISFeatureInstall` property. If szCommandLine does not set either property or both properties, the call to **FeatureConfigureFeaturesFromSuite** has no effect. To learn how to refer to top-level features and subfeatures for `ISFeatureInstall` and `ISFeatureRemove`, see Specifying Features and Subfeatures in Function Calls.

Return Values

This function has no return values.

FeatureDialog

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureDialog** function displays a dialog that enables the end user to select one or more items from a list of features in the installation. The end user can also select a destination location.

When the end user clicks the Browse button, the Choose Folder dialog, which displays a list of existing folders, opens. The end user can select an existing folder from the list or enter a new folder name in the Path field. **FeatureDialog** returns the name of the specified folder in svDir. If the user specifies a folder that does not currently exist, the installation creates the folder.

Caution ▪ *If your installation does not use a setup type dialog, you must call FeatureSetupTypeSet to specify a setup type that has been defined in the Setup Types view in InstallShield before calling* **FeatureDialog**.

Syntax

```
FeatureDialog ( szTitle, szMsg, svDir, szFeature );
```

Parameters

Table 43 ▪ FeatureDialog Parameters

Parameter	Description
szTitle	Specifies the dialog title. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the default destination location variable. Returns the folder selected by the end user. The location returned in svDir does not affect file transfer unless you assign it to TARGETDIR (in InstallScript installations) or INSTALLDIR (in InstallScript MSI installations). If the default folder specified by svDir does not already exist on the end user’s system, it will not be created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder, you must call ExistsDir when FeatureDialog returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user’s system.
szFeature	Specifies the feature whose subfeatures are displayed for selection. Pass a null string ("") in this parameter to display all top-level features. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls. FeatureDialog searches for the requested features in the script-created feature set specified by the system variable MEDIA.  ***Note ▪*** *If necessary, feature names are truncated to allow the display of the largest possible feature size. The space required to display the size depends on the maximum feature size (2 GB), the feature size options currently in use, and the font used to display feature information in the dialog. Feature size options are set with the DialogSetInfo function.* *When the space required to display the maximum possible size has been determined, all feature names are truncated automatically—if necessary—to fit the remaining space. This ensures that feature names will not overlap feature sizes.* *Note that the name of a feature that requires less space to display its size (or that is not selected) may still be truncated under this method. To maximize performance and ensure that complete feature names are displayed, make feature names or display names smaller than the space available in the dialog.*

Return Values

Table 44 ▪ FeatureDialog Parameters

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.
< 0	Unable to display the FeatureDialog dialog. Call FeatureError for additional information.

Additional Information

The Choose Folder dialog indicates the amount of disk space that each feature occupies. A feature's size is displayed as 0 if it is not selected. Once it has been selected, its actual size is displayed.

FeatureDialog Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureDialog function.
 *
 * This example script displays a dialog that displays a list
 * of features in the setup that the user can install and the
 * amount of space that each feature occupies.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
```

```
   export prototype MyFunction(HWND);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING szTitle, szMsg, svDir;

begin

    svDir   = INSTALLDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display available features.
    FeatureDialog (szTitle, szMsg, svDir, "");

end;
```

FeatureError

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FeatureError does not return error information for unsupported functions. For example, ComponentInitialize, ComponentUpdate, and ComponentValidate are not supported as feature functions. FeatureError does not work for these functions.

The FeatureError function obtains additional error information when a feature function returns a value less than zero. The following code fragment shows a typical implementation of FeatureError:

```
nResult = FeatureGetData (MEDIA, svFeature, FEATURE_FIELD_SELECTED, nvResult,
          svResult);

if(nResult < 0) then
    FeatureError(svFeatureSource, svFeature, svComponent, svFile, nvError);

    SprintfBox (INFORMATION, "FeatureGetData Error Information",
                "FeatureGetData had the following error:\n\n" +
                "Media Name: %s\nFeature: %s\nComponent: %s\n" +
                "File: %s\nError Number: %ld"
                svFeatureSource, svFeature, svComponent, svFile, nvError);
endif;
```

The FeatureError function should be called only after another feature function returns a value less than zero. FeatureError might return invalid error codes if called when another feature function has not returned a value that is less than zero.

Note ▪ *FeatureError returns information for all parameters (media name, feature name, component name, file name, and error code) only for script-created feature sets. For features in the file media (MEDIA), FeatureError returns only the error code.*

Syntax

```
FeatureError ( svFeatureSource, svFeature, svComponent, svFile, nvError );
```

Parameters

Table 45 ▪ FeatureError Parameters

Parameter	Description
svFeatureSource	Returns the media name of the script-created feature set if relevant to the error indicated by nvError.
svFeature	Returns the name of the feature if relevant to the error indicated by nvError.
svComponent	Returns the name of the component if relevant to the error indicated by nvError.
svFile	Returns the name of the file if relevant to the error indicated by nvError.
nvError	Returns a code that identifies the type of error that occurred in a previous call to a feature-related function. These error codes are described below.

Error Codes

The following table describes the error codes returned by FeatureError.

Note ▪ *After correcting errors involving the media, you must rebuild the project.*

Table 46 ▪ FeatureError Error Codes

Code	Description	Cause
-101	Cannot add feature.	FeatureAddItem was unable to add a feature to the script-created feature set.
-102	Specified feature already exists.	FeatureAddItem was called twice with the same media name and feature name.

Table 46 ▪ FeatureError Error Codes (cont.)

Code	Description	Cause
-103	Specified feature cannot be selected or deselected.	FeatureSelectItem was used to select or deselect a feature that is required by a currently selected feature. Deselect the dependent feature (that requires the other feature) before attempting to select or deselect the required feature.
-105	Specified feature cannot be found in the media.	An attempt was made to access a feature that does not exist. This error occurs when a feature name is specified incorrectly in a feature function call. Feature names must be specified exactly as they appear in the Setup Design view or in the call to FeatureAddItem. Feature names are case-sensitive.
-108	Out of disk space.	The target disk or directory has insufficient free space, the disk space cannot be determined because TARGETDIR (in an InstallScript installation) or INSTALLDIR (in an InstallScript MSI installation) is invalid, or a script-defined folder of a feature has not been set.
-118	Attempted operation not allowed with script-created feature sets.	A script-created feature set name was passed to a feature function that operates only on file media.
-125	The list specified in the feature function is not valid.	When calling FeatureListItems, verify that the list you are passing to the function is valid.
-126	Attempted operation not allowed with file media library.	A file media name was passed to a feature function (for example, FeatureAddItem), that operates only on script-created feature sets.
-132	The specified media cannot be found.	The media has been declared, but it not associated with any features. Make sure that script-created features are associated with the media.
-136	Unable to allocate memory.	Insufficient memory is available to the setup. Display a message to the end user to close all other applications or to cancel the setup, reboot the system, and restart the setup.
-137	Specified option is not valid.	An invalid option has been specified for a feature function—for example, specifying only a component when both a component and file name are required.
-147	Invalid value passed to a feature-related function.	One of the values passed to a feature function is invalid. This error can be caused, for example, by passing an empty string in the second parameter of FeatureAddItem.

Return Values

Table 47 ▪ FeatureError Return Values

Return Value	Description
0	FeatureError was successful.
< 0	FeatureError failed.

FeatureError Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureError function.
 *
 * This example script demonstrates a function that adds a feature
 * to a script-created feature set.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
 *             subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);
   prototype HandleMoveDataError(number);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  szTitle, szMsg;
    NUMBER  listID, nResult;

begin

    szTitle = "List MEDIA Features";
    szMsg   = "MEDIA contains the following top-level features:";

    // Initialize the string list.
    listID = ListCreate (STRINGLIST);
```

```
    // Create a list of top-level features in the specified media.
    nResult = FeatureListItems (MEDIA, "", listID);

    // Call the error handler function.
    HandleMoveDataError (nResult);

    // Display a list of top-level features.
    SdShowInfoList (szTitle, szMsg, listID);

end;

function HandleMoveDataError(nResult)

    STRING szErrMsg, svFeature , svComponent , svFile;

begin

    svFeature = "";
    svComponent = "";
    svFile = "";

    // In cases where FeatureListItems returns a value not equal to zero, display an
    // error message.
    switch (nResult)
        case 0:
            return 0;
        default:
            FeatureError (MEDIA , svFeature , svComponent , svFile , nResult);
            szErrMsg = "An error occurred during the process: %d"  + "\n\n" +
                "Feature: " + svFeature + "\n" +
                "Component: " + svComponent + "\n" +
                "File: " + svFile;
            SprintfBox (SEVERE, "", szErrMsg, nResult);
            return nResult;
    endswitch;

end;
```

FeatureErrorInfo

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureErrorInfo** function, which is called in the default code for the OnComponentError event handler, returns information about a file transfer error that does not generate any error event other than FeatureError—for example, FileLocked or SelfRegistrationError.

Note ▪ *This function returns information only about file transfer errors. For information about errors from script-created features, call FeatureError.*

Syntax

```
FeatureErrorInfo ( );
```

Parameters

None

Return Values

A reference that can be assigned to a variable of type OBJECT by using the set keyword. Upon assignment, that variable (oErrorInfo in the following example) has the following properties:

Table 48 ▪ FeatureErrorInfo Return Values

Property	Description
oErrorInfo.Feature	An object whose properties provide information about the feature that was being transferred when the error occurred. If the error is not associated with a particular feature, or the feature cannot be identified, this property is not set; test for this case by checking the value of IsObject (oErrorInfo.Feature).
oErrorInfo.Feature.DisplayName	The display name of the feature that was being transferred when the error occurred. If you did not specify a display name for this feature, this string is null ("").
oErrorInfo.Feature.Name	The name of the feature that was being transferred when the error occurred.
oErrorInfo.Feature.Description	A string describing the file transfer error. This string may be null ("").
oErrorInfo.LastError	The numeric code for the file transfer error.

FeatureErrorInfo Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureError function.
 *
 * This example script demonstrates a function that adds a feature
 * to a script-created feature set.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
```

```
 *             subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);
   prototype HandleMoveDataError(number);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  szTitle, szMsg;
    NUMBER  listID, nResult;

begin

    szTitle = "List MEDIA Features";
    szMsg   = "MEDIA contains the following top-level features:";

    // Initialize the string list.
    listID = ListCreate (STRINGLIST);

    // Create a list of top-level features in the specified media.
    nResult = FeatureListItems (MEDIA, "", listID);

    // Call the error handler function.
    HandleMoveDataError (nResult);

    // Display a list of top-level features.
    SdShowInfoList (szTitle, szMsg, listID);

end;

function HandleMoveDataError(nResult)

    STRING szErrMsg, svFeature , svComponent , svFile;

begin

    svFeature = "";
    svComponent = "";
    svFile = "";

    // In cases where FeatureListItems returns a value not equal to zero, display an
    // error message.
    switch (nResult)
```

```
        case 0:
            return 0;
        default:
            FeatureError (MEDIA , svFeature , svComponent , svFile , nResult);
            szErrMsg = "An error occurred during the process: %d"  + "\n\n" +
                "Feature: " + svFeature + "\n" +
                "Component: " + svComponent + "\n" +
                "File: " + svFile;
            SprintfBox (SEVERE, "", szErrMsg, nResult);
            return nResult;
    endswitch;

end;
```

FeatureFileEnum

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureFileEnum** function builds a list of the files in a component associated with the specified feature or a list of the components associated with a particular feature.

Note *▪ This function cannot be used with script-created feature sets.*

Syntax

```
FeatureFileEnum ( szFeatureSource, szFeature, szQuery, listFilesorComponents, nOption );
```

Parameters

Table 49 ▪ FeatureFileEnum Parameters

Parameter	Description
szFeatureSource	Pass MEDIA in this parameter.
szFeature	Specifies the name of the feature to be enumerated. Do not pass a null string ("") in this parameter. **FeatureFileEnum** requires a specific feature name.
szQuery	To query the components in a particular feature, specify a component specification (same format as a file specification). Delimit the component specification with double backslashes and enclose the expression in double quotation marks. The component specification can include wild-card characters: an asterisk (*) as a substitute for zero or more characters, or a question mark (?) as a substitute for a single character. The following example specifies all of the components in the feature specified in szFeature: `"*.*"` To query the files in a particular component, specify a component name and a file specification. Delimit the component name and the file specification with double backslashes and enclose the expression in double quotation marks. You can also specify only a file specification. The file name part of the file specification may include wild-card characters. The following example specifies all of the files in the component Graphic_Examples: `"Graphic_Examples\\*.*"` ***Note ▪*** *There are limitations when using this functionality in InstallScript MSI installations (both when querying components and files), because complex wild-card expressions are not supported.* *When querying files, you must specify one of the following as szQuery:* • *<Component Name>*.** • *<Component Name>\<Complete File Name>* • *<Component Name>*.<Extension>* • *<Component Name>\<File Name>.** *When querying components, you must specify one of the following as szQuery:* • *.** • *<Complete Component>*
listFilesOrComponents	When querying components, returns a list of the components that match szQuery. When querying files, returns a list of the names of all files that match szQuery. The string list identified by listFilesOrComponents must already have been initialized by a call to ListCreate.

Table 49 ▪ FeatureFileEnum Parameters (cont.)

Parameter	Description
nOption	Pass NO_SUBDIR in this parameter. Note that nOptions is ignored when querying the list of components.

Return Values

Table 50 ▪ FeatureFileEnum Return Values

Return Value	Description
0	FeatureFileEnum was successful.
<0	FeatureFileEnum failed.

FeatureFileEnum Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureFileEnum function.
 *
 * Notes: To run this example script, create a project with the
 *        following features (f), subfeatures (sf), and
 *        components (c):
 *
 *        (f) Program_Files
 *            (c) Program_DLLS
 *            (c) Program_EXEs
 *        (f) Example_Files
 *            (sf) Graphics
 *               (c) Graphic_Examples
 *
 *         Be sure to assign files to the components so there
 *         is something to enumerate.
 *
\*---------------------------------------------------------------*/

#define FEAT1       "Program Files"
#define FEAT2       "Example Files"
#define SUBFEAT1    "Graphics"
#define EXECCOMP    "Program Executable Files"
#define GRAPHCOMP   "Graphic Examples"
#define SDSHOWTITLE "FeatureFileEnum Results"

#define SDSHOWMSG1  FEAT1 + " enumerated files:"
#define SDSHOWMSG2  FEAT2 + " enumerated files:"

prototype HandleFeatureError (NUMBER);
```

```
NUMBER nResult;
LIST   listList1, listList2;

program

   // Create two lists to store file names.
   listList1 = ListCreate (STRINGLIST);
   listList2 = ListCreate (STRINGLIST);

   // Build a list of the program files.
   nResult = FeatureFileEnum (MEDIA, FEAT1, EXECCOMP + "\\*.*",
                              listList1, INCLUDE_SUBDIR);

   HandleFeatureError (nResult);

   // Build a list of the graphic files.
   nResult = FeatureFileEnum (MEDIA, FEAT2 + "\\" + SUBFEAT1,
                              GRAPHCOMP+"\\*.*", listList2, INCLUDE_SUBDIR);

   HandleFeatureError (nResult);

   // Display the program files.
   SdShowInfoList (SDSHOWTITLE, SDSHOWMSG1, listList1);

   // Display the graphic files.
   SdShowInfoList (SDSHOWTITLE, SDSHOWMSG2, listList2);

   // Release the lists from memory.

   ListDestroy (listList1);
   ListDestroy (listList2);

endprogram

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the setup.
 *
\*---------------------------------------------------------------------------*/

function HandleFeatureError( nResult )

   NUMBER  nvError;
   STRING  svFeatureSource, svFeature, svComponent, svFile;

begin
   if (nResult < 0) then

      FeatureError (svFeatureSource, svFeature, svComponent, svFile, nvError);

      SprintfBox (INFORMATION, "Data Transfer Error Information",
                "FeatureError returned the following data transfer error.\n" +
```

```
                "Setup will now abort.\n\n" +
            "Media Name: %s\nFeature: %s\nComponent: %s\n" +

                "File: %s\nError Number: %ld",
                svFeatureSource, svFeature, svComponent, svFile, nvError);
      abort;

   endif;
end;
```

FeatureFileInfo

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

Note that this function does not work with files in InstallScript Object projects.

The **FeatureFileInfo** retrieves information on a file in the file media that is referenced by szFeatureSource (MEDIA).

Note ▪ *This function cannot be used with script-created features.*

Syntax

```
FeatureFileInfo ( szFeatureSource, szFeature, szFile, nInfo, nvResult, svResult );
```

Parameters

Table 51 ▪ FeatureFileInfo Parameters

Parameter	Description
szFeatureSource	Pass MEDIA in this parameter.
szFeature	Specifies the feature containing the component in which the file is found.
szFile	Specifies the component and the file name, with or without a path. Delimit tokens in the szFile expression with double backslashes and enclose the expression in double quotation marks. ● If there are two tokens in szFile, the first is the component name and the second is the file name: “component\\file name” ● If there are more than two tokens in szFile, the first is the component name, the last is the file name, and the middle tokens form the path: "component\\path\\file name" For example: ● "Shared_Files\\Is5.dll"—Shared_Files is a component and Is5.dll is a file name. ● "Shared_Files\\dev\\myapp\\dlls\\Is5.dll"—Shared_Files is a component, \\dev\\myapp\\dlls is a path, and Is5.dll is a file name.  ***Note ▪*** *InstallShield lets you add entire file and folder structures to your components by dragging and dropping them in the Files view.*

Table 51 ▪ FeatureFileInfo Parameters (cont.)

Parameter	Description
nInfo	Specifies the type of information to be retrieved. Pass a constant in this parameter. The available constants apply to either a specified component, or a specified file in a component. The available file-specific constants are: ● **FEATURE_INFO_ATTRIBUTE**—Attribute values for the specified file. For more information about the `File` table attributes that are returned, see the Windows Installer Help. Only InstallScript MSI projects support this constant; InstallScript projects do not support it. ● **FEATURE_INFO_DATE**—Date value for the specified file in the format mm-dd-yy. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. If this constant is used with **FeatureFileInfo** in an InstallScript MSI installation, the function returns failure. ● **FEATURE_INFO_DATE_EX**—Date value for the specified file in the 2000-compliant format mm-dd-yyyy. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. If this constant is used with **FeatureFileInfo** in an InstallScript MSI installation, the function returns failure. ● **FEATURE_INFO_TIME**—Time value for the specified file in the format hh:mm, using 24-hour time. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. If this constant is used with **FeatureFileInfo** in an InstallScript MSI installation, the function returns failure. ● **FEATURE_INFO_VERSIONLS**—The minor version number or numbers in string form. ● **FEATURE_INFO_VERSIONMS**—The major version number or numbers in string form. ● **FEATURE_INFO_VERSIONSTR**—The entire version number in string form. ● **FEATURE_INFO_MD5_SIGNATURE**—Returns the MD5 signature of the file specified by szFile. Note that this information is generated during the media build, so calling this function with this parameter does not cause the MD5 signature to be generated.  ***Note ▪*** *Raw MD5 signature data for a particular file consists of 16 generated numeric values of 16 bit each (between 0x00 and 0xFF). These values are usually stored in a string of unsigned characters. However, the InstallScript language does not support unsigned characters, so instead of returning the raw MD5 file data, each of the 16 numeric values are converted to their string equivalent and placed in the resulting string. This results in a string of 32 characters, where each set of two characters represent a single numeric value. This is sometimes referred to as a MD5 hex string.*

Table 51 ▪ FeatureFileInfo Parameters (cont.)

Parameter	Description
nInfo (cont.)	• **FEATURE_INFO_ORIGSIZE_HIGH**—Returns the upper 31 bits of size of the original file. If the original size of the file is more than 2 GB, the size of the file is equal to the value returned for FEATURE_INFO_ORIGSIZE_HIGH multiplied by 2 GB added to the value returned for FEATURE_INFO_ORIGSIZE_LOW. Only InstallScript installations support this constant. • **FEATURE_INFO_ORIGSIZE_LOW**—Returns the lower 31 bits of size of the original file. If the original size of the file is more than 2 GB, the size of the file is equal to the value returned for FEATURE_INFO_ORIGSIZE_HIGH multiplied by 2 GB added to the value returned for FEATURE_INFO_ORIGSIZE_LOW. • **FEATURE_INFO_COMPSIZE_LOW**—Returns the lower 31 bits of size of the compressed file. If the compressed size of the file is more than 2 GB, the size of the file is equal to the value returned for FEATURE_INFO_COMPSIZE_HIGH multiplied by 2 GB added to the value returned for FEATURE_INFO_COMPSIZE_LOW. • **FEATURE_INFO_COMPSIZE_HIGH**—Returns the upper 31 bits of size of the compressed file. If the original size of the file is more than 2 GB, the size of the file is equal to the value returned for FEATURE_INFO_ORIGSIZE_HIGH multiplied by 2 GB added to the value returned for FEATURE_INFO_ORIGSIZE_LOW. Only InstallScript installations support this constant.  ***Note ▪*** *You can use the* **ConvertSizeToUnits** *function to convert these values into a single value of KBYTES, MBYTES, GBYTES, or TBYTES.*

Table 51 ▪ FeatureFileInfo Parameters (cont.)

Parameter	Description
nInfo (cont.)	The available component-specific constants are: • **FEATURE_INFO_COMPONENT_FLAGS**—General flags that are set for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_DESTINATION**—Destination setting for the component. Note that any text substitutions that are included in the destination are not resolved in the returned string. To determine the component's destination with any text substitutions resolved, call **TextSubSubstitute** on the returned string. • **FEATURE_INFO_DOTNET**—.NET flags that are selected for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_FTPLOCATION**—FTP Location setting for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_HTTPLOCATION**—HTTP Location setting for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_LANGUAGE**—Languages setting for the specified component. Because this applies only to a component, szFile must be a single token expression identifying a component. • **FEATURE_INFO_MISC**—Miscellaneous setting for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_OS**—Operating System setting for the specified component. Because this applies only to a component, szFile must be a single token expression that identifies a component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_OVERWRITE**—Overwrite flags that are set for the specified component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • **FEATURE_INFO_PLATFORM_SUITE**—Platform Suites setting for the specified component. Because this applies only to a component, szFile must be a single token expression that identifies a component. Only InstallScript projects support this constant; InstallScript MSI projects do not support it.

Table 51 ▪ FeatureFileInfo Parameters (cont.)

Parameter	Description
nvResult	Specifies information that is dependent on the constant that is passed in nInfo. When nInfo is FEATURE_INFO_ORIGSIZE_HIGH, FEATURE_INFO_ORIGSIZE_LOW, or FEATURE_INFO_ATTRIBUTE, nvResult returns a number value. When nInfo is FEATURE_INFO_ATTRIBUTE, nvResult returns a numeric value that represents the file attributes from the Windows Installer `File` table. To determine the file attribute settings, use file attribute constants in bitwise OR operations with nvResult. For an example of how to test nvResult, see FeatureFileInfo Example. For more information about the File table attributes, see the Windows Installer Help. When nInfo is FEATURE_INFO_LANGUAGE or FEATURE_INFO_OS, the parameter position occupied by nvResult must specify a LIST variable to store the language or operating system IDs. You must call ListCreate with the constant NUMBERLIST to create the list before you call **FeatureFileInfo** to determine which languages or operating systems are specified by the component: `listID = ListCreate(NUMBERLIST);` `FeatureFileInfo(szFeatureSource, szFeature, szFile, FEATURE_INFO_LANGUAGE, listID, svResult);` When nInfo is FEATURE_INFO_LANGUAGE, **FeatureFileInfo** adds language IDs to the list; when nInfo is FEATURE_INFO_OS, **FeatureFileInfo** adds operating system IDs to the list. When ninfo is FEATURE_INFO_COMPONENT_FLAGS, nvResult returns one or more of the following values: • FEATURE_INFO_COMPONENT_FLAG_COMPRESSED—The component's Compressed setting is Yes. • FEATURE_INFO_COMPONENT_FLAG_DATAASFILES—The component's files are placed in a particular folder for a CD-ROM type of release. (This is determined by the CD-ROM Folder setting for the feature that contains the component.) Only InstallScript projects support this constant; InstallScript MSI projects do not support it. • FEATURE_INFO_COMPONENT_FLAG_DONTUNINSTALL—The component's Uninstall setting is No. • FEATURE_INFO_COMPONENT_FLAG_ENCRYPTED—The component is encrypted. (This is determined by whether the feature that includes the component has Yes selected for its Encryption setting.) • FEATURE_INFO_COMPONENT_FLAG_POTENTIALLYLOCKED—The component's Potentially Locked setting is Yes. • FEATURE_INFO_COMPONENT_FLAG_SELFREGISTERING—The component's Self-Register setting is Yes. • FEATURE_INFO_COMPONENT_FLAG_SHARED—The component's Shared setting is Yes.

Table 51 ▪ FeatureFileInfo Parameters (cont.)

Parameter	Description
nvResult (cont.)	When ninfo is FEATURE_INFO_OVERWRITE, nvResult returns one or more of the following values: • FEATURE_VALUE_ALWAYS—The component's Overwrite setting is Always. • FEATURE_VALUE_DATE_NEWER—The component's Overwrite setting is Newer Date. • FEATURE_VALUE_DATE_OLDER—The component's Overwrite setting is Older Date. • FEATURE_VALUE_DATE_SAME—The component's Overwrite setting is Same or Newer Date. • FEATURE_VALUE_NEVER—The component's Overwrite setting is Never. • FEATURE_VALUE_VERSION_NEWER—The component's Overwrite setting is Newer Version. • FEATURE_VALUE_VERSION_OLDER—The component's Overwrite setting is Older Version. • FEATURE_VALUE_VERSION_SAME—The component's Overwrite setting is Same or Newer Version. Note that nvResult could contain both date and version values. When ninfo is FEATURE_INFO_DOTNET, nvResult may return the following value: FEATURE_VALUE_LOCAL_ASSEMBLY—The component is marked as a local assembly.
svResult	Returns the date, time, or version when nInfo specifies a corresponding information type.

Return Values

Table 52 ▪ FeatureFileInfo Return Values

Return Value	Description
0	FeatureFileInfo was successful.
<0	FeatureFileInfo failed.

FeatureFileInfo Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the FeatureFileInfo function.
 *
 * This script calls FeatureFileInfo repeatedly to retrieve
 * information about the file media. The information is stored
 * in a list and then displayed.
 *
 * Note: To run this example script, create a project with the
 *       following features (f), subfeatures (sf), and
 *       components (c):
 *
 *       (f) Example_Files
 *           (sf) Graphics
 *                (c) Graphic_Examples
 *
 *       Be sure to assign at least one file to the Graphic_Examples
 * component so there is something to enumerate.
 *       Also, remember to specify the file name in the #define
 *       FILE line.
 *
\*---------------------------------------------------------------*/

#define FEAT         "Example Files"
#define SUBFEAT      "Graphics"
#define COMP     "Graphic Examples"
#define FILE         "comdlg32.dll"
#define SDSHOWTITLE  "ComponentFileInfo Results"
#define SDSHOWMSG    FILE + " information:"

prototype HandleFeatureError (NUMBER);

NUMBER nReturn, nvResult;
STRING svResult;
LIST   listID;

program

   // Create a list to store file media information.
   listID = ListCreate (STRINGLIST);

   // Get the original size of the specified file.
   nReturn = FeatureFileInfo (MEDIA, FEAT + "\\" + SUBFEAT,
                              COMP +  "\\" + FILE,
                              FEATURE_INFO_ORIGSIZE , nvResult, svResult);

   HandleFeatureError (nvResult);

   // Convert the original size to a string.
   Sprintf (svResult ,"%d", nvResult);

   // Add the string to the list.
   ListAddString (listID, "The Original size of the file is       " +
                  svResult, AFTER);

   // Get the attributes of the specified file.
   nReturn = FeatureFileInfo (MEDIA, FEAT + "\\" + SUBFEAT,
```

```
                                COMP +  "\\" + FILE,
                                FEATURE_INFO_ATTRIBUTE , nvResult, svResult);

HandleFeatureError (nReturn);

// If no attributes are set, indicate normal attributes.
if (nvResult = FILE_ATTR_NORMAL) then
    svResult = "normal";

// If attributes are set, concatenate them for display.

else
   if (FILE_ATTR_ARCHIVED & nvResult) then
      svResult = "archived,";
   endif;

   if (FILE_ATTR_HIDDEN & nvResult) then
       svResult = svResult + "hidden,";
   endif;

   if (FILE_ATTR_READONLY & nvResult) then
       svResult = svResult + "read-only,";
   endif;

   if (FILE_ATTR_SYSTEM & nvResult) then
      svResult = svResult + "system,";
   endif;

   if (FILE_ATTR_DIRECTORY & nvResult) then
      svResult = svResult + "directory,";

   endif;

 endif;

 // Add the string of attributes to the list.
 ListAddString (listID, "The attribute for the file is          " +
                svResult, AFTER);

 // Get the major file version of the specified file.
 nReturn = FeatureFileInfo (MEDIA, FEAT + "\\" + SUBFEAT,
                            COMP +  "\\" + FILE,
                            FEATURE_INFO_VERSIONMS , nvResult, svResult);
 HandleFeatureError (nReturn);

 // Add the major file version to the list.
 ListAddString (listID, "The upper 32-bit version value         " +
                svResult, AFTER);

 // Get the minor file version of the specified file.
 nReturn = FeatureFileInfo (MEDIA, FEAT + "\\" + SUBFEAT,
                            COMP +  "\\" + FILE,
                            FEATURE_INFO_VERSIONLS , nvResult, svResult);
 HandleFeatureError (nReturn);

 // Add the minor file version to the list.
```

```
    ListAddString (listID, "The lower 32-bit version value is       " +
                   svResult, AFTER);

    // Get the complete file version of the specified file.
    nReturn = FeatureFileInfo (MEDIA, FEAT + "\\" + SUBFEAT,
                               COMP +  "\\" + FILE,
                               FEATURE_INFO_VERSIONSTR , nvResult, svResult);

    HandleFeatureError (nReturn);

   // Add the complete file version to the list.
   ListAddString (listID, "The version for the file is             " +

                  svResult, AFTER);

   // Display the list.
   SdShowInfoList (SDSHOWTITLE, SDSHOWMSG, listID);

   // Release the list from memory.
   ListDestroy(listID);

endprogram

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the setup.
 *
\*---------------------------------------------------------------------------*/
function HandleFeatureError (nvResult)

   NUMBER  nvError;
   STRING  svFeatureSource, svFeature, svComponent, svFile;

begin
   if (nvResult < 0) then
      FeatureError(svFeatureSource, svFeature, svComponent, svFile, nvError);
      SprintfBox(INFORMATION, "Data Transfer Error Information",
                 "FeatureError returned the following data transfer error.\n" +

                 "Setup will now abort.\n\n" +
                 "Media Name: %s\nFeature: %s\nComponent: %s\n" +
                 "File: %s\nError Number: %ld",
                 svFeatureSource, svFeature, svComponent, svFile, nvError);
      abort;
   endif;
end;
```

FeatureFilterLanguage

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureFilterLanguage** function filters (excludes) files from file transfer based on language. By default, all languages included in the media build are unfiltered (included). You must call FeatureFilterLanguage for each language you wish to filter or unfilter.

Note *▪ This function cannot be used with script-created feature sets.*

Filtering Language-Specific Components

Task ***To filter language-specific components during the installation:***

1. Filter (exclude) all languages by calling FeatureFilterLanguage with ISLANG_ALL in the parameter nLangID and bFiltered set to TRUE.
2. For each language that you want to install, call FeatureFilterLanguage with the appropriate language constant in nLangID and with the parameter bFiltered parameter set to FALSE. Each call unfilters (includes) components for the language specified in nLangID.

Note *▪ You cannot specify multiple language constants in the nLangID parameter by using the OR operator (|). Specifying multiple language constants causes the function to perform incorrectly.*

Supporting Different Languages

InstallShield allows you to designate components for any language or language subgroup that is supported by Windows. However, in order for the Release Wizard to build a language-specific component, you must have support for the language of that component. Your setup must also support the language of the component.

If your setup includes language-specific components that are designated as specific to a language not supported by InstallShield or by your setup, the components are filtered (not included) by the Release Wizard.

Using FeatureFilterLanguage With GetSystemInfo

When using FeatureFilterLanguage in conjunction with the GetSystemInfo function, you must consider the following: The language constants that can be used to designate language-specific components are a small subset of the language constants that can be returned by GetSystemInfo.

If your setup includes language filtering based on these return values, you must use a switch statement to convert constants returned by this function into one of the constants supported for language filtering.

Syntax

```
FeatureFilterLanguage ( szFeatureSource, nLangID, bFiltered );
```

Parameters

Table 53 ▪ FeatureFilterLanguage Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media.
nLangID	Specifies the ID of the language to filter or unfilter. Only *one* language constant can be specified for each function call. To filter all languages, pass ISLANG_ALL in this parameter. See Language IDs to learn more.
bFiltered	Indicates whether to filter (exclude) or unfilter (include) the language specified in nLangID. Pass one of the following predefined constants in this parameter: • **TRUE**—Filter the language specified in nLangID—do not include it in the file transfer. • **FALSE**—Do not filter the language specified in nLangID—include it in the file transfer.

Return Values

Table 54 ▪ FeatureFilterLanguage Return Values

Return Value	Description
0	FeatureFilterLanguage was successful.
< 0	FeatureFilterLanguage failed.

FeatureFilterLanguage Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureFilterLanguage function.
 *
 * First, FeatureFilterLanguage is called to exclude all
 * languages.  Next, GetSystemInfo is called to determine the
 * target computer's default language/locale.
 *
 * Then, FeatureFilterLanguage is called again to include the
 * language appropriate for the target computer.  If language
 * support is not provided for the target computer, English is
 * used.  Finally, the FeatureMoveData is called to create the
 * installation.
```

```
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureFilterLanguage(HWND);

function ExFn_FeatureFilterLanguage(hMSI)
    STRING  szResult;
    NUMBER  nResult, nDisk;
begin

    // Filter out all language-specific file groups.
    FeatureFilterLanguage (MEDIA, ISLANG_ALL, TRUE);

    // Retrieve the target machine's default language/locale setting.
    GetSystemInfo (LANGUAGE, nResult, szResult);

    // Turn off filtering for file groups specific to the target
    // machine's default language/locale setting.

    switch (nResult)
        case ISLANG_FRENCH_CANADIAN:
            FeatureFilterLanguage (MEDIA, ISLANG_FRENCH_CANADIAN, FALSE);
        case ISLANG_FRENCH_STANDARD, ISLANG_FRENCH_BELGIAN, ISLANG_FRENCH_SWISS,
ISLANG_FRENCH_LUXEMBOURG:
            FeatureFilterLanguage (MEDIA, ISLANG_FRENCH_STANDARD, FALSE );
        case ISLANG_GERMAN_STANDARD, ISLANG_GERMAN_SWISS, ISLANG_GERMAN_AUSTRIAN,
ISLANG_GERMAN_LUXEMBOURG, ISLANG_GERMAN_LIECHTENSTEIN:
            FeatureFilterLanguage (MEDIA, ISLANG_GERMAN, FALSE);
        // Use English as a default.
        default:
            FeatureFilterLanguage (MEDIA, ISLANG_ENGLISH_UNITEDSTATES, FALSE);
    endswitch;

    // Transfer files for selected language.
    FeatureMoveData (MEDIA, nDisk, 0);

end;
```

FeatureFilterOS

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureFilterOS** function filters components that are flagged for specified operating systems and suites.

Note *▪ This function cannot be used with script-created feature sets.*

Any filtering that is done when the installation is first run must also be done during maintenance mode. Be sure to call this function in code that is executed during both initial and maintenance installations. Do not call this function from the following event handlers: OnAppSearch, OnCCPSearch, OnFirstUIBefore, OnFirstUIAfter, OnMaintUIBefore, or OnMaintUIAfter.

Project *▪ Components are not filtered by default in an InstallScript MSI installation.*

In an InstallScript installation, **FeatureFilterOS** *is called by the default OnFilterComponents event handler during both initial and maintenance installations. This event handler filters components by default that are specific to operating systems and suites other than those on the target system. An installation that is run in maintenance mode has no information about the filtering that was done during the initial installation.*

Syntax

```
FeatureFilterOS ( szMediaLibrary, nSuites, nOS, bFiltered );
```

Parameters

Table 55 ▪ FeatureFilterOS Parameters

Parameter	Description
szMediaLibrary	Specifies the media name of the file media library.
nSuites	Specifies the operating system suite or suites that you want to filter. Choose from the following values. You can combine values using the bitwise OR operator (|).  ***Note ▪*** *The suites listed here are those that can be specified in the Windows API's OSVERSIONINFOEX data structure.* • **ISOS_ST_ALL**—All Windows suites • **ISOS_ST_XP_PRO**—Windows XP Professional • **ISOS_ST_XP_HOME**—Windows XP Home Edition • **ISOS_ST_SERVER**—Windows Server • **ISOS_ST_WORKSTATION**—Windows Workstation • **ISOS_ST_BACKOFFICE**—Microsoft BackOffice • **ISOS_ST_DATACENTER**—Windows Server Datacenter • **ISOS_ST_ENTERPRISE**—Windows Server Enterprise • **ISOS_ST_SERVER2003_R2**—Microsoft Windows Server 2003 R2 • **ISOS_ST_SMALLBUSINESS**—Microsoft Small Business Server • **ISOS_ST_SMALLBUSINESS_RESTRICED**—Microsoft Small Business Server with the restrictive client license • **ISOS_ST_TERMINAL**—Microsoft Terminal Services • **ISOS_ST_PROC_ARCH_32**—32-bit Processors • **ISOS_ST_PROC_ARCH_IA64**—Intel Itanium 64-bit Processor • **ISOS_ST_PROC_ARCH_AMD64**—AMD Athalon 64-bit Processor • **0 (zero)**—Specifies that FeatureFilterOS ignores components' Platform Suite properties  ***Project ▪*** *InstallScript MSI projects do not have support for platform suites. Therefore, in an InstallScript MSI project, you must specify the number 0 for nSuites. Otherwise, the function fails and the information that is specified in nOS is ignored.*

Table 55 ▪ FeatureFilterOS Parameters (cont.)

Parameter	Description
nOS	Specifies the operating system or operating systems that you wish to filter. Choose from the following values. You can combine values using the bitwise OR operator (|). • **ISOSL_ALL**—All Windows systems • **ISOSL_WINXP**—Windows XP Edition • **ISOSL_WINSERVER2003**—Windows Server 2003 • **ISOSL_WINVISTA_SERVER2008 (or ISOSL_WINVISTA)**—Windows Vista or Windows Server 2008 • **ISOSL_WIN7_SERVER2008R2**—Windows 7 or Windows Server 2008 R2 • **ISOSL_WIN8**—Windows 8 or Windows Server 2012 • **ISOSL_WIN81**—Windows 8.1 or Windows Server 2012 R2 • **ISOSL_WIN10**—Windows 10 • **ISOSL_WIN10_SERVER2019**—Windows Server 2019 • **ISOSL_WIN11**—Windows 11 • **ISOSL_WIN10_SERVER2022**—Windows Server 2022  ***Note ▪*** *Several client and server versions of Windows use the same major and minor version numbers:* • *Windows 8.1 and Windows Server 2012 R2 use the same major and minor version numbers.* • *Windows 8 and Windows Server 2012 use the same major and minor version numbers.* • *Windows 7 and Windows Server 2008 R2 use the same major and minor version numbers.* • *Windows Vista and Windows Server 2008 have the same major and minor version numbers.* *Therefore, for these operating system versions, the installation considers the client versions to be the same as the equivalent server versions; thus, components that are marked for the client version are also installed on the server version. To distinguish between the client and server versions, you can check whether SYSINFO.nOSProductType is equal to VER_NT_WORKSTATION; on client versions, this is true. On server versions, this is false.*

Table 55 ▪ FeatureFilterOS Parameters (cont.)

Parameter	Description
bFiltered	Specifies whether to filter (exclude) or unfilter (include) the operating systems specified in nOS. Pass one of the following predefined constants in this parameter: • **TRUE**—Filter the specified operating system—do not include them in the file transfer. • **FALSE**—Do not filter the specified operating system—include them in the file transfer.

Return Values

Table 56 ▪ FeatureFilterOS Return Values

Return Value	Description
0	**FeatureFilterOS** was successful.
< 0	**FeatureFilterOS** failed. Call FeatureError for additional information.

Additional Information

While both ISOSL_ALL and ISOSL_SUPPORTED specify all Windows systems when passed as the third argument to **FeatureFilterOS**, they have different numeric values. ISOSL_ALL is zero (0) and ISOSL_SUPPORTED is the value obtained by combining every operating system constant using the bitwise OR operator, that is, ISOSL_WIN7_SERVER2008R2 | ISOSL_WINVISTA_SERVER2008 | ... . In some cases, you may find it useful to perform bitwise operations on ISOSL_SUPPORTED and other operating system constants.

FeatureFilterOS Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureFilterOS function.
 *
 * To run this script, create a blank setup project.
 * Specify Windows 95, Windows 98, and Windows NT 4.0
 * (Intel) for operating systems in the Components view.
 * Use release flags to specify which platforms to include
 * in the build. Specify Windows 95, Windows 98, and Windows
 * NT 4.0 (Intel). When you run the Release Wizard, enter the
 * release flags in the Filtering Settings panel.
 *
\*---------------------------------------------------------------*/

// You can convert the following define statements into string
// entries to localize your setup.
#define  COMPANY_NAME         "MultiLangOS Inc."
#define  PRODUCT_NAME         "MultiLangOS"
```

```
#define  PRODUCT_VERSION      "1.0"
#define  PROGRAMFOLDER        "MultiLangOS"
#define  PRODUCT_KEY          "Mlangos.exe"
#define  DEINST_KEY           "MultiLangOS"
#define  ASKDESTTITLE         "Destination Location"
#define  ASKDESTMSG           "Select a destination location."
#define  COMPERRTITLE         "Data Transfer Error Information"
#define  COMPERRMSG1          "FeatureError returned the following error."
#define  COMPERRMSG2          "Setup will now abort."
#define  COMPERRMSG3          "Media Name:"
#define  COMPERRMSG4          "Feature:"
#define  COMPERRMSG5          "Component:"
#define  COMPERRMSG6          "File:"
#define  COMPERRMSG7          "Error Number:"

    prototype HandleFeatureError (NUMBER);

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureFilterOS(HWND);

function ExFn_FeatureFilterOS(hMSI)
    STRING  svResult, svDir, svLogFile;
    NUMBER  nvResult, nvDisk;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set up uninstallation and get destination location.
    InstallationInfo(COMPANY_NAME, PRODUCT_NAME, PRODUCT_VERSION, PRODUCT_KEY);

    INSTALLDIR = PROGRAMFILES ^ PROGRAMFOLDER;

    AskDestPath (ASKDESTTITLE, ASKDESTMSG, INSTALLDIR , 0 );

    DeinstallStart (INSTALLDIR, svLogFile, DEINST_KEY, 0);

    RegDBSetItem (REGDB_UNINSTALL_NAME, DEINST_KEY);

    // Get the operating system and call FeatureFilterOS
    // to filter the operating systems that are not present.
    GetSystemInfo (OS, nvResult, svResult);

    switch (nvResult)
        case IS_WINDOWSNT:
            GetSystemInfo (WINMAJOR, nvResult, svResult);
            if (nvResult = 4) then
                // It's NT 4.0, so filter Windows 95 and Windows 98.
                FeatureFilterOS (MEDIA, 0, ISOSL_WIN95, TRUE);
                FeatureFilterOS (MEDIA, 0, ISOSL_WIN98, TRUE);
            else
                MessageBox ("Target system OS not supported.", SEVERE);
                abort;
            endif;
```

```
        case IS_WINDOWS9X:
            // It's Windows 95 or 98, so filter Windows NT 4.0.
            FeatureFilterOS (MEDIA, 0, ISOSL_NT40, TRUE);

            // Determine if it's Windows 95 or Windows 98.
            GetSystemInfo (WINMINOR, nvResult, svResult);

            if (nvResult < 10) then
                // It's Windows 95, so filter Windows 98 too.
                FeatureFilterOS (MEDIA, 0, ISOSL_WIN98, TRUE);
            else
                // It's Windows 98, so filter Windows 95 too.
                FeatureFilterOS (MEDIA, 0, ISOSL_WIN95, TRUE);
            endif;
        default:
            MessageBox ("Target system OS not supported.", SEVERE);
            abort;
    endswitch;

    // Transfer files to target system.
    nvResult = FeatureMoveData (MEDIA, nvDisk, 0);

    if (nvResult < 0) then
        HandleFeatureError (nvResult);
    endif;

end;

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the setup.
 *
\*---------------------------------------------------------------------------*/
function HandleFeatureError( nResult )
  NUMBER  nvError;
  STRING  svFeatureSource, svFeature, svComponent, svFile;
begin
  FeatureError (svFeatureSource, svFeature, svComponent, svFile, nvError);
  SprintfBox(INFORMATION, FEATERRTITLE,
            FEATERRMSG1 + "\n" + FEATERRMSG2 + "\n\n" +
            FEATERRMSG3 + " %s\n" + FEATERRMSG4 + " %s\n" +
            FEATERRMSG5 + " %s\n" + FEATERRMSG6 + " %s\n" +
            FEATERRMSG7 + " %ld",
            svFeatureSource, svFeature, svComponent, svFile, nvError);
  abort;
end;
```

FeatureGetCost

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureGetCost** function is obsolete. Use the FeatureGetCostEx function instead.

The **FeatureGetCost** function determines the total space, in kilobytes (KB), required on the target drive for the feature that is specified by szFeature. When determining required drive space, this function takes into account whether the feature is currently selected, whether any components associated with the feature are currently filtered by operating system or language, and the cluster size on the target drive.

Syntax

```
FeatureGetCost ( szFeatureSource, szFeature, szTargetDir, nvRequiredSpace );
```

Parameters

Table 57 ▪ FeatureGetCost Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose features have been specified for installation and uninstallation. Typically, you would pass the system variable MEDIA in this parameter.
szFeature	Specifies the feature for which you want to determine the total space that is required on the target drive.
szTargetDir	Specifies the drive that is used, or the path whose drive is used, in determining required drive space. Typically, you would pass the system variable TARGETDIR in this parameter.
nvRequiredSpace	Returns the required drive space, in KB.

Return Values

Table 58 ▪ FeatureGetCost Return Values

Return Value	Description
0	Indicates that the function successfully determined the required drive space.
< 0	Indicates that the function could not determine the required drive space. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

FeatureGetCost Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureGetCost function.
 *
 * This example script displays a dialog that shows the user
 * the size of each top-level feature that they selected.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"
```

```
function OnBegin()
    string svDir, svFeature, svFeatureInfo;
    LIST listFeatures, listFeatureInfo;
    number nListGetString, nvRequiredSpace;
begin
    svDir = TARGETDIR;
    SdFeatureTree ("", "", svDir, "", 1);

    listFeatures = ListCreate ( STRINGLIST );
    FeatureListItems ( MEDIA, "", listFeatures );
    nListGetString = ListGetFirstString ( listFeatures, svFeature );
    listFeatureInfo = ListCreate ( STRINGLIST );
    while nListGetString=0
        FeatureGetCost ( MEDIA, svFeature, svDir, nvRequiredSpace );
        Sprintf ( svFeatureInfo, "Selected feature %s has a size of %ld KB.\n",
            svFeature, nvRequiredSpace );
        ListAddString ( listFeatureInfo, svFeatureInfo, AFTER );
        nListGetString = ListGetNextString ( listFeatures, svFeature );
    endwhile;
    ListDestroy ( listFeatures );

    SdShowInfoList ( "", "", listFeatureInfo );
    ListDestroy ( listFeatureInfo );
end;
```

FeatureGetCostEx

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureGetCostEx** function returns the cost of the specified feature (in bytes) using the nvCostHigh and nvCostLow parameters. If szFeature is "", the cost of the entire media is returned. This function replaces the **FeatureGetCost** and **FeatureGetTotalCost** functions.

Syntax

```
FeatureGetCostEx ( szMediaSource, szFeature, szTarget, nvCostHigh, nvCostLow );
```

Parameters

Table 59 ▪ FeatureGetCostEx Parameters

Parameter	Description
szMediaSource	The media source, typically MEDIA.
szFeature	Specifies the feature to get the cost of. If this value is "", the function returns the cost of the entire media.
szTarget	Specifies the target directory for the feature specified by szFeature.
nvCostHigh	Returns the upper 31 bits of the cost of the feature. Each cost unit returned represents 2GB of cost. For example, a value of 4 for this variable represents a cost of 8GB.
nvCostLow	Returns the lower 31 bits of the cost of the feature. The maximum value for this variable is 1 or 2GB of cost. Any cost greater than this is returned in the nvCostHigh variable.

Return Values

Table 60 ▪ FeatureGetCostEx Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

FeatureGetData

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureGetData** function retrieves information about a feature.

Syntax

```
FeatureGetData ( szFeatureSource, szFeature, nInfo, nvResult, svResult );
```

Parameters

Table 61 ▪ FeatureGetData Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the script-created feature set or (in InstallScript projects) file media library that contains the feature for which information is retrieved.
szFeature	Specifies the name of the feature from which information is retrieved. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls.
nInfo	Specifies the type of information to retrieve. Pass one of the following predefined constants in this parameter: • **FEATURE_FIELD_CDROM_FOLDER**—For a CD-ROM media type, the location of the feature's data on the CD-ROM. Only InstallScript projects support this constant; InstallScript MSI projects do not. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_DESCRIPTION**—The description displayed when the feature is selected in a feature selection dialog. This is the text from the feature's Description property. • **FEATURE_FIELD_DISPLAYNAME**—The feature name displayed in the selection dialogs. This is the value in the feature's Display Name setting. • **FEATURE_FIELD_ENCRYPT**—Specifies whether the feature is encrypted. Only InstallScript projects support this constant; InstallScript MSI projects do not. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_FILENEED**—Defines how critical the feature files are for the installation. Only InstallScript projects support this constant; InstallScript MSI projects do not. • **FEATURE_FIELD_FLAGS**—Indicates the flags that are set for the feature. Only InstallScript projects support this constant; InstallScript MSI projects do not. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_FTPLOCATION**—Specifies an FTP location. This value is stored in the feature's FTP Location setting. • **FEATURE_FIELD_GUID**—The GUID that is associated with the feature. Only InstallScript projects support this constant; InstallScript MSI projects do not. This constant is available for file media libraries, not for script-created feature sets.

Table 61 ▪ FeatureGetData Parameters (cont.)

Parameter	Description
nInfo (cont.)	• **FEATURE_FIELD_HANDLER_ONINSTALLED**—The name of the OnInstalled event for the feature. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_HANDLER_ONINSTALLING**—The name of the OnInstalling event for the feature. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_HANDLER_ONUNINSTALLED**—The name of the OnUninstalled event for the feature. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_HANDLER_ONUNINSTALLING**—The name of the OnUninstalling event for the feature. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_HTTPLOCATION**—Specifies an HTTP location. This value is stored in the feature's HTTP Location setting. • **FEATURE_FIELD_IMAGE**—Specifies the index of the icon to be displayed in nvResult. If no icon should be displayed for the feature, nvResult returns -1. • **FEATURE_FIELD_MISC**—Miscellaneous text. This field can be useful at run time because you can use it to flag or identify features using any information you want. • **FEATURE_FIELD_PASSWORD**—Specifies whether a password is associated with the feature. This constant is available for file media libraries, not for script-created feature sets. Only InstallScript projects support this constant; InstallScript MSI projects do not. • **FEATURE_FIELD_SELECTED**—Indicates whether the feature specified in szFeature is selected. • **FEATURE_FIELD_SIZE**—Total original file size for the feature specified in szFeature. This constant is available for file media libraries, not for script-created feature sets. • **FEATURE_FIELD_STATUS**—In InstallScript installations, this text is displayed in the progress indicator during file transfer. This constant is available for file media libraries, not for script-created feature sets. In InstallScript MSI installations, the feature's display name is returned. • **FEATURE_FIELD_VISIBLE**—Determines whether the feature that is specified in szFeature is visible in the selection dialog. This value is stored in the feature's Display setting.

Table 61 ▪ FeatureGetData Parameters (cont.)

Parameter	Description
nvResult	Returns a numeric value when nInfo produces a numeric result. When nInfo is FEATURE_FIELD_FILENEED, nvResult returns one of the following values: ● **FEATURE_VALUE_CRITICAL**—This feature contains critical files. ● **FEATURE_VALUE_HIGHLYRECOMMENDED**—This feature is highly recommended. ● **FEATURE_VALUE_STANDARD**—This feature may or may not be included. When nInfo is FEATURE_FIELD_FLAGS, nvResult returns one of the following values: ● **FEATURE_DATA_FLAG_PASSWORD**—The feature is password protected. ● **FEATURE_DATA_FLAG_PASSWORD_VALIDATED**—The feature's password has been validated. (The installation is using **FeatureValidate** or the feature is not password protected.) ● **FEATURE_DATA_FLAG_DATA_AS_FILES**—The feature's files are placed in a particular folder for a CD-ROM type of release. ● **FEATURE_DATA_FLAG_SPLIT_AFTER**—This flag is set only for build-generated features. ● **FEATURE_DATA_FLAG_SPLIT_BEFORE**—This flag is set only for build-generated features. ● **FEATURE_DATA_FLAG_SPLIT_BEFORE_NOT_ALLOWED**—This flag is set only for build-generated features. ● **FEATURE_DATA_FLAG_SPLIT_NOT_ALLOWED**—This flag is set only for build-generated features. ● **FEATURE_DATA_FLAG_VISIBLE**—The feature is visible. ● **FEATURE_DATA_FLAG_VOLATILE**—The feature is volatile. ● **FEATURE_DATA_FLAG_ENCRYPTED**—The feature is encrypted.

Table 61 ▪ FeatureGetData Parameters (cont.)

Parameter	Description
	When nInfo is FEATURE_FIELD_PASSWORD, nvResult returns one of the following values: • **TRUE**—The feature is password protected. If the feature is password protected, you must get the correct password from the end user and validate it with **FeatureValidate** before calling **FeatureTransferData** to transfer the files in the file media library. • **FALSE**—The feature is not password protected. When nInfo is FEATURE_FIELD_SELECTED, nvResult returns one of the following values: • **TRUE**—This feature is selected. • **FALSE**—This feature is not selected. When nInfo is FEATURE_FIELD_VISIBLE, nvResult returns one of the following values: • **TRUE**—This feature is visible. • **FALSE**—This feature is not visible.
svResult	Returns a string value when nInfo produces a string result.

Return Values

Table 62 ▪ FeatureGetData Return Values

Return Value	Description
0	FeatureGetData was successful.
< 0	FeatureGetData failed. Call FeatureError for additional information. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

FeatureGetData Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureGetData function.
 *
 * This example script demonstrates a function that retrieves
 * information about a specified feature.
 *
 *  Comments:  To run this example script, create a project (or
```

```
 *             insert into a project) with features and/or
 *             subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

    // The keyword export identifies MyFunction() as an entry-point function.
    // The argument it accepts must be a handle to the Installer database.
    export prototype MyFunction(HWND);

    // To Do:  Declare global variables, define constants, and prototype user-
    //         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  svDir, szTitle, szMsg, svResult;
    NUMBER  nvResult;

begin

    svDir   = INSTALLDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display available features.
    SdFeatureTree (szTitle, szMsg, svDir, "", 2);

    // Get the description property for Feature1.
    FeatureGetData (MEDIA, "Feature1", feature_FIELD_DESCRIPTION, nvResult, svResult);

    // Display the description for Feature1.
    MessageBox ("Feature1's description is: " + svResult, INFORMATION);

    // Determine whether or not Feature2 is selected.
    FeatureGetData (MEDIA, "Feature2", feature_FIELD_SELECTED, nvResult, svResult);

    // Display a message indicating whether or not Feature2 is selected.
    if nvResult=0  then
    MessageBox ("Feature2 is not selected.", INFORMATION);
    else
    MessageBox ("Feature2 is selected.", INFORMATION);
    endif;

end;
```

FeatureGetItemSize

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureGetItemSize** function retrieves the size—in bytes—of a specified feature. The sizes of subfeatures are not included.

Note *▪ This function cannot be used with script-created feature sets.*

Syntax

```
FeatureGetItemSize ( szFeatureSource, szFeature, nvSize );
```

Parameters

Table 63 ▪ FeatureGetItemSize Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media that contains the feature whose size is to be retrieved.
szFeature	Specifies the name of the feature whose size is to be retrieved.
nvSize	Returns the size in bytes of the specified feature. You can also call FeatureGetData to get the total original file size of a specified feature. Call FeatureTotalSize to determine the total size of all selected features and subfeatures.

Return Values

Table 64 ▪ FeatureGetItemSize Return Values

Return Value	Description
0	FeatureGetItemSize was successful.
< 0	FeatureGetItemSize failed. Call FeatureError for additional information.

FeatureGetItemSize Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the FeatureGetItemSize function.
 *
 * This example calls FeatureGetItemSize to get the size of
 * a feature and a subfeature. The sizes are displayed
 * in a dialog.
 *
 * Notes:  To run this example script, create a project (or
 *         insert into a project) with several features and/or
 *         subfeatures with components containing files.
 *         You must name one feature and one subfeature as
 *         indicated in the #define statements in this example,
 *         or change the #define statements to reference your
 *         feature names.
 *
\*---------------------------------------------------------------*/

#define FEAT_NAME1 "Program Files"
#define FEAT_NAME2 "Example Files\\Graphics"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureGetItemSize(HWND);

function ExFn_FeatureGetItemSize(hMSI)
    NUMBER nvSize;
    STRING szString;
    LIST listInfo;
begin

    // Create a string list to store feature sizes.
    listInfo = ListCreate (STRINGLIST);

    // Get the size of FEAT_NAME1.
    FeatureGetItemSize (MEDIA, FEAT_NAME1, nvSize);

    // Convert the number to a string.
    NumToStr (szString, nvSize);

    // Put the string into the list.
    ListAddString (listInfo, "The size in bytes of " + FEAT_NAME1 +
                  " is:  " + szString, AFTER);

    // Get the size of FEAT_NAME2.
    FeatureGetItemSize (MEDIA, FEAT_NAME2, nvSize);

    // Convert the number to a string.
    NumToStr (szString, nvSize);

    // Put the string into the list.
    ListAddString (listInfo, "The size in bytes of " + FEAT_NAME2 +
                  " is:  " + szString, AFTER);

    // Display the list of feature sizes.
    SdShowInfoList ("Results of Calls to FeatureGetItemSize",
```

```
                    "The feature sizes are:", listInfo);

    // Release the list from memory.
    ListDestroy (listInfo);

end;
```

FeatureGetTotalCost

Note *▪ This function is obsolete. Use the FeatureGetCostEx function instead.*

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureGetTotalCost** function determines the total space, in kilobytes (KB), required on the target drive for the feature installations and uninstallations that have been specified (for example, by end user selections in feature or setup type dialogs). When determining required drive space, this function takes into account which features are currently selected, whether any components associated with the features are currently filtered by operating system or language, and the cluster size on the target drive.

Syntax

```
FeatureGetTotalCost ( szFeatureSource, szTargetDir, nvTotalRequiredSpace );
```

Parameters

Table 65 ▪ FeatureGetTotalCost Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose features have been specified for installation and uninstallation. Typically, you would pass the system variable MEDIA in this parameter.
szTargetDir	Specifies the drive that is used, or the path whose drive is used, in determining required drive space. Typically, you would pass the system variable TARGETDIR in this parameter.
nvTotalRequiredSpace	Returns the required drive space, in KB.

Return Values

Table 66 ▪ FeatureGetTotalCost Return Values

Return Value	Description
0	Indicates that the function successfully determined the required drive space.
< 0	Indicates that the function could not determine the required drive space. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

FeatureInitialize

Project ▪ *This information applies to InstallScript projects.*

The **FeatureInitialize** function is supported only for compatibility with scripts created in earlier versions of InstallShield. It is recommended that you avoid using multiple file media libraries in InstallShield because they are no longer necessary and they can break your installation.

The **FeatureInitialize** function associates a media name with a file media library and prepares that media library for access.

Syntax

```
FeatureInitialize ( szMediaLibrary, szMediaLibraryFile );
```

Parameters

Table 67 ▪ FeatureInitialize Parameters

Parameter	Description
szMediaLibrary	Specifies the media name to associate with the file media library whose files are to be transferred with FeatureMoveData Example. The media name Data is reserved for use with Data1.cab, the default file media library. You may not pass Data in the parameter szMediaLibrary.
szMediaLibraryFile	Specifies the file name of the file media library to be initialized. The file name must be in the format xxx1.cab; for example, second1.cab or wow1.cab. Do not specify a path; this file must reside in the installation's source folder (SRCDIR).

Return Values

Table 68 ▪ FeatureInitialize Return Values

Return Value	Description
0	FeatureInitialize was successful.
< 0	FeatureInitialize failed. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

This function cannot be used with script-created feature sets.

A file media library that is initialized with FeatureInitialize must be installed by calling **FeatureMoveData**. **FeatureTransferData** fails if called to install such a media library.

If an installation installs file media libraries that are initialized with **FeatureInitialize**, the uninstallation must be enabled by calling **DeinstallStart** rather than **MaintenanceStart**. (This is the case because files must be installed by calling **FeatureMoveData**, which does not support maintenance setups.)

The maintenance/uninstallation feature that is stored in szMediaLibraryFile is not installed by **FeatureMoveData**; only the first call to **FeatureMoveData**, before calling **FeatureInitialize**, can install a file media library's maintenance/uninstallation feature.

It is not necessary to call **FeatureInitialize** before accessing the default file media library (Data1.cab) using the default media name Data. The default media is initialized automatically during installation initialization. The file media library must reside in the installation’s source folder. The name of this folder is assigned to the system variable SRCDIR during installation initialization.

FeatureInitialize Example

```
/*---------------------------------------------------------------*\
*
* InstallShield Example Script
*
* Demonstrates the FeatureInitialize function.
*
\*---------------------------------------------------------------*/

NUMBER nResult, n;

program

   // Set a target directory.
   TARGETDIR = "C:\\temp" ^ MEDIA;

   // Select features to transfer.
   nResult = FeatureDialog ("", "", TARGETDIR,"");

   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureDialog ERROR", "%ld", nResult);
   endif;

   // Transfer files associated with data1.cab (Data Media).
   nResult = FeatureMoveData (MEDIA, n, 0);
   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureMoveData ERROR", "%ld", nResult);
   endif;

   // Set up for second media.
   MEDIA = "second";

   // Set a target directory.
   TARGETDIR = "C:\\temp" ^ MEDIA;

   // Associate new media with second1.cab cab file.
   nResult = FeatureInitialize (MEDIA, "second1.cab");
   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureInitialize ERROR", "%ld", nResult);
   endif;

   // Select features to transfer.
   nResult = FeatureDialog ("", "", TARGETDIR,"");
   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureDialog ERROR", "%ld", nResult);
   endif;

   // Reinitialize FeatureMoveData function.
   nResult = FeatureMoveData ("", n ,0);
   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureMoveData ERROR", "%ld", nResult);
   endif;

   // Transfer files associated with second1.cab (second Media).
   nResult = FeatureMoveData (MEDIA, n, 0);
```

```
   if (nResult < 0) then
      SprintfBox (SEVERE, "FeatureMoveData ERROR", "%ld", nResult);
   endif;

endprogram

// Source file: Is5fn628.rul
```

FeatureIsItemSelected

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

Project-specific differences are noted where appropriate.

In InstallScript projects, **FeatureIsItemSelected** determines the current selection state of the specified feature. In InstallScript MSI projects, **FeatureIsItemSelected** determines the current installed state of the specified feature. You can also use FeatureGetData to determine if a feature is selected.

FeatureIsItemSelected is typically called to perform feature-specific tasks before or after file transfer. To perform feature-specific tasks during file transfer in an InstallScript installation, it is recommended that you place code in feature event handler functions.

Syntax

```
FeatureIsItemSelected ( szFeatureSource, szFeature );
```

Parameters

Table 69 ▪ FeatureIsItemSelected Parameters

Parameter	Description
szFeatureSource	In InstallScript projects, specifies the media library for which the installed state or selection setting is determined. In InstallScript MSI projects, specifies the media name of the script-created feature set.
szFeature	Specifies the name of the feature for which the installed state or selection setting is determined. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls.

Return Values

Table 70 ▪ FeatureIsItemSelected Return Values

Return Value	Description
TRUE (1)	In InstallScript projects, szFeature is selected. In InstallScript MSI projects, szFeature's installed state is INSTALLSTATE_LOCAL (feature was installed on the local drive).
FALSE (0)	In InstallScript projects, szFeature is deselected. In InstallScript MSI projects, szFeature's installed state is INSTALLSTATE_ABSENT (feature was uninstalled).
< 0	The function failed to determine if the feature was installed or selected. Call FeatureError for additional information.

FeatureIsItemSelected Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureIsItemSelected function.
 *
 * This example script displays a dialog that displays a list
 * of features in the setup that the user can install and the
 * amount of space that each feature occupies. When the user
 * selects features, the installed state of the features is
 * provided.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
 *             subfeatures with components containing files.
```

```
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  szTitle, szMsg, svDir;
    NUMBER  nResult;

begin

    svDir   = INSTALLDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display available features.
    SdFeatureTree (szTitle, szMsg, svDir, "", 2);

    // Determine the installed state of Subfeature1.
    nResult = FeatureIsItemSelected (MEDIA,  "Feature1\\Subfeature1");

    // Display message indicating the installed state of Subfeature1.
    if nResult = 1  then
    MessageBox ("Subfeature1 is installed locally.", INFORMATION);
    else
    MessageBox ("Subfeature1 is uninstalled.", INFORMATION);
    endif;

end;
```

FeatureListItems

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureListItems** function lists all subfeatures under the feature specified in szFeature. The list of fully qualified subfeature names is stored in listFeatures. If szFeature has subfeatures, listFeatures returns an empty list.

Syntax

```
FeatureListItems ( szFeatureSource, szFeature, listFeatures );
```

Parameters

Table 71 ▪ FeatureListItems Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the script-created feature set whose subfeatures are listed.
szFeature	Specifies the feature whose subfeatures are listed. Pass a null string ("") in this parameter to list all top-level features. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls.
listFeatures	Returns the list of features. You must call ListCreate before calling FeatureListItems to initialize the string list identified by listFeatures.

Return Values

Table 72 ▪ FeatureListItems Return Values

Return Value	Description
0	FeatureListItems listed the features.
< 0	FeatureListItems was unable to list the features. Call FeatureError for additional information.

FeatureListItems Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureListItems function.
 *
 * This example script demonstrates a function that lists all
 * subfeatures under a specified feature.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
 *             subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  szTitle, szMsg;
    NUMBERlistID;

begin

    szTitle = "List MEDIA Features";
    szMsg   = "MEDIA contains the following top-level features:";

    // Initialize the string list.
    listID = ListCreate (STRINGLIST);

    // Create a list of top-level features in the specified media.
    FeatureListItems (MEDIA, "", listID);

    // Display the list of top-level features.
    SdShowInfoList (szTitle, szMsg, listID);

end;
```

FeatureLoadTarget

Project ▪ *This information applies to InstallScript projects.*

The **FeatureLoadTarget** function is called automatically during the initialization of any installation for which a valid log file exists.

Syntax

```
FeatureLoadTarget( szReserved );
```

Parameters

Table 73 ▪ FeatureLoadTarget Parameters

Parameter	Description
szReserved	Pass a null string ("") in this parameter. No other value is allowed.

Return Values

Table 74 ▪ FeatureLoadTarget Return Values

Return Value	Description
0	This function always returns zero (0).

Additional Information

FeatureLoadTarget reads the log file and retrieves the target directory of all filegroups in the setup. FeatureLoadTarget retrieves the values of all text substitutions used by the setup; this includes the target directory of all filegroups and the value of all target-directory-related system variables, as well as all other text substitution values.

FeatureMoveData

Project ▪ *This information applies to InstallScript projects:*

The **FeatureMoveData** function transfers and decompresses files associated with selected features in the file media referenced by szFeatureSource. The function automatically prompts the end user for the next disk when it is needed.

If you use this function to transfer files to WINSYSDIR64, you must first disable file system redirection using W0W64FSREDIRECTION. Otherwise, files being transferred to WINSYSDIR64 are incorrectly redirected to the 32-bit SysW0W64 folder. Since some Windows functionality that could be used by the installation requires that redirection be enabled to work, Windows documentation recommends that you disable redirection only for as long as necessary. It is recommended that you then enable file system redirection as soon as you have completed transferring the necessary files to WINSYSDIR64. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.

When you call FeatureMoveData, Do (SELFREGISTRATIONPROCESS) is called automatically after the files are installed but before the call returns. Therefore, if your installation needs to perform additional actions after the file transfer but before self-registration, place these actions in the OnMoved event; the OnMoved event is called after the file transfer but before the batch self-registration occurs.

You can call FeatureMoveData more than once on the same media, but you must reset internal structures before the second and subsequent calls by calling FeatureMoveData with a null string ("") in the first parameter position. InstallShield automatically initializes the default media and internal structures before your first call to FeatureMoveData.

Note ▪ *This function cannot be used with script-created feature sets.*

Syntax

```
FeatureMoveData ( szFeatureSource, nvReserved, nReserved );
```

Parameters

Table 75 ▪ FeatureMoveData Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose files are to be transferred.
nvReserved	Pass a number variable in this argument. No useful data is returned.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 76 ▪ FeatureMoveData Return Values

Return Value	Description
0	FeatureMoveData was successful.
< 0	FeatureMoveData failed. Call FeatureError for additional information.

FeatureMoveData Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdSetupTypeEx, SdFeatureDialog,
 * FeatureMoveData, FeatureError, and PlaceWindow.
 *
 * Notes:  To run this example script, create a project with
 *         the following features (f), subfeatures (sf),
 *         and components (c):
 *
 *             (f) Program_Files
 *                 (c) Program_DLLS
 *                 (c) Program_EXEs
 *             (f) Example_Files
 *                 (sf) Small_Documents
 *                      (c) Small_Document_Examples
 *                 (sf) Books
 *                      (c) Book_Examples
 *                 (sf) Graphics
```

```
 *                     (c) Graphic_Examples
 *             (f) Help_Files
 *                 (c) Help_Files
 *             (f) Utilities
 *                 (sf) Grammar_Checker
 *                     (c) Grammar_Checker
 *                 (sf) Art Studio
 *                     (c) Art_Studio
 *             (f) Evaluation_Copy
 *                 (c) Evaluation_Copy
 *                 (c) Help_Files
 *
 * Insert "dummy" files into the components.  Make sure you
 * define the correct file name for the main EXE (MAIN_EXE,
 * below) that you insert into the Program_EXEs component.
 *
 * This example script installs files, adds an icon to the
 * Start Programs menu, and provides uninstallation
 * functionality.
 *
\*---------------------------------------------------------------*/

// Define strings. In a real installation, you would define these in the String Editor
// view and precede each string identifier in the script with the at symbol (@).
#define FEAT_SELECT_TITLE               "Select features"
#define FEAT_SELECT_MSG                 "Select features and subfeatures to install."
#define FEAT_PROGRAMFILES_DISPLAYNAME   "Program Files"
#define PASSWORD_PROMPT                 "Please enter the password."
#define PASSWORD_ERRMSG                 "Password incorrect. Please enter again."
#define TITLE_MAIN                      "Word Processor"
#define TITLE_CAPTIONBAR                "Word Processor Setup"
#define APPBASE_PATH                    "Your Company\\Word Processor"
#define COMPANY_NAME                    "Your Company"
#define PRODUCT_NAME                    "Word Processor"
#define PRODUCT_VERSION                 "1.0"
#define PRODUCT_KEY                     "Word Processor"
#define DEINSTALL_KEY                   "Word Processor"
#define UNINSTALL_NAME                  "Word Processor"
#define ADDINGICON                      "Adding program icon to the Start Programs menu..."
#define PROGRAMDIR                      "Program"
#define DEFAULT_FOLDER_NAME             ""
#define APP_NAME                        "Word Processor"
#define COMPLETE_MSG                    "Setup is complete. You can run Word Processor from the Start
Programs menu."
#define MAIN_EXE                        "WRITE.EXE"
#define SETUPTYPE_TITLE                 "Setup Type Selection"
#define SETUPTYPE_MSG                   "Please select a setup type."
#define SETUPTYPE_CUSTOM                "Custom"

    // Global variable declarations.

    // Function declarations.
    prototype SetUpFileTransfer ();
    prototype HandleFeatureError (NUMBER);
    prototype FinishSetup ();
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureMoveData(HWND);

function ExFn_FeatureMoveData(hMSI)
    STRING  svData, svLogFile,  szProgram, szFeature;
    STRING svResult, svSetupType, svDir;
    BOOL    bInitStepsDone, bPwdValid;
    NUMBER  nvData, nvDisk, nResult;
begin

    SetUpFileTransfer ();

    // Disable the Back button in installation dialogs.
    Disable (BACKBUTTON);

    // Get the setup type.
    svDir = INSTALLDIR;

    SdSetupTypeEx (SETUPTYPE_TITLE, SETUPTYPE_MSG, "", svSetupType, 0);

    // If user selected Custom setup type, display feature selection dialog.
    if (svSetupType = SETUPTYPE_CUSTOM) then
        SdFeatureDialog (FEAT_SELECT_TITLE, FEAT_SELECT_MSG, svDir, "");
    endif;

    // Enable the Back button in installation dialogs.
    Enable (BACKBUTTON);

    // Set up the progress indicator, including locations for
    // progress indicator, information gauges, and billboards.
    PlaceWindow (FEEDBACK, LOWER_LEFT, LOWER_LEFT, LOWER_LEFT);

    PlaceWindow (STATUSDLG, CENTERED, LOWER_RIGHT, LOWER_RIGHT);

    PlaceWindow (BILLBOARD, CENTERED, CENTERED, CENTERED);

    Enable (STATUSDLG);

    Enable (INDVFILESTATUS);

    // Indicate the final percentage the progress bar is to show when the
    // following file transfer operation is complete.
    StatusUpdate (ON, 95);

    // Transfer files to the target system.  FeatureMoveData prompts
    // for next disk in a floppy disk installation.
    nResult=FeatureMoveData (MEDIA, nvDisk, 0);

    // See the FeatureError function in action.
    HandleFeatureError (nResult);

    FinishSetup();

end;
```

```
/*---------------------------------------------------------------------------*\
 *
 * Function:  SetupFileTransfer()
 *
 *  Purpose:  This function sets up file transfer. The main reason for
 *            abstracting this process into this function is to make it
 *            easy to see the function calls this sample script demonstrates.
 *
\*---------------------------------------------------------------------------*/
function SetUpFileTransfer()

begin
  // Set up the installation screen.
  Enable (FULLWINDOWMODE);
  SdProductName ( PRODUCT_NAME );
  SetTitle (TITLE_MAIN, 24, WHITE);
  SetTitle (TITLE_CAPTIONBAR, 0, BACKGROUNDCAPTION);
  Enable (BACKGROUND);

  // Welcome the user, check that the system meets minimum requirements,
  // and verify the destination location.
  bInitStepsDone = FALSE;

  while (!bInitStepsDone)
    Disable (BACKBUTTON);
    Welcome ("", 0);
    Enable (BACKBUTTON);
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;
    if (AskDestPath ("", "", INSTALLDIR, 0) != BACK) then
      bInitStepsDone = TRUE;
    endif;
  endwhile;

  // Set installation information required for registry entries and for
  // the following call to DeinstallStart.
  InstallationInfo (COMPANY_NAME, PRODUCT_NAME,
                    PRODUCT_VERSION, PRODUCT_KEY);

  // Initialize the uninstallation log file, including registry entry.
  svLogFile = "Uninst.isu";

  DeinstallStart (INSTALLDIR, svLogFile, DEINSTALL_KEY, 0);

  RegDBSetItem (REGDB_UNINSTALL_NAME, UNINSTALL_NAME);
end;

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the installation.
 *
\*---------------------------------------------------------------------------*/
```

```
function HandleFeatureError (nResult)
  NUMBER  nvError;
  STRING  svFeatureSource, svFeature, svComponent, svFile;
begin
  if (nResult < 0) then
    FeatureError (svFeatureSource, svFeature, svComponent, svFile, nvError);
    SprintfBox (INFORMATION, "Data Transfer Error Information",
               "FeatureError returned the " +
               "following data transfer error.\n" +
               "Setup will now abort.\n\n" +
               "Media Name: %s\nFeature: %s\nComponent: %s\n" +
               "File: %s\nError Number: %ld",
               svFeatureSource, svFeature, svComponent, svFile, nvError);
    abort;
  endif;
end;

/*---------------------------------------------------------------------------*\
 *
 * Function:  FinishSetup()
 *
 *  Purpose:  This function finishes the installation. The main reason for
 *            abstracting this process into this function is to make it
 *            easy to see the function calls this sample script demonstrates.
 *
\*---------------------------------------------------------------------------*/
function FinishSetup()
begin
  // Indicate the final percentage the progress bar is to show when the
  // following file transfer operation is complete.
  StatusUpdate(ON, 99);

  // Increment progress bar to 99% for creation of Start Programs menu icon.
  SetStatusWindow (96 , ADDINGICON);

  // Add the APP_NAME icon to the DEFAULT_FOLDER_NAME folder.
  szProgram = INSTALLDIR ^ PROGRAMDIR ^ MAIN_EXE;

  LongPathToQuote (szProgram, TRUE);
  AddFolderIcon (DEFAULT_FOLDER_NAME, APP_NAME, szProgram,
                 INSTALLDIR ^ PROGRAMDIR, "", 0, "", REPLACE);

  Delay (1);

  // Disable the progress indicator and its settings.
  Disable  (INDVFILESTATUS);
  Disable (STATUSDLG);

  // Announce installation complete and offer to view Readme file.
  MessageBox (COMPLETE_MSG, INFORMATION);

end;
```

FeaturePatch

Project *▪ This information applies to InstallScript projects.*

The **FeaturePatch** function is called only in installations that use differential media. (You can check the media format by calling MediaGetData with MEDIA_FIELD_MEDIA_FLAGS as its second argument).

FeaturePatch causes the next call to FeatureTransferData or FeatureMoveData to reinstall all features that are already installed when **FeatureTransferData** is called, including all of the maintenance/uninstallation feature's files except for Data1.hdr, Data1.cab, and Layout.bin. (Note that the maintenance/uninstallation feature is automatically placed in your disk image by the release builder and is not displayed in InstallShield.) A copy of the running file media library is stored on the target machine for use during subsequent maintenance operations, that is, modifying, repairing, or uninstalling.

Syntax

```
FeaturePatch ( );
```

Parameters

None.

Return Values

Table 77 ▪ FeaturePatch Return Values

Return Value	Description
0	Indicates that the function succeeded.
< 0	Indicates that the function failed.

Additional Information

FeaturePatch is called in the default code for the OnUpdateUIBefore event handler function.

FeatureReinstall

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

In a setup that has already been run, after the **FeatureReinstall** function is called, the next call to FeatureTransferData performs the file transfer that was specified the last time the setup was run.

Syntax

```
FeatureReinstall ( );
```

Parameters

None

Return Values

Table 78 ▪ FeatureReinstall Return Values

Return Value	Description
0	Indicates that the function successfully prepared the setup for reinstallation.
< 0	Indicates that the function was unable to prepare the setup for reinstallation.

FeatureRemoveAll

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FeatureRemoveAll is used during a maintenance install to force the removal of all features that were installed previously. FeatureRemoveAll is generally called when the user selects the Remove option in the SdWelcomeMaint dialog.

Calling FeatureRemoveAll causes all features to be deselected. As a result, when FeatureTransferData is called, any features that have already been installed (determined by reading the setup log file, if it exists) are removed (uninstalled).

Setup determines whether or not features have been previously installed by reading the setup log file. If no valid log file is found during setup initialization, all features are considered *not installed*. In this case, calling **FeatureRemoveAll** clears all feature selections, but does not force uninstallation of the features when **FeatureTransferData** is called.

Note ▪ **FeatureRemoveAll** *also deselects all internal features, including the features containing the Disk 1 setup files that are automatically installed to the DISK1TARGET location.*

Syntax

```
FeatureRemoveAll ( );
```

Parameters

None

Return Values

Table 79 ▪ FeatureRemoveAll Return Values

Return Value	Description
0	Indicates that the function successfully deselected all feature selections.
< 0	Indicates that the function was unable to deselect all feature selections.

FeatureRemoveAllInLogOnly

Project ▪ *This information applies to InstallScript projects.*

The **FeatureRemoveAllInLogOnly** function is called during an update installation to force the removal of all features that are not in the current media but were installed previously, as recorded in the setup log file.

Syntax

```
FeatureRemoveAllInLogOnly ( );
```

Parameters

None.

Return Values

Table 80 ▪ FeatureRemoveAllInLogOnly Return Values

Return Value	Description
0	Indicates that the function successfully deselected the feature selections.
< 0	Indicates that the function was unable to deselect the feature selections. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

Calling FeatureRemoveAllInLogOnly causes all features that are not in the current media but were installed previously to be deselected. As a result, when FeatureTransferData is called, those features will be removed (uninstalled).

Caution ▪ *Do not call FeatureRemoveAllInLogOnly in an "add-on" installation—that is, an installation with the same INSTANCE_GUID as a application already on the system that includes a subset of the features in the earlier*

installation. The result would be the uninstallation (removal) of all features that were contained in the earlier installation, but not the features in the current installation.

If no valid log file is found during installation initialization, calling FeatureRemoveAllInLogOnly has no effect.

FeatureRemoveAllInMedia

Project ▪ *This information applies to InstallScript projects.*

The **FeatureRemoveAllInMedia** is used during a maintenance installation to force the removal of all features that are in the current media and were installed previously. This function is generally called when the user selects the Remove option in the SdWelcomeMaint dialog.

When you call FeatureRemoveAllInMedia, only the features listed in the media header are removed; however, in the case of an updated application in which features were removed but not uninstalled during the update—that is, the features did not exist in the update media but did exist in the original media (and the update did not call FeatureRemoveAllInLogOnly)—whether or not these features are removed during uninstallation depends on whether the application was updated via a differential media or a full update media:

- If the application was updated via a full media, the full media header replaces the original media header; therefore, these features are not removed during uninstallation.
- If the application was updated via a differential media, both header files are present; therefore, FeatureRemoveAllInMedia removes these features.

To ensure that all installed features are uninstalled, an installation should call FeatureRemoveAllInMediaAndLog. This ensures that all features are removed.

Syntax

```
FeatureRemoveAllInMedia ( );
```

Parameters

None.

Return Values

Table 81 ▪ FeatureRemoveAllInMedia Return Values

Return Value	Description
0	Indicates that the function successfully deselected all feature selections.
< 0	Indicates that the function was unable to deselect all feature selections. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

Calling FeatureRemoveAllInMedia causes all features that are in the current media to be deselected. As a result, when FeatureTransferData is called, any features that have already been installed (determined by reading the installation log file, if it exists) are removed (uninstalled).

The installation determines whether or not features have been previously installed by reading the installation log file. If no valid log file is found during installation initialization (MAINTENANCE is FALSE), all features are considered *not installed*. In this case, calling FeatureRemoveAllInMedia causes all features to be deselected and not installed. However, a subsequent call to **FeatureTransferData** does not uninstall anything (since the log file contains the information regarding what to uninstall). Calling **FeatureRemoveAllInMedia** in this case is not recommended.

Note ▪ *FeatureRemoveAll also deselects all internal features, including the maintenance/uninstallation feature.*

FeatureRemoveAllInMediaAndLog

Project ▪ *This information applies to InstallScript projects.*

The **FeatureRemoveAllInMediaAndLog** function is called during an update installation to force the removal of all features that were installed previously—both those that are in the current media, and those that are not in the current media but are recorded in the setup log file.

Syntax

```
FeatureRemoveAllInMediaAndLog ( );
```

Parameters

None.

Return Values

Table 82 ▪ FeatureRemoveAllInMediaAndLog Return Values

Return Value	Description
0	Indicates that the function successfully deselected all feature selections.
< 0	Indicates that the function was unable to deselect all feature selections. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

Calling **FeatureRemoveAllInMediaAndLog** is equivalent to calling both FeatureRemoveAllInMedia and FeatureRemoveAllInLogOnly.

Calling **FeatureRemoveAllInMediaAndLog** causes all features that were installed previously to be deselected. As a result, when FeatureTransferData is called, those features will be removed (uninstalled).

The installation determines whether or not features have been previously installed by reading the setup log file. If no valid log file is found during installation initialization (MAINTENANCE is FALSE), all features are considered *not installed*. In this case, calling **FeatureRemoveAllInMediaAndLog** will cause all features to be deselected and not installed. However, a subsequent call to **FeatureTransferData** will not uninstall anything (since the log file contains the information regarding what to uninstall). Calling **FeatureRemoveAllInMediaAndLog** in this case is not recommended.

Note ▪ *FeatureRemoveAllInMediaAndLog will also deselect all internal features, including the maintenance/uninstallation feature.*

FeatureSaveTarget

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

FeatureSaveTarget gets the current values of all text substitutions used by the setup project and stores them in the installation log file. This includes the current target directory of all components and the value of all target-directory-related system variables, as well as all other text substitution values.

When the setup initializes and a valid log file is found, any values previously stored with this function are automatically restored. This allows a maintenance setup to update previously installed components and install new components to the appropriate location.

Syntax

```
FeatureSaveTarget ( szReserved );
```

Parameters

Table 83 ▪ FeatureSaveTarget Parameters

Parameter	Description
szReserved	Pass a null string ("") in this parameter. No other value is allowed.

Return Values

This function always returns zero (0).

FeatureSelectItem

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureSelectItem** function sets a feature's selection status to either selected or not selected. You can use **FeatureSelectItem** to change selection status before displaying features in feature dialogs, and you can use it to change or override selections afterward, depending on your installation's requirements.

Note ▪ *If you call a setup type selection function (such as* **FeatureSetupTypeSet**, **SetupType2**, **SdSetupType**, *or* **SdSetupTypeEx***) after calling* **FeatureSelectItem**, *the feature selections set by* **FeatureSelectItem** *are overridden by the selections in the setup type. (This applies to features that you add to your installation project and does not affect internal features.) Be aware that* **SetupType2** *is called in the default code for the OnFirstUIBefore event handler function, which is called after the OnBegin, OnCCPSearch, and OnAppSearch event handler functions are called. You can override or customize the OnFirstUIBefore event handler.*

If you use **FeatureSelectItem** *to deselect a feature, note that the same rules that apply to deselecting a feature through the feature dialog apply. That is, a feature cannot be deselected if it is required by a currently selected feature. Therefore, to deselect a feature that is required by another feature, ensure to deselect the requiring feature before attempting to deselect the required feature.*

- *It is usually not necessary to call* **FeatureSelectItem** *during maintenance mode, since the previous feature selections are automatically loaded from the existing log file.*

Syntax

```
FeatureSelectItem ( szFeatureSource, szFeature, bSelect );
```

Parameters

Table 84 ▪ FeatureSelectItem Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the script-created feature set or (in InstallScript projects) file media library containing the feature whose selection status is to be set.
szFeature	Specifies the feature whose selection status is to be set. You can specify a null string ("") for this parameter. If you specify a null string, all features from szFeatureSource are either selected or deselected, depending on the value of bSelect. For more information about specifying features and subfeatures in InstallScript, see Specifying Features and Subfeatures in Function Calls.
bSelect	Specifies whether the feature should be selected. Pass one of the following predefined constants in this parameter: • **TRUE**—Select the specified feature. • **FALSE**—Do not select the specified feature.

Return Values

Table 85 ▪ FeatureSelectItem Return Values

Return Value	Description
0	**FeatureSelectItem** successfully set the feature's selection status.
< 0	**FeatureSelectItem** was unable to set the feature's selection status. For additional information, call FeatureError.

FeatureSelectItem Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureSelectItem function.
 *
 * This example script demonstrates a function that sets a
 * feature's status to either selected or not selected.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
 *             subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  svDir, szTitle, szMsg;

begin

    svDir   = INSTALLDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Set the selection status of Subfeature2 to not selected.
    FeatureSelectItem (MEDIA, "Feature1\\Subfeature2", FALSE);

    // Display available features.
    SdFeatureTree (szTitle, szMsg, svDir, "", 2);

end;
```

FeatureSelectNew

Project ▪ *This information applies to InstallScript projects.*

The **FeatureSelectNew** function sets the selection status of all new features to either selected or unselected.

Syntax

```
FeatureSelectNew (szFeatureSource, bSelect);
```

Parameters

Table 86 ▪ FeatureSelectNew Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media library containing the new features whose selection status is to be set. Typically, this argument is set equal to the system variable MEDIA.
bSelected	Specifies whether the new features are selected or deselected. Pass one of the following predefined constants in this parameter: • **TRUE**—Selects the new features. • **FALSE**—Deselects the new features.

Return Values

Table 87 ▪ FeatureSelectNew Return Values

Parameter	Description
0	FeatureSelectNew successfully set the new features' selection status.
< 0	FeatureSelectNew was unable to set the new features' selection status. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

New features are features that exist in the installation's file media library but not in the existing log file. FeatureSelectNew is typically called in an update installation to select new features before displaying features in features dialogs. FeatureSelectNew is called in the default code for the OnUpdateUIBefore event handler function.

Note ▪ *If you call a setup type selection function after calling FeatureSelectNew, the feature selections set by FeatureSelectNew are overridden by the selections in the setup type.*

It is usually unnecessary to call FeatureSelectNew during maintenance mode because the previous feature selections are automatically loaded from the existing log file.

FeatureSetData

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

The **FeatureSetData** function sets properties and data for the specified feature. Most of the settings correspond to the properties in the Features view.

Syntax

```
FeatureSetData ( szFeatureSource, szFeature, nInfo, nData, szData );
```

Parameters

Table 88 ▪ FeatureSetData Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the script-created feature set or (in InstallScript projects) file media library that contains the feature for which properties and data are to be set.
szFeature	Specifies the name of the feature. For more information about specifying features and subfeatures in InstallScript, see Specifying Features and Subfeatures in Function Calls.
nInfo	Specifies the type of information to be set. Pass one of the following predefined constants in this parameter: • **FEATURE_FIELD_DESCRIPTION**—This text is displayed in the Description field of selection dialogs. • **FEATURE_FIELD_FTPLOCATION**—An FTP location. • **FEATURE_FIELD_HTTPLOCATION**—An HTTP location. • **FEATURE_FIELD_STATUS (not for script-created feature sets)**—This text is displayed in the progress indicator during file transfer. • **FEATURE_FIELD_VISIBLE**—Indicates whether or not the feature is visible in a feature selection dialog. The parameter nData can be one of the following: TRUE: The feature is visible. FALSE: The feature is not visible. • **FEATURE_FIELD_SELECTED**—Sets the selection status of the feature. This setting has the same effect as FeatureSelectItem. The parameter nData can be one of the following: TRUE: Select the feature. FALSE: Do not select the feature. • **FEATURE_FIELD_SIZE (not for file media)**—The total original file size for the feature. • **FEATURE_FIELD_MISC**—Miscellaneous text. • **FEATURE_FIELD_DISPLAYNAME (not for object projects)**—Indicates the name displayed in feature selection dialogs for the feature specified in szFeature. • **FEATURE_FIELD_IMAGE**—Overrides a feature's default icon assignment. Pass the index of the icon to display in nData. To specify that no icon should be displayed for the feature, pass -1 in nData.
nData	Specifies a numeric value to set when the information indicated by nInfo is numeric.
szData	Specifies a string value to set when the information indicated by nInfo is a string.

Return Values

Table 89 ▪ FeatureSetData Return Values

Return Value	Description
0	FeatureSetData was successful.
< 0	FeatureSetData failed. Call FeatureError for additional information. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

FeatureSetData Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureSetData function.
 *
 * This example script demonstrates a function that sets data
 * and properties for a specified feature.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features and/or
 *          subfeatures with components containing files.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

// Include iswi.h for Windows Installer API function prototypes and constants,
// and to declare code for the OnBegin and OnEnd events.
#include "iswi.h"

// The keyword export identifies MyFunction() as an entry-point function.
// The argument it accepts must be a handle to the Installer database.
   export prototype MyFunction(HWND);

// To Do:  Declare global variables, define constants, and prototype user-
//         defined and DLL functions here.

function MyFunction(hMSI)

    STRING  svDir, szTitle, szMsg, szData;
    NUMBER  nData;

begin

    svDir   = INSTALLDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";
```

```
    szData  = "Required Feature";

    // Hide Feature1 from the end user.
    FeatureSetData (MEDIA, "Feature1", FEATURE_FIELD_VISIBLE, FALSE, szData);

    // Set the display name for Feature2.
    FeatureSetData (MEDIA, "Feature2", FEATURE_FIELD_DISPLAYNAME, nData, szData);

    // Display available features.
    SdFeatureTree (szTitle, szMsg, svDir, "", 2);

end;
```

FeatureSetTarget

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureSetTarget** function assigns the value of szLocation to the public property (in InstallScript MSI projects) or property variable (in InstallScript projects) that is specified by szPropertyVar. Properties or property variables can be used in the Destination field of the Components view and in the Target field of a shortcut in the Shortcuts view. Call **FeatureSetTarget** before calling FeatureMoveData.

Note ▪ *This function cannot be used with script-created feature sets.*

This function cannot set the value of an object's property variable. To set the value of an object's property variable, you must use the object's ScriptDefinedVar property; see the object's help page for details. (You can display an object's help page by selecting the object in the Objects view or, if the object is included in your project, the Features or Setup Design view.) For information on adding the ScriptDefinedVar property to an object that you have created, see Add a ScriptDefinedVar Property to My Object .

In InstallScript MSI projects, this function was designed to set paths for public properties that are in the `Directory` table. You can create a new directory by clicking a component's destination or a shortcut's target, and creating a new directory. This newly created directory has TARGETDIR as its Directory_Parent. Through script, you can use **FeatureSetTarget** to set this public property (directory).

Syntax

```
FeatureSetTarget ( szFeatureSource, szPropertyVar, szLocation );
```

Parameters

Table 90 ▪ FeatureSetTarget Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media library whose user-defined variable is to be set.
szPropertyVar	Specifies the user-defined variable. In InstallShield, user-defined variables take the form <variable name>. ***Project ▪*** *(InstallScript MSI only:) The property used in this parameter must be a public property. You do not need to create an entry in the Property Manager for this property. If you intend to use the property as a destination, you must use it as a component's destination, not a feature's destination.*
szLocation	Specifies the path expression to substitute for the user-defined variable. This string should not include extra quotation marks, even if it specifies a long path. The value of szLocation can be a complete path—including drive letter and colon—or a partial path, depending on how szPropertyVar is used.

Return Values

This function always returns 0.

FeatureSetTarget Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureSetTarget function. After adding this
 * to a script for an InstallScript project, you will see the
 * modified value of INSTALLDIR in the SdAskDestPath
 * dialog. In a project that had any components with OTHERLOC as
 * their destination, that would also be changed.
 *
\*---------------------------------------------------------------*/

function OnBegin( )

begin
// change values of directory properties INSTALLDIR and OTHERLOC for a first-time
// installation
if (!MAINTENANCE) then
    FeatureSetTarget(MEDIA, "<INSTALLDIR>", "C:\\RightHere");
    FeatureSetTarget(MEDIA, "<OTHERLOC>", "C:\\SomewhereElse");
endif;

end;
```

FeatureSetupTypeEnum

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureSetupTypeEnum** function enumerates all setup types associated with the specified media. These setup types are defined by you in the IDE and stored in the file media. You must create the listSetupTypes string list using the ListCreate function.

Note *▪ This function cannot be used with script-created feature sets.*

Syntax

```
FeatureSetupTypeEnum ( szFeatureSource, listSetupTypes );
```

Parameters

Table 91 ▪ FeatureSetupTypeEnum Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose setup types are to be enumerated.
listSetupTypes	Returns a list of all setup types in the specified media. The string list identified by listSetupTypes must already have been initialized by a call to ListCreate.

Return Values

Table 92 ▪ FeatureSetupTypeEnum Return Values

Return Value	Description
0	FeatureSetupTypeEnum was successful.
< 0	FeatureSetupTypeEnum failed.

FeatureSetupTypeEnum Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureSetupTypeEnum function,
```

```
 *
 * This script enumerates the setup types in the media.
 *
 * Note:  To run this example script, create a project (or
 *        insert into a project) with several setup types
 *        defined. The value of DEFTYPE must be the name
 *        of one of your setup types.
 *
\*---------------------------------------------------------------*/

#define SDSHOWTITLE "Setup Type Enumeration"
#define SDSHOWMSG   MEDIA + " media's enumerated setup types are:"
#define SETUPTITLE  "Setup Type Selection"
#define SETUPMSG    "Select a setup type."
#define DEFTYPE     "Typical"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureSetupTypeEnum(HWND);

function ExFn_FeatureSetupTypeEnum(hMSI)
    LIST listID;
    STRING svSetupType;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Create a list to store setup types.
    listID = ListCreate ( STRINGLIST );

    // Get the setup type names from the media into the list.
    if (FeatureSetupTypeEnum( MEDIA, listID) < 0 ) then
        MessageBox ("FeatureSetupTypeEnum failed.", WARNING);
    endif;

    // Display the setup types.
    SdShowInfoList (SDSHOWTITLE, SDSHOWMSG, listID);

    // Now show setup types in a selection dialog.
    svSetupType = DEFTYPE;
    SdSetupTypeEx (SETUPTITLE, SETUPMSG, "", svSetupType, 0);

    // Release the list from memory.
    ListDestroy (listID);

end;
```

FeatureSetupTypeGetData

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureSetupTypeGetData** function retrieves data associated with a specified setup type. You can then use this data for any purpose.

A typical application of FeatureSetupTypeGetData might be to display setup type information in a custom setup type-related dialog. You would call FeatureSetupTypeGetData inside the switch-case statement following the call to WaitOnDialog that displays the custom dialog.

Note ▪ *This function cannot be used with script-created feature sets.*

Syntax

```
FeatureSetupTypeGetData ( szFeatureSource, szSetupType, nInfo, nvResult, svResult );
```

Parameters

Table 93 ▪ FeatureSetupTypeGetData Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media from which data associated with a setup type is to be retrieved.
szSetupType	Specifies the setup type name. This name must be specified exactly as it appears in the InstallShield interface—for example, “Typical”.
nInfo	Specifies the information to retrieve. Pass one of the following predefined constants in this parameter: • **SETUPTYPE_INFO_DESCRIPTION**—Retrieves the description of the specified setup type. The description is returned in svResult. • **SETUPTYPE_INFO_DISPLAYNAME**—Retrieves the display name of the setup type. The name is returned in svResult.
nvResult	Returns a NUMBER or LONG value when nInfo specifies information of that type.
svResult	Returns a STRING value when nInfo specifies information of that type.

Return Values

Table 94 ▪ FeatureSetupTypeGetData Return Values

Return Value	Description
0	FeatureSetupTypeGetData was successful.
< 0	FeatureSetupTypeGetData failed. Call FeatureError for additional information.

FeatureSetupTypeGetData Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions FeatureSetupTypeGetData,
 * FeatureGetData, FeatureSetData, SdFeatureDialog2,
 * and FeatureSelectItem.
 *
 * Notes:  To run this example script, create a project with
 *         the following features (f), subfeatures (sf),
 *         and components (c):
 *
 *             (f) Program_Files
```

```
 *                (c) Program_DLLS
 *                (c) Program_EXEs
 *            (f) Example_Files
 *                (sf) Small_Documents
 *                     (c) Small_Document_Examples
 *                (sf) Books
 *                     (c) Book_Examples
 *                (sf) Graphics
 *                     (c) Graphic_Examples
 *            (f) Help_Files
 *                (c) Help_Files
 *            (f) Utilities
 *                (sf) Grammar_Checker
 *                     (c) Grammar_Checker
 *                (sf) Art_Studio
 *                     (c) Art_Studio
 *
 * Be sure to enter descriptions into the Description fields of
 * the feature properties sheets for the Program_Files and
 * Example_Files features and their subfeatures.
 *
\*---------------------------------------------------------------*/

// Define strings. In a real installation, you would define these in the String Editor
// view and precede each string identifier in the script with the at symbol (@).
#define FEAT_SELECT_TITLE               "Select Features"
#define FEAT_SELECT_MSG1                "IMPORTANT! Note the various feature"
#define FEAT_SELECT_MSG2                "and subfeature names, descriptions,"
#define FEAT_SELECT_MSG3                "and selection settings."
#define FEAT_SELECT_MSG4                "IMPORTANT! Note the CHANGED feature"
#define FEAT_SELECT_MSG5                "and subfeature name, description, "
#define FEAT_SELECT_MSG6                "and selection settings."
#define FEAT_PROGRAMFILES_DISPLAYNAME   "Program Files"
#define FEAT_EXAMPLEFILES_DISPLAYNAME   "Example Files"
#define FEAT_SMALLDOCUMENTS_DISPLAYNAME "Small Documents"
#define FEAT_BOOKS_DISPLAYNAME          "Books"
#define FEAT_GRAPHICS_DISPLAYNAME       "Graphics"
#define SETUP_TYPE                      "Typical"

// Global variable declarations.
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureSetupTypeGetData(HWND);

function ExFn_FeatureSetupTypeGetData(hMSI)
    STRING  svInfo, szInfo, szFeature;
    NUMBER  nvInfo, nInfo, nResult;
begin

    // Get the description field data for the SETUP_TYPE setup type.
    FeatureSetupTypeGetData (MEDIA, SETUP_TYPE, SETUPTYPE_INFO_DESCRIPTION,
                             nvInfo, svInfo );

    SprintfBox (INFORMATION, "FeatureSetupTypeGetData demo",
               "FeatureSetupTypeGetData got the following " +
```

```
           "value from the " + SETUP_TYPE + " description field:\n\n%s",
           svInfo);

// Get the description field data for the FEAT_PROGRAMFILES_DISPLAYNAME
// feature using FeatureGetData.
szFeature = FEAT_PROGRAMFILES_DISPLAYNAME;

nResult = FeatureGetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                          nvInfo, svInfo);

SprintfBox (INFORMATION, "FeatureGetData demo",
           "FeatureGetData got the following value " +
           "from the " + FEAT_PROGRAMFILES_DISPLAYNAME +
           " description field:\n\n%s", svInfo);

// Disable the Back button in setup dialogs.
Disable (BACKBUTTON);

// Show the original description field values
// in the feature selection dialog.
SdFeatureDialog2 (FEAT_SELECT_TITLE, FEAT_SELECT_MSG1 + FEAT_SELECT_MSG2 +
                  FEAT_SELECT_MSG3, INSTALLDIR, "");

// Change the displayed names for the Program_Files feature and the
// Example_Files feature and subfeatures.
szInfo = "CHANGED Feature Name!";

nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DISPLAYNAME,
                         nInfo, szInfo);

szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME;

nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DISPLAYNAME,
                          nInfo, szInfo);

szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" +
              FEAT_SMALLDOCUMENTS_DISPLAYNAME;

nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DISPLAYNAME,
                          nInfo, szInfo);

szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" +
              FEAT_BOOKS_DISPLAYNAME;

nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DISPLAYNAME,
                          nInfo, szInfo);

szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" + FEAT_GRAPHICS_DISPLAYNAME;

nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DISPLAYNAME,
                          nInfo, szInfo);

// Change the descriptions displayed for the Program_Files feature
// and the Example_Files feature and subfeatures.
szFeature = FEAT_PROGRAMFILES_DISPLAYNAME;
szInfo = "CHANGED description field value!";
```

```
    nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                              nInfo, szInfo);

    szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME;

    nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                              nInfo, szInfo);

    szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" +
                FEAT_SMALLDOCUMENTS_DISPLAYNAME;

    nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                              nInfo, szInfo);

    szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" + FEAT_BOOKS_DISPLAYNAME;

    nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                              nInfo, szInfo);

    szFeature = FEAT_EXAMPLEFILES_DISPLAYNAME + "\\" + FEAT_GRAPHICS_DISPLAYNAME;

    nResult = FeatureSetData (MEDIA, szFeature, FEATURE_FIELD_DESCRIPTION,
                              nInfo, szInfo);

    // Deselect the Program_Files and Example_Files features (and all their
    // subfeatures, by extension).
    FeatureSelectItem (MEDIA, FEAT_PROGRAMFILES_DISPLAYNAME, FALSE);
    FeatureSelectItem (MEDIA, FEAT_EXAMPLEFILES_DISPLAYNAME, FALSE);

    // Display the features again, noting the changed names, descriptions,
    // and selection settings.

    SdFeatureDialog2 (FEAT_SELECT_TITLE, FEAT_SELECT_MSG4 + FEAT_SELECT_MSG5 +
                      FEAT_SELECT_MSG6, INSTALLDIR, "");

end;
```

FeatureSetupTypeSet

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureSetupTypeSet** function sets the specified setup type in the file media referenced by szFeatureSource. You can use FeatureSetupTypeSet to override the selection made in a setup type dialog, such as SdSetupTypeEx.

Note ▪ *This function cannot be used with script-created feature sets.*

Syntax

```
FeatureSetupTypeSet ( szFeatureSource, szSetupType );
```

Parameters

Table 95 ▪ FeatureSetupTypeSet Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose setup type is to be set.
szSetupType	Specifies which setup type to set.

Return Values

Table 96 ▪ FeatureSetupTypeSet Return Values

Return Value	Description
0	FeatureSetupTypeSet was successful.
< 0	FeatureSetupTypeSet failed.

FeatureSetupTypeSet Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureSetupTypeSet function.
 *
 * Note: To run this example script, create a project (or
 *       insert into a project) with several setup types and
 *       features. Make sure you specify the setup types'
 *       default feature selections.  If you do not include
 *       a Compact setup type, then define one of your setup
 *       types as SETUP_TYPE in the #define SETUP_TYPE line
 *       below.
 *
\*---------------------------------------------------------------*/

#define SETUP_TYPE   "Compact"
#define SDSETUPTITLE "Setup Type Selection"
#define SDSETUPMSG   "Select a setup type other than " + SETUP_TYPE + "."
#define SDFEATTITLE  "Feature Selection"
#define SDFEATMSG1   "Feature selection before FeatureSetupTypeSet."
#define SDFEATMSG2   "Feature selection after FeatureSetupTypeSet."
#define MSG1         "FeatureSetupTypeSet will now select all\n"
#define MSG2         "features in the " + SETUP_TYPE + " setup type."
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_FeatureSetupTypeSet(HWND);

function ExFn_FeatureSetupTypeSet(hMSI)
     STRING szSetupType, svSetup, svDir;
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Select a setup type other than SETUP_TYPE to show default
   // selection settings.
   SdSetupTypeEx (SDSETUPTITLE, SDSETUPMSG, "", svSetup, 0);

   // Display the feature selections for the selected setup type.
   svDir = INSTALLDIR;
   SdFeatureMult (SDFEATTITLE, SDFEATMSG1, svDir, "");

   MessageBox (MSG1 + MSG2, INFORMATION);

   // Now change/override the previous setup type selection by
   // selecting SETUP_TYPE's features. All others are deselected.
   szSetupType = SETUP_TYPE;
   if (FeatureSetupTypeSet (MEDIA, szSetupType) < 0) then
       MessageBox ("FeatureSetupTypeSet failed.", SEVERE);
   endif;

   // Display the new feature selections.
   SdFeatureMult (SDFEATTITLE, SDFEATMSG2, svDir, "");

end;
```

FeatureSpendCost

Project ▪ *This information applies to InstallScript projects:*

The **FeatureSpendCost** function tells the setup that the progress bar should be updated for a certain amount of cost that has been spent by an event external to the setup. This function has the effect of updating the progress bar appropriately as if the setup itself had spent the corresponding amount of cost. This function can only be called during a standard file operation event, such as an event resulting from calling **FeatureTransferData** or **FeatureMoveData**. Typically, this function is called during the OnInstalling or OnInstalled event as a result of an external event occurring that spends cost.

Note ▪ *It is not necessary to call this function for file transfer operations that the setup engine carries out, such as XCopyFile or CopyFile. These mechanisms automatically update the status bar during operation. However, FeatureAddCost must be called in this case (before file transfer operations begin) so the installation is aware of the additional cost.*

Syntax

```
FeatureSpendCost ( nCostHigh, nCostLow );
```

Parameters

Table 97 ▪ FeatureSpendCost Parameters

Parameter	Description
nCostHigh	Specifies the upper 31 bits of the installation cost that should be spent.
nCostLow	Specifies the lower 31 bits of the installation cost that should be spent.

Return Values

Table 98 ▪ FeatureSpendCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function successfully updated the progress bar.
< ISERR_SUCCESS	Indicates that the function was unable to update the progress bar.

FeatureSpendUninstallCost

Project ▪ *This function applies to InstallScript projects.*

The **FeatureSpendUninstallCost** function is used to tell the setup that the progress bar should be updated for a certain amount of uninstall 'cost' that has been spent by an event external to the setup. This function has the effect of updating the progress bar appropriately as if the setup itself had spent the corresponding amount of cost. This function can only be called during a standard file operation event, such as an event resulting from calling **FeatureTransferData** or **FeatureMoveData**. Typically, this function is called during the OnInstalling or OnInstalled event as a result of an external event occurring that spends cost.

Note ▪ *It is not necessary to call this function for file transfer operations that are listed the uninstall log file., such as XCopyFile or CopyFile operations. The status bar is updated automatically for items listed in the log file, note also that you do not need to call FeatureAddUninstallCost for items listed in the log file, as the setup automatically accounts for all items listed in the log file. However, FeatureAddCost must be called in this case so the file transfer operation is aware of the additional cost.*

Syntax

```
FeatureSpendUninstallCost ( nOps, nOpType);
```

Parameters

Table 99 ▪ FeatureSpendUninstallCost Parameters

Parameter	Description
nOps	The number of operations to spend.
nOpType	Indicates the type of operation. Pass one of the following predefined constants in this parameter: • **FEATURE_OPCOST_UNINSTALL_FILE**—Specifies the operation as uninstalling a file. You can also specify this constant using the value 4096. This enables you to experiment with different sizes to determine what size to use for your custom operation. • **FEATURE_OPCOST_UNINSTALL_REGORINI**—Specifies the operation as uninstalling a registry file. You can also specify this constant using the value 2048. This enables you to experiment with different sizes to determine what size to use for your custom operation. • **FEATURE_OPCOST_UNINSTALL_UNREGFILE**—Specifies the operation as unregistering a file. You can also specify this constant using the value 16384. This enables you to experiment with different sizes to determine what size to use for your custom operation.  ***Note ▪*** *You can also pass a numeric value in this parameter to indicate an operation of a specific cost. You may need to experiment with different values to determine the appropriate value for a specified custom operation. Note that the total uninstall cost added is nOps multiplied by nOpType.*

Return Values

Table 100 ▪ FeatureSpendUninstallCost Parameters

Return Value	Description
ISERR_SUCCESS	Indicates that the function successfully updated the progress bar.
< ISERR_SUCCESS	Indicates that the function was unable to update the progress bar.

FeatureStandardSetupTypeSet

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureStandardSetupTypeSet** function sets the current setup type to the standard setup type specified by nSetupType. This function attempts to set the setup type by calling the FeatureSetupTypeSet function with the appropriate string to set the setup type.

Syntax

```
FeatureStandardSetupTypeSet ( szFeatureSource, nSetupType );
```

Parameters

Table 101 ▪ FeatureStandardSetupTypeSet Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose setup type is to be set.
nSetupType	Specifies which setup type to set. Pass one of the following predefined constants in this parameter: • TYPICAL • COMPLETE • COMPACT • CUSTOM You can customize the string setup type value associated with each numeric constant by customizing the global predefined script variables listed below. The function sets the setup or installation type by trying the appropriate script variable, then tries the setup type name in English and Japanese (see below). Also, when the COMPLETE setup type is specified, the function tries all TYPICAL values after checking the values for COMPLETE. If the setup type cannot be set to any of these values, the function returns failure. The following global predefined script variables can be customized: • **SETUPTYPE_STR_TYPICAL**—Defines the setup type that will be set by default if TYPICAL is specified. • **SETUPTYPE_STR_COMPLETE**—Defines the setup type that will be set by default if COMPLETE is specified. • **SETUPTYPE_STR_COMPACT**—Defines the setup type that will be set by default if COMPACT is specified. • **SETUPTYPE_STR_CUSTOM**—Defines the setup type that will be set by default if CUSTOM is specified.

The following table shows the values the FeatureStandardSetupTypeSet function uses when each constant is specified in the nSetupType parameter.

Table 102 ▪ nSetupType Constants

Constant	Strings Used
TYPICAL	SETUPTYPE_STR_TYPICAL Typical
COMPLETE	SETUPTYPE_STR_COMPLETE Complete

Table 102 ▪ nSetupType Constants (cont.)

Constant	Strings Used
COMPACT	SETUPTYPE_STR_COMPACT Compact
CUSTOM	SETUPTYPE_STR_CUSTOM Custom

Return Values

Table 103 ▪ FeatureStandardSetupTypeSet Return Values

Return Value	Description
>= ISERR_SUCCESS	FeatureStandardSetupTypeSet was able to set the specified setup type.
< ISERR_SUCCESS	FeatureStandardSetupTypeSet was unable to set the specified setup type.

FeatureTotalSize

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **FeatureTotalSize** function returns the total size—in bytes—of the features referenced by szFeature.

- To include subfeatures in the size calculation, set bIncludeSubcomp to TRUE.
- To get the total size of all the features in the specified media, set szFeature to a null string ("") and set bIncludeSubcomp to TRUE.

Note ▪ *There might be a difference between the value returned by FeatureTotalSize and the space required values displayed in the SdFeatureDialog, SdFeatureDialog2, SdFeatureDialogAdv, and SdFeatureMult dialogs. This difference is due to the fact that this function does not take into account whether any components associated with the feature are currently filtered by operating system or language, or the cluster size on the target drive. To obtain a drive space calculation that takes these factors into account, call FeatureGetCost.*

Syntax

```
FeatureTotalSize ( szFeatureSource, szFeature, bIncludeSubcomp, bTargetSize );
```

Parameters

Table 104 ▪ FeatureTotalSize Parameters

Parameter	Description
szFeatureSource	Specifies the name of the file media from which the total size of selected features is to be returned.
szFeature	Specifies the name of the feature whose size is to be retrieved. To retrieve the size of the entire media, pass a null string ("") in this parameter.
bIncludeSubcomp	Indicates whether to include selected subfeatures of szFeature. Pass one of the following predefined constants in this parameter: • **TRUE**—Include selected subfeatures in the size calculation. • **FALSE**—Do not include subfeatures in the size calculation.
bTargetSize	Indicates whether to retrieve the original, uncompressed size or the size in the media library. Pass one of the following predefined constants in this parameter: • **TRUE**—Retrieve the original, uncompressed size. • **FALSE**—Retrieve the size in the media library.

Return Values

Table 105 ▪ FeatureTotalSize Return Values

Return Value	Description
XXXX	The total size, in bytes, of the selected features.
< 0	FeatureTotalSize failed. Call FeatureError for additional information.

FeatureTotalSize Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FeatureListItems, SdFeatureMult, and
 * FeatureTotalSize functions.
 *
 * Comments:  To run this example script, create a project with
 *            the following features (f), subfeatures (sf),
 *            and components (c):
 *
 *             (f) Program_Files
 *                 (c) Program_DLLS
 *                 (c) Program_EXEs
 *             (f) Example_Files
```

```
 *                 (sf) Small_Documents
 *                      (c) Small_Document_Examples
 *                 (sf) Books
 *                      (c) Book_Examples
 *                 (sf) Graphics
 *                      (c) Graphic_Examples
 *             (f) Help_Files
 *                 (c) Help_Files
 *             (f) Utilities
 *                 (sf) Grammar_Checker
 *                      (c) Grammar_Checker
 *                 (sf) Art_Studio
 *                      (c) Art_Studio
 *
\*---------------------------------------------------------------*/

#define FEAT_SELECT_TITLE    "Select Features"
#define FEAT_SELECT_MSG      "Select features and subfeatures to install."
#define FEATTOTSIZEMSG1      "Want to change feature selections and see\n"
#define FEATTOTSIZEMSG2      "size change reflected in FeatureTotalSize call?"

    // Global variable declarations.

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FeatureTotalSize(HWND);

function ExFn_FeatureTotalSize(hMSI)
    STRING  szDir, svString;
    NUMBER  nResult, nDone;
    LIST    listCompList, listTemp;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Create a string list of all top-level features.
    listCompList = ListCreate (STRINGLIST);
    FeatureListItems (MEDIA, "", listCompList);

    // Display the string list of top-level features.
    SdShowInfoList ("List MEDIA Features", "MEDIA contains " +
                    "the following top-level features:", listCompList);

    // Get each top-level feature in listCompList, in turn, and
    // list and display all of its subfeatures, if any.
    nResult = ListGetFirstString ( listCompList, svString );
    while ( nResult != END_OF_LIST )
        listTemp = ListCreate (STRINGLIST);
        FeatureListItems (MEDIA, svString, listTemp);
        SdShowInfoList ("Subfeature Listing", svString + " contains " +
                        "the following subfeatures:", listTemp);
        ListDestroy (listTemp);
        nResult = ListGetNextString (listCompList, svString);
    endwhile;
```

```
    // Show feature selection dialog and total size of all selected
    // features.  Loop to change selections and see total size change
    // reflected in the call to FeatureTotalSize.
    nDone = YES;
    while (nDone = YES)
        szDir = INSTALLDIR;
        SdFeatureMult (FEAT_SELECT_TITLE, FEAT_SELECT_MSG, szDir, "" );

        nResult = FeatureTotalSize(MEDIA, "", TRUE, TRUE);
        SprintfBox (INFORMATION, "", "Total size of all files " +
                    "in SELECTED features:\n\n%ld", nResult);
        nDone = AskYesNo (FEATTOTSIZEMSG1 + FEATTOTSIZEMSG2, YES);
    endwhile;

    ListDestroy (listCompList);

end;
```

FeatureTransferData

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI—if the InstallScript user interface (UI) style is the traditional style (which uses the InstallScript engine as an external UI handler)*

This information does not apply to InstallScript MSI projects in which the InstallScript UI style is the new style (which uses the InstallScript engine as an embedded UI handler). To learn more, see Using the InstallScript Engine as an External vs. Embedded UI Handler for InstallScript MSI Installations.

If you use an event-based script, the **FeatureTransferData** function is called automatically after the OnFirstUIBefore event and interacts with the OnMoving, OnMoved, and feature events. FeatureTransferData installs or uninstalls features appropriately based on their selection state and whether they are currently installed.

FeatureTransferData does the following:

- **FeatureTransferData** installs features that are selected (for example, by end user selections in feature or setup type dialogs) and are currently not installed.
- **FeatureTransferData** uninstalls features that are not selected and are currently installed.

The installation determines whether a feature is currently installed by reading the existing log file during installation initialization. If no valid log file is found during installation initialization, all features are considered to be not installed.

When you call **FeatureTransferData**, `Do(SELFREGISTRATIONPROCESS);` is called automatically after the files are installed but before the call returns. Therefore, if your installation needs to perform additional actions after the file transfer but before self-registration, place these actions in the OnMoved event; the OnMoved event is called after the file transfer but before the batch self-registration occurs.

Syntax

```
FeatureTransferData ( szFeatureSource );
```

Parameters

Table 106 ▪ FeatureTransferData Parameters

Parameter	Description
szFeatureSource	Specifies the media name of the file media whose features have been specified for installation and uninstallation. Typically, you would pass the system variable MEDIA in this parameter.

Return Values

Table 107 ▪ FeatureTransferData Return Values

Return Value	Description
0	Indicates that the function successfully performed the feature installations and uninstallations.
< 0	Indicates that the function could not perform the feature installations and uninstallations.

Additional Information

You can call one of the following functions before calling **FeatureTransferData** to affect the result of the call:

- **FeatureReinstall**—Reinstalls all features that are currently selected when **FeatureTransferData** is called.
- **FeatureRemoveAll**—Removes (uninstalls) all features when **FeatureTransferData** is called.

FeatureUpdate

Project ▪ *This information applies to InstallScript project.*

The **FeatureUpdate** function causes the next call to FeatureTransferData (or FeatureMoveData) to reinstall all features that are already installed when FeatureTransferData is called, except the maintenance/uninstallation feature. (Note that this feature is automatically placed in your .cab files by the media builder and is not displayed in InstallShield.)

Syntax

```
FeatureUpdate ( szReserved );
```

Parameters

Table 108 ▪ FeatureUpdate Parameters

Parameter	Description
szReserved	Pass a null string ("") in this parameter. No other value is allowed.

Return Values

Table 109 ▪ FeatureUpdate Return Values

Return Value	Description
0	Indicates that the function succeeded.
< 0	Indicates that the function failed.

Additional Information

Call FeatureUpdate in an installation whose maintenance/uninstallation feature you do not want to be used during subsequent maintenance operations (modifying, repairing, or uninstalling). FeatureUpdate is typically called in an update or add-on installation, in which the installation media does not contain all the elements of the previous media and thus should not be used for subsequent maintenance operations.

FeatureUpdate is similar to FeatureReinstall, but FeatureReinstall also reinstalls the maintenance/uninstallation feature.

Note ▪ *If you call both FeatureUpdate and FeatureReinstall, the call to FeatureUpdate will not have any effect; so if you call FeatureUpdate, do not call FeatureReinstall in the same installation.*

Call FeatureUpdate to update only applications that were installed with the same version of InstallShield as the update installation. If you call FeatureUpdate to update an application that was installed with a previous version of InstallShield, the maintenance/uninstallation files will not be updated, so any subsequent maintenance operations will use the maintenance/uninstallation files that were created with the previous version.

The following information applies in this situation: A previously released version of your application was installed by an installation that aborts if a newer version of the application is present. In this case, FeatureUpdate should not be called in an update installation that changes the version number of the installed application. Otherwise, after the update installation runs, the currently installed application cannot be uninstalled.

FeatureValidate

Project ▪ *This information applies to InstallScript projects.*

Note ▪ *This function cannot be used with script-created feature sets.*

The **FeatureValidate** function validates the password of the file media library or of a specified feature.

Syntax

```
FeatureValidate ( szMediaLibrary, szFeature, szPassword );
```

Parameters

Table 110 ▪ FeatureValidate Parameters

Parameter	Description
szMediaLibrary	Specifies the name of the file media library whose password is to be validated.
szFeature	Specifies the name of the feature. If this parameter is a null string (""), the entire media library is assumed.
szPassword	Specifies the password to be validated.

Return Values

Table 111 ▪ FeatureValidate Return Values

Return Value	Description
0	FeatureValidate was successful.
< 0	FeatureValidate failed. Call FeatureError for additional information. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

FeatureValidate Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdSetupTypeEx, SdFeatureDialog,
 * FeatureIsItemSelected, FeatureGetData, and FeatureValidate.
 *
 * Notes:  To run this example script, create a project with
 *         the following features (f), subfeatures (sf),
 *         and components (c):
 *
 *             (f) Program Files
 *                 (c) Program DLLS
 *                 (c) Program EXEs
 *             (f) Example Files
 *                 (sf) Small Documents
 *                      (c) Small Document Examples
 *                 (sf) Books
```

```
 *                     (c) Book Examples
 *                 (sf) Graphics
 *                     (c) Graphic Examples
 *             (f) Help Files
 *                 (c) Help Files
 *             (f) Utilities
 *                 (sf) Grammar Checker
 *                     (c) Grammar Checker
 *                 (sf) Art Studio
 *                     (c) Art Studio
 *             (f) Evaluation Copy
 *                 (c) Evaluation Copy
 *                 (c) Help Files
 *
 * Insert "dummy" files into the components.  Make sure you
 * define the correct file name for the main EXE (MAIN_EXE,
 * below) that you insert into the Program EXEs components.
 * Run the setup with and without a password assigned to the
 * Program Files feature (remember to rebuild your media
 * each time).
 *
 * You can also create billboards (name them Bbrd1.bmp,
 * Bbrd2.bmp, and Bbrd3.bmp) and add them to the project in
 * the Support Files/Billboards's Language Independent folder.
 *
 * This example script installs files, adds an icon to the
 * Start Programs menu, and provides uninstallation
 * functionality.
 *
\*-----------------------------------------------------------------*/

// Define strings. In a real installation, you would define these in the String Editor
// view and precede each string identifier in the script with the at symbol (@).
#define FEATURE_SELECT_TITLE              "Select Features"
#define FEATURE_SELECT_MSG                "Select features and subfeatures to install."
#define FEATURE_PROGRAMFILES_DISPLAYNAME   "Program Files"
#define PASSWORD_PROMPT                "Please enter the password."
#define PASSWORD_ERRMSG                "Password incorrect. Please enter again."


// Global variable declarations.
STRING  svData, svLogFile,  szProgram, szFeature, svResult, svSetupType,
svDir;
BOOL    bInitStepsDone, bPwdValid;
NUMBER  nvData, nResult;

#include "ifx.h"

function OnFirstUIBefore()
begin
    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Get the setup type.
    svDir = TARGETDIR;
    SdSetupTypeEx (SETUPTYPE_TITLE, SETUPTYPE_MSG, "", svSetupType, 0);
```

```
    // If user selected Custom setup type, display feature selection dialog.
    if  (svSetupType = SETUPTYPE_CUSTOM) then
        SdFeatureDialog (FEATURE_SELECT_TITLE, FEATURE_SELECT_MSG, svDir, "");
    endif;

    // Enable the Back button in setup dialogs.
    Enable (BACKBUTTON);

    // If the Program Files feature is selected and there is a password
    // associated with it, the user must input the password and
    // it must be validated.
    nResult = FALSE;
    nvData = FALSE;
    nResult = FeatureIsItemSelected (MEDIA, FEATURE_PROGRAMFILES_DISPLAYNAME);
    FeatureGetData (MEDIA, FEATURE_PROGRAMFILES_DISPLAYNAME,
        FEATURE_FIELD_PASSWORD, nvData, svData);
    if (nResult && nvData) then
        bPwdValid = FALSE;
        Disable (BACKBUTTON);  // Back button not needed or supported here.
        while  (!bPwdValid)
            AskText (PASSWORD_PROMPT, "", svResult);
            nResult = FeatureValidate (MEDIA, FEATURE_PROGRAMFILES_DISPLAYNAME,
                svResult);
            if  (nResult = 0) then
                bPwdValid = TRUE;
            else
                MessageBox (PASSWORD_ERRMSG, SEVERE);
            endif;
        endwhile;
        Enable (BACKBUTTON);   // Restore Back button's default status.
    endif;
end;
```

FileCompare

The **FileCompare** function compares the size, modify dates, contents, or versions of two files.

Syntax

```
FileCompare ( szFileName1, szFileName2, nCompareFlag );
```

Parameters

Table 112 ▪ FileCompare Parameters

Parameter	Description
szFileName1	Specifies the name of the first file to compare. The installation uses the system variable SRCDIR as the path of the file.
szFileName2	Specifies name of the second file to compare. The installation uses one of the following system variables as the path of the file: ● TARGETDIR (in an InstallScript installation) ● INSTALLDIR (in an Basic MSI or InstallScript MSI installation)
nCompareFlag	Specifies comparison options. Pass one of the following predefined constants in this parameter: ● **COMPARE_SIZE**—Compares the size of the two files. ● **COMPARE_DATE**—Compares the modify dates of the two files. ● **COMPARE_VERSION**—Compares the version resource of the two files. ● **COMPARE_MD5_SIGNATURE**—Compares the MD5 signature of the two files. If the MD5 signatures match, the contents of the files are identical.

Return Values (when COMPARE_MD5_SIGNATURE is specified)

Table 113 ▪ FileCompare Return Values (COMPARE MD5_SIGNATURE)

Return Value	Description
>= ISERR_SUCCESS	The function successfully compared the files, specifically: ● **EQUALS**—The files MD5 signatures are the same (the files contents are the same). ● **NOT_EQUALS**—The files MD5 signatures are not the same.
<= ISERR_SUCCESS	The function failed to compare the files.

Return Values (when COMPARE_SIZE, COMPARE_DATE, or COMPARE_VERSION is

specified)

Table 114 ▪ FileCompare Return Values (COMPARE_SIZE, COMPARE_DATE, or COMPARE_VERSION)

Return Value	Description
>= ISERR_SUCCESS	The function successfully compared the files, specifically: • **EQUALS**—The first file's date, size, or version is equal to that of the second file. • **GREATER_THAN**—The first file is newer or larger than the second file. • **LESS_THAN**—The first file is older or smaller than the second file.
<= ISERR_SUCCESS	The function failed to compare the files.

FileCompare Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FileCompare function.
 *
 * This example script calls FileCompare three times:
 *
 * -- The first call compares the version of FILE_COMP1 in SDIR
 *    to the version of FILE_COMP2 in TDIR.
 *
 * -- The second call checks if FILE_COMP1 was created earlier
 *    than FILE_COMP2.
 *
 * -- The third call checks if FILE_COMP1 is smaller than
 *    FILE_COMP2.
 *
 * Note: Before you run this script, set the preprocessor
 *       constants so that they reference existing files in
 *       existing directories on the target computer.
 *
\*---------------------------------------------------------------*/

#define  SDIR        "C:\\"
#define  TDIR        "C:\\"
#define  FILE_COMP1  "Example1.dll"
#define  FILE_COMP2  "Example2.dll"
#define  MSG_TITLE   "FileCompare Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_FileCompare(HWND);

function ExFn_FileCompare(hMSI)
    NUMBER nResult;
begin

    /*------------------------------------------------------------*\
     *
     * Compare the versions of the two files.
     *
    \*------------------------------------------------------------*/

    nResult = FileCompare (SDIR ^ FILE_COMP1, TDIR ^ FILE_COMP2,
                           COMPARE_VERSION);

    // Report an error and terminate if either file is not found.
    if (nResult = FILE_NOT_FOUND) then
        SprintfBox (INFORMATION, MSG_TITLE, "%s and/or %s not found.",
                        FILE_COMP1, FILE_COMP2);
        abort;
    endif;

    // Files are present so report the result of the comparison.
    switch (nResult)
        case EQUALS:
            SprintfBox (INFORMATION, MSG_TITLE, "%s is the same version as %s.",
                       FILE_COMP1, FILE_COMP2);
        case GREATER_THAN:
            SprintfBox (INFORMATION, MSG_TITLE, "%s is a newer version than %s.",
                       FILE_COMP1, FILE_COMP2);
        case LESS_THAN:
            SprintfBox (INFORMATION, MSG_TITLE, "%s is an older version than %s.",
                       FILE_COMP1, FILE_COMP2);
        case OTHER_FAILURE:
            SprintfBox (INFORMATION, MSG_TITLE,
                       "Version information not available in %s and/or %s.",
                       FILE_COMP1, FILE_COMP2);
    endswitch;

    /*------------------------------------------------------------*\
     *
     * Compare the creation dates.
     *
    \*------------------------------------------------------------*/

    nResult = FileCompare (SDIR ^ FILE_COMP1, TDIR ^ FILE_COMP2,
                           COMPARE_DATE);

    switch (nResult)
        case LESS_THAN:
            SprintfBox (INFORMATION, MSG_TITLE,
                       "%s was created earlier than %s.",
                       FILE_COMP1, FILE_COMP2);
        case GREATER_THAN:
            SprintfBox (INFORMATION, MSG_TITLE,
                       "%s was created earlier than %s.",
```

```
                    FILE_COMP2, FILE_COMP1);
        case EQUALS:
            SprintfBox (INFORMATION, MSG_TITLE,
                        "%s and %s have the same creation date and time.",
                        FILE_COMP1, FILE_COMP2);
        default:
            SprintfBox (INFORMATION, MSG_TITLE,
                        "Unable to compare the creation date and time of %s and %s.",
                        FILE_COMP2, FILE_COMP1);
    endswitch;

    /*---------------------------------------------------------*\
     *
     * Compare the file sizes.
     *
    \*---------------------------------------------------------*/

    nResult = FileCompare (SDIR ^ FILE_COMP1, TDIR ^ FILE_COMP2,
        COMPARE_SIZE);

    switch (nResult)
        case LESS_THAN:
            SprintfBox (INFORMATION, MSG_TITLE,
                        "%s is smaller than %s.",
                        FILE_COMP1, FILE_COMP2);
        case GREATER_THAN:
            SprintfBox (INFORMATION, MSG_TITLE,
                        "%s is smaller than %s.",
                        FILE_COMP2, FILE_COMP1);
        case EQUALS:
            SprintfBox (INFORMATION, MSG_TITLE,
                        "%s and %s are the same size.",
                        FILE_COMP1, FILE_COMP2);
        default:
            SprintfBox(INFORMATION, MSG_TITLE,
                      "Unable to compare the size of %s and %s.",
                      FILE_COMP1, FILE_COMP2);
    endswitch;

end;
```

FileDeleteLine

The **FileDeleteLine** function deletes a range of lines (including the starting line and ending line) from a text file using a starting and ending line number. This function works on line-oriented text files—it does not work with binary files. You can use FileDeleteLine with the FileGrep function to search and delete text lines in a file.

Caution ▪ *The file specified by szFileName must not already have been opened by a call to OpenFile. If szFileName is already open, call CloseFile before calling FileDeleteLine.*

Syntax

```
FileDeleteLine ( szFileName, nStartLineNum, nEndLineNum );
```

Parameters

Table 115 ▪ FileDeleteLine Parameters

Parameter	Description
szFileName	Specifies the unqualified name of a file located in the directory specified by the system variable SRCDIR, or the fully qualified path to the file. The lines specified by nStartLineNum and nEndLineNum will be deleted from that file if it exists.
nStartLineNum	Specifies the number of the first line to delete from the file. Note that line numbering begins at 0.
nEndLineNum	Specifies the number of the last line to delete from the file. Note that line numbering begins at 0. To delete from the line specified by nStartLineNum to the end of the file, pass the predefined constant DELETE_EOF in this parameter.

Return Values

Table 116 ▪ FileDeleteLine Return Values

Return Value	Description
0	FileDeleteLine successfully deleted the specified lines from the file.
< 0	FileDeleteLine failed because of one of the following conditions: • **FILE_NOT_FOUND (-2)**—The installation could not find the file in szFileName. • **FILE_RD_ONLY (-5)**—The file is write-protected. • **LINE_NUMBER (-7)**—One of the line numbers you specified is less than zero, or the line number does not exist in the file. • **OUT_OF_DISK_SPACE (-6)**—There is insufficient space on the disk drive to complete the specified operation. • **OTHER_FAILURE (-1)**—Some other unspecified error has occurred.

FileDeleteLine Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the FileDeleteLine function.
 *
 * This script searches a file for the first line that includes
 * the string "PATH".  If a line with that string is found, it
 * is deleted.  Finally, a new line is added to the file at the
 * position of the deleted line.  If a line with the word
 * "PATH" was not found, the new line is inserted at the top of
 * the file.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, that file should include PATH command.
 *
\*---------------------------------------------------------------*/

#define SDIR         "C:\\"
#define EXAMPLE_BAT  "ISExampl.bat"
#define TITLE        "FileDeleteLine Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FileDeleteLine(HWND);

function ExFn_FileDeleteLine(hMSI)
    STRING szSearchStr, svReturnLine, szNewString, szMsg;
    NUMBER nvResult, nvLineNum;
begin

    // Set up the search string parameter for FileGrep.
    szSearchStr = "PATH";

    // Find the search string in the specified file.
    nvResult = FileGrep (SDIR ^ EXAMPLE_BAT, szSearchStr,
                         svReturnLine, nvLineNum, RESTART);

    switch(nvResult)
        case FILE_NOT_FOUND:
            // Report error; then terminate.
            MessageBox (EXAMPLE_BAT + " not found.", WARNING);
            abort;
        case FILE_LINE_LENGTH:
            // Report error; then terminate.
            MessageBox (EXAMPLE_BAT + "lines too long.", WARNING);
            abort;
        case OTHER_FAILURE:
            // Report error; then terminate.
            MessageBox (EXAMPLE_BAT + "Unknown failure on call to FileGrep.",
                        WARNING);
            abort;
        case END_OF_FILE:
            // Report that the search string was not found.
            szMsg = "\"%s\" not found in %s.";
            SprintfBox (INFORMATION, TITLE, szMsg, szSearchStr, EXAMPLE_BAT);
```

```
            // Set the line number parameter for FileInsertLine.
            nvLineNum = 0;
        case 0:
            // Delete the line with the search string.
            if (FileDeleteLine (EXAMPLE_BAT, nvLineNum, nvLineNum) < 0) then
                MessageBox ("Failed on call to FileDeleteLine.", SEVERE);
                abort;
            else
                // Report the deletion.
                szMsg = "\"%s\" found in line %d of %s:\n\n%s\n\n\Line deleted. ";
                SprintfBox (INFORMATION, TITLE, szMsg, szSearchStr, nvLineNum,
                            EXAMPLE_BAT, svReturnLine);
            endif;
    endswitch;

    // Set up the new string parameter for FileInsertLine.
    szNewString = "PATH=C:\\Windows\\Bin;C:\\Bin;C:\\Ishield;";

    // Insert the new string.
    if (FileInsertLine (EXAMPLE_BAT, szNewString, nvLineNum, BEFORE) < 0) then
        // Report an error.
        MessageBox ("Failed on call to FileInsertLine.", SEVERE);
    else
        // Report success.
        szMsg = "The following string was inserted as line %d of %s:\n\n %s";
        SprintfBox (INFORMATION, TITLE, szMsg, nvLineNum, EXAMPLE_BAT,
                    szNewString);
    endif;

end;
```

FileGrep

The **FileGrep** function searches a text file for a specified string. If the string is found, the line containing that string is returned in svReturnLine and the number of the line is returned in nvLineNumber. The search is not case-sensitive. FileGrep works on line-oriented text files; it will not work with binary files.

Note ▪ *It is not necessary to open a file before searching it with FileGrep; nor do you need to close it after the call to FileGrep. File open and file close are performed automatically by FileGrep. Although FileGrep will perform successfully in most cases on a file that is already open as a result of a previous call to OpenFile, it will return FILE_NOT_FOUND if the file was opened in append mode.*

Syntax

```
FileGrep ( szFileName, szSearchStr, svReturnLine, nvLineNumber, nFlag );
```

Parameters

Table 117 ▪ FileGrep Parameters

Parameter	Description
szFileName	Specifies the fully qualified name of the file to search.
szSearchStr	Specifies the search string.
svReturnLine	Returns the line in which szSearchStr was found.
nvLineNumber	Return the number of the line in which szSearchStr was found. Line numbering starts at 0.
nFlag	Specifies search options. Pass one of the following predefined constants in this parameter: • **CONTINUE**—Retrieves the next occurrence (if any) of the search string. • **RESTART**—Retrieves the first instance of the search string.

Return Values

Table 118 ▪ FileGrep Return Values

Return Value	Description
0	FileGrep found the specified string.
< 0	FileGrep failed because of one of the following conditions: • **END_OF_FILE (-4)**—The end of file was reached without finding the search string. • **FILE_NOT_FOUND (-2)**—InstallShield was unable to find the file in szFileName. • **FILE_LINE_LENGTH (-3)**—The line exceeds the maximum length allowed. • **OTHER_FAILURE (-1)**—An unspecified error has occurred.

FileGrep Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FileGrep function.
 *
 * FileGrep is called to search a file for the first line that
```

```
 * contains the word "PATH".  The results are displayed in a
 * message box.  Note that the FileGrep function is not case
 * sensitive.
 *
 * Note: Before running this script, create a batch file
 *       named ISExampl.bat in the root of drive C.  For
 *       best effect, that file should include PATH command.
 *
\*---------------------------------------------------------------*/

#define  SOURCE_DIR  "C:\\"
#define  SOURCE_FILE "ISExampl.bat"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FileGrep(HWND);

function ExFn_FileGrep(hMSI)
    STRING  svLine, szNewString, svReturnLine, szMsg;
    NUMBER  nvLineNumber, nvResult;
begin

    // Find the search string in the source file.
    nvResult = FileGrep (SOURCE_DIR ^ SOURCE_FILE, "PATH", svReturnLine,
                         nvLineNumber, RESTART);

    switch(nvResult)
        case FILE_NOT_FOUND:
            // Report error; then abort.
            MessageBox( SOURCE_FILE + " not found.", WARNING);
            abort;
        case FILE_LINE_LENGTH:
            // Report error; then abort.
            MessageBox (SOURCE_FILE + "lines too long.", WARNING);
            abort;
        case OTHER_FAILURE:
            // Report error; then abort.
            MessageBox (SOURCE_FILE + "Unknown failure on call to FileGrep.",
                        WARNING);
            abort;
    endswitch;

    // Loop until end of file.
    while (nvResult != END_OF_FILE)

        // Set up message string for SprintfBox.
        szMsg = "'PATH' found in line %d of %s:\n\n'%s'";

        // Report matching line from file.
        SprintfBox (INFORMATION, "FileGrep", szMsg, nvLineNumber, SOURCE_FILE,
                    svReturnLine);

        // Search again.
        nvResult = FileGrep (SOURCE_DIR ^ SOURCE_FILE, "PATH", svReturnLine,
                             nvLineNumber, CONTINUE);
```

```
    endwhile;

end;
```

FileInsertLine

The **FileInsertLine** function inserts or replaces a line using line numbers. You can use FileInsertLine with FileGrep, which finds lines and returns their line numbers.

FileInsertLine works on line-oriented text files with lines that are no longer than 1,024 bytes. With InstallShield, a line longer than the maximum allowed length indicates a binary file and causes FileInsertLine to fail.

Caution ▪ *The file specified by szFileName must not already have been opened by a call to OpenFile. If szFileName is already open, call CloseFile before calling FileInsertLine.*

Syntax

```
FileInsertLine (szFileName, szInsertLine, nLineNumber, nInsertFlag);
```

Parameters

Table 119 ▪ FileInsertLine Parameters

Parameter	Description
szFileName	Specifies the unqualified name of a file located in the directory specified by the system variable SRCDIR, or the fully qualified path to the file. The value of szInsertLine is inserted into that file if it exists.
szInsertLine	Specifies the string to insert into the file.
nLineNumber	Specifies the line number at which you want to insert szInsertLine. The first line number is 0.
nInsertFlag	Specifies an insertion location option. Pass one of the following predefined constants in this parameter: • **BEFORE**—Inserts the line before nLineNumber. • **AFTER**—Inserts the line after nLineNumber. • **APPEND**—Appends szInsertLine to the line indicated by nLineNumber. • **REPLACE**—Replaces the line indicated by nLineNumber with szInsertLine.

Return Values

Table 120 ▪ FileInsertLine Return Values

Return Value	Description
0	FileInsertLine successfully inserted the line into the specified file.
< 0	FileInsertLine failed because of one of the following conditions: • **FILE_LINE_LENGTH (-3)**—Indicates that the length of the line exceeds the maximum length allowed for text files. • **FILE_NOT_FOUND (-2)**—FileInsertLine was unable to find the file in szFileName. • **FILE_RD_ONLY (-5)**—Indicates that the file is write-protected. • **LINE_NUMBER (-7)**—Indicates that one of the line numbers you specified is less than zero, or the line number does not exist in the file. • **OUT_OF_DISK_SPACE (-6)**—Indicates that there is insufficient space on the disk drive to complete the specified operation. • **OTHER_FAILURE (-1)**—An unspecified error has occurred.

FileInsertLine Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FileInsertLine function.
 *
 * The AskText dialog is displayed to obtain a line of text
 * from the user.  This text is then inserted as the first line
 * in the text file specified by TARGET_FILE.
 *
 * FileInsertLine is then called again to append the same text
 * to the first line, leaving two copies of the same text in
 * the first line of the file.
 *
 * Note: Before running this script, create a batch file named
 *       ISExampl.bat in the root of drive SRCDIR.
 *
\*---------------------------------------------------------------*/

#define TARGET_FILE  "ISExampl.bat"
#define TITLE        "FileInsertLine Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FileInsertLine(HWND);

function ExFn_FileInsertLine(hMSI)
    STRING szMsg, svText;
begin

    // Set up message parameter for call to AskText.
    szMsg = "Please enter a line to insert into EXAMPLE.BAT.";

    // Get line to add to file.
    AskText (szMsg, "", svText);

    // Insert the text as the first line of the specified file.
    if (FileInsertLine (TARGET_FILE, svText, 0, BEFORE) < 0) then
        MessageBox ("FileInsertLine failed.", SEVERE);
    else
        // Set up message parameter for call to SprintfBox.
        szMsg    = "'%s' successfully inserted as first line of %s.";

        // Display message.
        SprintfBox (INFORMATION, TITLE, szMsg, svText, TARGET_FILE);
    endif;

    // Append the same string to the same line.
    if (FileInsertLine(TARGET_FILE, svText, 0, APPEND) < 0) then
        MessageBox("FileInsertLine failed.", SEVERE);
```

```
    else
        // Set up message parameter for call to SprintfBox.
        szMsg    = "'%s' successfully appended to first line of %s.";

        // Display message.
        SprintfBox(INFORMATION, TITLE, szMsg, svText, TARGET_FILE);
    endif;

end;
```

FindAllDirs

The **FindAllDirs** function searches an entire hierarchical disk or directory structure starting with the specified directory, and it returns a string list of subdirectory names. You can use FindAllDirs to find either subdirectories of a certain directory, or you can use it to find all the directories on a disk.

If nOp is INCLUDE_SUBDIR, the search starts at the directory specified by szDir and continues searching the subdirectory structure. If the specified directory is a root directory and nOp contains INCLUDE_SUBDIR, all the directory names on the entire disk are returned.

Syntax

```
FindAllDirs ( szDir, nOp, listDirs );
```

Parameters

Table 121 ▪ FindAllDirs Parameters

Parameter	Description
szDir	Specifies the name of the directory to search.  ***Note ▪*** *If the directory is enclosed in quotation marks, FindAllDirs fails. To ensure that the folder name is not enclosed in quotation marks, call LongPathToQuote (szPath, FALSE) before calling FindAllDirs.*
nOp	Specifies whether or not to search all of the subdirectories below szDir. Pass one of the following predefined constants in this parameter: • **EXCLUDE_SUBDIR**—Excludes subdirectories. • **INCLUDE_SUBDIR**—Includes subdirectories.
listDirs	Returns a list of fully qualified directory names. The string list identified by listDirs must already have been initialized by a call to ListCreate.

Return Values

Table 122 ▪ FindAllDirs Return Values

Return Value	Description
0	FindAllDirs successfully generated the list of subdirectory names.
< 0	FindAllDirs function was unable to generate a list.

FindAllDirs Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * This example demonstrates the FindAllDirs function.
 *
 * FindAllDirs is called to retrieve all directories located
 * in a specified directory.  Subdirectories are included at
 * the user's discretion.
 *
\*---------------------------------------------------------------*/
```

```
#define TITLE "FindAllDirs Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FindAllDirs(HWND);

function ExFn_FindAllDirs(hMSI)
    LIST   listDirs;
    STRING svSearchPath, szMsg;
    NUMBER nOp, nResult;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Ask the user for a path.
    AskPath ("Enter an existing path.", "", svSearchPath);

    // Ask whether or not to include subdirectories.
    if (AskYesNo ("Include subdirectories?", YES) = YES) then
        nOp    = INCLUDE_SUBDIR;
        szMsg = "Directories and Subdirectories";
    else
        nOp    = EXCLUDE_SUBDIR;
        szMsg = "Directories only";
    endif;

    // Display a message while building the list.
    SdShowMsg ("Searching . . . please wait.", TRUE);

    // Create a STRING list for directory names.
    listDirs = ListCreate (STRINGLIST);

    // Find requested elements place them into the list.
    nResult = FindAllDirs (svSearchPath, nOp, listDirs);

    // Close the message box.
    SdShowMsg ("", FALSE);

    if ( nResult< 0) then
        // Report no matches.
        SprintfBox (INFORMATION, TITLE, "No directories in %s",
                    svSearchPath);
    else
        // Display the list.
        SdShowInfoList (TITLE, szMsg, listDirs);
    endif;

end;
```

FindAllFiles

The **FindAllFiles** function searches an entire hierarchical subdirectory structure starting with the specified directory, and it returns the name of the first file with a particular file specification. If the specified directory is the root directory, InstallShield searches the entire disk. The function stops at the first matching file name it finds.

Note ▪ *If the argument passed to nOp is RESET, InstallShield starts searching at the directory specified in the parameter szDir and continues searching the subdirectory structure until it finds a file matching szFileName. If nOp equals CONTINUE, the search continues where it finished the last time the function was called. Call this function repeatedly to find all occurrences of files that match szFileName.*

The first time you call this function to begin a new search, set nOp to RESET. You can continue to search for all other occurrences of the specified file by setting nOp to CONTINUE and placing the function call in a loop that ends when the FindAllFiles function fails.

Finding Files that Match a File Specification

Task ***To find all files matching a file specification:***

1. Assign to szDir the name of the folder to search.
2. Assign to szFileName the file specification, such as IS5*.txt.
3. Call **FindAllFiles** with nOp set to RESET.
4. While the return code from **FindAllFiles** is 0, save the file name in svResult; then call **FindAllFiles** with nOp set to CONTINUE.
5. Call **FindAllFiles** with nOp set to CANCEL.

Caution ▪ *You cannot use the XCopyFile function within a FindAllFiles(..., RESET), and FindAllFiles(..., CONTINUE) loop. If you call XCopyFile inside a FindAllFiles loop, the file name returned by FindAllFiles(..., CONTINUE) may be incorrect.*

Syntax

```
FindAllFiles ( szDir, szFileName, svResult, nOp );
```

Parameters

Table 123 ▪ FindAllFiles Parameters

Parameter	Description
szDir	Specifies the name of the directory to search.
szFileName	Specifies the file specification to search for. Wild-card characters are allowed in this parameter.
svResult	Returns the fully qualified name of the first matching file if found. If **FindAllFiles** fails, svResult remains unchanged.
nOp	Indicates search options. Pass one of the following predefined constants in this parameter: • **CONTINUE**—Resumes the search at the location where the previous search stopped. • **RESET**—Starts the search at the beginning of the directory specified by szDir. • **CANCEL**—Frees all files and folders that were accessed by previous calls to **FindAllFiles**. Call **FindAllFiles** with this parameter to ensure the success of subsequent file and folder operations on files and folders that have been accessed by **FindAllFiles**.

Return Values

Table 124 ▪ FindAllFiles Return Values

Return Value	Description
0	Indicates that the function retrieved and returned a file that matched the specification.
< 0	Indicates that the function was unable to find a file that matched the specifications.

FindAllFiles Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FindAllFiles function.
 *
 * This script gets a directory name and filespec from the
 * user.  Then it calls FindAllFiles repeatedly to build a
```

```
 * list of files that are located in the specified directory
 * and whose names match the filespec.  Finally, the list of
 * matching files is displayed in a listbox.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "FindAllFiles Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FindAllFiles(HWND);

function ExFn_FindAllFiles(hMSI)
    STRING szMsg, svDir, svFileSpec, svMatchingFileName, svNumFiles;
    NUMBER nResult, nNumFiles;
    LIST   listFiles;
begin

selectdir:

    // Set up parameters for call to SelectDir.
    szMsg = "Select a directory to search.";
    svDir = "";

    // Select a search directory.
    SelectDir (TITLE_TEXT, szMsg, svDir, FALSE);

askfile:
    szMsg = "Enter a file specification to search for in " + svDir + ":";

    // Get a file specification from the user.
    if (AskText (szMsg , "*.*", svFileSpec) = BACK) then
        goto selectdir;
    endif;

    // Create a string list for the file listing.
    listFiles = ListCreate (STRINGLIST);

    if listFiles = LIST_NULL then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Set the file count to zero.
    nNumFiles = 0;

    // Show a message while the file list is being built.
    SdShowMsg ("Searching . . . ", TRUE);

    // Get the first file that matches the file spec.
    nResult = FindAllFiles (svDir, svFileSpec, svMatchingFileName, RESET);

    while(nResult = 0)
        // Add the file to the list.
        if ListAddString (listFiles, svMatchingFileName, AFTER) < 0 then
```

```
            MessageBox ("Unable to build complete file list", WARNING);
            goto showmatches;
        endif;

        // Increment the file counter.
        nNumFiles = nNumFiles + 1;

        // Find the next matching file name.
        nResult = FindAllFiles(svDir, svFileSpec, svMatchingFileName, CONTINUE);
    endwhile;

showmatches:

    // Free all files and folders accessed by FindAllFiles. If your
    // setup does not target the Windows NT platform, this step is
    // not necessary.
    FindAllFiles(svDir, svFileSpec, svMatchingFileName, CANCEL);

    // Convert the file count to a string for display.
    NumToStr(svNumFiles, nNumFiles);

    // Clear the message that displayed while the file list was being built.
    SdShowMsg("", FALSE);

    // Display the files that match the file specification.
    szMsg = "Number of matching files : " + svNumFiles;
    if (SdShowInfoList(TITLE_TEXT, szMsg, listFiles) = BACK) then
        ListDestroy(listFiles);
        goto askfile;
    endif;

    // Remove the list from memory.
    ListDestroy(listFiles);

end;
```

FindFile

The **FindFile** function searches a directory for a specified file. InstallShield returns the first matching file in the parameter svResult.

Note ▪ *This function searches only the specified subdirectory. It does not search an entire disk or directory tree.*

Syntax

```
FindFile ( szPath, szFileName, svResult );
```

Parameters

Table 125 ▪ FindFile Parameters

Parameter	Description
szPath	Specifies the name of the directory to search. Subdirectories beneath this directory are *not* searched. ***Note ▪*** *If the directory is enclosed in quotation marks, FindFile fails. To ensure that the folder name is not enclosed in quotation marks, call LongPathToQuote (szPath, FALSE) before calling FindFile.*
szFileName	Specifies the name of the file to search for. Wild-card characters are allowed in this parameter.
svResult	Returns the name of the first file that matches szFileName. This parameter contains the unqualified file name; that is, the drive designation and path are not included.

Return Values

Table 126 ▪ FindFile Return Values

Return Value	Description
0	Indicates that the function successfully found and returned the specified file.
< 0	Indicates that the function was unable to find the file.

FindFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FindFile function.
 *
 * FindFile is called to search for the file Config.sys in the
 * root of drive C.
 *
\*---------------------------------------------------------------*/

#define FILE_SPEC "Config.sys"
#define SEARCH_DIR "C:\\"
```

```
#define TITLE_TEXT "FindFile Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FindFile(HWND);

function ExFn_FindFile(hMSI)
   STRING svResult;
begin

   if (FindFile (SEARCH_DIR, FILE_SPEC, svResult) < 0) then
      MessageBox ("FindFile failed.", SEVERE);
   else
      SprintfBox (INFORMATION, TITLE_TEXT, "Found: %s in %s.", svResult,
                  SEARCH_DIR);
   endif;

end;
```

FindWindow

The **FindWindow** function provides a way for advanced developers to get a handle to a window by specifying its window class and window name. If you know the class and window name of an application, you can get its handle. You can then use that handle to send messages directly to the window.

Tip ▪ *To find the class and name of a window, run the Microsoft Spy.exe program.*

Syntax

```
FindWindow ( szClassName, szWinName );
```

Parameters

Table 127 ▪ FindWindow Parameters

Parameter	Description
szClassName	Specifies the name of the class to which the window belongs. To specify “any class,” pass a null string in this parameter.
szWinName	Specifies the window caption (title). To return the handle of the topmost window in the specified class, pass a null string ("") in this parameter.

Return Values

Table 128 ▪ FindWindow Return Values

Return Value	Description
XXXX	The handle of the window.
NULL (0)	FindWindow was unable to find a window with the specified name and class name.

FindWindow Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the FindWindow and SendMessage functions.
 *
 * This script launches Windows Notepad and then calls
 * FindWindow to locate the Notepad window.  Next, it calls
 * SendMessage to maximize the window;  after a three-second
 * delay, it calls SendMessage again to minimize the
 * window.   When the script ends, Windows NotePad remains
 * open but minimized.  Note that the parameters passed to
 * SendMessage are Windows system messages whose values
 * are defined as constants in this script.
 *
 * Note: Before running this script, set the preprocessor
 *       constant NOTEPAD so that it references the fully-
 *       qualified name of the Windows Notepad executable.
 *
\*---------------------------------------------------------------*/

#define NOTEPAD "C:\\Windows\\Notepad.exe"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_FindWindow(HWND);

function ExFn_FindWindow(hMSI)
    NUMBER nMsg, nwParam, nlParam;
    HWND nHwnd;
begin

    // Do not display the setup's background window.
    Disable (BACKGROUND);

    // Open the Windows Notepad.
    if (LaunchApp (NOTEPAD, "") < 0 ) then
        MessageBox ("Unable to launch Notepad.", SEVERE);
        abort;
    endif;

    // Wait three seconds so we can view the window before
    // it's maximized.
    Delay (3);

    // Retrieve the handle of the Notepad window.  The first
    // parameter is the window class.  A null string in the
    // second parameter specifies the topmost Notepad window.
    nHwnd = FindWindow ("NotePAD", "");

    if (nHwnd = NULL) then
        MessageBox ("Unable to find the Notepad window.", SEVERE);
    else
        // Send system command to maximize the window.
        SendMessage (nHwnd, WM_SYSCOMMAND, SC_MAXIMIZE, 0);

        // Wait three seconds so we can view the window
        // before it's minimized.
        Delay (3);

        // Send system command to minimize the window.
        SendMessage (nHwnd, WM_SYSCOMMAND, SC_MINIMIZE, nlParam);
    endif;

end;
```

FormatMessage

The **FormatMessage** function provides the error message text associated with a large error code returned by a built-in InstallScript function.

Syntax

```
FormatMessage ( nErrorReturnCode );
```

Parameters

Table 129 ▪ FormatMessage Parameters

Parameter	Description
nErrorReturnCode	Pass a large error code—for example, 2147024891 (0x80070005)—that was returned by a built-in InstallScript function. Passing the error code -1 will not produce useful results.

Return Value

A string containing the error message text associated with the error code nErrorReturnCode.

FormatMessage Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates the FormatMessage function.
//
//  To demonstrate, deliberately call XCopyFile with a nonexistent source
//  directory, which should cause the function to fail. To provide system
//  details about the error, call FormatMessage and display the message
//  string in a MessageBox.
//
//---------------------------------------------------------------------------

function OnBegin( )
    NUMBER nReturn;
begin

// call XCopyFile on a nonexistent directory
nReturn = XCopyFile("C:\\no_such_directory", "C:\\destination", COMP_NORMAL);

// when XCopyFile fails, display the error message and exit the installer
if (nReturn < 0) then
    MessageBox(FormatMessage(nReturn), SEVERE);
    abort;
endif;

end;
```

GetAndAddAllFilesCost

The **GetAndAddAllFilesCost** function determines the cost of all of the files that are in szSrcDir and that match the wild-card pattern that is identified by szWildcard; the function adds this cost to the current value of nvCostHigh and/or nvCostLow. This cost can then be passed to **FeatureAddCost**.

Note ▪ *Note that* **GetAndAddAllFilesCost** *does not actually set any information to be used directly by the installation. You must call* **FeatureAddCost** *(as appropriate) after calling this function to add the additional cost to an existing feature.*

Syntax

```
GetAndAddAllFilesCost (szSrcDir, szWildcard, szTargetDir, nClusterSize, nvInstallCostHigh,
    nvInstallCostLow, nvUninstallCost);
```

Parameters

Table 130 ▪ GetAndAddAllFilesCost Parameters

Parameter	Description
szSrcDir	The fully qualified path of the source location containing the files to determine the cost of.
szWildcard	The wild card to match files against. Note that the function returns failure if no files that match szWildcard are found.
szTargetDir	If nClusterSize is 0, the fully qualified path that the file is being installed to. This path is used to determine the cluster size of the target drive. If nClusterSize is non-zero, this parameter is ignored.
nClusterSize	Specifies the cluster size of the target drive. If this parameter is 0, the function determines this information from szTargetDir.
nvInstallCostHigh	The upper 31 bits of the install cost (in bytes) of this file is added to the current value of this variable.
nvInstallCostLow	The lower 31 bits of the install cost (in bytes) of this file is added to the current value of this variable.
nvUninstallCost	The uninstall cost of these files is added to the current value of this variable. This value equals 1 per file to be uninstalled. Therefore, 100 files to be uninstalled returns a value of 100.

Return Values

Table 131 ▪ GetAndAddAllFilesCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

GetAndAddFileCost

The **GetAndAddFileCost** function determines the cost of the specified file and adds it to the current value of nvCostHigh and/or nvCostLow. This allows you to calculate and add up the cost of multiple files by calling the function multiple times in a loop. Set nvCostHigh and nvCostLow to zero before calling the function to determine the cost of a single file. This function is typically used when you need to determine the cost of an existing file on disk so this cost can then be passed to FeatureAddCost.

Note ▪ *Note that this function does not actually set any information to be used directly by the installation. You must call FeatureAddCost (as appropriate) after calling this function to add the additional cost to an existing feature.*

Syntax

```
GetAndAddFileCost ( szSrcFile, szTargetDir, nClusterSize, nvCostHigh, nvCostLow );
```

Parameters

Table 132 ▪ GetAndAddFileCost Parameters

Parameter	Description
szSrcFile	The fully qualified path and file name of the existing file on disk to determine the cost of.
szTargetDir	If nClusterSize is 0, the target folder for the file. This path is used to determine the cluster size of the target drive. If nClusterSize is non-zero, this parameter is ignored.
nClusterSize	Specifies the cluster size of the target drive. If this parameter is 0, the function determines this information from szTargetDir.
nvCostHigh	The upper 31 bits of the installation cost (in bytes) of this file is added to the current value of this variable.
nvCostLow	The lower 31 bits of the installation cost (in bytes) of this file is added to the current value of this variable.

Return Values

Table 133 ▪ GetAndAddFileCost Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

GetCArrayFromISArray

The **GetCArrayFromISArray** function returns a pointer to an array of pointers that point to the actual data of the specified array. This function does not allocate any additional memory, but it returns a pointer to the data in the existing array. If vArray is a string array, the returned pointer can be passed to functions that take LPCWSTR* or LPWSTR* arguments; if vArray is a numeric array, the returned pointer can be passed to functions that take LPCDWORD* or LPDWORD* arguments.

Syntax

```
GetCArrayFromISArray (vArray);
```

Parameters

Table 134 ▪ GetCArrayFromISArray Parameters

Parameter	Description
vArray	Specifies the array to which you want a pointer.

Return Values

Table 135 ▪ GetCArrayFromISArray Return Values

Return Value	Description
pointer	A pointer to an array of pointers that point to the actual data of the specified array.
< ISERR_SUCCESS	Indicates that the function failed.

Additional Information

Be careful when using the returned pointer to modify strings that are contained in the array. The length of the strings that are contained in string arrays are managed internally by the installation. Therefore, if you change the length of a string, the installation is no longer able to manage the data that are contained in the string array.

GetCHARArrayFromISStringArray

The **GetCHARArrayFromISStringArray** function returns a pointer to an array of pointers to ANSI character strings that corresponds to the wide character strings that are contained in the specified array.

Syntax

```
GetCHARArrayFromISStringArray ( vArray );
```

Parameters

Table 136 ▪ GetCHARArrayFromISStringArray Parameters

Parameter	Description
vArray	Specifies the string array to which you want a pointer.

Return Values

Table 137 ▪ GetCHARArrayFromISStringArray Return Values

Return Value	Description
pointer	A pointer to an array of pointers to ANSI character strings.
< ISERR_SUCCESS	Indicates that the function failed.

Additional Information

The **GetCHARArrayFromISStringArray** function allocates additional memory for the array of pointers and the ANSI character strings. This pointer can be passed to functions that take LPCSTR* or LPSTR* arguments. After you are done with the newly created array, call DeleteCHARArray to delete the array from memory.

If you call CopyCHARArrayToISStringArray to write the data from the array of pointers back to the original string array, be careful when modifying strings that are contained in the array. Since the lengths of the strings that are contained in string arrays are managed internally by the installation, if you change the length of a string the entire string will not be copied back to the original array when you call **CopyCHARArrayToISStringArray**.

GetCurrentDialogName

Project *▪ This information applies to InstallScript projects.*

The **GetCurrentDialogName** function retrieves the name of the currently displayed dialog as it was specified in the call to EzDefineDialog when the dialog was defined.

This information can be used to close the dialog by calling EndDialog.

Syntax

```
GetCurrentDialogName ( svDialogName );
```

Parameters

Table 138 ▪ GetCurrentDialogName Parameters

Parameter	Description
svDialogName	Returns the name of the currently displayed dialog, or a null string ("") if no dialog is currently displayed.

Return Values

Table 139 ▪ GetCurrentDialogName Return Values

Return Value	Description
>= ISERR_SUCCESS	GetCurrentDialogName successfully retrieved the name of the currently displayed dialog.
< ISERR_SUCCESS	No dialog is currently displayed. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

GetCurrentDir

The **GetCurrentDir** function returns the current directory.

Note ▪ *When you are specifying a file in your script, always specify the full path (using the appropriate InstallShield system variable, for example, SRCDIR) rather than depend on the current folder having the appropriate value. The script internally executes code that can change the current folder, so its value may not be what you expect.*

Syntax

```
GetCurrentDir( svCurrentDir );
```

Parameters

Table 140 ▪ GetCurrentDir Parameters

Parameter	Description
svCurrentDir	Returns the current directory.

Return Values

Table 141 ▪ GetCurrentDir Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully retrieved the current directory.
< ISERR_SUCCESS	Indicates that the function was unable to retrieve the current directory.

GetDir

The **GetDir** function removes the drive designation from the fully qualified path or file name passed in szPath and returns the remainder of the path or file name in svDir. The path must include a drive designation. It may be a UNC path.

In the following example, the fully qualified path C:\Windows is returned in svDir as \Windows.

```
GetDir("C:\\Windows", svDir);
```

In the next example, the UNC path \\TheServer\TheSharedDevice\Programs is returned in svDir as \Programs.

```
GetDir("\\\\TheServer\\TheSharedDevice\\Programs", svDir);
```

Syntax

```
GetDir ( szPath, svDir );
```

Parameters

Table 142 ▪ GetDir Parameters

Parameter	Description
szPath	Specifies a path that includes a drive designation.
svDir	Returns the path without the drive designation. If szPath is a UNC path, GetDir returns the path without the server name and shared device name.

Return Values

Table 143 ▪ GetDir Return Values

Return Value	Description
0	Indicates that the function successfully returned a path without a drive designation.
< 0	Indicates that the function was unable to return a path without a drive designations.

GetDir Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetDir function.
 *
 * This script gets a fully qualified directory name from the
 * user.  Next, it calls GetDir to return the selected directory
 * name without the drive designation.  The resulting path is
 * then displayed.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "GetDir example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_GetDir(HWND);

function ExFn_GetDir(hMSI)
    STRING szMsg, svSelectedDir, svDirNameOnly;
```

```
begin

    // Get a fully qualified directory name from the user.
    AskPath ("Select a directory.", INSTALLDIR, svSelectedDir);

    // Get the directory name minus the drive designation.
    if (GetDir (svSelectedDir, svDirNameOnly) < 0) then
        // Report the error.
        MessageBox ("GetDir failed.", SEVERE);
    else
        // Display the directory name as it was returned by GetDir.
        SprintfBox (INFORMATION, TITLE_TEXT,
                    "Selected directory without drive designation: %s",
                    svDirNameOnly);
    endif;

end;
```

GetDisk

The **GetDisk** function extracts the disk drive designation from the fully qualified path or file name specified by szPath and returns it in svDisk.

Syntax

```
GetDisk ( szPath, svDisk );
```

Parameters

Table 144 ▪ GetDisk Parameters

Parameter	Description
szPath	Specifies a fully qualified path or file name that includes a drive designation. If a drive designation is not included, GetDisk will fail. The value passed in szPath may be a UNC path.
svDisk	Returns the drive designation (which includes the colon). If szPath is a UNC path, GetDisk returns the server name and shared device name in the format `\\server\sharedevice`.

Return Values

Table 145 ▪ GetDisk Return Values

Return Value	Description
0	Indicates that the function successfully returned the drive designation.
< 0	Indicates that the function was unable to return the drive designation.

GetDisk Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetDisk function.
 *
 * This script gets a fully qualified directory name from
 * the user.  Next, it calls GetDisk to return the disk drive
 * designation. The drive designation is then displayed.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "GetDisk example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetDisk(HWND);

function ExFn_GetDisk(hMSI)
    STRING svSelectedDir, svDisk;
```

```
begin

   // Get a fully qualified directory name from the user.
    AskPath ("Select a directory.", INSTALLDIR, svSelectedDir);

    // Get the drive designation from the selected directory name.
    if (GetDisk (svSelectedDir, svDisk) < 0) then
        // Report the error.
        MessageBox ("GetDir failed.", SEVERE);
    else
        // Display the drive designation as it was returned by GetDisk.
        SprintfBox (INFORMATION, TITLE_TEXT, "Disk drive: %s", svDisk);
    endif;

end;
```

GetDiskInfo

The **GetDiskInfo** function gets information about a specified disk drive. By inspecting the values assigned to members of this variable, your script can determine the information about a disk drive.

Syntax

```
GetDiskInfo ( _DISK_INFO& pdi );
```

Parameters

Table 146 ▪ GetDiskInfo Parameters

Parameter	Description
_DISK_INFO& pdi	Specifies a pointer to an existing _DISK_INFO structure (allocated by the installation before calling the function) that specifies the information to retrieve and contains the specified information after the function returns.

The following table shows the meaning of each _DISK_INFO member:

Table 147 ▪ _DISK_INFO Members

Member	Meaning
szDiskPath[_MAX_PATH]	Specifies the fully qualified path of the drive to return the information for.

Table 147 ▪ _DISK_INFO Members (cont.)

Member	Meaning
nInfoToQuery	Specifies the information to query. Possible values are the following: • **DISK_INFO_QUERY_ALL**—Queries all information about the disk drive. • **DISK_INFO_QUERY_BYTES_PER_CLUSTER**—Queries the bytes per cluster (cluster-size) of the drive. • **DISK_INFO_QUERY_DISK_TOTAL_SPACE**—Queries the total space on the drive. • **DISK_INFO_QUERY_DISK_FREE_SPACE**—Queries the free space on the drive. • **DISK_INFO_QUERY_DRIVE_TYPE**—Queries the drive type.
nBytesPerCluster	Returns the number of bytes per cluster if DISK_INFO_QUERY_BYTES_PER_CLUSTER was specified in nInfoToQuery.
nTotalSpaceHigh	Returns the upper 31 bits of the total space on the target drive.
nTotalSpaceLow	Returns the lower 31 bits of the total space on the target drive.
nFreeSpaceHigh	Returns the upper 31 bits of the free space on the target drive.
nFreeSpaceLow	Returns the lower 31 bits of the free space on the target drive.
nDriveType	Returns the drive type using the same constants returned by the Windows API GetDriveType. For convenience, the following constants are predefined: • **DRIVE_UNKNOWN**—The drive type is unknown. • **DRIVE_NO_ROOT_DIR**—The drive type is defined as no root directory. • **DRIVE_REMOVABLE**—The drive type is defined as removable. • **DRIVE_FIXED**—The drive type is defined as fixed. • **DRIVE_REMOTE**—The drive type is defined as remote. • **DRIVE_CDROM**—The drive type is defined as a CD-ROM. • **DRIVE_RAMDISK**—The drive type is defined as a RAM DISK.
nResultDiskSpace	This member contains valid information on return when any of the following flags are specified: • DISK_INFO_QUERY_BYTES_PER_CLUSTER • DISK_INFO_QUERY_DISK_TOTAL_SPACE • DISK_INFO_QUERY_DISK_FREE_SPACE This member returns the result of querying the information.

Return Values

Table 148 ▪ GetDiskInfo Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was unsuccessful. If a null pointer is passed to the function, this value is returned.

You can check the nResultDiskSpace member to determine whether the query was successful.

GetDiskInfo Example

Note ▪ *To call this function in a Basic MSI installation, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetDiskInfo function.
 *
 * This script gets the amount of free disk space on a Windows drive
 * and displays that amount in a message box.
 *
\*---------------------------------------------------------------*/

function OnBegin( )
    _DISK_INFO di;
    NUMBER n; // to do: something with function return values
    NUMBER nvSizeTargetHigh, nvSizeTargetLow, nUnitsTarget;
begin

// init. _DISK_INFO members: what drive, what info
di.szDiskPath = WINDISK;
di.nInfoToQuery = DISK_INFO_QUERY_DISK_FREE_SPACE;

n = GetDiskInfo(&di);

// change to desired unit for free space
nUnitsTarget = MBYTES;

n = ConvertSizeToUnits(
    di.nFreeSpaceHigh, di.nFreeSpaceLow, BYTES,
    nvSizeTargetHigh, nvSizeTargetLow, nUnitsTarget);

SprintfBox(INFORMATION, "Free Space",
    "Free space: %d MB",
```

```
    nvSizeTargetLow);

end;
```

GetDiskSpace

This function is obsolete. Use the GetDiskInfo function instead.

The **GetDiskSpace** function returns the amount of free space—in bytes—on the drive or path specified in szPath.

Syntax

```
GetDiskSpace ( szDrive );
```

Parameters

Table 149 ▪ GetDiskSpace Parameters

Parameter	Description
szPath	Specifies the path for which the function returns the amount of space available. The value specified can be a UNC path.

Return Values

Table 150 ▪ GetDiskSpace Return Values

Return Value	Description
> 0	The number of bytes free in the specified directory. The maximum value returned is 2 GB. Free disk space greater than that returns as 2 GB. Call GetDiskSpaceEx when your setup needs to check for free space greater than 2 GB.
< 0	Indicates that GetDiskSpace was unable to obtain the amount of free space.

GetDiskSpace Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetDiskSpace function.
 *
 * This script gets a fully qualified path from the end user.
```

```
 * It then extracts the drive designation from the path, gets
 * the amount of free space on that drive, and displays the
 * amount of free space in a message box.
 *
 * A script-defined function is used to insert commas if
 * necessary into the number before it's displayed.
 *
\*---------------------------------------------------------------*/


    // User-defined function to format a number in a string.
    prototype FormatIntString (BYREF STRING);

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetDiskSpace(HWND);

function ExFn_GetDiskSpace(hMSI)
    STRING svResultPath, svDrive;
    LONG   lFreeSpace;
    STRING svFreeSpace;
begin

    // Prompt for a target path; use C as the default.
    AskPath ("Select drive:", "C:\\", svResultPath);

    // Get the drive designation from the path.
    GetDisk (svResultPath, svDrive);

    // Get the amount of free disk space on that drive.
    lFreeSpace = GetDiskSpace (svDrive);

    if (lFreeSpace < 0) then
        // Handle an error from GetDiskSpace.
        MessageBox ("GetDiskSpace failed.", SEVERE);
    else
        // Convert the free disk space value to a string.
        NumToStr (svFreeSpace, lFreeSpace);

        // Insert commas into the number if necessary.
        FormatIntString (svFreeSpace) ;

        // Report the amount of free space.
        MessageBox (svFreeSpace + " bytes free on drive " + svDrive + ".",
                    INFORMATION);
    endif;

end;


function FormatIntString(svInteger)
// Insert commas if necessary into an integer
// that's been stored in a string variable.
  INT nLen;
  STRING svSubStr, svTemp;
```

```
begin
  nLen = StrLength (svInteger);

  if nLen > 3 then
    nLen = nLen - 3;
    StrSub (svTemp , svInteger, nLen, 3);

    while nLen > 3
      nLen = nLen - 3;
      StrSub (svSubStr, svInteger, nLen, 3);
      svTemp = svSubStr + "," + svTemp;
    endwhile;

    StrSub (svSubStr, svInteger, 0,nLen);
    svInteger = svSubStr + "," + svTemp;
  endif;
end;
```

GetDiskSpaceEx

This function is obsolete. Use the GetDiskInfo function instead.

The **GetDiskSpaceEx** function returns the amount of free space on the specified path. The value passed in nUnits determines whether the value returned by GetDiskSpaceEx is a measure of bytes, kilobytes, megabytes, or gigabytes.

Syntax

```
GetDiskSpaceEx ( szDrive, nUnits );
```

Parameters

Table 151 ▪ GetDiskSpaceEx Parameters

Parameter	Description
szPath	Specifies the path for which the function returns the amount of space available. The value specified can be a UNC path.
nUnits	Pass one of the following predefined constants to indicate the measurement unit: • **BYTES**—Indicates that GetDiskSpaceEx should return the number of free bytes. • **KBYTES**—Indicates that GetDiskSpaceEx should return the number of free kilobytes. • **MBYTES**—Indicates that GetDiskSpaceEx should return the number of free megabytes. • **GBYTES**—Indicates that GetDiskSpaceEx should return the number of free gigabytes.

Return Values

Table 152 ▪ GetDiskSpaceEx Return Values

Return Value	Description
> 0	The number of free bytes, kilobytes, megabytes, or gigabytes in the specified directory, depending on the value of nUnits.
< 0	Indicates that GetDiskSpaceEx was unable to obtain the amount of free space.

Additional Information

The limit of GetDiskSpaceEx is 2 giga-units (2 31) of the measurement unit you pass in nUnits. When you specify BYTES, the limit is 2 GB; when you specify KBYTES, the limit is 2 TB; and so on. You should specify KBYTES for most setups.

GetDiskSpaceEx returns the available space rounded down to the nearest single unit specified in nUnits. For example, if you specify GBYTES, a path that has 2.5 GB available will return 2. For setups that require more precise space information, call the Windows API function GetDiskFreeSpaceEx directly.

GetDiskSpaceEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetDiskSpaceEx function.
 *
 * This script gets a fully qualified path from the end user.
 * It then extracts the drive designation from the path, gets
 * the amount of free space on that drive, and displays the
 * amount of free space in a message box.
 *
\*---------------------------------------------------------------*/

STRING   szPath;

   INT      iResult;



#include "ifx.h"

program

   // Prompt for a target path.

    szPath = PROGRAMFILES;
    iResult = SdAskDestPath
    ("Select Folder\nSelect the folder to check for available disk space.", " ", szPath, 0);

    if (iResult < 0) then
        MessageBox("Unable to display dialog.", SEVERE);
        endif;

   // Get the amount of free disk space (in kilobytes) for the specified path.

    iResult = GetDiskSpaceEx(szPath, KBYTES);

    if (iResult < 0) then
        MessageBox("Unable to get available disk space.", SEVERE);
        endif;

    // Display the amount of space available.

        SprintfBox(INFORMATION, "Space Available", "%d KB available on %s.", iResult, szPath);

endprogram
```

GetEnvVar

The **GetEnvVar** function retrieves the current value of an environment variable.

Syntax

```
GetEnvVar ( szParameter, svValue );
```

Parameters

Table 153 ▪ GetEnvVar Parameters

Parameter	Description
szParameter	Specifies the name of the environment variable whose value is to be retrieved.
svValue	Returns the current value of the environment variable.

Return Values

Table 154 ▪ GetEnvVar Return Values

Return Value	Description
0	Indicates that the function retrieved the value of the environment variable.
< 0	Indicates that the function was unable to retrieve the value of the environment variable.

GetEnvVar Example

This script is structured for use in a Basic MSI installation. To call this function in a Basic MSI installation, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release. To run this code in an InstallScript or InstallScript MSI installation, copy only the code that is in between the begin and end statements and paste it into your script's OnBegin event handler function.

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetEnvVar function.
 *
 * GetEnvVar is called to get the value of the environment
 * variable named TEMP.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "GetEnvVar Example"

#define ENV_TEMP "TEMP"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
   export prototype ExFn_GetEnvVar(HWND);

function ExFn_GetEnvVar(hMSI)
    STRING svEnvVar;
begin

    // Get the value of the environment variable specified by ENV_TEMP.
    if (GetEnvVar (ENV_TEMP, svEnvVar) < 0) then
        // Report the error.
        MessageBox ("Environment variable " + ENV_TEMP + " not found.", SEVERE);
    else
        // Display the value of the environment variable.
        SprintfBox (INFORMATION, TITLE_TEXT, "%s = %s", ENV_TEMP, svEnvVar);
    endif;

end;
```

GetExtendedErrInfo

Project ▪ *This information applies to InstallScript projects.*

The **GetExtendedErrInfo** function returns the error information that was set by SetExtendedErrInfo. Many InstallScript functions call SetExtendedErrInfo(__FILE__, __LINE__, nError) internally.

Syntax

```
GetExtendedErrInfo ( svScriptFile, nvLineNumber, nvError );
```

Parameters

Table 155 ▪ GetExtendedErrInfo Parameters

Parameter	Description
svScriptFile	Returns the script file in which the error occurred.
nvLineNumber	Returns the line number in which the error occurred.
nvError	Returns the error code for the error.

Return Values

Table 156 ▪ GetExtendedErrInfo Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully retrieved the error information.
< ISERR_SUCCESS	The function failed to retrieve the error information.

GetExtents

The **GetExtents** function retrieves the dimensions of a screen—in pixels. The width of the screen is returned in nvDx and the height is returned in nvDy. For example, a standard VGA monitor returns 640 in nvDx and 480 in nvDy.

Note ▪ *The screen dimensions of the target machine can be gotten through the Windows Installer service by using the ScreenX and ScreenY properties.*

Syntax

```
GetExtents ( nvDx, nvDy );
```

Parameters

Table 157 ▪ GetExtents Parameters

Parameter	Description
nvDx	Returns the width of the screen in pixels.
nvDy	Returns the height of the screen in pixels.

Return Values

Table 158 ▪ GetExtents Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the dimensions of a screen.
< 0	Indicates that the function was unable to retrieve the values.

GetExtents Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetExtents function.
 *
 * This script calls GetExtents to obtain the current video
 * resolution of the target system.  It then displays that
 * information in a dialog.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "GetExtents example"
#define MSG_TEXT   "Video Resolution: %d by %d"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_GetExtents(HWND);

function ExFn_GetExtents(hMSI)
    NUMBER  nvDx, nvDy;
begin
```

```
    // Get the video resolution of the target system.
    if (GetExtents (nvDx, nvDy) < 0) then
        // Report the error.
        MessageBox ("GetExtents failed.", SEVERE);
    else
        // Display the information
        SprintfBox (INFORMATION, TITLE_TEXT, MSG_TEXT, nvDx, nvDy);
    endif;

end;
```

GetFileInfo

Call the **GetFileInfo** function to determine a file's or directory's attributes, modify date, time, MD5 signature, or size. In each GetFileInfo statement, you can request only one of the data. For example, to obtain the date and time information for a file or directory, you must call GetFileInfo twice—once to obtain the date and once to obtain the time.

Syntax

```
GetFileInfo ( szPathName, nType, nvResult, svResult );
```

Parameters

Table 159 ▪ GetFileInfo Parameters

Parameter	Description
szPathName	Specifies the fully qualified name of the file or directory about which you want to retrieve information. You can specify a valid Uniform Resource Locator (URL) in this parameter unless you pass FILE_ATTRIBUTE or FILE_SHARED_COUNT as the nType parameter, in which case the function fails and returns ISERR_INVALID_ARG. To check the validity of a URL, call IsValid(VALID_PATH, szURL).
nType	Specifies the type of file or directory information to retrieve. If the information is a number, GetFileInfo places it in nvResult. If the information is a string, GetFileInfo places it in svResult. Pass one of the following predefined constants in this parameter: • **FILE_ATTRIBUTE**—The attribute of the file or directory is returned in nvResult. • **FILE_DATE**—The modify date of the file or directory in the format YYYY\MM\DD is returned in svResult. • **FILE_MD5_SIGNATURE**—Returns the MD5 signature of the file specified in svResult. Generating and returning an MD5 signature is an expensive operation that requires reading the contents of the entire file. Only use this parameter when absolutely necessary. FILE_MD5_SIGNATURE is not supported for URLs.  ***Note ▪*** *Raw MD5 signature data for a particular file consists of 16 generated numeric values of 16 bit each (between 0x00 abd 0xFF). These values are usually stored in a string of unsigned characters. However, the InstallScript language does not support unsigned characters, so instead of returning the raw MD5 file data, each of the 16 numeric values are converted to their string equivalent and placed in the resulting string. This results in a string of 32 characters, where each set of two characters represent a single numeric value. This is sometimes referred to as a MD5 hex string.* • **FILE_SHARED_COUNT**—The file's reference count. • **FILE_SIZE**—The size in bytes is returned in nvResult (same as FILE_SIZE_LOW). • **FILE_SIZE_LOW**—The lower 31 bits of the file's size (in bytes) is returned in nvResult. If the size of the file is more than 2GB, the size of the file is equal to the value returned for FILE_SIZE_HIGH multiplied by 2GB added to the value returned for FILE_SIZE_LOW. • **FILE_SIZE_HIGH**—The upper 31 bits of the file's size (in bytes) is returned in nvResult. This value is 0 (zero) if the file is less than 2GB. If not, the size of the file is equal to the value returned for FILE_SIZE_HIGH multiplied by 2GB added to the value returned for FILE_SIZE_LOW. • **FILE_TIME**—The modify time of the file or directory in the format HH:MM:SS is returned in svResult.

Table 159 ▪ GetFileInfo Parameters (cont.)

Parameter	Description
	 ***Note ▪*** *After calling GetFileInfo with FILE_ATTRIBUTE as the second parameter (nType), use if-then-else logic to determine the file's or directory's attributes. If nvResult = FILE_ATTR_NORMAL, then no attributes are set. If nvResult != FILE_ATTR_NORMAL, test the result of bitwise AND (&) operations on nvResult and one or more of the following file attribute constants to determine which attributes are set:* • *FILE_ATTR_NORMAL: The file is a normal file.* • *FILE_ATTR_ARCHIVED: The file is archived.* • *FILE_ATTR_DIRECTORY: The file is a directory.* • *FILE_ATTR_HIDDEN: The file is hidden.* • *FILE_ATTR_READONLY: The file is read-only.* • *FILE_ATTR_SYSTEM: The file is a system file.* `if (nvResult = FILE_ATTR_NORMAL) then` `  //The file is NORMAL.` `else` `  if (FILE_ATTR_HIDDEN & nvResult) then` `  //The file is HIDDEN.` `  endif;` `  if (FILE_ATTR_READONLY & nvResult) then` `  //The file is READ-ONLY.` `  endif;` `endif;`
nvResult	Returns numeric information.
svResult	Returns string information.

Return Values

Table 160 ▪ GetFileInfo Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the requested file information.
ISERR_INVALID_ARG (-2)	Indicates that an invalid argument was passed to the function.
All other negative values	Indicates that the function was unable to retrieve the requested information.

GetFileInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetFileInfo function.
 *
 * GetFileInfo is called to retrieve the time, date, and
 * attributes of a file.
 *
 * Note: In order for this script to run correctly, you
 *       must set the constant EXAMPLE_TXT to the name
 *       of an existing file on the target system.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_FILE "C:\\IO.sys"
#define TITLE_TEXT   "GetFileInfo Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetFileInfo(HWND);

function ExFn_GetFileInfo(hMSI)
    STRING svResult, szAttributes;
    NUMBER nvResult;
    LIST   listID;
begin

    // Create a list to store information about the file.
    listID = ListCreate (STRINGLIST);

    // Get the date the file was created or last updated into svResult.
```

```
if (GetFileInfo (EXAMPLE_FILE, FILE_DATE, nvResult, svResult) = 0) then
    // Add the file date to the list.
    ListAddString (listID, "File date: " + svResult, AFTER);
endif;

// Get the time the file was created or last updated into svResult.
if (GetFileInfo (EXAMPLE_FILE, FILE_TIME, nvResult, svResult) = 0) then
    // Add the file time to the list.
    ListAddString (listID, "File time: " + svResult, AFTER);
endif;

// Get the file attributes into nvResult.
if (GetFileInfo (EXAMPLE_FILE, FILE_ATTRIBUTE, nvResult, svResult) = 0) then
  // Test for no attribute.
  if (nvResult = FILE_ATTR_NORMAL) then
      // No attributes are set.  Add that info to the list
      ListAddString(listID, "File attributes: Normal", AFTER);
  else
        // Append attributes to this string.
        szAttributes = "File attributes: ";

        // Is it archived?
        if (FILE_ATTR_ARCHIVED & nvResult) then
            szAttributes = szAttributes + "archived ";
        endif;

        // Is it hidden?
        if (FILE_ATTR_HIDDEN & nvResult) then
            szAttributes = szAttributes + "hidden ";
        endif;

        // Is it read-only?
        if (FILE_ATTR_READONLY & nvResult) then
            szAttributes = szAttributes + "read-only ";
        endif;

        // Is it a system file?
        if (FILE_ATTR_SYSTEM & nvResult) then
            szAttributes = szAttributes + "system ";
        endif;

        // Is it a directory?
        if (FILE_ATTR_DIRECTORY & nvResult) then
            szAttributes = szAttributes + "directory ";
        endif;

    endif;

    // Add the file attributes to the list.
    ListAddString (listID, szAttributes, AFTER);

endif;

// Display the list.
SdShowInfoList (TITLE_TEXT, EXAMPLE_FILE, listID);
```

```
    // Remove the list from memory.
    ListDestroy (listID);

end;
```

GetFolderNameList

The **GetFolderNameList** function is used to enumerate all program item shortcuts and subfolders in a specified folder. This function can also be used to enumerate program item shortcuts and subfolders in the root folder.

Syntax

```
GetFolderNameList ( szFolderName, listItemsID, listSubFoldersID );
```

Parameters

Table 161 ▪ GetFolderNameList Parameters

Parameter	Description
szFolderName	Specifies the name of the folder to be queried. You can specify a fully qualified path for szFolderName, such as: "C:\\Windows\\Start Menu\\Programs\\Accessories\\Games" If szFolderName is null, **GetFolderNameList** searches the default Programs directory. If you do not specify an absolute path (a path that includes a drive specification, for example, "C:\\Program Files\\AppName") for szFolderName, **GetFolderNameList** searches for a subfolder under the default Programs directory; the location depends on the value of the InstallScript variable ALLUSERS, as well as the version of Windows on the target system. You can also use an InstallScript system variable: • **FOLDER_DESKTOP**—Searches the Desktop folder. • **FOLDER_STARTUP**—Searches the Startup menu. • **FOLDER_STARTMENU**—Searches the Start menu. • **FOLDER_PROGRAMS**—Searches the Start Menu\Programs folder. Or you could use a relative path, such as: FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"
listItemsID	Returns a list with the names of the program item shortcuts in szFolderName. Note that if szFolderName includes both personal and common program items, the list returned in this parameter will contain either the common or personal program item shortcuts, but not both. The list identified by listItemsID must already have been initialized by a call to **ListCreate**.
listSubFoldersID	Returns a list with the names of the subfolders in szFolderName. Note that if szFolderName includes both personal and common folders, the list returned in this parameter will contain either the common or personal folders, but not both. The list identified by listSubFoldersID must already have been initialized by a call to **ListCreate**.

Return Values

Table 162 ▪ GetFolderNameList Return Values

Return Value	Description
0	**GetFolderNameList** successfully retrieved all the programs items and subfolder names.

Table 162 ▪ GetFolderNameList Return Values (cont.)

Return Value	Description
< 0	**GetFolderNameList** was unable to retrieve the program items and subfolder names. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

GetFolderNameList Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetFolderNameList function.
 *
 * GetFolderNameList is called to retrieve all of the folders
 * and program items on the desktop.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetFolderNameList(HWND);

function ExFn_GetFolderNameList(hMSI)
    NUMBER  nResult;
    LIST    listItemsID, listFoldersID;
begin

    // Create lists for folders and program names.
    listItemsID = ListCreate (STRINGLIST);
    listFoldersID = ListCreate (STRINGLIST);

    if (listItemsID = LIST_NULL) || (listFoldersID = LIST_NULL) then
        MessageBox ("Unable to create lists.", SEVERE);
    else
        // Display a message box while building the list.
        SdShowMsg ("Searching . . . please wait.", TRUE);

        // Place the folder and program names into the lists.
        nResult = GetFolderNameList (FOLDER_DESKTOP, listItemsID, listFoldersID);

        // Close the message box.
        SdShowMsg ("", FALSE);
```

```
        if (nResult < 0) then
            MessageBox ("Unable to retrieve desktop folder and program names.",
                        SEVERE);
        else

            // Display the lists.
            repeat

                // Disable the Back button.
                Disable (BACKBUTTON);

                // Display the list of items.
                nResult = SdShowInfoList ("", "Items list:", listItemsID);

                // Enable the Back button.
                Enable (BACKBUTTON);

                // Display the list of folders.
                nResult = SdShowInfoList ("", "Folders list:", listFoldersID);

            until (nResult = NEXT);

        endif;
    endif;

end;
```

GetFont

The **GetFont** function builds a font and retrieves its handle. You can use the font handle to specify the font used by the controls in a custom dialog.

Note ▪ *InstallShield deletes all fonts created with this function when the installation terminates. In addition, InstallShield releases all system resources upon termination.*

Syntax

```
GetFont ( szFontName, nPointSize, nAttributes );
```

Parameters

Table 163 ▪ GetFont Parameters

Parameter	Description
szFontName	Specifies the name of the font that you want to build.
nPointSize	Specifies the point size of the font that you want to build.
nAttributes	Specifies the style of the font. Pass one or more of the following predefined constants in this parameter. Specify multiple styles by combining constants with the bitwise OR operator (|). • **STYLE_BOLD**—Specifies a bold style font. • **STYLE_ITALIC**—Specifies that you want the font to be italicized. • **STYLE_NORMAL**—Specifies a normal style font. • **STYLE_UNDERLINE**—Specifies that you want the characters to be underlined.

Return Values

Table 164 ▪ GetFont Return Values

Return Value	Description
XXXX	The handle to the font.

If GetFont cannot find the font that is named in szFontName, the function builds the Arial font and returns a handle to that font.

GetFont Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetFont and CtrlSetFont functions.
 *
 * This example script calls GetFont to retrieve the handles
 * of four fonts.  These handles are then passed to CtrlSetFont
 * to set the font of the static text fields in a custom dialog
 * box.
 *
 * The "custom" dialog used in this script is actually the
```

```
 * InstallShield dialog that is displayed by the built-in
 * function SetupType.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
\*---------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     10203   // ID of the custom dialog
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_TEXT_1          202   // ID of first static text box

#define RES_TEXT_2          210   // ID of second static text box
#define RES_TEXT_3          220   // ID of third static text box
#define RES_TEXT_4          230   // ID of fourth static text box

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetFont(HWND);

function ExFn_GetFont(hMSI)
    STRING szDialogName;
    NUMBER nResult, nCmdValue;
    HWND   hFont1, hFont2, hFont3, hFont4, hwndDlg;
    BOOL   bDone;
begin

    // Get the handle of the fonts to use for the static text
    // that is displayed by the custom dialog.
    hFont1 = GetFont("Arial", 14, STYLE_BOLD);
    hFont2 = GetFont("Times New Roman", 11, STYLE_ITALIC);
    hFont3 = GetFont("Arial", 10, STYLE_BOLD);
    hFont4 = GetFont("Courier New", 9, STYLE_NORMAL);

    if (hFont1 = 0 || hFont2 = 0 || hFont3 = 0 || hFont4 = 0) then
        // Report an error; then terminate.
        MessageBox ("Unable to get all fonts. ", SEVERE);
        abort;
    endif;

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll. Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.

    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog.", SEVERE);
```

```
    abort;
endif;

// Initialize indicator used to control the while loop.
bDone = FALSE;

// Loop until done.
repeat

    // Display the dialog and return the next dialog event.
    nCmdValue = WaitOnDialog (szDialogName);

    // Respond to the event.
    switch (nCmdValue)
        case DLG_CLOSE:
            // The user clicked the window's Close button.
            Do (EXIT);
         case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
         case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
            hwndDlg = CmdGetHwndDlg(szDialogName);
            SdGeneralInit(szDialogName, hwndDlg, 0, "");

            // Set the font and text for static text box 1.
            if (CtrlSetFont (szDialogName, hFont1, RES_TEXT_1) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_1,
                             "This text is set in 14-point Arial bold.");
            else
                CtrlSetText (szDialogName, RES_TEXT_1,
                    "Unable to set font for first static text box.");
            endif;

            // Set font and text for static text box 2.
            if (CtrlSetFont (szDialogName, hFont2, RES_TEXT_2) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_2,
                             "This text is set in 11-point Times New Roman italic.");
            else
                CtrlSetText (szDialogName, RES_TEXT_2,
                             "Unable to set font for second static text box.");
            endif;

            // Set font and text for static text box 3.
            if (CtrlSetFont (szDialogName, hFont3, RES_TEXT_3) = 0) then
                CtrlSetText (szDialogName, RES_TEXT_3,
                             "This text is set in 10-point Arial bold.");
            else
                CtrlSetText (szDialogName, RES_TEXT_3,
                             "Unable to set font for third static text box.");
            endif;

            // Set font and text for static text box 4.
```

```
                if (CtrlSetFont (szDialogName, hFont4, RES_TEXT_4) = 0) then
                    CtrlSetText (szDialogName, RES_TEXT_4,
                                 "This text is set in 9-point Courier New.");
                else
                    CtrlSetText (szDialogName, RES_TEXT_4,
                                 "Unable to set font for fourth static text box.");
                 endif;
            case RES_PBUT_NEXT:
                 bDone = TRUE;
            case RES_PBUT_CANCEL:
                 // The user clicked the Cancel button.
                 Do (EXIT);
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

GetLine

The **GetLine** function reads a line of text from a text file opened in read-only mode. Before you call GetLine, you must first call OpenFileMode to set the file mode to read-only and then call OpenFile to open the file (which can be a file on the Internet). The first call to GetLine reads the first line of text from the file. After reading a line, GetLine repositions the file pointer to the next line. The second call to GetLine reads the second line, and so forth. GetLine strips the carriage return and line feed characters from the end of the line it returns.

When GetLine has read all the lines in a file, it returns an end-of-file error. If you open a file in append mode, the GetLine function fails if you call it because the file pointer is at the end of the file. The function also fails if the file specified by nvFileHandle was opened in a binary mode.

The maximum size of a line is 4,096 characters. To read multiple lines from a file, use a separate GetLine call for each line or place the GetLine statement in a loop.

Tip ▪ *To write to a text file, use the WriteLine function. WriteLine always produces lines that have a carriage return and line feed character combination at the end of the line.*

Syntax

```
GetLine ( nvFileHandle, svLine );
```

Parameters

Table 165 ▪ GetLine Parameters

Parameter	Description
nvFileHandle	Specifies the handle of a file that has been opened by a call to OpenFile.
svLine	Returns a line of text from the file specified by nvFileHandle.

Return Values

Table 166 ▪ GetLine Return Values

Return Value	Description
0	Indicates that the function successfully retrieved a line of text from an open text file.
< 0	Indicates that the function failed due to an end-of-file error or another error condition. This condition also indicates GetLine has read all the lines in the file.

GetLine Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetLine function.
 *
 * GetLine is called in this script to read a text file line by
 * line.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants so that they reference an
 *       existing text file on the target system.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_FILE "Readme.txt"
#define EXAMPLE_DIR  "C:\\Windows"
#define TITLE_TEXT   "GetLine example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_GetLine(HWND);

function ExFn_GetLine(hMSI)
    STRING  szFileName, szPath, szText, svLine;
    NUMBER  nFlag, nFileHandle;
    LIST   listID;
begin

    // Create a list to store lines from the file.
    listID = ListCreate (STRINGLIST);

    // Set the file mode to normal.
    OpenFileMode (FILE_MODE_NORMAL);

    // Open the file for editing.
    OpenFile (nFileHandle, EXAMPLE_DIR, EXAMPLE_FILE);

    // Get lines from the file into the list.
    while (GetLine (nFileHandle, svLine) = 0)
        ListAddString (listID, svLine, AFTER);
    endwhile;

    // Close the file.
    CloseFile (nFileHandle);

    // Display the list.
    SdShowInfoList (TITLE_TEXT, EXAMPLE_FILE, listID);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

GetMemFree

The **GetMemFree** function is obsolete and should not be used. This function always returns 1048576.

Syntax

```
GetMemFree ( );
```

Tip ▪ *To determine the amount of actual physical memory available on the target system, call GetSystemInfo.*

GetObject

The **GetObject** function initializes the szObjectName object and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword. To get a reference to a new or existing COM object (as Visual Basic's GetObject function does), call CoGetObject.

***Tip** ▪ To check whether the object was initialized successfully, call the IsObject function.*

Syntax

```
GetObject ( szObjectName );
```

Parameters

Table 167 ▪ GetObject Parameters

Parameter	Description
szObjectName	Specifies the name of the InstallShield object to be initialized as that name is displayed in the Features view, for example: `"New ATL 3.0"`  ***Note** ▪ To ensure that the correct InstallShield object is initialized, give each InstallShield object in your project a unique name.* If szObjectName is set to a null string (""), in an object project GetObject returns a reference to the object that is calling it (in a setup project GetObject returns an invalid reference). Setting szObjectName to a null string is useful for reading and writing object properties within the object itself. For example, the following code displays the current status description for the object: `OBJECT oThis;` `set oThis = GetObject("");` `if( IsObject( oThis ) ) then` `  MessageBox( oThis.Status.Description, INFORMATION );` `endif;`

Return Values

A reference that can be assigned to a variable of type OBJECT by using the set keyword.

GetObjectByIndex

***Project** ▪ This information applies to InstallScript projects.*

The **GetObjectByIndex** function finds the setup's or object's subobject that is specified by nIndex and returns a reference that can be assigned to a variable of type OBJECT by using the set keyword.

Syntax

```
GetObjectByIndex ( nIndex );
```

Parameters

Table 168 ▪ GetObjectByIndex Parameters

Parameter	Description
nIndex	Specifies the index of a subobject. Index numbers start at one (1); if an object passes zero (0) as the argument to GetObjectByIndex, the function returns a reference to the object or setup that is calling the function rather than any subobject. (This is the same as calling GetObject("").) If a setup calls GetObjectByIndex(0), the reference that is returned does not contain any meaningful information.

Return Values

A reference that can be assigned to a variable of type OBJECT by using the set keyword.

Additional Information

To check whether the object was initialized successfully, call the IsObject function.

To get the number of subobjects contained by the object or setup, call GetObjectCount.

GetObjectCount

Project ▪ *This information applies to InstallScript projects.*

The **GetObjectCount** function returns the number of subobjects contained by the object or setup.

Syntax

```
GetObjectCount ( );
```

Parameters

None

Return Values

Table 169 ▪ GetObjectCount Return Values

Return Value	Description
>= 0	The number of subobjects.
< ISERR_SUCCESS	GetObjectCount cannot determine the number of subobjects.

Additional Information

To get a reference to a subobject that is specified by its index within the setup or object, call GetObjectByIndex.

GetProfInt

The **GetProfInt** function retrieves an integer from an .ini file. GetProfInt works like the Windows API GetPrivateProfileInt with the nDefault parameter specified as 0.

Syntax

```
GetProfInt ( szFileName, szSectionName, szKeyName, nvValue );
```

Parameters

Table 170 ▪ GetProfInt Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file from which to get the current integer value of a key. If szFileName is unqualified (that is, if a drive designation and path are *not* included), InstallShield searches for the file in the Windows folder.
szSectionName	Specifies the name of the .ini file section to search for szKeyName. The section name should not be enclosed within delimiting brackets ([ ]). The search for this name is not case-sensitive.
szKeyName	Specifies the key whose integer value is to be returned in nvValue. The search for this key is not case-sensitive.
nvValue	Returns an integer value currently assigned to szKeyName. Due to limitations of the GetPrivateProfileInt function, this function can return only a 16-bit value from the profile. Therefore, the maximum value that can be returned is 65,535; larger values may not be returned correctly. If you need to return a larger value, use the general file handling functions, such as FileGrep and FileInsertLine, and then convert the returned string into an integer by calling StrToNum.

Return Values

GetProfInt always returns 0.

Additional Information

- As with the Windows API function **GetPrivateProfileInt**, no error is returned if an error occurs because the file, section, or key name cannot be found. Instead, nvValue will contain 0. For that reason, it is not possible to distinguish between an error and a returned value of zero. To distinguish between zero and an error, call **GetPrivateProfileInt** directly and specify an alternate default value.
- Some calls to **GetPrivateProfileInt**—and therefore to **GetProfInt**—are mapped automatically to the Windows registry instead of the profile.

GetProfInt Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetProfInt function.
```

```
 *
 * GetProfInt is called to retrieve the value of a key in
 * the file specified by EXAMPLE_INI.
 *
 * Note: Before running this script, create a file called
 *       ISExample.ini in the root of drive C.  Include the
 *       following lines in that file.
 *
 *       [ISExample]
 *       ISKey=100
 *
\*---------------------------------------------------------------*/

#define  EXAMPLE_INI  "C:\\ISExampl.ini"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetProfInt(HWND);

function ExFn_GetProfInt(hMSI)
    STRING szSectionName, szKeyName;
    NUMBER nvValue;
begin

    szSectionName = "ISExample";
    szKeyName     = "ISKey";

    // Get the value of szKeyName under the szSectionName section.
    GetProfInt (EXAMPLE_INI, szSectionName, szKeyName, nvValue);

    SprintfBox (INFORMATION, "GetProfInt Example",
                "The value of %s is: %d.", szKeyName, nvValue);

end;
```

GetProfSectionKeyCount

Project ▪ *This information applies to InstallScript projects.*

The **GetProSectionKeyCount** function returns the number of keys in the section specified by szSectionName in the initialization file specified by szFilename.

Syntax

```
GetProfSectionKeyCount ( szFilename, szSectionName );
```

Parameters

Table 171 ▪ GetProfSectionKeyCount Parameters

Parameter	Description
szFilename	Specifies the fully qualified name of the .ini file in which to count the keys.
szSectionName	Specifies the name of the .ini file section in which to count the keys. The section name should not be enclosed within delimiting brackets ([ ]). The search for this name is not case-sensitive.

Return Values

Table 172 ▪ GetProfSectionKeyCount Return Values

Return Value	Description
X	The number of keys in the specified section of the specified file.
< ISERR_SUCCESS	Indicates that the function could not determine the number of keys. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

GetProfString

The **GetProfString** function retrieves a profile string from the specified .ini file. GetProfString works like the Windows API GetPrivateProfileString.

Note ▪ *GetProfString uses the functions provided by your operating environment's API to access the .ini file. Because of this, InstallShield's functionality might be limited by the operating environment.*

Syntax

```
GetProfString ( szFileName, szSectionName, szKeyName, svResult );
```

Parameters

Table 173 ▪ GetProfString Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file from which to get the current value of a key. If szFileName is unqualified (that is, if a drive designation and path are *not* included), InstallShield searches for the file in the Windows folder.
szSectionName	Specifies the name of the .ini file section to search for szKeyName. The section name should not be enclosed within delimiting brackets ([ ]). The search for this name is not case-sensitive. To obtain a list of all section names in the initialization file, pass a null string ("") in this parameter.  ***Tip ▪*** *To obtain a list of all section names in the initialization file, pass a null string ("") in szSectionName. The section names, delimited by null characters, are returned in the parameter svResult. svResult must be long enough to accept all of the section names. Use the StrGetTokens function to extract the individual section names from this string.*
szKeyName	Specifies the key whose value is to be returned in svResult. The search for this key is not case-sensitive. To obtain a list of all key names in the section, pass a null string ("") in this parameter.  ***Tip ▪*** *To obtain a list of all key names in the section specified by szSectionName, pass a null string ("") in szKeyName. The key names, delimited by null characters, are returned in the parameter svResult. svResult must be long enough to accept all of the key names. Use the StrGetTokens function to extract the individual key names from this string.*
svResult	If szSectionName specifies a section name and szKeyName specifies a key name, the value of that key is returned in this parameter. If szSectionName specifies a null string (""), all of the section names are returned in svResult. If szKeyName specifies a null string (""), all of the key names in the section specified szSectionName are returned in svResult.

Return Values

Table 174 ▪ GetProfString Return Values

Return Value	Description
0	GetProfString successfully returned the value of the profile string.
< 0	GetProfString was unable to return the value.

Table 174 ▪ GetProfString Return Values (cont.)

Return Value	Description
-2	The length of the key's value exceeded 2048 characters, which is the maximum number of characters that can be returned in svResult by GetProfString.

GetProfString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions AddProfString and GetProfString.
 *
 * This script adds a profile string to a file; then it
 * retrieves and displays the string that was added.
 *
 * Note: The first time you run this script, it will create a
 *       file named ISExampl.ini in the root of drive C. You
 *       may delete that file when you have finished analyzing
 *       this script.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_INI "C:\\ISExampl.ini"

// The new section, key, and value to add to the file.
#define NEW_SECTION "New Section"
#define NEW_KEY     "New Key"
#define NEW_VALUE   "Test"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetProfString(HWND);

function ExFn_GetProfString(hMSI)
    STRING svResult;
begin

    // Add the profile string to the file.
    if (AddProfString (EXAMPLE_INI, NEW_SECTION, NEW_KEY, NEW_VALUE) != 0) then
        // Display an error message if the string could not be added.
        MessageBox ("AddProfString failed.", SEVERE);
    else
        // Retrieve the value of a key from the file.
        if (GetProfString (EXAMPLE_INI, NEW_SECTION, NEW_KEY, svResult) != 0) then
```

```
            // Display an error message if the string could not be retrieved.
            MessageBox ("GetProfString failed.", SEVERE);
        else
            // Display the key and its current value.
            MessageBox (NEW_KEY + "=" + svResult, INFORMATION);
        endif;
    endif;

end;
```

GetProfStringList

The **GetProfStringList** function retrieves lists of key names and string values from the specified section of the specified initialization file.

Syntax

```
GetProfStringList ( szFileName, szSectionName, listKeyNames, listValues );
```

Parameters

Table 175 ▪ GetProfStringList Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file from which to get the key names and string values. If szFileName is unqualified (that is, if a drive designation and path are not included), InstallShield searches for the file in the Windows folder.
szSectionName	Specifies the name of the .ini file section to search for the key names and string values. The section name should not be enclosed within delimiting brackets ([ ]). The search for this name is not case-sensitive.
listKeyNames	Returns a list of key names. The string list identified by listKeyNames must already have been initialized by a call to ListCreate.
listValues	Returns a list of string values. The string list identified by listValues must already have been initialized by a call to ListCreate.

Return Values

Table 176 ▪ GetProfStringList Return Values

Return Value	Description
>= ISERR_SUCCESS (0)	Indicates that the function successfully read the section and inserted key names and string values into the specified lists.
< ISERR_SUCCESS (0)	Indicates that the function could not read the section or insert key names and string values into the specified lists.

Additional Information

GetProfStringList calls the Windows API **GetPrivateProfileSection** and specifies a 32 KB buffer for the data. Therefore, the function returns only the first 32 KB of data from the section. An installation that needs to handle sections with more than 32 KB of data should call the Windows API **GetPrivateProfileSection** directly and specify a larger buffer size (and parse the returned information manually).

GetProfStringList Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function GetProfStringList.
 *
 * This script retrieves keys and their values from an
 * initialization file.
\*---------------------------------------------------------------*/
```

```
#define EXAMPLE_INI "C:\\ISExampl.ini"

// The new section, key, and value to add to the file.
#define SECTION "InstallShield"
#define KEY1     "Key1"
#define KEY2     "Key2"
#define KEY3     "Key3"
#define KEY4     "Key4"
#define KEY5     "Key5"
#define VALUE1   1
#define VALUE2   2
#define VALUE3   3
#define VALUE4   4
#define VALUE5   5

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

  export prototype ExFn_GetProfString(HWND);

function ExFn_GetProfString(hMSI)
    STRING svResult, svKeyName, svKeyVal;
    LIST listKeyNames, listKeyValues;
    NUMBER nVal;
begin

    // Add the profile strings to the file.
    WriteProfInt (EXAMPLE_INI, SECTION, KEY1, VALUE1);
    WriteProfInt (EXAMPLE_INI, SECTION, KEY2, VALUE2);
    WriteProfInt (EXAMPLE_INI, SECTION, KEY3, VALUE3);
    WriteProfInt (EXAMPLE_INI, SECTION, KEY4, VALUE4);
    WriteProfInt (EXAMPLE_INI, SECTION, KEY5, VALUE5);

    // Create a list to hold the key names;
    listKeyNames = ListCreate(STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listKeyNames = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        //Add your custom error handling code here.
        abort;
    endif;

    // Create a list to hold the key values;
    listKeyValues = ListCreate(STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listKeyValues = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        //Add your custom error handling code here.
        abort;
    endif;

    // Retrieve the keys from the specified section of the file.
    nVal = GetProfStringList (EXAMPLE_INI, SECTION,
```

```
                            listKeyNames, listKeyValues);

    if (nVal = 0) then
        nVal = ListGetFirstString (listKeyNames, svKeyName);

        if (nVal = END_OF_LIST) then
            MessageBox("No keys found in [" + SECTION + "]", WARNING);
        else
            ListGetFirstString (listKeyValues, svKeyVal);

            repeat
                // Display the keys and their values.
                MessageBox(svKeyName + "=" + svKeyVal, INFORMATION);

                nVal = ListGetNextString (listKeyNames, svKeyName);
                if !(nVal = END_OF_LIST) then
                    ListGetNextString (listKeyValues, svKeyVal);
                endif;

            until nVal = END_OF_LIST;

        endif;
    endif;

end;
```

GetShortcutInfo

The **GetShortcutInfo** function checks for the existence of a specific shortcut or subfolder name. If the InstallScript engine finds the shortcut or subfolder, **GetShortcutInfo** returns its attributes. The attributes include the product's command line, working directory, icon path, shortcut key, and minimize flag.

To use **GetShortcutInfo**, enter information in the parameters szShortcutFolder and szName. The InstallScript engine fills the remaining parameters with the shortcut's or subfolder's attributes.

Syntax

```
GetShortcutInfo (szShortcutFolder, szName, svCmdLine, svWrkDir, svIconPath, nvIconIndex, svShortCutKey,
    nvMinimizeFlag);
```

Parameters

Table 177 ▪ GetShortcutInfo Parameters

Parameter	Description
szShortcutFolder	Specify the name of the folder that contains the shortcut or subfolder. You can specify a fully qualified path for szShortcutFolder, such as: `"C:\\ProgramData\\Microsoft\\Windows\\Start Menu\\Programs\\Games"` If szShortcutFolder is null, **GetShortcutInfo** searches the default Programs directory. If you do not specify an absolute path (a path that includes a drive specification, for example, "C:\\Program Files\\AppName") for szShortcutFolder, **GetShortcutInfo** searches for a subfolder under the default Programs directory; the location depends on the value of the InstallScript variable ALLUSERS, as well as the version of Windows on the target system. You can also use an InstallScript system variable: ● **FOLDER_DESKTOP**—Queries items in the Desktop folder. ● **FOLDER_STARTUP**—Queries items in the Startup menu. ● **FOLDER_STARTMENU**—Queries items in the Start menu. ● **FOLDER_PROGRAMS**—Queries items in the Start\Programs menu. Or you could use a relative path, such as: `FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"`
szName	Specify the name of the shortcut or subfolder for which you are looking.
svCmdLine	The function returns either the command line of the item's executable file or the complete path to the subfolder.
svWrkDir	The function returns the full path of the working directory of the program item. (Not applicable if szName is a subfolder.)
svIconPath	The function returns the full path and file name of the .ico file or .exe file. (Not applicable if szName is a subfolder.)
nvIconIndex	The function returns the index of the icon that is used for the shortcut. (Not applicable if szName is a subfolder.)
svShortCutKey	The function returns the item's shortcut key. (Not applicable if szName is a subfolder.)

Table 177 ▪ GetShortcutInfo Parameters (cont.)

Parameter	Description
nvMinimizeFlag	The function returns one of the following constants, indicating whether an application window is minimized when first displayed: • **NULL**—Indicates that the application's window is not minimized upon startup. • **RUN_MINIMIZED**—Indicates that the application's window is minimized upon startup. (Not applicable if szName is a subfolder.)

Return Values

Table 178 ▪ GetShortcutInfo Return Values

Return Value	Description
IS_ITEM (0)	Indicates szName is a shortcut in szShortcutFolder.
IS_FOLDER (1)	Indicates szName is a subfolder in szShortcutFolder.
< 0	Indicates that the function was unable to find the shortcut or subfolder name. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

The location of the Start menu is different under different languages. The InstallScript engine automatically selects the correct path.

GetShortcutInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetShortcutInfo function.
 *
 * GetShortcutInfo is called to find the attributes of a target
 * file or subfolder.
 *
 * Note: Before running this script, set the defined constants
 *       FOLDER_NAME and SHORTCUT so that they reference an
```

```
 *       existing folder name and shortcut.
 *
\*------------------------------------------------------------------*/
// Define constants to reference the shortcut or folder name.
#define FOLDER_NAME  "C:\\Windows\\Start Menu\\Programs"
#define SHORTCUT     "InstallShield"

function OnFirstUIAfter()
    STRING   svCmdLine, svWrkDir, svIconPath;
    STRING   svShortCutKey, svGroupPath, szTitle, szMsg, szInfo, svMinFlag;
    STRING   svMinimizeFlag;
    NUMBER   nvIconIndex, nvMinimizeFlag, nResult, nvMinFlag;
    LIST     listInfo, listID;
begin

    // Search for an item in the FOLDER_NAME folder.
    nResult = GetShortcutInfo (FOLDER_NAME, SHORTCUT, svCmdLine, svWrkDir,
                               svIconPath, nvIconIndex, svShortCutKey,
                               nvMinimizeFlag);

    // Create string list.
    listInfo = ListCreate (STRINGLIST);

    // Error check GetShortcutInfo.
    if (nResult < 0) then
        // Report the error; then abort.
        MessageBox ("GetShortcutInfo failed.", SEVERE);
        abort;
    // Check if the item is an application.
    elseif (nResult = IS_ITEM) then
        // Add the command line to the string list.
        Sprintf (szInfo, "The command line of %s: %s", SHORTCUT, svCmdLine);
        ListAddString (listInfo, szInfo, AFTER);

        // Add the working directory to string list.
        Sprintf (szInfo, "The working directory of %s: %s", SHORTCUT, svWrkDir);
        ListAddString (listInfo, szInfo, AFTER);

        // Add the icon path to string list.
        Sprintf (szInfo, "The icon path of %s: %s", SHORTCUT, svIconPath);
        ListAddString (listInfo, szInfo, AFTER);

        // Add icon index to string list.
        Sprintf (szInfo, "The index of the icon: %d", nvIconIndex);
        ListAddString (listInfo, szInfo, AFTER);

        // Add shortcut key to string list.
        Sprintf (szInfo, "The shortcut key of %s: %s", SHORTCUT,
                svShortCutKey);
        ListAddString (listInfo, szInfo, AFTER);

        // Check if the item is a folder.
    elseif (nResult = IS_FOLDER) then
        // Add a message to string list.
        Sprintf (szInfo, "The item is a subfolder. GetShortcutInfo does not " +
                "retrieve very much information about subfolders.");
```

```
        ListAddString (listInfo, szInfo, AFTER);
    endif;

    // Display the string list.
    szTitle = "GetShortcutInfo Example";
    szMsg   = "The following are attributes of the item:";
    SdShowInfoList (szTitle, szMsg, listInfo);

    // Destroy the list.
    ListDestroy (listID);

end;
```

GetStatus

Project ▪ *The* **GetStatus** *function applies to InstallScript Object projects.*

The **GetStatus** function retrieves the current status of the object; that is, the current value of Status.Number.

Tip ▪ *To retrieve additional information or to retrieve the status of an object from the installation that contains the object, use the object's Status object.*

Syntax

```
number GetStatus();
```

Parameters

GetStatus takes no parameters.

Return Values

GetStatus returns the status of the object.

GetSystemInfo

The **GetSystemInfo** function retrieves information about the target system. **GetSystemInfo** collects the information that it returns by using the Windows API.

Syntax

```
GetSystemInfo ( nItem, nvResult, svResult );
```

Parameters

Table 179 ▪ GetSystemInfo Parameters

Parameter	Description
nItem	Specifies the type of information to retrieve.
nvResult	Returns system information in the form of numeric data.
svResult	Returns system information in the form of string data.

The following table contains a list of constants that you can pass in the nItem parameter to retrieve system information. When using certain constants (such as DISK_TOTALSPACE_EX), you must specify additional information in the parameters nvResult and/or svResult before calling the function.

Table 180 ▪ nItem Options

nItem Option	nvResult Returns	svResult Returns
BOOTUPDRIVE	The ID of the bootup drive, where 1= A:, 2 = B:, 3 = C:. It is possible to convert this number to the appropriate drive letter by adding 64 (DECIMAL) to the value and then setting a string variable to this value. Use the following syntax to convert: `svResult[0] = 64 + nvResult;`	Returns the drive designation (the drive letter followed by a colon) of the bootup drive.
CDROM	TRUE or FALSE Indicates whether a CD-ROM is available.	Not applicable
COLORS	Returns the number of colors available on the user's system. The result is retrieved from the video driver on the target system, rather than from the monitor card. If the card can support 256 colors but the driver can handle only 16 colors, the number of colors returned is 16.	Not applicable

Table 180 ▪ nItem Options (cont.)

nItem Option	nvResult Returns	svResult Returns
CPU	 ***Note ▪*** *This parameter is deprecated. Use the structure members of SYSPROCESSORINFO to determine the processor type.* One of the following constants is returned: • **IS_UNKNOWN**—The user's CPU is unknown. • **IS_386**—The user has a 386 processor. • **IS_486**—The user has a 486 processor. • **IS_PENTIUM**—The user has a PENTIUM processor. • **IS_ALPHA**—The user has an ALPHA processor.	Not applicable
DATE	Not applicable	The current system date in the format MM-DD-YYYY. Leading zeroes are suppressed in the month and day fields.
DISK_TOTALSPACE	 ***Note ▪*** *This parameter is obsolete. Use the parameters available with the GetDiskInfo function instead.* Returns the total capacity of the disk drive specified in svResult. The maximum value returned is 2 GB. Total disk space greater than that still returns as 2 GB.	The letter of the drive. Note that this parameter is passed *to* the function; that is, you must assign a value to svResult *before* calling GetSystemInfo. Also note that you must include the colon (:) after the drive letter; otherwise the function will fail. You can also specify a UNC path in this parameter.
DISK_TOTALSPACE_EX	 ***Note ▪*** *This parameter is obsolete. Use the parameters available with the GetDiskInfo function instead.* Specifies the measurement unit; pass one of the following predefined constants in this parameter: BYTES, KBYTES, MBYTES or GBYTES. Returns the total capacity of the disk drive specified in svResult.	The letter of the drive. Note that this parameter is passed *to* the function; that is, you must assign a value to svResult *before* calling GetSystemInfo. Also note that you must include the colon (:) after the drive letter; otherwise the function will fail. You can also specify a UNC path in this parameter.

Table 180 ▪ nItem Options (cont.)

nItem Option	nvResult Returns	svResult Returns
DRIVE	 ***Note ▪*** *This parameter is obsolete. Use the parameters available with the GetDiskInfo function instead.* Returns the type of the drive specified in svResult. One of the following constants is returned: • **IS_UNKNOWN**—Target drive is unknown. • **IS_REMOVABLE**—Target drive is a floppy drive. • **IS_FIXED**—Target drive is a fixed drive. • **IS_CDROM**—Target drive is a CD-ROM drive. • **IS_REMOTE**—Target drive is a network drive.	The letter of the drive followed by a colon (:). Note this parameter is passed *to* the function; that is, you must assign a value to svResult *before* calling GetSystemInfo. Due to operating system limitations, UNC paths are not supported for svResult. If you pass a UNC path in svResult, the function returns IS_UNKNOWN.
EXTENDEDMEMORY	Returns the *total* amount of memory installed on the machine. Due to operating system limitations, the value returned may be slightly different than the actual amount of physical memory installed on the system. This value will normally be within 100K (0.1 MB) of the actual value. Note that the value returned is a measurement in kilobytes. GetSystemInfo (EXTENDEDMEMORY, ...) accurately returns the amount of extended memory up to 2 terabytes (TB). If a system has more than 2 TB of extended memory, 2 TB is returned.	Not applicable
LANGUAGE	The InstallScript language constants for the target system are returned in this parameter. For more information, see Creating Multilingual Installations.	The equivalent language name string for the language constant returned in nvResult is returned in this parameter.

Table 180 ▪ nItem Options (cont.)

nItem Option	nvResult Returns	svResult Returns
OS	 ***Note ▪*** *This parameter is deprecated. Use the WIN9X.bWin9X or WINNT.bWinNT members of the SYSINFO structure variable to obtain operating system information.* You can conditionally install some or all of your product based upon operating system by using conditional logic for components, features, and custom actions. For more information, see Building Conditional Statements.	Not applicable
OSMAJOR	This parameter is deprecated. Use the nOSMajor member of the SYSINFO structure variable to obtain operating system information.	Not applicable
OSMINOR	This parameter is deprecated. Use the nOSMinor member of the SYSINFO structure variable to obtain operating system information.	Not applicable
PARALLEL	Returns the number of physical parallel ports available.	Not applicable
SERIAL	Returns the number of physical serial ports available.	Not applicable
SYSTEM_DPI	Returns the system DPI value.	Not applicable
SYSTEM_DPI_SCALING	Returns the system DPI scaling value.	Not applicable
TIME	Not applicable	Returns current system time in HH:MM:SS format.

Table 180 ▪ nItem Options (cont.)

nItem Option	nvResult Returns	svResult Returns
VIDEO	Returns the type of video adapter installed. (InstallShield cannot detect CGA or monochrome video drivers.) One of the following constants is returned: • **IS_UNKNOWN**—The user's video is unknown. • **IS_EGA**—EGA resolution. • **IS_VGA**—VGA resolution. • **IS_SVGA**—Super VGA (800 x 600) resolution. • **IS_XVGA**—XVGA (1024 x 768) resolution. • **IS_UVGA**—Greater than 1024 x 768 resolution.	Not applicable
VIRTUAL_MACHINE_TYPE	Not applicable This constant returns its value through the function return. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.	Not applicable
VOLUMELABEL	Not applicable	Pass the drive designation—the drive letter followed by a colon—of the disk whose volume label you want to retrieve. The volume label of the specified drive is then returned in this parameter. If the drive has no volume label, a null string ("") is returned.
WINMAJOR	This parameter is deprecated. Use the nWinMajor member of the SYSINFO structure variable to obtain operating system information.	Not applicable
WINMINOR	This parameter is deprecated. Use the nWinMinor member of the SYSINFO structure variable to obtain operating system information.	Not applicable

Return Values

Table 181 ▪ GetSystemInfo Return Values

Return Value	Description
IS_VM_TYPE_HYPERV	The installation is running on a Microsoft Hyper-V machine. **GetSystemInfo** may return this value if VIRTUAL_MACHINE_TYPE was passed to nItem. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
IS_VM_TYPE_NONE	No virtual machine has been detected. **GetSystemInfo** may return this value if VIRTUAL_MACHINE_TYPE was passed to nItem. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
IS_VM_TYPE_VMWARE	The installation is running on a VMware product such as VMware Player, VMware Workstation, or VMware Server. **GetSystemInfo** may return this value if VIRTUAL_MACHINE_TYPE was passed to nItem. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
IS_VM_TYPE_VIRTUALPC	The installation is running on a Microsoft Virtual PC machine. **GetSystemInfo** may return this value if VIRTUAL_MACHINE_TYPE was passed to nItem. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
IS_VM_TYPE_UNKNOWN	The type of virtual machine is not known. **GetSystemInfo** may return this value if VIRTUAL_MACHINE_TYPE was passed to nItem. For more information, see Detecting Whether the Installation Is Being Run on a Virtual Machine.
0	Indicates that the function successfully returned the specified information.
< 0	Indicates that the function was unable to return the specified information.

GetSystemInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetSystemInfo function.
```

```
 *
 * This script uses many of the constants available for
 * GetSystemInfo and tests for all possible return values.
 * The results are displayed in a dialog.
 *
\*------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetSystemInfo(HWND);

function ExFn_GetSystemInfo(hMSI)
    STRING   szTitle, szMsg, svResult, szInfo;
    NUMBER   nvResult;
    LIST     listInfo;
begin

    // Create a list for system information.
    listInfo = ListCreate (STRINGLIST);

    // Get the amount of extended memory.
    if (GetSystemInfo (EXTENDEDMEMORY, nvResult, svResult) < 0) then
        szInfo = "Couldn't get EXTENDEDMEMORY info.";
    else
        Sprintf(szInfo, "Extended memory: %d K", nvResult);
    endif;

    // Add the information to the list.
    ListAddString(listInfo, szInfo, AFTER);

    // Get the boot drive.
    if (GetSystemInfo (BOOTUPDRIVE, nvResult, svResult) < 0) then
        szInfo = "Couldn't get BOOTUPDRIVE info.";
    else
        Sprintf(szInfo, "Boot drive: %s", svResult);
    endif;

    // Add the information to the list.
    ListAddString(listInfo, szInfo, AFTER);

    // Get info about the CD-ROM.
    if (GetSystemInfo (CDROM, nvResult, svResult) < 0) then
        szInfo = "Couldn't get CD-ROM info.";
    else
        if (nvResult = 0) then
            svResult = "No";
        else
            svResult = "Yes";
        endif;

        Sprintf(szInfo, "CDROM: %s", svResult);
    endif;

    // Add the information to the list.
    ListAddString(listInfo, szInfo, AFTER);
```

```
// Get the video adapter.
if (GetSystemInfo (VIDEO, nvResult, svResult) < 0) then
    szInfo = "Couldn't get VIDEO info.";
else
    switch (nvResult)
        case IS_UNKNOWN:
            szInfo = "VIDEO: UNKNOWN";
        case IS_SVGA:
            szInfo = "VIDEO: SVGA";
        case IS_XVGA:
            szInfo = "VIDEO: XVGA";
        case IS_UVGA:
            szInfo = "VIDEO: UVGA";
    endswitch;
endif;

// Add the information to the list.
ListAddString(listInfo, szInfo, AFTER);

// Get number of available colors.
if (GetSystemInfo (COLORS, nvResult, svResult) < 0) then
    szInfo = "Couldn't get COLORS info.";
else
    Sprintf(szInfo, "Number of colors: %d", nvResult);
endif;

// Add the information to the list.
ListAddString(listInfo, szInfo, AFTER);

// Get the current date.
if (GetSystemInfo (DATE, nvResult, svResult) < 0) then
    szInfo = "Couldn't get DATE info.";
else
    Sprintf(szInfo, "DATE: %s", svResult);
endif;

// Add the information to the list.
ListAddString(listInfo, szInfo, AFTER);

// Get the current time.
if (GetSystemInfo (TIME, nvResult, svResult) < 0) then
    szInfo = "Couldn't get TIME info.";
else
    Sprintf(szInfo, "TIME: %s", svResult);
endif;

// Add the information to the list.
ListAddString(listInfo, szInfo, AFTER);

// Get the operating system.
if (GetSystemInfo (OS, nvResult, svResult) < 0) then
    szInfo = "Couldn't get Operating System info.";
else
    switch (nvResult)
        case IS_WINDOWSNT:
```

```
                szInfo = "OS: Windows NT";
            case IS_WINDOWS9X:
                GetSystemInfo (WINMINOR, nvResult, svResult);

                if (nvResult < 10) then
                     szInfo = "OS: Windows 95";
                else
                     szInfo = "OS: Windows 98";
                endif;
        endswitch;
    endif;

    // Add the information to the list.
    ListAddString(listInfo, szInfo, AFTER);

    // Display the information.
    szTitle   = "System Information";
    szMsg     = "The following is some information related to your system:\n";

    SdShowInfoList (szTitle, szMsg, listInfo);

    ListDestroy(listInfo);

end;
```

GetTempFileNameIS

The **GetTempFileNameIS** function calls the Windows API **GetTempFileName** to create a temporary file and perform related actions. Note that unlike the Windows API **GetTempFileName**, **GetTempFileNameIS** creates the folder specified by szPathName if it does not already exist. Note that as with the **CreateDir** function, the newly created folder or folders are not logged for uninstallation.

Syntax

```
GetTempFileNameIS( byval string szPathName, byval string szPrefixString, byval number nUnique, byref
    string svTempFileName, byval number nOptions );
```

Parameters

Table 182 ▪ GetTempFileNameIS Parameters

Parameter	Description
szPathName	Specifies the path for the lpPathName parameter of the Windows API GetTempFileName. You can use text substitutions for this parameter.
szPrefixString	Specifies the string for the lpPrefixString parameter of the Windows API GetTempFileName. You can use text substitutions for this parameter.
nUnique	Specifies the integer for the nUnique parameter of the Windows API GetTempFileName.
svTempFileName	Specifies the value for the lpTempFileName parameter of the Windows API GetTempFileName.  ***Note ▪*** *InstallScript strings are automatically _MAX_PATH or greater in length. Therefore, there is no need to manually size this string.*
nOptions	Specifies an InstallScript-specific option. Pass any of the following predefined constants in this parameter: • **GTFIS_OPTION_NONE**—No InstallScript-specific options. This is the default option. • **GTFIS_OPTION_DONT_RESOLVE_TEXTSUBS**—Do not call **TextSubSubstitute** to resolve text substitutions in szPathName and szPrefixString. • **GTFIS_OPTION_DONT_CREATE_DIR**—Do not create the directory specified by szPathName if it does not already exist. Note that if this option is specified and szPathName does not exist, the function fails. • **GTFIS_OPTION_DELETE_TEMP_FILE**—Delete the created temporary file before returning. (Note that this option is useful only if you specify nUnique such that the function creates a temporary file. For more information, see GetTempFileName Function.) The function does not return failure if the temporary file cannot be deleted.

Return Values

Table 183 ▪ GetTempFileNameIS Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

GetTrueTypeFontFileInfo

The **GetTrueTypeFontFileInfo** function returns in svResult information about the TrueType font file that is specified by szTrueTypeFontFile.

Syntax

```
GetTrueTypeFontFileInfo ( szTrueTypeFontFile, nInfo, nLanguage, svResult );
```

Parameters

Table 184 ▪ GetTrueTypeFontFileInfo Parameters

Parameter	Description
szTrueTypeFontFile	Specifies the fully qualified file name of the TrueType font file from which you want information. Note that non-TrueType files such as .fon and .fot files are not supported by this function, nor are TrueType collection files (.ttc files) supported.
nInfo	Specifies the information to be returned in svResult. Pass one of the following constants in this parameter: • **TTFONTFILEINFO_FONTTITLE**—Specifies the font's title. • **name ID**—You can use a name ID to get font information.
nLanguage	Specifies the language of the string to be returned in svResult. Pass a predefined language constant, numeric language ID, the system variable SELECTED_LANGUAGE, or 0 (zero)—which has the same effect as passing SELECTED_LANGUAGE—in this parameter. Note that not all information for a particular font may be available in all languages.
svResult	Returns the font information that you specified in nInfo. An ANSI (non-Unicode) string is returned even if the data in the file is stored in a Unicode format.

Return Values

Table 185 ▪ GetTrueTypeFontFileInfo Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully retrieved the requested information.
< ISERR_SUCCESS	Indicates that the function was unable to retrieve the requested information.

GetUpdateStatus

The **GetUpdateStatus** function is obsolete. If this function is called, it returns FALSE.

Syntax

```
BOOL GetUpdateStatus();
```

GetUpdateStatusReboot

The **GetUpdateStatusReboot** function is obsolete. If this function is called, it returns FALSE.

Syntax

```
BOOL GetUpdateStatusReboot();
```

GetValidDrivesList

The **GetValidDrivesList** function retrieves a list of all the drives attached to the target system that meet a certain criterion. This criterion includes the type of drive and the minimum amount of space on the drive. If a drive door is open, the drive name is still inserted into the list.

Syntax

```
GetValidDrivesList (listID, nDriveType, nMinDriveSpace);
```

Parameters

Table 186 ▪ GetValidDrivesList Parameters

Parameter	Description
listID	Returns a list of valid drive letters. The string list identified by listID must already have been initialized by a call to ListCreate.
nDriveType	Specifies the type of drive to search for. Pass one of the following predefined constants in this parameter: • **-1**—Searches for all drive types. • **FIXED_DRIVE**—Searches only for fixed drives. • **REMOTE_DRIVE**—Searches only for remote drives. Remote drives are generally located on a network. • **REMOVEABLE_DRIVE**—Searches only for removable drives. Floppy drives are removable drives. • **CDROM_DRIVE**—Searches only for CD-ROM drives.
nMinDriveSpace	Specifies the minimum amount of disk space in bytes that must be free on the drive to allow the drive to be included in the return list. If nMinDriveSpace is less than zero, GetValidDrivesList will not check for the minimum space on the drive. This is useful for floppy drives.

Return Values

Table 187 ▪ GetValidDrivesList Return Values

Return Value	Description
0	GetValidDrivesList successfully retrieved the requested list.
< 0	GetValidDrivesList was unable to retrieve the list.

Additional Information

- You can specify the type of drive to search for and the minimum amount of disk space that must be available before the drive is listed.
- Network mapping drives can be returned as remote drives. GetValidDrivesList might not return all drives on the network. Those drives designated as mapping drives only are returned.

GetValidDrivesList Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetValidDrivesList function.
 *
 * GetValidDrivesList is called twice: once to return a list of
 * removable drives that have a minimum of 120,000 bytes free,
 * then again to return a list of fixed drives that have a
 * minimum of 1,000,000 bytes free.
 *
\*---------------------------------------------------------------*/

#define TITLE         "GetValidDrivesList Example"
#define MSG_REMOVABLE "Removable drives with 120,000 bytes free:"
#define MSG_FIXED     "Fixed drives with 1,000,000 bytes free."
#define MSG_ERR       "GetValidDrivesList failed."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetValidDrivesList(HWND);

function ExFn_GetValidDrivesList(hMSI)
    LIST   listID;
begin

    // Create a list to hold the removable drive names.
    listID = ListCreate (STRINGLIST);

    // Get removable drives with at least 120,000 bytes free.
    if (GetValidDrivesList (listID, REMOVEABLE_DRIVE, 120000) < 0) then
        // Report an error; then terminate.
        MessageBox (MSG_ERR, SEVERE);
        abort;
    else
        // Display the list of removable drives.
        SdShowInfoList (TITLE, MSG_REMOVABLE, listID);
    endif;

    // Destroy the list of removable drives.
    ListDestroy (listID);

    // Create a list to hold the fixed drive names.
    listID = ListCreate (STRINGLIST);

    // Get fixed drives with at least one million bytes free.
    if (GetValidDrivesList (listID, FIXED_DRIVE, 1000000) < 0) then
        // Report an error; then terminate.
```

```
        MessageBox (MSG_ERR, SEVERE);
        abort;
    else
        // Display the list of fixed drives.
        SdShowInfoList (TITLE, MSG_FIXED, listID);
    endif;

end;
```

GetWCHARArrayFromISStringArray

The **GetWCHARArrayFromISStringArray** function returns a pointer to an array of pointers to Unicode character strings that are contained in the specified array.

Syntax

```
GetWCHARArrayFromISStringArray ( vArray );
```

Parameters

Table 188 ▪ GetWCHARArrayFromISStringArray Parameters

Parameter	Description
vArray	Specifies the string array to which you want a pointer.

Return Values

Table 189 ▪ GetWCHARArrayFromISStringArray Return Values

Return Value	Description
pointer	A pointer to an array of pointers to Unicode character strings.
< ISERR_SUCCESS	Indicates that the function failed.

Additional Information

The **GetWCHARArrayFromISStringArray** function allocates additional memory for the array of pointers and the Unicode character strings. This pointer can be passed to functions that take LPWSTR* arguments. After you are done with the newly created array, call DeleteWCHARArray to delete the array from memory.

If you call CopyCHARArrayToISStringArray to write the data from the array of pointers back to the original string array, be careful when modifying strings that are contained in the array. Since the lengths of the strings that are contained in string arrays are managed internally by the installation, if you change the length of a string the entire string will not be copied back to the original array when you call **CopyCHARArrayToISStringArray**.

GetWindowHandle

The **GetWindowHandle** function gets the handle of the main window of the installation.

Syntax

```
GetWindowHandle ( nHwndFlag );
```

Parameters

Table 190 ▪ GetWindowHandle Parameters

Parameter	Description
nHwndFlag	Specifies the window handle of InstallShield's main window. Pass the predefined constant HWND_INSTALL in this parameter.

Return Values

Table 191 ▪ GetWindowHandle Parameters

Return Value	Description
X	Where X is the handle of the window.
< 0	GetWindowHandle was unable to retrieve the handle.

GetWindowHandle Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the GetWindowHandle function.
 *
 * This script starts the setup in a normal window.  After three
 * seconds, the window is minimized.  Then after another pause,
 * the window is maximized and a message box is displayed.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_GetWindowHandle(HWND);

function ExFn_GetWindowHandle(hMSI)
    NUMBER nHwnd;
    HWND hInstallHwnd;
begin

    // Specify a standard window for this setup.
    Enable (DEFWINDOWMODE);

    // Display the background window.
    Enable (BACKGROUND);
```

```
    // Get the setup's window handle.
    nHwnd = GetWindowHandle (HWND_INSTALL);

    // Wait three seconds.
    Delay (3);

    // Send system command to minimize the window.
    SendMessage (nHwnd, WM_SYSCOMMAND, SC_MINIMIZE, 0);

    // Wait three seconds.
    Delay (3);

    // Send system command to maximize the window.
    SendMessage (nHwnd, WM_SYSCOMMAND, SC_MAXIMIZE, 0);

    // Display a message.
    MessageBox ("Demo completed.", INFORMATION);

end;
```

Built-In Functions (H-P)

For a list of functions by category, see Built-In Functions by Category.

Handler

The **Handler** function is obsolete. Use HandlerEx instead.

HandlerEx

The **HandlerEx** function creates custom handlers for events such as the Help accelerator key (F1) and the Cancel button.

If the end user presses the F1 key, the currently defined HELP handler is executed. If the user presses the Cancel button, the currently defined EXIT handler is executed. If you have not defined custom HELP or EXIT handlers using the **HandlerEx** function, the default handlers are executed. The default EXIT handler displays the Exit dialog. The default HELP handler does nothing.

To execute custom handlers defined using **HandlerEx**, the InstallScript engine calls a unique label that is specified in the parameter Label when the nObject event occurs. When the InstallScript engine reaches a return statement in the handler code (under the label), control returns to the statement that would have executed next if the handler label were not called.

Using **HandlerEx**, you can specify custom handling of EXIT or HELP. You can display the **MessageBox**, **SprintfBox**, and **AskYesNo** dialogs inside Exit handlers; however, you cannot display Sd dialogs.

Syntax

```
HandlerEx (nObject, Label);
```

Parameters

Table 1 ▪ HandlerEx Parameters

Parameter	Description
nObject	Specifies the event to trap. Pass one of the following predefined constants in this parameter: • **EXIT**—Specifies that a custom handler is called when the Cancel button is pressed. If you do not define a handler, a default Exit dialog appears when the Cancel button is pressed. • **HELP**—Specifies that a custom handler is called when the F1 accelerator key is pressed. If you do not define a handler, nothing happens when the F1 accelerator key is pressed.
Label	Specifies the name of the label to which the program should jump if the specified button or accelerator key is pressed. Do not define this label as a numeric value or as a string variable. To cancel a currently defined handler and reinstall the default handler, pass -1 in this parameter. This method is useful in scripts that install a custom handler only for certain processes and then revert to the default handler.  ***Caution ▪*** *Do not define the label name as a numeric value or as a string variable.*

Return Values

Table 2 ▪ HandlerEx Return Values

Return Value	Description
0	**HandlerEx** successfully created the handle.
< 0	**HandlerEx** was unable to create the handle.

Additional Information

- The only accelerator available is the F1 function key (Help).
- Help (F1) allows you to launch the help engine or provide other suitable help. When the end user presses the F1 key, the InstallScript engine calls the currently defined Help handler. You can provide any type of help functionality in the Help handler. If you want to provide context-sensitive help, you must keep track of the context in your script.

  For example, you can have a string variable that contains a current context string. You can then use that string variable in a switch-case statement inside the Help handler to execute the appropriate Help events based on the value of the context string. You can also test the value of the nSdDialog global variable in your Help handling routine. nSdDialog is set to the dialog ID (as described in `_isres.h` in the *`InstallShield`*

Program Files Folder\Script\Isrt\Include folder) of the currently executing Sd dialog. (When no Sd dialog is executing, nSdDialog is not defined.) You can therefore give the user access to Sd dialog-specific help when an Sd dialog is executing.

- As with Help handlers, you can also define and execute custom and Sd dialog-specific EXIT handlers.

HandlerEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the HandlerEx function.
 *
 * This script shows how to install error and help handlers in
 * an installation.
 *
 * First, the handlers are installed. Then Sd dialogs are
 * displayed to the end user. The handler code is invoked if
 * the end user presses F1 (help) or clicks the cancel
 * button while the dialogs are displayed.
 *
 * Note that the script uses the InstallScript Language
 * Reference and Help Library help files for demonstration purposes.
 * Insert copies of these files (Langref.chm and HelpLib.chm from
 * the InstallShield Program Files Folder\Program folder) in the
 * Language Independent area of the Support Files/Billboards view.
\*---------------------------------------------------------------*/

// Included header files ------------------------------------------------
#include "ifx.h"

export prototype void ExFn_Handler();
prototype OnHelp_Handler();
prototype OnExit_Handler();

// Define help topic IDs
#define HELP_WELCOME      101
#define HELP_REGISTERUSER 102

INT    nHelpID;

function void ExFn_Handler()
    STRING svName, svCompany, szMsg;
begin
    // Install the help handler.
    HandlerEx (HELP, OnHelp_Handler);

    // Install the exit handler.
    HandlerEx (EXIT, OnExit_Handler);
```

```
    // Set message for display in dialogs.
    szMsg = "Press F1 to display InstallShield's " +
        "help for this dialog.\n" +
        "Press Cancel to invoke the custom exit handler.";

WelcomeDialog:
    // Set the help topic ID.
    nHelpID = HELP_WELCOME;

    // Display the Welcome dialog.
    SdWelcome ("SdWelcome Dialog", szMsg);

    // Set the help topic ID.
    nHelpID = HELP_REGISTERUSER;

    if SdRegisterUser ("Register", szMsg, svName, svCompany) = BACK then
        // Go back to the Welcome dialog.
        goto WelcomeDialog;
    endif;

end;

function OnHelp_Handler()
    STRING szHelpTopic;
begin
    // Set the topic to be displayed from the help.
    switch (nHelpID)
        case HELP_WELCOME      : szHelpTopic = "5223 ";
        case HELP_REGISTERUSER : szHelpTopic = "5211 ";
    endswitch;

    // Launch the InstallScript language reference and
    // display the selected help topic.

    LaunchApplication (WINDIR ^ "hh.exe", "-mapid " + szHelpTopic +
                       SUPPORTDIR ^ "Help_Lib.chm",
                       "", SW_SHOW, INFINITE, LAAW_OPTION_WAIT);
end;

function OnExit_Handler()
begin
    // Ask for confirmation to abort.
    if AskYesNo ("Do you really want to exit?", FALSE) = YES then
        // Abort the setup.
        abort;
    else
        // Return to the setup.
        return 0;
    endif;
end;
```

HIBYTE

Project ▪ *This information applies to InstallScript projects.*

The **HIBYTE** function extracts the high-order byte from the 16-bit integer value specified by shValue.

Syntax

```
HIBYTE ( shValue );
```

Parameters

Table 3 ▪ HIBYTE Parameters

Parameter	Description
shValue	Specifies the 16-bit integer from which you want to extract the higher byte.

Return Values

This function returns the high-order byte of the integer.

HIWORD

The **HIWORD** function extracts and returns the high-order word (upper two bytes) from the 32-bit integer value specified by lValue.

InstallShield's HIWORD differs from the corresponding C macro in that it uses sign extension. As a result, the high-order bytes of the value returned by HIWORD are filled with ones if lValue is negative. If necessary, you can use the bitwise AND operator (&) to combine the result with 0xFFFF to produce a positive value, as shown below:

```
lValue = HIWORD(lValue);
lValue = lValue & 0xFFFF;
```

Syntax

```
HIWORD ( lValue );
```

Parameters

Table 4 ▪ HIWORD Parameters

Parameter	Description
lValue	Specifies the 32-bit integer from which to extract the upper two bytes.

Return Values

HIWORD returns the high-order word (upper two bytes) of lValue.

HIWORD Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates HIWORD and LOWORD.
 *
 * This example script shows how to use HIWORD and LOWORD to
 * to get the low-order word and the high-order word from a value.
\*---------------------------------------------------------------*/

#define TITLE_TEXT "LOWORD/HIWORD Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_HIWORD(HWND);

function ExFn_HIWORD(hMSI)
    STRING  szMsg;
    NUMBER  nData, nLOWORD, nHIWORD;
begin

    nData = 305419896; // hex value: 12345678
    // Get the low-order word, 22136 (hex value: 5678).

    nLOWORD = LOWORD (nData);

    // Get the high-order word, 4660 (hex value: 1234).
    nHIWORD  = HIWORD (nData);

    // Display the results.
    szMsg  = "LOWORD: %ld\nHIWORD: %ld";
    SprintfBox (INFORMATION, TITLE_TEXT, szMsg, nLOWORD, nHIWORD);
```

```
end;
```

InstallationInfo

The **InstallationInfo** function is obsolete. Use the CreateInstallationInfo function instead.

Syntax

```
InstallationInfo (szCompany, szProduct, szVersion, szProductKey);
```

Is

The **Is** function retrieves information commonly needed in a script.

Syntax

```
Is ( nIsFlag, szIsData );
```

Parameters

Table 5 ▪ Is Parameters

Parameter	Description
nIsFlag	Specifies the type of information to retrieve. Pass one of the following predefined constants in this parameter: • **BACKBUTTON**—Is the Back button that is displayed in some built-in dialogs enabled? • **CANCELBUTTON**—Is the Cancel button that is displayed in some built-in dialogs enabled? • **DOTNETFRAMEWORKINSTALLED**—Is a particular version of the .NET Framework or language pack installed? For more information on the predefined values that are supported, see the Additional Information section. • **DOTNETSERVICEPACKINSTALLED**—Is a particular service pack—or a later version of the service pack—of the .NET Framework installed? For more information on the predefined values that are supported, see the Additional Information section. • **DIR_WRITEABLE**—Can the installation write to the directory that is specified in szIsData? • **FILE_EXISTS**—Does the file that is specified in szIsData exist? • **FILE_LOCKED**—Is the file locked? Note that **Is** returns TRUE if the file is not accessible because of insufficient privileges. • **FILE_WRITEABLE**—Can the installation write to the file specified in szIsData? • **FONT_AVAILABLE**—Is the font with the title that is specified in szIsData installed? Note that the function searches for the font in all character sets. To search in a single character set, call the Windows API function **EnumFontFamiliesEx**; for details on this function, see Microsoft's Windows API documentation. • **FUNCTION_EXPORTED**—Does the DLL that is specified in szIsData export the function specified in szIsData? **Is** returns TRUE if the DLL exists and can be loaded, and if the function is exported. Otherwise, **Is** returns FALSE. • **LANGUAGE_SUPPORTED**—(InstallScript and InstallScript MSI projects) Does the installation support the language that is specified in szIsData? • **LOGGING**—(InstallScript projects only) Is logging of uninstallation information enabled? • **MATH_COPROCESSOR**—Does a math coprocessor exist in the target system? • **NEXTBUTTON**—Is the Next button that is displayed by some built-in dialogs enabled? On most dialogs, the Next button is enabled by default. • **PATH_EXISTS**—Does the path that is specified in szIsData exist? • **REGDBREMOTEREGCONNECTED**—Is a remote registry currently connected? • **REBOOTED**—Is the installation running after a reboot?

Table 5 ▪ Is Parameters (cont.)

Parameter	Description
nIsFlag (cont.)	• **SETUP_PACKAGE**—(InstallScript projects only) Is the setup running from a self-extracting executable file? During maintenance mode or during uninstallation, Is(SETUP_PACKAGE, szIsData) returns TRUE if the original installation was a self-extracting executable file (although maintenance or uninstallation runs not from the self-extracting executable file, but from the copy of `Setup.exe` in the DISK1TARGET folder). • **SKIN_LOADED**—Is a dialog skin loaded? • **URL**—Is the string that is specified in szIsData a URL? (That is, does the string begin with "http://" or "https://" or "file://" or "ftp://"?) • **USER_ADMINISTRATOR**—Does the current user have administrator privileges? **Is** returns TRUE when USER_ADMINISTRATOR is passed in nFlag in all cases, except for some cases on Windows Vista and later systems; on these later systems, **Is** returns TRUE if the USER_ADMINISTRATOR is passed in nFlag and the SE_GROUP_USE_FOR_DENY_ONLY security identifier (SID) attribute is not set for the group. That is, if the current user is in the Administrators group but that user is running the installation with a standard access token on Windows Vista or later, **Is** returns FALSE. • **USER_INADMINGROUP**—Is the current user in the Administrators group? **Is** returns TRUE for this constant, regardless of whether the SE_GROUP_USE_FOR_DENY_ONLY SID attribute is set for the group (that is, regardless of whether the user with administrative privileges is running the installation with a standard access token). • **USER_POWERUSER**—Does the current user belong to the Power Users group? • **VALID_PATH**—Is the path specified in szIsData a legal path? This will not confirm the existence of a path, it will only check its syntax. You can use this constant when you retrieve path information from the user. The function will then check to see if the path information was entered correctly. A valid URL string meets the following criteria: (1) It begins with **http://**, **https://**, or **file://** . (2) It contains only numbers, letters, and the following characters: ! $ % & ' ( ) * + - . / \ _
nIsFlag (cont.)	• **WEB_BASED_SETUP**—(InstallScript projects only) Is the installation being run from the Internet?  ***Note ▪*** *Is(WEB_BASED_SETUP,szIsData) checks whether the current instance of the installation is being run from the Web. For this reason, when the installation is run from Add or Remove Programs, Is(WEB_BASED_SETUP,szIsData) always returns FALSE, since in that case the installation is always being run from the local files even if the original installation was run from the Web.* • **WINDOWS_SHARED**—Is Microsoft Windows running a shared copy from a network? A shared copy of Microsoft Windows is installed on a network and has common files that are shared by many users.

Table 5 ▪ Is Parameters (cont.)

Parameter	Description
szIsData	Specifies information that is dependent on the constant that is passed in nIsFlag, as shown below. Note that if the path or file name is enclosed in quotation marks, **Is** fails. To ensure that the path or file name is not enclosed in quotation marks, call LongPathToQuote(szIsData, FALSE) before calling **Is**. The following list provides an explanation of what szIsData should contain when each nIsFlag option is specified: • **DIR_WRITEABLE**—szIsData specifies the fully qualified path to be checked. • **DOTNETFRAMEWORKINSTALLED**—szIsData specifies the version of the .NET Framework or language pack to check. For more information on the predefined values that are supported, see the Additional Information section. • **DOTNETSERVICEPACKINSTALLED**—szIsData specifies the minimum service pack and version of the .NET Framework to check, in the following format: *Service Pack Number*|*.NET Version Registry Constant or Path* *Service Pack Number* indicates the number of the minimum service pack. For the .NET Framework 1.0, the value can be 0 through 3. For the .NET Framework 1.1 and later, all numeric values are supported. Both the service pack number and the pipe character (|) delimiter must be included; otherwise, the function returns failure. *.NET Version Registry Constant or Path* indicates the registry constant or registry path that shows the version of the .NET Framework to check. For more information on the predefined values that are supported and to learn how the **Is** function performs the check, see the Additional Information section. • **FILE_EXISTS**—szIsData specifies the fully qualified file name. You can specify a valid URL in this parameter. To check the validity of a URL, call Is(VALID_PATH, szIsData). • **FILE_LOCKED**—szIsData specifies the fully qualified file name. • **FILE_WRITEABLE**—szIsData specifies the fully qualified file name. • **FONT_AVAILABLE**—szIsData specifies the font title. • **FUNCTION_EXPORTED**—szIsData specifies the fully qualified file name of the DLL followed by a pipe character (|) and the name of the function; for example: *C:\\MyDLLFolder\\MyDLL.dll*|*MyFunction* • **LANGUAGE_SUPPORTED**—szIsData specifies the path to the `Setup.ini` file and the language ID, in the following format: *Path to Setup.ini*|*Language ID* If the path to `Setup.ini` is not specified, the current installation is used. If the language ID is not specified, SELECTED_LANGUAGE is used. The language ID should be a four-digit hexadecimal language code, including the 0x prefix. For example, if for English, the value should be 0x0409. To build a string with STANDARD_SELECTED_LANGUAGE in this format, use a statement such as: `Sprintf (szLang, "0x%.04lx", STANDARD_SELECTED_LANGUAGE);`

Table 5 ▪ Is Parameters (cont.)

Parameter	Description
szIsData (cont.)	• **LOGGING**—szIsData is ignored. • **MATH_COPROCESSOR**—szIsData specifies szIsData is ignored. • **PATH_EXISTS**—szIsData specifies the fully qualified path. You can specify a valid URL in this parameter. To check the validity of a URL, call Is(VALID_PATH, szIsData). • **REGDBREMOTEREGCONNECTED**—szIsData is ignored. • **SETUP_PACKAGE**—szIsData is ignored. • **SKIN_LOADED**—szIsData is ignored. • **USER_ADMINISTRATOR**—szIsData is ignored. • **USER_POWERUSER**—szIsData is ignored. • **VALID_PATH**—szIsData specifies the fully qualified path. • **WEB_BASED_SETUP**—szIsData is ignored. • **WINDOWS_SHARED**—szIsData is ignored.

Return Values

Table 6 ▪ Is Return Values

Return Value	Description
TRUE (1)	Indicates that the answer is true.
FALSE (0)	Indicates that the answer is false.
< 0	The Is function was unable to answer the question.

Additional Information

.NET Framework Version and Service Details

The following predefined constants are supported for specifying a particular version of the .NET Framework using DOTNETFRAMEWORKINSTALLED or DOTNETSERVICEPACKINSTALLED:

- REGDB_KEYPATH_DOTNET_40_CLIENT
- REGDB_KEYPATH_DOTNET_40_FULL
- REGDB_KEYPATH_DOTNET_35
- REGDB_KEYPATH_DOTNET_30_SP—Use this variable to detect whether the SP1 (or a later service pack) of the .NET Framework 3.0 is installed.
- REGDB_KEYPATH_DOTNET_30—Use this variable to detect whether the RTM version of the .NET Framework 3.0 is installed.

- REGDB_KEYPATH_DOTNET_20
- REGDB_KEYPATH_DOTNET_11
- REGDB_KEYPATH_DOTNET_10

***Tip** ▪ Since each of these predefined constants correspond to the appropriate registry path under HKEY_LOCAL_MACHINE, you can also specify a registry path directly in szIsData for DOTNETFRAMEWORKINSTALLED or DOTNETSERVICEPACKINSTALLED.*

The installation of the .NET Framework 3.0 writes the registry value InstallSuccess, with 1 as the value data, in the following registry location:

`HKEY_LOCAL_MACHINE\Software\Microsoft\NET Framework Setup\NDP\v3.0\Setup\`

Therefore, REGDB_KEYPATH_DOTNET_30 is set to that location.

The installations of all other versions of the .NET Framework write the registry value Install with a value data of 1 in the following registry location:

`HKEY_LOCAL_MACHINE\Software\Microsoft\NET Framework Setup\NDP\`*`Version Number`*`\`

The REGDB_KEYPATH_DOTNET_35, REGDB_KEYPATH_DOTNET_20, REGDB_KEYPATH_DOTNET_11, and REGDB_KEYPATH_DOTNET_10 constants are set to the appropriate values, based on that path.

Note that the installation of the .NET Framework 3.0 SP1 also writes the registry value Install with a value data of 1 in the following registry location:

`HKEY_LOCAL_MACHINE\Software\Microsoft\NET Framework Setup\NDP\v3.0\`

Therefore, REGDB_KEYPATH_DOTNET_30_SP is set to that location.

If you use the **Is** function with the DOTNETFRAMEWORKINSTALLED constant, the function automatically checks for both the Install and InstallSuccess values. If the Install or InstallSuccess value exists and its value data is set to 1, **Is** returns TRUE. Otherwise, **Is** returns FALSE.

The .NET Framework 1.0 service pack installations do not create registry values that indicate the service pack number. Therefore, if you use DOTNETSERVICEPACKINSTALLED to test for the .NET Framework 1.0, the Is function compares the version of the `mscorlib.dll` file in FOLDER_DOTNET_10 against known version numbers to determine the service pack:

- SP3 is present if the version of `mscorlib.dll` is 1.0.3705.6018 or later.
- SP2 is present if the version of `mscorlib.dll` is 1.0.3705.288 or later, but earlier than 1.0.3705.6018.
- SP1 is present if the version of `mscorlib.dll` is 1.0.3705.209 or later, but earlier than 1.0.3705.288.
- The original RTM version is present if the version of `mscorlib.dll` is 1.0.3705.0 or later, but earlier than 1.0.3705.209.

If you use DOTNETSERVICEPACKINSTALLED to test for any of the other .NET Framework versions, the function compares the REGDB_VALUENAME_SP value under the .NET version registry constant or path that is specified in szIsData with the service pack number that is specified in szIsData. Note that the comparison is an equal-to-or-later-than version comparison; therefore, if you specify a service pack of 2 in szIsData, the function returns true whenever service pack 2 or later is installed.

.NET Framework Language Pack Details

Version 1.1 and later of the .NET Framework includes support for language packs; version 1.0 does not. For version 1.1 and later of the .NET Framework, you can test whether a particular .NET language pack is installed through the DOTNETFRAMEWORKINSTALLED constant by specifying the appropriate .NET version constant and the locale identifier (LCID) of the language (converted to a string). Separate the .NET version constant and the LCID with the caret operator. For example, use the following syntax to test whether the German language pack for .NET Framework 1.1 is installed:

```
NumToStr( szLang, ISLANG_GERMAN_STANDARD );

REGDB_KEYPATH_DOTNET_11 ^ szLang;
```

As documented by Microsoft, the .NET Framework 1.1 supports the following LCIDs:

Table 7 ▪ Supported .NET LCIDs

Language	LCID	Corresponding Is Constant
Chinese (Simplified)	2052 (0x0804)	ISLANG_CHINESE_SIMPLIFIED
Chinese (Traditional)	1028 (0x0404)	ISLANG_CHINESE_TRADITIONAL
Czech	1029 (0x0405)	ISLANG_CZECH_STANDARD
Danish	1030 (0x0406)	ISLANG_DANISH_STANDARD
Dutch	1043 (0x0413)	ISLANG_DUTCH_STANDARD
Finnish	1035 (0x040B)	ISLANG_FINNISH_STANDARD
French	1036 (0x040C)	ISLANG_FRENCH_STANDARD
German	1031 (0x0407)	ISLANG_GERMAN_STANDARD
Greek	1032 (0x0408)	ISLANG_GREEK_STANDARD
Hungarian	1038 (0x040E)	ISLANG_HUNGARIAN_STANDARD
Italian	1040 (0x0410)	ISLANG_ITALIAN_STANDARD
Japanese	1041 (0x0411)	ISLANG_JAPANESE_STANDARD
Korean	1042 (0x0412)	ISLANG_KOREAN_STANDARD
Norwegian	1044 (0x0414)	ISLANG_NORWEGIAN_BOKMAL
Polish	1045 (0x0415)	ISLANG_POLISH_STANDARD
Portuguese (Brazilian)	1046 (0x0416)	ISLANG_PORTUGUESE_BRAZILIAN
Portuguese (Portugal)	2070 (0x0816)	ISLANG_PORTUGUESE_STANDARD

Table 7 ▪ Supported .NET LCIDs (cont.)

Language	LCID	Corresponding Is Constant
Russian	1049 (0x0419)	ISLANG_RUSSIAN_STANDARD
Spanish	3082 (0x0C0A)	ISLANG_SPANISH_MODERNSORT
Swedish	1053 (0x041D)	ISLANG_SWEDISH_STANDARD
Turkish	1055 (0x041F)	ISLANG_TURKISH_STANDARD

Is Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Is function.
 *
 * The Is function is first called to check if a file is write
 * protected.  It is called a second time to check if the
 * directory is write protected.  This is useful for checking
 * the write protection of directories on a network. The third
 * time the Is function is called, the function checks if Windows
 * is installed on a network server or if it is installed on the
 * local system.
 *
 * Note: Before running this script, set the defined constants
 *       so that they point to an existing file on the target
 *       system.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR   "C:\\WINDOWS"
#define EXAMPLE_FILE  EXAMPLE_DIR^"Win.com"
#define TITLE         "Is Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Is(HWND);

function ExFn_Is(hMSI)
     NUMBER nResult;
begin

    // Check if the EXAMPLE_FILE file is write-protected.
    nResult  = Is (FILE_WRITEABLE, EXAMPLE_FILE);
```

```
    // Report the results.
    if (nResult = TRUE) then
        SprintfBox (INFORMATION, TITLE, "%s is writeable.", EXAMPLE_FILE);
    elseif (nResult = FALSE) then
        SprintfBox (INFORMATION, TITLE, "%s is not writeable.", EXAMPLE_FILE);
    else
        SprintfBox (INFORMATION, TITLE,
                    "Unable to determine if %s is writeable.", EXAMPLE_FILE);
    endif;

    // Check if the directory is write-protected.
    nResult  = Is (DIR_WRITEABLE, EXAMPLE_DIR);

    // Report the results.
    if (nResult = TRUE) then
        SprintfBox (INFORMATION, TITLE, "%s is writeable.", EXAMPLE_DIR);
    elseif (nResult = FALSE) then
        SprintfBox (INFORMATION, TITLE, "%s is not writeable.", EXAMPLE_DIR);
    else
        SprintfBox (INFORMATION, TITLE,
                    "Unable to determine if %s is writeable.", EXAMPLE_DIR);
    endif;

    // Check if Windows is being shared on a network.
    nResult  = Is (WINDOWS_SHARED, "");

    // Report the results.
    if (nResult = TRUE) then
        MessageBox ("Windows is shared.", INFORMATION);
    elseif (nResult = FALSE) then
        MessageBox ("Windows is not shared.", INFORMATION);
    else
        MessageBox ("Unable to determine if Windows is shared.", SEVERE);
    endif;

end;
```

ISCompareServicePack

The **ISCompareServicePack** function is supported only for compatibility with scripts created in InstallShield Professional. It is recommended that you determine the Windows service pack number by checking the value of SYSINFO.WINNT.nServicePack instead.

The **ISCompareServicePack** function compares the service pack number installed on a Windows system to the service pack number specified by szServicePack.

Syntax

```
ISCompareServicePack ( szServicePack );
```

Parameters

Table 8 ▪ ISCompareServicePack Parameters

Parameter	Description
szServicePack	Specifies the Service Pack number to be compared with the Service Pack number on the target computer. This string must be in the format “Service Pack n”, where n is the Service Pack number. The comparison is case sensitive.

Return Values

Table 9 ▪ ISCompareServicePack Return Values

Return Value	Description
LESS_THAN (1)	No Service Pack is installed or the Service Pack number on the target system is less than the value passed in szServicePack.
EQUALS (2)	The Service Pack numbers match.
GREATER_THAN (0)	The Service Pack number on the target system is greater than the number passed in szServicePack.
-1	ISCompareServicePack failed to compare the Service Pack numbers.

ISCompareServicePack Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ISCompareServicePack function.
 *
 * Note: ISCompareServicePack is defined in Sdint.rul.
 *
\*---------------------------------------------------------------*/
#define SERVICE_PACK "Service Pack 3"

// Include Ifx.h for built-in InstallScript function prototypes.
```

```
#include "Ifx.h"

   export prototype ExFn_ISCompareServicePack(HWND);

function ExFn_ISCompareServicePack(hMSI)
    BOOL bWinNT;
    NUMBER nvResult;
    STRING svResult;
begin

    // Determine which operating system is running.
    GetSystemInfo (OS, nvResult, svResult);

    if (nvResult =  IS_WINDOWSNT) then
        // Running Windows NT.
        bWinNT = TRUE;

        // Check if Service Pack 3 is installed.
        nvResult = ISCompareServicePack (SERVICE_PACK);

        if (nvResult < 0) then
            MessageBox ("Error: ISCompareServicePack failed.", SEVERE);
        elseif (nvResult = LESS_THAN) then
            MessageBox ("No service pack or the service pack is less than "
                        + SERVICE_PACK, INFORMATION);
        elseif (nvResult = EQUALS) then
            MessageBox ("The service pack is " + SERVICE_PACK, INFORMATION);
        elseif (nvResult = GREATER_THAN) then
            MessageBox ("The service pack is greater than "
                        + SERVICE_PACK, INFORMATION);
        endif;
    else
        MessageBox ("The target system is not running Windows NT.", SEVERE);
    endif;

end;
```

ISDeterminePlatform

The **ISDeterminePlatform** function sets the system variable SYSINFO, a structured variable whose members are used to specify information about the operating platform of the target computer. ISDeterminePlatform is called directly by the setup engine during setup initialization.

Parameters

None

Return Values

None

IsEmpty

The **IsEmpty** function checks whether a variable of type VARIANT has been initialized.

To check whether a variable of type OBJECT has been assigned a reference to a valid object, call IsObject.

Syntax

```
IsEmpty ( vVariant );
```

Parameters

Table 10 ▪ IsEmpty Parameters

Parameter	Description
vVariant	Specifies the variable to be checked.

Return Values

Table 11 ▪ IsEmpty Return Values

Return Value	Description
TRUE (1)	vVariant has been initialized.
FALSE (0)	vVariant has not been initialized.

IsEmpty Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the IsEmpty function.
 *
\*---------------------------------------------------------------*/

function OnBegin()
    VARIANT vVariant;
    BOOL bEmpty;
    STRING szString;
begin
    bEmpty = IsEmpty ( vVariant );
    /* The message "vVariant is empty." is displayed. */
    if bEmpty then
        MessageBox ( "vVariant is empty." , INFORMATION );
    else
        MessageBox ( "vVariant is not empty." , INFORMATION );
    endif;

    /* Initialize vVariant. */
```

```
    vVariant = szString;

    bEmpty = IsEmpty ( vVariant );
    /* The message "vVariant is not empty." is displayed. */
    if bEmpty then
        MessageBox ( "vVariant is empty." , INFORMATION );
    else
        MessageBox ( "vVariant is not empty." , INFORMATION );
    endif;

    /* Terminate example setup script. */
    abort;
end;
```

IsObject

The **IsObject** function checks whether a variable of type OBJECT has been assigned a reference to a valid object, using the CreateObject or GetObject functions.

Syntax

```
IsObject ( oObject );
```

Parameters

Table 12 ▪ IsObject Parameters

Parameter	Description
oObject	Specifies the variable to be checked.

Return Values

Table 13 ▪ IsObject Return Values

Return Value	Description
TRUE	oObject has been assigned a reference to a valid object.
FALSE	oObject has not been assigned a reference to a valid object.

LaunchApp

The **LaunchApp** function enables you to launch another application from within the script. **LaunchApp** calls LaunchAppAndWait(szCommand, szCmdLine, LAAW_OPTION_NOWAIT). For information on **LaunchApp** parameters and return values, see LaunchAppAndWait.

LaunchApp Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the LaunchApp function.
 *
 * LaunchApp is called to execute an application.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully qualified
 *       names of the Windows Notepad executable and a valid
 *       text file on the target system.
 *
\*---------------------------------------------------------------*/

#define APPLICATION WINDIR^"Notepad.exe"
#define CMD_LINE    WINDIR^"Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LaunchApp(HWND);

function ExFn_LaunchApp(hMSI)
begin

    // Launch the Windows Notepad application to edit
    // the Windows Readme.txt file.
    if (LaunchApp (APPLICATION, CMD_LINE) < 0) then
        MessageBox ("Unable to launch "+APPLICATION+".", SEVERE);
    endif;

end;
```

LaunchAppAndWait

The **LaunchAppAndWait** function enables you to launch another application from within the script. **LaunchAppAndWait** calls the following:

```
LaunchApplication( szProgram, szCmdLine, "", LAAW_STARTUPINFO.wShowWindow, LAAW_PARAMETERS.nTimeOut,
nOptions | LAAW_OPTION_CHANGEDIRECTORY | LAAW_OPTION_FIXUP_PROGRAM );
```

For more information on parameters and return values for **LaunchAppAndWait**, see LaunchApplication.

Syntax

```
LaunchAppAndWait ( szProgram, szCmdLine, nOptions );
```

LaunchAppAndWait Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the LaunchAppAndWait function.
 *
 * This script presents the user with three options:
 *
 * -- Launch Notepad; after it closes, continue setup
 * -- Launch Notepad and continue setup immediately
 * -- Exit installation
 *
 * If the user selects the first option, the installation
 * launches Notepad and then waits for it to close before
 * continuing. If the user selects the second option, the
 * installation launches Notepad and then continues immediately
 * to execute the script. If the user selects the third option,
 * the installation exits.
 *
\*---------------------------------------------------------------*/

#define PROGRAM          WINDIR^"NotePAD.EXE"
#define LAUNCH_WAIT_TEXT "Launch Notepad; after it closes, continue setup"
#define LAUNCH_GO_TEXT   "Launch Notepad and continue setup immediately"
#define EXIT_TEXT        "Exit installation"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LaunchAppAndWait(HWND);

function ExFn_LaunchAppAndWait(hMSI)
    STRING szProgram, szCmdLine, szMsg;
    BOOL bLaunchAndGo, bLaunchAndWait, bExit;
    NUMBER nWait;
begin

    // Run the installation in a normal Window;
    Enable (BACKGROUND);
    Enable (DEFWINDOWMODE);

    // Disable the Back button in installation dialogs.
    Disable (BACKBUTTON);

    // Get an option from the user.
    AskOptions (EXCLUSIVE, "Test",
               LAUNCH_WAIT_TEXT, bLaunchAndWait,
               LAUNCH_GO_TEXT, bLaunchAndGo,
               EXIT_TEXT, bExit);
```

```
    if !bExit then

        // Set variable to pass to LaunchAppAndWait
        // to indicate whether or not to wait.
        if bLaunchAndWait then
            nWait = WAIT;
        else
            nWait = NOWAIT;
        endif;

        // Launch Notepad; the value of nWait determines
        // when execution of the installation continues.
        if (LaunchAppAndWait (PROGRAM, "", nWait) < 0) then
            MessageBox ("Unable to launch "+ PROGRAM +".",SEVERE);
        endif;

        MessageBox ("Setup will now exit.", INFORMATION);

    endif;

end;
```

LaunchAppAndWaitInitStartupInfo

The **LaunchAppAndWaitInitStartupInfo** function initializes the LAAW_STARTUPINFO and LAAW_PARAMETERS system variables to the appropriate default values. This function is called automatically during installation initialization.

Syntax

```
LaunchAppAndWaitInitStartupInfo ( );
```

System Variables

Table 14 ▪ LaunchAppAndWaitInitStartupInfo System Variables

System Variable	Default Value
LAAW_STARTUPINFO.cb	SizeOf(LAAW_STARTUPINFO)
LAAW_STARTUPINFO.lpReserved	NULL
LAAW_STARTUPINFO.lpDesktop	NULL
LAAW_STARTUPINFO.lpTitle	NULL
LAAW_STARTUPINFO.wShowWindow	SW_SHOWDEFAULT
LAAW_STARTUPINFO.lpReserved2	NULL
LAAW_STARTUPINFO.cbReserved2	0
LAAW_STARTUPINFO.dwFlags	STARTF_USESHOWWINDOW
LAAW_PARAMETERS.szStatusText	""
LAAW_PARAMETERS.szCommandLineResult	""
LAAW_PARAMETERS.lpProcessAttributes	NULL
LAAW_PARAMETERS.lpThreadAttributes	NULL
LAAW_PARAMETERS.bInheritHandles	FALSE
LAAW_PARAMETERS.dwCreationFlags	NORMAL_PRIORITY_CLASS
LAAW_PARAMETERS.lpEnvironment	NULL
LAAW_PARAMETERS.lpCurrentDirectory	NULL
LAAW_PARAMETERS.nCallbackInterval	1000
LAAW_PARAMETERS.nLaunchResult	0

Parameters

None.

Return Values

Table 15 ▪ LaunchAppAndWaitInitStartupInfo Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

LaunchApplication

The **LaunchApplication** function launches and optionally waits for the specified application.

LaunchApplication uses either the Windows API function CreateProcess or the Windows API function ShellExecuteEx (if nOptions includes LAAW_OPTION_USE_SHELLEXECUTE) to launch the specified application. After the application is launched, if the LAAW_OPTION_WAIT or LAAW_OPTION_WAIT_INCL_CHILD options are specified, the installation calls WaitForApplication to wait for the application to terminate; once the process has completed or the specified timeout value has elapsed, the installation continues.

Syntax

```
LaunchApplication( byval string szProgram, byval string szCmdLine, byval string szDirectory, byval
    number nShowWindow, byval number nTimeOut, byval number nOptions );
```

Parameters

Table 16 ▪ LaunchApplication Parameters

Parameter	Description
szProgram	Specifies the complete path and file name of the application to be launched. If nOptions does not include LAAW_OPTION_USE_SHELLEXECUTE, you can instead specify the file name of the application to be launched in the szCmdLine parameter; if you do so, pass an empty string ("") in the szProgram parameter. The szProgram parameter supports URLs only if the LAAW_OPTION_USE_SHELLEXECUTE option is used.
szCmdLine	Specifies the command-line parameters to pass to the launched application. To launch the application with no command-line parameters, pass a null string (""). If nOptions does not include LAAW_OPTION_USE_SHELLEXECUTE, you can also specify the file name of the application to be launched in the szCmdLine parameter; if you do so, be sure to do the following: ● Separate the path to the application and the command line with a single space. ● If the fully qualified name of the application includes long folder names and/or a long file name, pass it to LongPathToQuote before adding it to szCmdLine. For example: `szApplicationPath = WINDIR ^ "Notepad.exe";` `szApplicationCmdLine = SRCDIR ^ "Readme.txt";` `LongPathToQuote( szApplicationPath, TRUE );` `szCmdLine = szApplicationPath + " " + szApplicationCmdLine;`
szDirectory	Specifies the working directory for the application. Note that if an empty string ("") is specified (and LAAW_OPTION_USE_SHELLEXECUTE is not specified), the function passes NULL to **CreateProcess** instead of an empty string.

Table 16 ▪ LaunchApplication Parameters (cont.)

Parameter	Description
nShowWindow	Specifies the initial window state of the application as passed to **CreateProcess** in the wShowWindow parameter of the STARTUPINFO structure, or passed to **ShellExecuteEx** in the nShow parameter of the SHELLEXECUTEINFO structure (if LAAW_OPTION_USE_SHELLEXECUTE is specified). You can specify any documented value for the aforementioned functions; some values are predefined in `ISRTWindows.h`: • SW_FORCEMINIMIZE • SW_HIDE • SW_MAX • SW_MAXIMIZE • SW_MINIMIZE • SW_NORMAL • SW_RESTORE • SW_SHOW • SW_SHOWDEFAULT • SW_SHOWMAXIMIZED • SW_SHOWMINIMIZED • SW_SHOWMINNOACTIVE • SW_SHOWNA • SW_SHOWNOACTIVATE • SW_SHOWNORMAL
nTimeOut	Specifies the nTimeOut value (in milliseconds) passed to the **WaitForApplication** function. Note that if you do not specify LAAW_OPTION_WAIT, the specified value is ignored.

Table 16 ▪ LaunchApplication Parameters (cont.)

Parameter	Description
nOptions	Specifies various options, including whether the installation should wait for the launched application to terminate before continuing. Pass one of the following predefined constants in this parameter. You can combine these constants by using the bitwise OR operator (|), with the following exceptions: you cannot combine LAAW_OPTION_NOWAIT with LAAW_OPTION_WAIT, and you cannot combine LAAW_OPTION_HIDDEN, LAAW_OPTION_MINIMIZED, and LAAW_OPTION_MAXIMIZED. • **LAAW_OPTION_USE_SHELLEXECUTE**—Indicates that the function should call the Windows API function **ShellExecuteEx** instead of calling **CreateProcess** to launch the application. • **LAAW_OPTION_NOWAIT**—Passed through the function to **WaitForApplication**. Note that using this parameter is equivalent to calling the function LaunchApp. • **LAAW_OPTION_WAIT**—Passed through the function to **WaitForApplication**. • **LAAW_OPTION_USE_CALLBACK**—Passed through the function to **WaitForApplication**. • **LAAW_OPTION_SET_BATCH_INSTALL**—Specifies that the function internally sets BATCH_INSTALL to a non-zero value if it detects that the launched application causes a change that requires a reboot, such as updating the RunOnce key. The function attempts to determine this by checking the state of the system before launching the specified application and then comparing the current system state after launching the application (and waiting for the application to complete if LAAW_OPTION_WAIT is specified.) This flag can be used when launching third-party installations that do not return status information indicating that a reboot is needed. LAAW_OPTION_SET_BATCH_INSTALL is available for InstallScript event–driven code in InstallScript and InstallScript MSI projects. It does not have any effect in InstallScript custom actions. • **LAAW_OPTION_SHOW_HOURGLASS**—Specifies that the cursor changes to an hourglass while the launched application is running. • **LAAW_OPTION_WAIT_INCL_CHILD**—Passed through the function to **WaitForApplication**.

Table 16 ▪ LaunchApplication Parameters (cont.)

Parameter	Description
nOptions (cont.)	 ***Note ▪*** *When LAAW_OPTION_WAIT_INCL_CHILD is used, the function detects and waits for only direct child processes of the launched process—not for any additional child processes that are launched by child processes of the initially launched process.* *For details about using LAAW_OPTION_USE_SHELLEXECUTE with LAAW_OPTION_WAIT_INCL_CHILD, see the Additional Information.* This parameter also supports the following options, but they are no longer recommended: • **LAAW_OPTION_HIDDEN**—Specifies that the launched application's main window is initially hidden. • **LAAW_OPTION_MINIMIZED**—Specifies that the launched application's main window is initially minimized. • **LAAW_OPTION_MAXIMIZED**—Specifies that the launched application's main window is initially maximized. • **LAAW_OPTION_NO_CHANGEDIRECTORY**—This is obsolete. This parameter is ignored. • **LAAW_OPTION_CHANGEDIRECTORY**—Specifies that **LaunchApplication** should temporarily update the current directory of the installation to that of the application about to be launched. By default, **LaunchApplication** does not modify the current directory of the installation. Note that **LaunchApplication** resets the current directory of the installation back to the original value before **LaunchApplication** returns.  ***Note ▪*** *Calling* **LaunchAppAndWait** *instead of* **LaunchApplication** *automatically includes this option.* • **LAAW_OPTION_FIXUP_PROGRAM** —Specifies that **LaunchApplication** should call LongPathFromShortPath on szProgram in order to ensure that the call to **CreateProcess** or **ShellExecuteEx** works correctly. In most cases, this should not be needed.  ***Note ▪*** *Calling* **LaunchAppAndWait** *instead of* **LaunchApplication** *automatically includes this option.*

Return Values

Table 17 ▪ LaunchApplication Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the application was launched successfully.
< ISERR_SUCCESS	Indicates that the application was not launched successfully.  ***Note ▪*** *If the application cannot be launched, the LAAW_PARAMETERS system variable's nLaunchResult member contains the result of calling the Windows API function* **GetLastError** *after the* **CreateProcess** *or* **ShellExecuteEx** *call. If the function is successful and the LAAW_OPTION_WAIT option was specified, the LAAW_PARAMETERS system variable's nLaunchResult member contains the return code of the launched application.*

Additional Information

- If you are not using LAAW_OPTION_USE_SHELLEXECUTE, update the LAAW_STARTUPINFO system variable before calling **LaunchApplication** to customize the behavior of the application.

  If you are using LAAW_OPTION_USE_SHELLEXECUTE, customize the LAAW_SHELLEXECUTEINFO structure to customize the behavior of the application.

  If you are using LAAW_OPTION_USE_SHELLEXECUTE on systems running Windows Vista or later and you want to launch the application using the full administrator account (similar to right-clicking the executable file to be run and clicking Run as Administrator), set LAAW_SHELLEXECUTEVERB to **runas** before using **LaunchApplication** in your script:

  ```
  LAAW_SHELLEXECUTEVERB = "runas";
  ```

  This ensures that the application is always run with full administrator privileges regardless of whether the application to be launched has an application manifest with relevant settings. Note that this may trigger a User Account Control (UAC) prompt for consent or credentials.

  On systems running operating systems earlier than Windows Vista, if **runas** is used, a Run As dialog box is displayed. The behavior is similar to right-clicking the executable file to be run and clicking Run As. This dialog box enables the end user to select the user account that should be used to run the application.

- To obtain identification information about the launched process, use the LAAW_PROCESS_INFORMATION system variable or the LAAW_SHELLEXECUTEINFO system variable (if you are using LAAW_OPTION_USE_SHELLEXECUTE).

- Note that if you are using LAAW_OPTION_USE_SHELLEXECUTE, the LAAW_PROCESS_INFORMATION is not used, except for the hProcess member. The hProcess member is updated to the process handle of the launched process (from the LAAW_SHELLEXECUTEINFO.hProcess member).

- **ShellExecuteEx** does not return the process ID of the launched process. Thus, if LAAW_OPTION_USE_SHELLEXECUTE is used, the LAAW_OPTION_WAIT_INCL_CHILD option works only if the

Windows API **GetProcessId** is available so that the function can determine the process ID. According to the Windows API documentation, **GetProcessId** is available on Windows XP SP1 and later and Windows Server 2003 and later. If this API is not available, LAAW_OPTION_WAIT_INCL_CHILD behaves as LAAW_OPTION_WAIT.

- When the installation is run from any removable media, such as a CD or a DVD, the `Setup.exe` file on Disk1 may not be available during the entire installation. (If `Setup.exe` becomes unavailable while it is running, the operating system sometimes displays a prompt to request that the end user insert the correct disk, and this may cause the installation to fail.) Therefore, to avoid this problem, the `Setup.exe` file is copied to a Temp folder, and the installation is relaunched from there. The original `Setup.exe` then terminates. However, when this happens, **LaunchApplication** behaves as if the installation has completed, and it does not wait.

  To avoid this issue, you may want to use the `/clone_wait` parameter when you are launching the child installation; when this occurs, the launched installation keeps the original launched process running, and the parent installation then waits. Note, however, that this may cause problems if the original CD containing `Setup.exe` is not available throughout the entire installation. This includes multiple-CD installations, where the first CD is not available during some parts of the installation.

  The only other way to avoid this problem is to add code that determines the ID of the child processes of the launched process and wait for the child process to complete.

LaunchApplicationInit

The **LaunchApplicationInit** function initializes the LAAW_STARTUPINFO and LAAW_PARAMETERS system variables to the appropriate default values. This function is called automatically during installation initialization. This function supersedes the LaunchAppAndWaitInitStartupInfo function.

Syntax

```
LaunchApplicationInit( );
```

System Variables

Table 18 ▪ LaunchApplicationInit System Variables

System Variable	Default Value
LAAW_PARAMETERS.bCallbackEndedWait	FALSE
LAAW_PARAMETERS.bInheritHandles	FALSE
LAAW_PARAMETERS.dwCreationFlags	NORMAL_PRIORITY_CLASS
LAAW_PARAMETERS.lpCurrentDirectory	NULL
LAAW_PARAMETERS.lpEnvironment	NULL
LAAW_PARAMETERS.lpProcessAttributes	NULL
LAAW_PARAMETERS.lpThreadAttributes	NULL
LAAW_PARAMETERS.nCallbackInterval	1000
LAAW_PARAMETERS.nLaunchResult	0
LAAW_PARAMETERS.nTimeOut	INFINITE
LAAW_PARAMETERS.nTimeOutCheckInterval	1000
LAAW_PARAMETERS.nWaitForInputIdleMax	2000
LAAW_PARAMETERS.nWaitResult	WAIT_OBJECT_0
LAAW_PARAMETERS.szCommandLineResult	""
LAAW_PARAMETERS.szStatusText	""
LAAW_SHELLEXECUTEINFO.cbSize	SizeOf(LAAW_SHELLEXECUTEINFO)
LAAW_SHELLEXECUTEINFO.dwHotKey	0
LAAW_SHELLEXECUTEINFO.fMask	SEE_MASK_NOCLOSEPROCESS | SEE_MASK_FLAG_NO_UI
LAAW_SHELLEXECUTEINFO.hIconMonitor	NULL
LAAW_SHELLEXECUTEINFO.hInstApp	NULL
LAAW_SHELLEXECUTEINFO.hkeyClass	NULL
LAAW_SHELLEXECUTEINFO.hProcess	NULL

Table 18 ▪ LaunchApplicationInit System Variables (cont.)

System Variable	Default Value
LAAW_SHELLEXECUTEINFO.hwnd	GetWindowHandle(HWND_INSTALL)
LAAW_SHELLEXECUTEINFO.lpClass	NULL
LAAW_SHELLEXECUTEINFO.lpDirectory	NULL
LAAW_SHELLEXECUTEINFO.lpFile	NULL
LAAW_SHELLEXECUTEINFO.lpIDList	NULL
LAAW_SHELLEXECUTEINFO.lpParameters	NULL
LAAW_SHELLEXECUTEINFO.lpVerb	&LAAW_SHELLEXECUTEVERB
LAAW_SHELLEXECUTEINFO.nShow	SW_SHOWDEFAULT
LAAW_SHELLEXECUTEVERB	"open"
LAAW_STARTUPINFO.cb	SizeOf(LAAW_STARTUPINFO)
LAAW_STARTUPINFO.cbReserved2	0
LAAW_STARTUPINFO.dwFlags	STARTF_USESHOWWINDOW
LAAW_STARTUPINFO.lpDesktop	NULL
LAAW_STARTUPINFO.lpReserved	NULL
LAAW_STARTUPINFO.lpReserved2	NULL
LAAW_STARTUPINFO.lpTitle	NULL
LAAW_STARTUPINFO.wShowWindow	SW_SHOWDEFAULT

Parameters

None.

Return Values

Table 19 ▪ LaunchApplicationInit Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

ListAddItem

The **ListAddItem** function adds a numeric element to a number list before or after the current element.

Note ▪ *ListAddItem works only with numbered lists.*

Task ***To traverse a list:***

1. Call ListGetFirstItem to get the first element in the list.
2. Call ListGetNextItem repeatedly until you reach the end of the list.

To make a specific element in the list the current element, call ListSetIndex.

Syntax

```
ListAddItem ( listID, nItem, nPlacementFlag );
```

Parameters

Table 20 ▪ ListAddItem Parameters

Parameter	Description
listID	Specifies the name of a number list. The list identified by listID must already have been initialized by a call to ListCreate.
nItem	Specifies the numeric element to add to the list.
nPlacementFlag	Specifies where to put nItem relative to the current element. The new element will go either before or after the current element. Pass one of the following predefined constants in this parameter: • **AFTER**—Adds the new element after the current element in the list. • **BEFORE**—Adds the new element before the current element in the list.

Return Values

Table 21 ▪ ListAddItem Return Values

Return Value	Description
> = ISERR_SUCCESS (0)	The function was successful.
< ISERR_SUCCESS (0)	The function was not successful.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListAddItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListAddItem function.
 *
 * First, an empty list is created by a call to ListCreate.
 * Then ListAddItem is called three times to add the numbers
 * 1, 3, and 2 to the list.  Although the numbers are not added
 * in ascending order, they are arranged in that order in the
 * list by means of the placement flag that is passed in the
 * third parameter of each call to ListAddItem.  After the list
 * has been built, it is displayed.  Finally the current element
```

```
 * is displayed.
 *
\*------------------------------------------------------------*/

#define TITLE "ListAddItem Example"
#define MSSG  "The following is a list of the items added:\n\n"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListAddItem(HWND);

function ExFn_ListAddItem(hMSI)
    NUMBER nvItem, nvResult;
    LIST   listID;
    STRING szMsg, svItem;
begin

    // Create an empty number list.
    listID = ListCreate (NUMBERLIST);

    //If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add the number 1 to the list.
    if (ListAddItem (listID, 1, AFTER) < 0) then
        MessageBox ("First call to ListAddItem failed.", INFORMATION);
        abort;
    endif;

    // The integer 1, in position 1, is the current element.
    // Add the number 3 after the current element.
    if (ListAddItem (listID, 3, AFTER) < 0) then
        MessageBox ("Second call to ListAddItem failed.", INFORMATION);
        abort;
    endif;

    // The integer 3, in position 2, is the current element.
    // Add the number 2 to the list before the current element.
    if (ListAddItem (listID, 2, BEFORE) < 0) then
        MessageBox ("Third call to ListAddItem failed.", INFORMATION);
        abort;
    endif;

    // Retrieve and display the current element.
    ListCurrentItem (listID, nvItem);

    SprintfBox (INFORMATION, TITLE, "Current Item: %d", nvItem);

        // Start building the message to report the numbers.
        szMsg = MSSG;

        // Get the numbers and add them to the message.
```

```
        nvResult = ListGetFirstItem (listID, nvItem);
        while (nvResult != END_OF_LIST)
            NumToStr (svItem, nvItem);
            szMsg = szMsg + svItem + "  ";
            nvResult = ListGetNextItem (listID, nvItem);
        endwhile;

        // Display the numbers.
        MessageBox (szMsg, INFORMATION);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListAddList

The **ListAddList** function adds elements from one list (listAdd) to the destination list (listDest). This function is available for both string lists and number lists; however, the types of listDest and listAdd must match.

Syntax

```
ListAddList (listDest, listAdd, nPlacementFlag);
```

Parameters

Table 22 ▪ ListAddList Parameters

Parameter	Description
listDest	Specify the destination list. **ListAddList** adds new elements either before or after the current element of this list.
listAdd	Specify the list that contains the elements to be added to the destination list. **ListAddList** adds all elements (from the current element in this list to the last element in this list) to ListDest.
nPlacementFlag	Specify whether **ListAddList** should add the list elements before or after the current element of listDest. Available values are: • BEFORE • AFTER

Return Values

Table 23 ▪ ListAddList Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

ListAddString

The **ListAddString** function adds a string to a string list before or after the current element.

Note ▪ *ListAddString works only with string lists.*

Task ***To traverse a list:***

1. Call ListGetFirstItem to get the first element in the list.
2. Call ListGetNextItem repeatedly until you reach the end of the list.

To make a specific element in the list the current element, call ListSetIndex.

Syntax

```
ListAddString ( listID, szString, nPlacementFlag );
```

Parameters

Table 24 ▪ ListAddString Parameters

Parameter	Description
listID	Specifies the name of a string list. The list identified by listID must already have been initialized by a call to ListCreate.
szString	Specifies the string to add to the list.
nPlacementFlag	Specifies where to put szString relative to the current element. The new string will go either before or after the current element. Pass one of the following predefined constants in this parameter: • **AFTER—**Adds the new string after the current element in the list. • **BEFORE—**Adds the new string before the current element in the list.

Return Values

Table 25 ▪ ListAddString Return Values

Return Value	Description
> = ISERR_SUCCESS (0)	The function was successful.
< ISERR_SUCCESS (0)	The function was not successful.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListAddString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListAddString function.
 *
 * ListAddString is called to add a string to the string list.
 * Then it is called again to add another string after the
 * first.  This string is also set as the current element.
 * ListAddString is called for the third time to add a string
 * before the current element.
 *
\*---------------------------------------------------------------*/
```

```
#define  TITLE_TEXT "ListAddString Example"
#define  MSG_TEXT   "Hardware devices:"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListAddString(HWND);

function ExFn_ListAddString(hMSI)
   STRING szString, svString;
    LIST   listID;
begin

    // Create an empty string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add a string to the list. This string becomes the current element.
    szString = "Keyboard";
    if (ListAddString (listID, szString, AFTER) < 0) then
        MessageBox ("ListAddString failed.", INFORMATION);
    endif;

    // Add a second string; insert it after the current element.
    // This string then becomes the current element.
    szString = "Mouse";
    if (ListAddString (listID, szString, AFTER) < 0) then
        MessageBox ("ListAddString failed.", INFORMATION);
    endif;

    // Add a third string; insert it before the current element.
    szString = "Monitor";

    if (ListAddString (listID, szString, BEFORE) < 0) then
        MessageBox ("ListAddString failed.", INFORMATION);
    endif;

    // Show the list of strings.
    SdShowInfoList (TITLE_TEXT, MSG_TEXT, listID);

    // Retrieve and display the current element.
    ListCurrentString (listID, svString);

    MessageBox (svString, INFORMATION);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListAppendFromArray

Project *▪ This information applies to InstallScript projects.*

The **ListAppendFromArray** function appends the elements in the array that is specified by varSource to the list that is specified by listResult.

Syntax

```
ListAppendFromArray ( listResult, varSource, bString );
```

Parameters

Table 26 ▪ ListAppendFromArray Parameters

Parameter	Description
listResult	Specifies the name of a list. The list identified by listResult must already have been initialized by a call to ListCreate.
varSource	Specifies the array to append to the list.
bString	Set this parameter to TRUE if varSource is a string array and listResult is a string list; set this parameter to FALSE if varSource is a number array and listResult is a number list.

Return Values

Table 27 ▪ ListAppendFromArray Return Values

Return Value	Description
>= 0	The new number of elements in the list.
< ISERR_SUCCESS	Indicates that the function was unable to append the array to the list.

Comments

The array and list types must match (that is, both be string or both be numeric) or the function will fail. If necessary, convert the data appropriately by calling ListConvertNumToStr or ListConvertStrToNum before calling ListAppendToArray.

ListAppendToArray

Project *▪ This information applies to InstallScript projects.*

The **ListAppendToArray** function appends the elements in the list that is specified by listSource to the array that is specified by varResult, resizing the array appropriately to store the new elements.

Syntax

```
ListAppendToArray ( varResult, listSource, bString );
```

Parameters

Table 28 ▪ ListAppendToArray Parameters

Parameter	Description
varResult	Specifies an array.
listSource	Specifies the list to append to the array. The list identified by listSource must already have been initialized by a call to ListCreate.
bString	Set this parameter to TRUE if varResult is a string array and listSource is a string list; set this parameter to FALSE if varResult is a number array and listSource is a number list.

Return Values

Table 29 ▪ ListAppendToArray Return Values

Return Value	Description
>= 0	The new number of elements in the array.
< ISERR_SUCCESS	Indicates that the function was unable to append the list to the array.

Comments

The array and list types must match (that is, both be string or both be numeric) or the function will fail. If necessary, convert the data appropriately by calling ListConvertNumToStr or ListConvertStrToNum before calling ListAppendToArray.

The current size of the array determines where the end of the array is and thus where the new elements are placed. For example, if the size of the array is 10 but only one element contains a string, the new data is still added as the 11th and later elements. If you use an autosized array the new elements are added to the end of the array.

ListConvertNumToStr

Project ▪ *This information applies to InstallScript projects.*

The **ListConvertNumToStr** function converts each numeric element in listNumber to its string equivalent and appends it to listString.

Syntax

```
ListConvertNumToStr (listString, listNumber);
```

Parameters

Table 30 ▪ ListConvertNumToStr Parameters

Parameter	Description
listString	Specifies the string list to which to append the converted numbers. The list identified by listString must already have been initialized by a call to ListCreate.
listNumber	Specifies a number list. The list identified by listNumber must already have been initialized by a call to **ListCreate**.

Return Values

Table 31 ▪ ListConvertNumToStr Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully converted the number list to a string list.
< ISERR_SUCCESS	Indicates that the function was unable to convert the number list to a string list.

Comments

The function uses NumToStr to convert the numeric elements to strings; if the conversion fails for an element in listNumber, a null string ("") is appended to listString for that element.

ListConvertStrToNum

***Project ▪** This information applies to InstallScript projects.*

The **ListConvertStrToNum** function converts each string element in listString to its numeric equivalent and appends it to listNumber.

Syntax

```
ListConvertStrToNum (listNumber, listString );
```

Parameters

Table 32 ▪ ListConvertStrToNum Parameters

Parameter	Description
listNumber	Specifies the number list to which to append the converted strings. The list identified by listNumber must already have been initialized by a call to ListCreate.
listString	Specifies a string list. The list identified by listString must already have been initialized by a call to ListCreate.

Return Values

Table 33 ▪ ListConvertStrToNum Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully converted the string list to a number list.
< ISERR_SUCCESS	Indicates that the function was unable to convert the string list to a number list.

Comments

The function uses StrToNum to convert the strings to numbers; if the conversion fails for an element in listString, 0 is appended to listNumber for that element.

ListCount

The **ListCount** function returns the number of elements in a list.

Note ▪ *This function works with both strings and number lists.*

Syntax

```
ListCount ( listID );
```

Parameters

Table 34 ▪ ListCount Parameters

Parameter	Description
listID	Specifies the name of a string or number list.

Return Values

Table 35 ▪ ListCount Return Values

Return Value	Description
>= 0	The number of items in the list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.
< 0	ListCount was unable to determine the number of elements in the list.

ListCount Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListCount function.
 *
 * The following adds the names of the program folders to a
 * string list and then displays the number of strings in
 * the list.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ListCount(HWND);

function ExFn_ListCount(hMSI)
    STRING svString;
    LIST   listID;
    NUMBER nCount;
begin
```

```
    // Create a string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Get the names of the program folders into a list.
    GetGroupNameList (listID);

    // Count the number of program folders in the list.
    nCount = ListCount (listID);

    // Report error or display the folder count.
    if (nCount < 0) then
        MessageBox ("ListCount failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "ListCount",
                        "There are %i program folders.", nCount);
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListCreate

The **ListCreate** function creates an empty string or number list. You can create any number of lists in a script. A list may contain any number of elements. The only constraint is the amount of available free memory.

When calling any of the list functions, you must pass a valid ID of the list returned by this function. Verify this function was successful in creating the list. Otherwise, all the list functions will fail on the invalid list.

When you no longer need the list, you can destroy the list with the ListDestroy function.

Each list has a pointer that identifies an element as the “current” element of the list. The various list functions reposition the current element of the list.

Note ▪ *A list cannot contain both types of elements—numbers and strings. InstallScript provides separate functions to work with string lists and with number lists. You cannot use the ID of a number list with the string list functions and vice versa. Use list functions that end in “Item” for number lists and use list functions that end in “String” for string lists.*

Syntax

```
ListCreate ( nListType );
```

Parameters

Table 36 ▪ ListCreate Parameters

Parameter	Description
nListType	Specifies the type of list to create. Pass one of the following predefined constants in this parameter: • **NUMBERLIST**—Specifies a number list. • **STRINGLIST**—Specifies a string list.

Return Values

Table 37 ▪ ListCreate Return Values

Return Value	Description
ListID	The ID of the newly created, empty list. You must use this ID whenever you want to use this list in other InstallScript list functions. You must check this variable and be sure the function did not return LIST_NULL.
LIST_NULL (-1)	Indicates that InstallShield is unable to create a list. This is a seldom seen condition that is the result of a serious memory problem. You might experience difficulties in continuing the setup with such memory problems.

Additional Information

Before you can pass a valid list ID to any function that requires a list, you must build the list using ListCreate.

ListCreate Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListCreate and ListDestroy functions.
 *
 * ListCreate is called to create a numbered list.  ListDestroy
 * is called to destroy it.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_ListCreate(HWND);

function ExFn_ListCreate(hMSI)
    LIST listID;
    NUMBER nvItem;
begin

    // Create an empty number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add the number 1078 to the list.
    ListAddItem (listID, 1078, AFTER);

    // Add the number 304 to the list
    ListAddItem (listID, 304, AFTER);

    // Retrieve the current item in the list (304).
    ListCurrentItem (listID, nvItem);

    // Display the current item.
    SprintfBox (INFORMATION, "ListCreate",
               "Current item in list: %d", nvItem);

    // Retrieve the first item in the list (1078).
    ListGetFirstItem (listID, nvItem);

    // Display the first item.
    SprintfBox (INFORMATION, "ListCreate",
               "First item in list: %d", nvItem);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListCurrentItem

The **ListCurrentItem** function retrieves the current element from the number list specified in listID.

You can also use the ListGetFirstItem and ListGetNextItem functions to traverse the list and make any element the current element.

Note ▪ *ListCurrentItem works only with numbered lists.*

Syntax

```
ListCurrentItem ( listID, nvItem );
```

Parameters

Table 38 ▪ ListCurrentItem Parameters

Parameter	Description
listID	Specifies a number list.
nvItem	Returns the value of the current element in the list.

Return Values

Table 39 ▪ ListCurrentItem Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the current element in a number list.
< 0	Indicates that the function was unable to retrieve the current element in a number list.
END_OF_LIST (1)	Indicates that the list is empty and therefore does not have a current element.
ISERR_LIST_NOSUCHLIST	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListCurrentItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListCurrentItem function.
 *
 * This script adds three numbers to a list and then retrieves
 * and displays the value of the current list item.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListCurrentItem Example"


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ListCurrentItem(HWND);
```

```
function ExFn_ListCurrentItem(hMSI)
    STRING szMsg;
    LIST   listID;
    NUMBER nItem;
begin

    // Create the number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add the numbers 100, 200, and 300 to the list.
    for nItem = 100 to 300 step 100
        ListAddItem (listID, nItem, AFTER);
    endfor;

    // Get the current element from the number list.
    if (ListCurrentItem (listID, nItem) < 0) then
        MessageBox ("ListCurrentItem failed.", SEVERE);
    else
        // Report the value of the current item.
        szMsg = "Value of current element in list: %d";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, nItem);
    endif;

end;
```

ListCurrentString

The **ListCurrentString** function retrieves the current element from the string list specified in listID.

You can also use the ListGetFirstString and ListGetNextString functions to traverse the list and make any element the current element.

Note ▪ *ListCurrentString works only with string lists.*

Syntax

```
ListCurrentString ( listID, svString );
```

Parameters

Table 40 ▪ ListCurrentString Parameters

Parameter	Description
listID	Specifies a string list.
svString	Returns the value of the current element in the list.

Return Values

Table 41 ▪ ListCurrentString Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the current element in a string list.
< 0	Indicates that the function was unable to retrieve the current element in a string list.
END_OF_LIST (1)	Indicates that the list is empty and therefore does not have a current element.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListCurrentString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListCurrentString function.
 *
 * ListAddString retrieves the current string element from a
 * string list.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListCurrentString Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ListCurrentString(HWND);
```

```
function ExFn_ListCurrentString(hMSI)
    STRING szString, svString, szMsg;
    LIST   listID;
begin

    // Create the string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add three strings to the list.
    ListAddString (listID, "First string", AFTER);
    ListAddString (listID, "Second string", AFTER);
    ListAddString (listID, "Third string", AFTER);

    // Get the current element in the string list.
    if (ListCurrentString (listID, svString) < 0) then
        MessageBox ("ListCurrentString failed.", SEVERE);
    else
        // Report the value of the current item.
        szMsg = "Current element in list: '%s'";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svString);
    endif;

end;
```

ListDeleteAll

The **ListDeleteAll** function deletes all elements in the specified list. This function can be used for both string and number lists.

Syntax

```
ListDeleteAll ( list);
```

Parameters

Table 42 ▪ ListDeleteAll Parameters

Parameter	Description
list	The list specified to have all elements deleted.

Return Values

Table 43 ▪ ListDeleteAll Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

ListDeleteItem

The **ListDeleteItem** function removes the current element from the number list you specify in listID.

You can also use the ListGetFirstItem and ListGetNextItem functions to traverse the list and make any element the current element.

Note ▪ *ListDeleteItem works only with numbered lists.*

Syntax

```
ListDeleteItem ( listID );
```

Parameters

Table 44 ▪ ListDeleteItem Parameters

Parameter	Description
listID	Specifies the number list from which to delete the current element.

Return Values

Table 45 ▪ ListDeleteItem Return Values

Return Value	Description
0	Indicates that the function successfully deleted the current element from a number list.
< 0	Indicates that the list is empty and therefore does not have a current element.
END_OF_LIST (1)	Indicates that the list is empty and therefore does not have a current element.
ISERR_LIST_NOSUCHLIST	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListDeleteItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListDeleteItem function.
 *
 * This script first creates a list of numbers and prompts the
 * user for a number to delete.  Then ListFindItem is called to
 * make the selected number the current item.  Next,
 * ListDeleteItem is called to delete the selected number from
 * the list.  Finally, the numbers remaining in the list are
 * displayed.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListDeleteItem Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_ListDeleteItem(HWND);

function ExFn_ListDeleteItem(hMSI)
    STRING   svItem, szMsg;
    LIST     listID;
    NUMBER   nvItem, nvResult;
begin

    // Create the number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add the numbers 1, 2, 3, and 4 to the list.
    for nvItem = 1 to 4
        ListAddItem (listID, nvItem, AFTER);
    endfor;

    repeat
        // Disable the Back button.
        Disable (BACKBUTTON);

        // Prompt user to select a number to delete.
        if AskText ("The numbers 1, 2, 3, and 4 have been added to a list.\n"+
                    "Select one of those numbers to delete.", "", svItem)then
        endif;

        // Convert the value from string data to a number data.
        nvResult = StrToNum (nvItem, svItem);

        if  (nvItem < 1) || (nvItem > 4) then
            MessageBox ("You must enter a number between 1 and 4.", WARNING);
        endif;
    until (nvItem > 0) && (nvItem <5);

    // Make the first list element the current element
    // so ListFindItem will search from the top of the list.
    ListSetIndex (listID, 0);

    // Search for the selected number.
    nvResult = ListFindItem(listID, nvItem);

    // Delete the selected number from the list.
    if (ListDeleteItem (listID) < 0) then
        MessageBox ("Unable to delete selected number.", SEVERE);
    else
        // Start building the message to report the remaining numbers.
        szMsg = "The list now contains the following numbers:\n\n";

        // Get the remaining numbers and add them to the message.
        nvResult = ListGetFirstItem (listID, nvItem);
```

```
        while (nvResult != END_OF_LIST)
            NumToStr (svItem, nvItem);
            szMsg = szMsg + svItem + "  ";
            nvResult = ListGetNextItem (listID, nvItem);
        endwhile;

        // Display the remaining numbers.
        MessageBox (szMsg, INFORMATION);
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListDeleteString

The **ListDeleteString** function removes the current element from the string list you specify in listID.

You can also use the ListGetFirstString and ListGetNextString functions to traverse the list and make any element the current element.

Note ▪ *ListCurrentString works only with string lists.*

Syntax

```
ListDeleteString ( listID );
```

Parameters

Table 46 ▪ ListDeleteString Parameters

Parameter	Description
listID	Specifies the string list from which to delete the current element.

Return Values

Table 47 ▪ ListDeleteString Return Values

Return Value	Description
0	Indicates that the function successfully deleted the current element from a string list.
< 0	Indicates that the function was unable to delete the current element from a string list.
END_OF_LIST (1)	Indicates that the list is empty and therefore does not have a current element.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListDeleteString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListDeleteString function.
 *
 * This script first creates a list of strings and then displays
 * the current string in a dialog.  Next, ListDeleteString
 * is called twice, deleting the last two strings in the list.
 * The current string is then displayed again.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListDeleteString & ListCurrentString"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ListDeleteString(HWND);
```

```
function ExFn_ListDeleteString(hMSI)
   STRING   szString, svString, szMsg;
    LIST     listID;
begin

   // Create the string list.
   listID = ListCreate (STRINGLIST);

   // If an error occurred, report it; then terminate.
   if (listID = LIST_NULL) then
      MessageBox ("Unable to create list.", SEVERE);
      abort;
   endif;

   // Add three strings to the list.
   ListAddString (listID, "First string", AFTER);
   ListAddString (listID, "Second string", AFTER);
   ListAddString (listID, "Third string", AFTER);

   // Display the current string in the list.
   if (ListCurrentString (listID, svString) < 0) then
      MessageBox ("First call to ListCurrentString failed.", SEVERE);
   else

      szMsg   = "Current string in list: %s";
      SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svString);

   endif;

   // Remove the current string ("Value three").
    if (ListDeleteString (listID) < 0) then
      MessageBox ("First call to ListDeleteString failed.", SEVERE);
   endif;

   // Remove the current string ("Value two").
   if (ListDeleteString (listID) < 0) then
      MessageBox ("Second call to ListDeleteString failed.", SEVERE);
   endif;

   // Display the current string in the list.
   if (ListCurrentString(listID, svString) < 0) then
      MessageBox ("Second call to ListCurrentString failed.", SEVERE);

   else
      szMsg   = "Current string in list: %s";
      SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svString);

   endif;

   // Remove the list from memory.
   ListDestroy (listID);

end;
```

ListDestroy

The **ListDestroy** function destroys the contents of a list and the list itself. Use this function to remove the string or number list identified in listID.

You should destroy all the lists you create when you no longer need them or at the end of the setup script. When you destroy a list, you free all memory associated with the list.

Note ▪ *This function works with both string and number lists. After you destroy a list, do not use that in any list function.*

Syntax

```
ListDestroy ( listID );
```

Parameters

Table 48 ▪ ListDestroy Parameters

Parameter	Description
listID	Specifies the string or number list to destroy.

Return Values

Table 49 ▪ ListDestroy Return Values

Return Value	Description
0	Indicates that the function successfully destroyed the list, removing it from memory.
< 0	Indicates that the function was unable to destroy the list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListDestroy Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListCreate and ListDestroy functions.
```

```
 *
 * ListCreate is called to create a number list.  ListDestroy
 * is called to destroy it.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListDestroy(HWND);

function ExFn_ListDestroy(hMSI)
    LIST listID;
    NUMBER nvItem;
begin

    // Create an empty number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add the number 1078 to the list.
    ListAddItem (listID, 1078, AFTER);

    // Add the number 304 to the list
    ListAddItem (listID, 304, AFTER);

    // Retrieve the current item in the list (304).
    ListCurrentItem (listID, nvItem);

    // Display the current item.
    SprintfBox (INFORMATION, "ListCreate",
                "Current item in list: %d", nvItem);

    // Retrieve the first item in the list (1078).
    ListGetFirstItem (listID, nvItem);

    // Display the first item.
    SprintfBox (INFORMATION, "ListCreate",
                 "First item in list: %d", nvItem);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListFindItem

The **ListFindItem** function searches for a specific element in a number list, starting at the current element and continuing through the list from that point. If you want to start the search from the beginning of the list, use the ListGetFirstItem function. When ListFindItem finds the element, it becomes the current element in the list.

Note ▪ *The ListFindItem function works only with number lists.*

Syntax

```
ListFindItem ( listID, nItem );
```

Parameters

Table 50 ▪ ListFindItem Parameters

Parameter	Description
listID	Specifies the number list to search.
nItem	Specifies the item to find in the list.

Return Values

Table 51 ▪ ListFindItem Return Values

Return Value	Description
0	The function successfully found the requested element.
< 0	An error prevented the function from searching the specified list. This error occur, for example, if the list specified by listID does not exist.
END_OF_LIST (1)	The function searched to the end of the list and did not find the requested element.
ISERR_LIST_NOSUCHLIST (-501)	A list with the specified ID does not exist. Valid list IDs are return values from the **ListCreate** function.

ListFindItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListFindItem function.
 *
 * This script creates a number list and adds three numbers
 * to it.  The user is then asked to guess one of the numbers.
```

```
 * ListFindItem is called to search the list for the number the
 * user entered.  A message box is displayed to tell the user
 * whether the guess was right or wrong.
 *
\*------------------------------------------------------------*/

#define TITLE_TEXT "ListFindItem Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListFindItem(HWND);

function ExFn_ListFindItem(hMSI)
    STRING svItem;
    NUMBER nItem, nResult;
    LIST listID;
begin

    // Create a number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add three numbers to the list
    ListAddItem (listID, 1, AFTER);
    ListAddItem (listID, 5, AFTER);
    ListAddItem (listID, 9, AFTER);

    // Prompt user for a number.
    if AskText ("Three numbers between 1 and 10 have been added to a list.\n"+
                "Try to guess one of those numbers.", "", svItem) = NEXT then
        // Convert the value from string data to number data.
        if StrToNum (nItem, svItem) < 0 then
            MessageBox ("You did not enter a number: operation canceled.", SEVERE);
        else
            // Make the first list element the current element
            // so ListFindItem searches from the top of the list.
            ListSetIndex (listID, 0);

            // Search for the list of numbers.
            nResult = ListFindItem (listID, nItem);

            // Display the results of the search.
            if (nResult < 0) then
                MessageBox ("ListFindItem failed.", SEVERE);
            elseif (nResult = END_OF_LIST) then
                SprintfBox (WARNING, TITLE_TEXT, "Sorry, %d is not in the list.", nItem);
            elseif (nResult = 0) then
                SprintfBox (INFORMATION, TITLE_TEXT, "Yes, %d is in the list.", nItem);
            endif;
        endif;
```

```
    endif;

    // Remove list from memory.
    ListDestroy (listID);

end;
```

ListFindKeyValueString

The **ListFindKeyValueString** function searches a string or number list for a specified value. It returns a value from an additional list that corresponds with the position of the found string in the first list. This enables you to search lists of key-value pairs for a particular key and get the corresponding value.

Syntax

```
ListFindKeyValueString (byval LIST listKeys, byval LIST listValues, byval string szKey, byref string
    svValue);
```

Parameters

Table 52 ▪ ListFindKeyValueString Parameters

Parameter	Description
listKeys	Indicate the list of keys to be searched. You can specify a string or number list. The list must be initialized by calling **ListCreate** before calling **ListFindKeyValueString**. Note that the starting point for the search is always the beginning of the list, regardless of the current position of the list. When the function returns, the current position in the list is the found element.
listValues	Indicate the list of values that corresponds with the list of keys. You can specify a string or number list. The list must be initialized by calling **ListCreate** before calling **ListFindKeyValueString**. Note that listKeys and listValues do not necessarily need to be the same type of list.
szKey	Specify the string for which you want to search. If listKeys is a number list, szKey is converted to a number by using the **StrToNum** function, which is then used to search the list. **ListFindKeyValueString** calls **ListFindString** (if the list is a string list) or **ListFindItem** (if the list is a number list) to search the list. Searches for string lists are case-sensitive, since **ListFindString** performs case-sensitive searches.
svValue	The value from the second list is returned in this parameter. If listValues is a number list, the number is converted to a string using **NumToStr** and then passed back as a string.

Return Values

Table 53 ▪

Return Value	Description
0	The function successfully found the requested element.
< 0	An error prevented the function from searching the specified list. This error occur, for example, if the list specified by listID does not exist.
END_OF_LIST (1)	The function searched to the end of the list and did not find the requested element.
ISERR_LIST_NOSUCHLIST (-501)	A list with the specified ID does not exist. Valid list IDs are return values from the **ListCreate** function.

ListFindString

The **ListFindString** function searches for a specified element in a string list, starting at the current element and continuing from that point. If you want to start the search from the beginning of the string list, call the ListGetFirstString function. When ListFindString finds the string, it becomes the current element in the list.

Note ▪ *The ListFindString function performs a case-sensitive comparison of the strings, and works only with string lists.*

Syntax

```
ListFindString ( listID, szString );
```

Parameters

Table 54 ▪ ListFindString Parameters

Parameter	Description
listID	Specifies the string list to search.
szString	Specifies the string to find in the list. InstallShield performs a case-sensitive comparison when searching for this string.

Return Values

Table 55 ▪ ListFindString Return Values

Return Value	Description
0	Indicates that the function successfully found the requested element.
< 0	Indicates that an error prevented the function from searching the specified list. This error will occur, for example, if the list specified by listID does not exist.
END_OF_LIST (1)	Indicates that InstallShield searched to the end of the list and did not find the requested element.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListFindString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListFindString function.
 *
 * This script prompts the user to input the name of a program
 * folder on the target system.  ListFindString is then called
 * to search for this folder name in a list that contains all
 * folder names on the target system.  A message is displayed
 * to report the results of the search.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListFindString Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListFindString(HWND);

function ExFn_ListFindString(hMSI)
    STRING szString;
    LIST   listID, listSubfoldersID;
    NUMBER nResult;
begin

    // Create string lists
    listID = ListCreate (STRINGLIST);
    listSubfoldersID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) || (listSubfoldersID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Fill the list with the names of program folders.
    GetFolderNameList (FOLDER_PROGRAMS, listID, listSubfoldersID);

    // Prompt user to enter a folder name.
    AskText ("Please enter the name of an existing program folder:",
            "", szString);

    // Make the first list element the current element
    // so ListFindItem will search from the top of the list.
    ListSetIndex (listSubfoldersID, 0);

    // Search the list for the folder name entered by the user.
    // Reminder: The string comparison is case sensitive.
    nResult = ListFindString (listSubfoldersID, szString);

    // Report the search result.
    if (nResult < 0) then
        MessageBox ("ListFindString failed.", SEVERE);
    elseif (nResult = END_OF_LIST) then
```

```
        SprintfBox (WARNING, TITLE_TEXT, "%s could not be found.", szString);
    elseif (nResult = 0) then
        SprintfBox (INFORMATION, TITLE_TEXT, "ListFindString found: %s.",
                    szString);
    endif;

    // Remove list from memory.
    ListDestroy (listID);
    ListDestroy (listSubfoldersID);

end;
```

ListGetFirstItem

The **ListGetFirstItem** function retrieves the first element from a number list. The first item becomes the current element in the list.

Note ▪ *The ListGetFirstItem function works only with number lists.*

Syntax

```
ListGetFirstItem ( listID, nvItem );
```

Parameters

Table 56 ▪ ListGetFirstItem Parameters

Parameter	Description
listID	Specifies the number list from which to retrieve the first element.
nvItem	Returns the first element of the number list.

Return Values

Table 57 ▪ ListGetFirstItem Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the first element in a number list.
-1	Indicates that an error prevented the function from retrieving the first element in a number list.
END_OF_LIST (1)	Indicates that the list is empty.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListGetFirstItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListGetFirstItem and ListGetNextItem
 * functions.
 *
 * This script starts by creating a number list and adding
 * three numbers to it.  ListGetFirstItem is called then to get
 * the first number from the list.  This call also makes the
 * first number the current element.  A loop process follows to
 * display the number retrieved from the list and then call
 * ListGetNextItem to get the next number.  The loop executes
 * until ListGetFirstItem or ListGetNextItem reaches the end
```

```
 * of the list.
 *
\*------------------------------------------------------------------*/

#define TITLE_TEXT "ListGetFirstItem & ListGetNextItem"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListGetFirstItem(HWND);

function ExFn_ListGetFirstItem(hMSI)
    STRING szMsg;
    LIST   listID;
    NUMBER nvItem, nResult;
begin

    // Create a number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add three numbers to the list.
    ListAddItem (listID, 1024, AFTER);
    ListAddItem (listID, 360, AFTER);
    ListAddItem (listID, 777, AFTER);

    // Get the first number from the list.
    nResult = ListGetFirstItem (listID, nvItem);

    // Loop while not at end of list.
    while (nResult != END_OF_LIST)
        // Display the number retrieved from the list.
        SprintfBox (INFORMATION, TITLE_TEXT, "%i", nvItem);

        // Get the next number from the list.
        nResult = ListGetNextItem (listID, nvItem);
    endwhile;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListGetFirstString

The **ListGetFirstString** function retrieves the first element from a string list. The first string becomes the current element in the list.

The ListGetFirstString function works only with string lists.

Syntax

```
ListGetFirstString ( listID, svString );
```

Parameters

Table 58 ▪ ListGetFirstString Parameters

Parameter	Description
listID	Specifies the string list from which to retrieve the first element.
svString	Returns the first element of the string list.

Return Values

Table 59 ▪ ListGetFirstString Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the first element in a string list.
-1	Indicates that an error prevented the function from retrieving the first element in a string list.
END_OF_LIST (1)	Indicates that the list is empty.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListGetFirstString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListGetFirstString and ListGetNextString
 * functions.
 *
 * This script starts by creating a string list and adding
 * program folder names to it.  ListGetFirstString is called
 * then to get the first string from the list.  This call also
 * makes the first string the current element.  A loop process
```

```
 * follows to display the string retrieved from the list and
 * then call ListGetNextString to get the next string.  The
 * loop executes until ListGetFirstString or ListGetNextString
 * reaches the end of the list.
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListGetFirstString(HWND);

function ExFn_ListGetFirstString(hMSI)
    STRING svString;
    LIST listID;
    NUMBER nResult;
begin

    // Create a string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Get the names of the program folders into a list.
    if GetGroupNameList(listID) < 0 then ;
      // Report ListCreate failure.
        MessageBox ("Unable to retrieve program folder names.", SEVERE);
    else
        // Get the first string in the list.
        nResult = ListGetFirstString (listID, svString);

        // Loop while list items continue to be retrieved.
        while (nResult != END_OF_LIST)
            // Display the current element.
            MessageBox (svString, INFORMATION);

            // Get the next string in the list.
            nResult = ListGetNextString (listID, svString);
        endwhile;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListGetIndex

Project ▪ *This information applies to InstallScript projects.*

The **ListGetIndex** function retrieves the index of the specified list's current element. Index numbers starts at zero (0).

Syntax

```
ListGetIndex ( listID, nIndex );
```

Parameters

Table 60 ▪ ListGetIndex Parameters

Parameter	Description
listID	Specifies the ID of the string or number list whose current element's index is to be retrieved.
nIndex	Returns the index of the list's current element.

Return Values

Table 61 ▪ ListGetIndex Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully retrieved the index of the list's current element.
< ISERR_SUCCESS	Indicates that the function was unable to retrieve the index of the list's current element.
ISERR_LIST_NOSUCHLIST	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

Additional Information

- Use ListCurrentItem and ListCurrentString to retrieve the value of the current element.
- This function works on both string and number lists.

ListGetNextItem

The **ListGetNextItem** function retrieves the item after the current element in a number list. The retrieved item becomes the current element in the list.

Note ▪ *The ListGetNextItem function works only with number lists.*

Syntax

```
ListGetNextItem ( listID, nvItem );
```

Parameters

Table 62 ▪ ListGetNextItem Parameters

Parameter	Description
listID	Specifies the number list from which to retrieve the next element.
nvItem	Returns the item that follows the current element in the number list. That item becomes the current element in the list.

Return Values

Table 63 ▪ ListGetNextItem Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the element after the current element in a number list.
-1	Indicates that an error prevented the function from retrieving the specified element in a number list.
END_OF_LIST (1)	Indicates that the current item is the last element in the list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListGetNextItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListGetFirstItem and ListGetNextItem
 * functions.
```

```
 *
 * This script starts by creating a number list and adding
 * three numbers to it.  ListGetFirstItem is called then to get
 * the first number from the list.  This call also makes the
 * first number the current element.  A loop process follows to
 * display the number retrieved from the list and then call
 * ListGetNextItem to get the next number.  The loop executes
 * until ListGetFirstItem or ListGetNextItem reaches the end
 * of the list.
 *
\*------------------------------------------------------------*/

#define TITLE_TEXT "ListGetFirstItem & ListGetNextItem"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListGetNextItem(HWND);

function ExFn_ListGetNextItem(hMSI)
    STRING szMsg;
    LIST   listID;
    NUMBER nvItem, nResult;
begin

    // Create a number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add three numbers to the list.
    ListAddItem (listID, 1024, AFTER);
    ListAddItem (listID, 360, AFTER);
    ListAddItem (listID, 777, AFTER);

    // Get the first number from the list.
    nResult = ListGetFirstItem (listID, nvItem);

    // Loop while not at end of list.
    while (nResult != END_OF_LIST)
        // Display the number retrieved from the list.
        SprintfBox (INFORMATION, TITLE_TEXT, "%i", nvItem);

        // Get the next number from the list.
        nResult = ListGetNextItem (listID, nvItem);
    endwhile;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListGetNextString

The **ListGetNextString** function retrieves the element after the current element in a string list. The retrieved element becomes the current element in the list.

Note ▪ *The ListGetNextString function works only with string lists.*

Syntax

```
ListGetNextString ( listID, svString );
```

Parameters

Table 64 ▪ ListGetNextString Parameters

Parameter	Description
listID	Specifies the string list from which to retrieve the next element.
svString	Returns the string that follows the current element of the string list. This string becomes the current element in the list.

Return Values

Table 65 ▪ ListGetNextString Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the element after the current element in a string list.
-1	Indicates that an error prevented the function from retrieving the specified element in a string list.
END_OF_LIST (1)	Indicates that the current item is the last element in the list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListGetNextString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListGetFirstString and ListGetNextString
 * functions.
 *
 * This script starts by creating a string list and adding
 * program folder names to it.  ListGetFirstString is called
 * then to get the first string from the list.  This call also
```

```
 * makes the first string the current element.  A loop process
 * follows to display the string retrieved from the list and
 * then call ListGetNextString to get the next string.  The
 * loop executes until ListGetFirstString or ListGetNextString
 * reaches the end of the list.
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListGetNextString(HWND);

function ExFn_ListGetNextString(hMSI)
    STRING svString;
    LIST listID;
    NUMBER nResult;
begin

    // Create a string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Get the names of the program folders into a list.
    if GetGroupNameList(listID) < 0 then ;
        // Report ListCreate failure.
        MessageBox ("Unable to retrieve program folder names.", SEVERE);
    else
        // Get the first string in the list.
        nResult = ListGetFirstString (listID, svString);

        // Loop while list items continue to be retrieved.
        while (nResult != END_OF_LIST)
            // Display the current element.
            MessageBox (svString, INFORMATION);

            // Get the next string in the list.
            nResult = ListGetNextString (listID, svString);
        endwhile;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListGetType

The **ListGetType** function determines whether a list is a STRINGLIST or NUMBERLIST.

Syntax

```
ListGetType (listID);
```

Parameters

Table 66 ▪ ListGetType Parameters

Parameter	Description
listID	Specifies the name of a string list. The list identified by listID must already have been initialized by a call to ListCreate.

Return Values

Table 67 ▪ ListGetType Return Values

Return Value	Description
STRINGLIST	Indicates that the list is a string list.
NUMBERLIST	Indicates that the list is a number list.
<0	Indicates that the function was unable to determine the type of list.

ListGetType Example

Note ▪ *The list identified by listID must already have been initialized by a call to ListCreate<LangrefListCreate.htm>.*

```
//Sample code
LIST listID;
int     nType;

program
    listID = ListCreate(STRINGLIST);
    if (LIST_NULL != listID) then
        nType = ListGetType(listID);
        if (STRINGLIST = nType) then
            MessageBox("It is a STRINGLIST", INFORMATION);
        else
            MessageBox("It is a NUMBERLIST", INFORMATION);
        endif;
    endif;
    ListDestroy(listID);

    listID = ListCreate(NUMBERLIST);
    if (LIST_NULL != listID) then
```

```
        nType = ListGetType(listID);
        if (STRINGLIST = nType) then
            MessageBox("It is a STRINGLIST", INFORMATION);
        else
            MessageBox("It is a NUMBERLIST", INFORMATION);
        endif;
    endif;
    ListDestroy(listID);
endprogram
```

ListReadFromFile

The **ListReadFromFile** function reads a text file into a list. After you load a text file into a list, you can use it for various functions in the setup, such as displaying a README file at the end of the setup or writing a string list to the disk with ListWriteToFile.

This function detects the newline characters at the end of each string and uses the characters as delimiters for each element in the list.

Note ▪ *The ListReadFromFile function operates on string lists and text files only.*

Syntax

```
ListReadFromFile ( listID, szFile );
```

Parameters

Table 68 ▪ ListReadFromFile Parameters

Parameter	Description
listID	Returns a list of the lines read from the file specified by szFile. The list identified by listID must already have been initialized by a call to ListCreate.
szFile	Specifies the fully qualified name of the file that will be read into the list.

Return Values

Table 69 ▪ ListReadFromFile Return Values

Return Value	Description
0	Indicates that the function successfully read the lines of text in a file into a list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.
< 0	Indicates that the function was unable to read the lines from a text file into a list.

ListReadFromFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListReadFromFile and ListWriteToFile
 * functions.
 *
 * ListReadFromFile is called to read and display the
 * Autoexec.bat file.  After the list has been displayed,
 * a remark is appended to the end of the list and the list
 * is written to a new file. The original file remains
 * unchanged.
 *
 * Note: In order for this script to run correctly, there must
```

```
 *       be a batch file named Autoexec.bat in the root
 *       directory of drive C.
 *
\*---------------------------------------------------------------*/

#define OLD_FILE "C:\\Autoexec.bat"
#define NEW_FILE "C:\\Autoexec.lst"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListReadFromFile(HWND);

function ExFn_ListReadFromFile(hMSI)
    LIST listID;
begin

    // Create a string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
         MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Read the file into a string list.
    if (ListReadFromFile (listID, OLD_FILE) < 0) then
        // Report ListReadFromFile failure.
        MessageBox ("Unable to read" + OLD_FILE + ".", SEVERE);
    else
        // Display the list.
        SdShowInfoList ("Demo", "The example list file:", listID);

        // Add a new string to the list.
        ListAddString (listID, "REM Added by IS setup.", AFTER);

        // Write the list to a file.
        if (ListWriteToFile (listID, NEW_FILE) < 0) then
            MessageBox ("Unable to write list to "+ NEW_FILE + ".", SEVERE);
        else
            MessageBox ("Successfully wrote list "+ NEW_FILE + ".", INFORMATION);
        endif;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListSetCurrentItem

The **ListSetCurrentItem** function assigns the value of nItem to the current element in a number list.

Note ▪ *The ListSetCurrentItem function works only with number lists.*

Syntax

```
ListSetCurrentItem ( listID, nItem );
```

Parameters

Table 70 ▪ ListSetCurrentItem Parameters

Parameter	Description
listID	Specifies the name of a number list whose current element is to be updated. The list identified by listID must already have been initialized by a call to ListCreate.
nItem	Specifies the numeric value that will replace the current element.

Return Values

Table 71 ▪ ListSetCurrentItem Return Values

Return Value	Description
0	Indicates that the function successfully updated the current element in a number list.
< 0	Indicates that the function was unable to update the current element in a number list.
END_OF_LIST (1)	Indicates that the list is empty.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListSetCurrentItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the ListSetCurrentItem function.
 *
 * This script first creates a number list and then adds two
 * numbers to it.  Next, the list is displayed in a dialog.
 * ListSetCurrentItem is then called to update the value of
 * the current element in the list.  Finally, this new list is
 * displayed.
 *
\*---------------------------------------------------------------*/

#define  MSG_TEXT   "Elements in listID:\n\n"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListSetCurrentItem(HWND);

function ExFn_ListSetCurrentItem(hMSI)
    LIST   listID;
    NUMBER nItem, nvResult, nvItem;
    STRING szMsg, svItem;
begin

    // Create an empty number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add two numbers to the list.
    ListAddItem (listID, 1024, AFTER);
    ListAddItem (listID, 360, AFTER);

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

        // Start building the message to report the numbers.
        szMsg = MSG_TEXT;

        // Get the numbers and add them to the message.
        nvResult = ListGetFirstItem (listID, nvItem);
        while (nvResult != END_OF_LIST)
            NumToStr (svItem, nvItem);
            szMsg = szMsg + svItem + "  ";
            nvResult = ListGetNextItem (listID, nvItem);
        endwhile;

        // Display the numbers.
        MessageBox (szMsg, INFORMATION);

    // Replace the value of the second item with a new value.
    if (ListSetCurrentItem (listID, 777) < 0) then
```

```
        MessageBox ("ListSetCurrentItem failed.", SEVERE);
    else
        // Start building the message to report the numbers.
        szMsg = MSG_TEXT;

        // Get the numbers and add them to the message.
        nvResult = ListGetFirstItem (listID, nvItem);

        while (nvResult != END_OF_LIST)
            NumToStr (svItem, nvItem);
            szMsg = szMsg + svItem + "  ";
            nvResult = ListGetNextItem (listID, nvItem);
        endwhile;

        // Display the numbers.
        MessageBox (szMsg, INFORMATION);
    endif;

    // Remove list from memory.
    ListDestroy (listID);

end;
```

ListSetCurrentString

The **ListSetCurrentString** function assigns the value of szString to the current element in the string list.

Note ▪ *The ListSetCurrentString function works only with string lists.*

Syntax

```
ListSetCurrentString ( listID, szString );
```

Parameters

Table 72 ▪ ListSetCurrentString Parameters

Parameter	Description
listID	Specifies the name of a string list whose current element is to be updated. The list identified by listID must already have been initialized by a call to ListCreate.
szString	Specifies the string value that will replace the current element.

Return Values

Table 73 ▪ ListSetCurrentString Return Values

Return Value	Description
0	Indicates that the function successfully updated the current element in a number list.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.
< 0	Indicates that the function was unable to update the current element in a number list. A common reason for this error is that the index is out of range of available list elements.

ListSetCurrentString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListSetCurrentString function.
 *
 * In this script, two strings are added to an empty list.
 * The list is then displayed in a dialog. Next,
 * ListSetCurrentString is called to replace the current
 * element. The list is then displayed again in a
 * dialog.
 *
```

```
\*-------------------------------------------------------------*/

#define  TITLE_TEXT "ListSetCurrentString Example"
#define  MSG_TEXT   "Elements in listID:"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListSetCurrentString(HWND);

function ExFn_ListSetCurrentString(hMSI)
    LIST listID;
begin

    // Create an empty string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Add two strings to the list.
    ListAddString (listID, "Keyboard", AFTER);
    ListAddString (listID, "Monitor", AFTER);

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Display the list.
    SdShowInfoList (TITLE_TEXT, MSG_TEXT, listID);

    // Replace the value of the second item with a new value.
    if (ListSetCurrentString(listID, "Mouse") < 0) then
        MessageBox ("ListSetCurrentString failed.", SEVERE);
    endif;

    // Display the new altered list.
    SdShowInfoList (TITLE_TEXT, MSG_TEXT, listID);

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListSetIndex

The **ListSetIndex** function makes a specific element in a string or number list the current element, using an index. You can also use constants to traverse a list one element at a time or to jump to the beginning or end of a list. By using indices to access items in a list, you can treat numeric and string lists as arrays.

After you set the indexed element as the current element, you can use either the ListCurrentItem or ListCurrentString function in the script to retrieve the value of the indexed (current) item.

Note ▪ *The ListSetIndex function works with both string and number lists.*

Syntax

```
ListSetIndex (listID, nIndex);
```

Parameters

Table 74 ▪ ListSetIndex Parameters

Parameter	Description
listID	Specifies the name of the string or number list whose index is to be set.
nIndex	Specifies the number of the element you want to set as the current element. List element numbering begins at zero (0). For example, if you enter 5 in the parameter nIndex, the item in the sixth physical location in the list becomes the current element. Pass a numeric value or one of the following predefined constants in this parameter: • **LISTFIRST—**Moves to the first element in the list. • **LISTLAST—**Moves to the last element in the list. • **LISTNEXT—**Moves to the next element in the list. • **LISTPREV—**Moves to the previous element in the list.

Return Values

Table 75 ▪ ListSetIndex Return Values

Return Value	Description
0	Indicates that the function successfully updated the current element in the list.
< 0	Indicates that the function was unable to update the current element the list.
END_OF_LIST (1)	Indicates that the index is out of range of available list elements.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.

ListSetIndex Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListSetIndex function.
 *
 * This example script displays the last three items from a list
 * of program folders.
 *
 * Note: If the target system has a shell other than Explorer,
 *       the GetGroupNameList function may return an error.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "ListSetIndex Example"
#define MSG_TEXT   "Please note the last three items in this list."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListSetIndex(HWND);

function ExFn_ListSetIndex(hMSI)
    STRING   svString;
    LIST     listID;
    NUMBER   nResult, nIndex;
begin

    // Create string list.
    listID  = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Get the names of the program folders into a list.
    if GetGroupNameList (listID) < 0 then ;
        // Report ListCreate failure.
        MessageBox ("Unable to retrieve program folder names.", SEVERE);
    else
        // Display the list.
        SdShowInfoList( TITLE_TEXT, MSG_TEXT, listID);

        // Make the third item from the end of the list the current
        // the current element. If there are fewer than three items,
        // display them all. List indexing begins at 0.
        nIndex = ListCount (listID);

        if nIndex > 3 then
```

```
            nIndex = nIndex - 3;
        endif;

        nResult = ListSetIndex (listID, nIndex);

        // Loop while there are items to display.
        while (nResult != END_OF_LIST)
            // Get the current list item.
            ListCurrentString (listID, svString);

            // Display the current list item.
            MessageBox (svString, INFORMATION);

            // Make the next item the current item.
            nResult = ListSetIndex (listID, LISTNEXT);
        endwhile;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListValid

The **ListValid** function indicates whether the list specified by listID is valid, that is, whether it has been initialized by calling ListCreate and not destroyed by calling ListDestroy. This function works with both string and number lists.

Syntax

```
ListValid ( listID );
```

Parameters

Table 76 ▪ ListValid Parameters

Parameter	Description
listID	Specifies the string or number list to be checked.

Return Values

Table 77 ▪ ListValid Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the list is valid.
< ISERR_SUCCESS	Indicates that the list is not valid.
ISERR_LIST_NOSUCHLIST	Indicates that the list has not been initialized.

ListValid Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListValid function.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

function OnBegin()
    LIST listID;
    number nListValid;
begin
    // Create an empty number list.
    listID = ListCreate (NUMBERLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Check whether the list ID is valid.
    nListValid = ListValid (listID);
    if (nListValid >= ISERR_SUCCESS) then
        MessageBox ("List ID is valid.", INFORMATION);
    else
```

```
        MessageBox ("List ID is not valid.", INFORMATION);
    endif;

   // Remove the list from memory.
    ListDestroy (listID);

    // Check whether the list ID is valid.
    nListValid = ListValid (listID);
    if (nListValid >= ISERR_SUCCESS) then
        MessageBox ("List ID is valid.", INFORMATION);
    else
        MessageBox ("List ID is not valid.", INFORMATION);
    endif;

    // If you cut and paste this sample script into a project
    // and run it, the following line aborts execution of the script.
    abort;
end;
```

ListValidType

The **ListValidType** function indicates whether the list specified by listID is of the specified type and is valid, that is, whether it has been initialized by calling ListCreate and not destroyed by calling ListDestroy.

Syntax

```
ListValidType ( listID, nType );
```

Parameters

Table 78 ▪ ListValidType Parameters

Parameter	Description
listID	Specifies the string or number list to be checked.
nType	Specifies the list type to which the specified list is compared. Pass one of the following predefined constants in this parameter: • **NUMBERLIST—**Specifies a number list. • **STRINGLIST—**Specifies a string list.

Return Values

Table 79 ▪ ListValidType Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the list is valid and is of the specified type.
< ISERR_SUCCESS	Indicates that the list is not valid or is not of the specified type.
ISERR_LIST_NOSUCHLIST	Indicates that the list has not been initialized.
ISERR_LIST_TYPEMISMATCH	Indicates that the list is not of the specified type.

ListValidType Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListValidType function.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

function OnBegin()
    LIST listID;
    number nListValidType;
begin
    // Create an empty string list.
```

```
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Check whether the list ID is valid and what type it is.
    nListValidType = ListValidType (listID, NUMBERLIST);
    if (nListValidType >= ISERR_SUCCESS) then
        MessageBox ("List ID is valid and is a number list.",
            INFORMATION);
    else
        nListValidType = ListValidType (listID, STRINGLIST);
        if (nListValidType >= ISERR_SUCCESS) then
            MessageBox ("List ID is valid and is a string list.",
                INFORMATION);
        else
            MessageBox ("List ID is not valid.", INFORMATION);
        endif;
    endif;

   // Remove the list from memory.
    ListDestroy (listID);

    // Check whether the list ID is valid and what type it is.
    nListValidType = ListValidType (listID, NUMBERLIST);
    if (nListValidType >= ISERR_SUCCESS) then
        MessageBox ("List ID is valid and is a number list.",
            INFORMATION);
    else
        nListValidType = ListValidType (listID, STRINGLIST);
        if (nListValidType >= ISERR_SUCCESS) then
            MessageBox ("List ID is valid and is a string list.",
                INFORMATION);
        else
            MessageBox ("List ID is not valid.", INFORMATION);
        endif;
    endif;

    // If you cut and paste this sample script into a project
    // and run it, the following line aborts execution of the script.
    abort;
end;
```

ListWriteToFile

The **ListWriteToFile** function writes a string list to a text file. Each string appears on a separate line in the text file.

Note ▪ *Note if the file already exists and the pre-existing file is Unicode, it writes the file as Unicode. Otherwise, it writes the file as ANSI.*

Syntax

```
ListWriteToFile ( listID, szFileName );
```

Parameters

Table 80 ▪ ListWriteToFile Parameters

Parameter	Description
listID	Specifies the name of a string list to write into a text file.
szFileName	Specifies the fully qualified name of the file to which the string list is to be written. If the file does not exist, it is created. If the file already exists, it is overwritten.

Return Values

Table 81 ▪ ListWriteToFile Return Values

Return Value	Description
0	The function was successful.
ISERR_LIST_NOSUCHLIST (-501)	Indicates that a list with the specified ID does not exist. Valid list IDs are return values from the ListCreate function.
< 0	The function failed.

ListWriteToFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ListReadFromFile and ListWriteToFile
 * functions.
 *
 * ListReadFromFile is called to read and display the
 * Autoexec.bat file. After the list has been displayed,
 * a remark is appended to the end of the list and the list
 * is written to a new file. The original file remains
 * unchanged.
```

```
 *
 * Note: In order for this script to run correctly, there must
 *       be a batch file named Autoexec.bat in the root
 *       directory of drive C.
 *
\*---------------------------------------------------------------*/

#define OLD_FILE "C:\\Autoexec.bat"
#define NEW_FILE "C:\\Autoexec.lst"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ListWriteToFile(HWND);

function ExFn_ListWriteToFile(hMSI)
    LIST listID;
begin

    // Create a string list.
    listID = ListCreate (STRINGLIST);

    // If an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
         MessageBox ("Unable to create list.", SEVERE);
        abort;
    endif;

    // Read the file into a string list.
    if (ListReadFromFile (listID, OLD_FILE) < 0) then
        // Report ListReadFromFile failure.
        MessageBox ("Unable to read" + OLD_FILE + ".", SEVERE);
    else
        // Display the list.
        SdShowInfoList ("Demo", "The example list file:", listID);

        // Add a new string to the list.
        ListAddString (listID, "REM Added by IS setup.", AFTER);

        // Write the list to a file.
        if (ListWriteToFile (listID, NEW_FILE) < 0) then
            MessageBox ("Unable to write list to "+ NEW_FILE + ".", SEVERE);
        else
            MessageBox ("Successfully wrote list "+ NEW_FILE + ".", INFORMATION);
        endif;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

ListWriteToFileEx

The **ListWriteToFileEx** function writes or appends a string list to a text file. Each string appears on a separate line in the text file.

Syntax

```
ListWriteToFileEx ( listID, szFileName, nOptions );
```

Parameters

Table 82 ▪ ListWriteToFileEx Parameters

Parameter	Description
listID	Specifies the name of a string list to write into a text file.
szFileName	Specifies the fully qualified name of the file to which the string list is to be written. If the file does not exist, it is created. If the file already exists and the LWTF_OPTION_APPEND_TO_FILE is not specified for nOptions, it is overwritten.
nOptions	Specifies the encoding of the file and whether the string list can be appended to it if it already exists. Choose one or more of the following predefined constants: • **0**—If the file already exists and the pre-existing file is Unicode, writes the file as Unicode. Otherwise, writes the file as ANSI. • **LWTF_OPTION_WRITE_AS_UNICODE**—Writes the file as Unicode. • **LWTF_OPTION_WRITE_AS_ANSI**—Writes the file as ANSI. • **LWTF_OPTION_APPEND_TO_FILE**—Appends the contents of the list to the existing file. If the file does not exist, the function creates the file (which is the same behavior as if this option was not specified). You can combine two of these constants by using the bitwise OR operator (|). For example, combine the LWTF_OPTION_WRITE_AS_ANSI and LWTF_OPTION_APPEND_TO_FILE constants if you want the contents of the string list to be append to the file as ANSI.

Return Values

Table 83 ▪ ListWriteToFileEx Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

LoadStringFromStringTable

The **LoadStringFromStringTable** function loads the value of the string entry specified by szID into svString. The

svString buffer is automatically resized if necessary to accommodate the string value.

Syntax

```
LoadStringFromStringTable ( szID, svString );
```

Parameters

Table 84 ▪ LoadStringFromStringTable Parameters

Parameter	Description
szID	Specifies the string identifier of the string entry. Do not prefix the identifier with the at sign (@).
svString	Returns the string value associated with the identifier that is specified by szID.

Return Values

Table 85 ▪ LoadStringFromStringTable Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the string value was successfully loaded into svString.
< ISERR_SUCCESS	Indicates that the string identifier was not found in the String Editor view.

Additional Information

The **LoadStringFromStringTable** function is case-insensitive when it comes to string identifiers. Therefore, when you use a string identifier in your script, you do not necessarily need to match the case of the string identifier that is specified in the String Editor view. However, mixing case may prevent InstallShield from matching the string entries in the script to the corresponding string entries in the String Editor view at build time. Therefore, it is recommended that you use uppercase for all instances of string identifiers.

The **LoadStringFromStringTable** function is equivalent to the @ operator, with some exceptions:

- When you build a project that includes an InstallScript file (.rul) and the InstallScript code contains one or more references to string entries that use the @ operator, InstallShield validates the string entries at build time. If a string identifier in the project's InstallScript file is not defined as one of the project's string entries in the String Editor view, InstallShield displays build warning -7174. If you use **LoadStringFromStringTable**, InstallShield does not validate the string entries at build time; scripts that use **LoadStringFromStringTable** are assumed to have their own string-not-found error handling.
- If the specified identifier does not exist in the String Editor view, the @ operator causes a message box to be displayed at run time; **LoadStringFromStringTable** simply returns failure (< ISERR_SUCCESS).

LOBYTE

Project ▪ *This information applies to InstallScript projects.*

The **LOBYTE** function extracts the low-order byte from the 16-bit integer value specified by shValue.

Syntax

```
LOBYTE ( shValue );
```

Parameters

Table 86 ▪ LOBYTE Parameters

Parameter	Description
shValue	Specifies the 16-bit integer from which you want to extract the lower byte.

Return Values

This function returns the low-order byte of the integer.

LogReadCustomNumber

Project ▪ *This information applies to InstallScript projects.*

The **LogReadCustomNumber** function reads the number that is stored the log file's custom logging section under the key name specified by szKey, and it returns the number data in nvValue.

Syntax

```
LogReadCustomNumber( szKey, nvValue );
```

Parameters

Table 87 ▪ LogReadCustomNumber Parameters

Parameter	Description
szKey	Specifies the key name that identifies the number being read from the log file.
nvValue	Returns the number data that is read from the log file.

Return Values

Table 88 ▪ LogReadCustomNumber Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully read the number from the log file.
< ISERR_SUCCESS	Indicates that the function was unable to read the number from the log file.

Additional Information

LogReadCustomNumber is not affected by whether logging is enabled or disabled. **LogReadCustomNumber** can read values that were entered with LogWriteCustomNumber and numbers that were entered as strings (for example, **"123"**) with LogWriteCustomString. **LogReadCustomNumber** fails if used to read non-numeric data (for example, **"123abc"**).

Custom log file entries do not affect maintenance or uninstallation of the product unless you add code to the script to read custom values and perform actions based on those values. **LogReadCustomString** cannot read data from the maintenance/uninstallation section of the log file (that is, the section where the installation automatically writes data, such as the files that are installed and the registry entries that are created, and from which it automatically reads data during maintenance or uninstallation).

To execute script code only when the product is being completely uninstalled, use an if-then statement:

```
if REMOVEALLMODE!=0 then
    /* this code is executed only during uninstallation */
endif;
```

To perform specific uninstallation actions when a particular feature is uninstalled, override the feature's UnInstalling event with the appropriate code.

LogReadCustomNumber Example

Project ▪ *This information applies to InstallScript projects.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
```

```
//
//  Demonstrates the LogWriteCustomString, LogWriteCustomNumber,
//  LogReadCustomString, and LogReadCustomNumber functions.
//
//---------------------------------------------------------------------------

//  during installation, write some custom data to the log file
function OnMoved( )
    LIST listDrives;
    NUMBER nDriveCount, nvIgnore;
    STRING svDate;
begin

if (!MAINTENANCE) then
    // get current date
    GetSystemInfo(DATE, nvIgnore, svDate);

    // get current count of available drive letters
    listDrives = ListCreate(STRINGLIST);
    GetValidDrivesList(listDrives, -1, -1);
    nDriveCount = ListCount(listDrives);
    ListDestroy(listDrives);

    // write custom data to .ilg log file
    LogWriteCustomString("InstallDate", svDate);
    LogWriteCustomNumber("DriveCount", nDriveCount);
endif;

end;


// during a complete uninstallation, read custom data back from the log file
function OnMoving( )
    NUMBER nvDriveCount;
    STRING svInstallDate;
begin

if (REMOVEALLMODE) then
    LogReadCustomNumber("DriveCount", nvDriveCount);
    LogReadCustomString("InstallDate", svInstallDate);
    SprintfBox(INFORMATION, "Custom Log Data",
        "During installation, the drive count " +
        "was %d, and the date was %s.",
        nvDriveCount, svInstallDate);
endif;

end;
```

LogReadCustomString

Project ▪ *This information applies to InstallScript projects.*

LogReadCustomString reads the string that is stored the log file's custom logging section under the key name specified by szKey, and it returns the string data in svValue.

Syntax

```
LogReadCustomString( szKey, svValue );
```

Parameters

Table 89 ▪ LogReadCustomString Parameters

Parameter	Description
szKey	Specifies the key name that identifies the string being read from the log file.
svValue	Returns the string data that is read from the log file.

Return Values

Table 90 ▪ LogReadCustomString Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully read the string from the log file.
< ISERR_SUCCESS	Indicates that the function was unable to read the string from the log file.

Additional Information

LogReadCustomString is not affected by whether logging is enabled or disabled. **LogReadCustomString** can read values that were entered with either LogWriteCustomString or LogWriteCustomNumber.

Custom log file entries do not affect maintenance or uninstallation of the product unless you add code to the script to read custom values and perform actions based on those values. **LogReadCustomString** cannot read data from the maintenance/uninstallation section of the log file (that is, the section where the installation automatically writes data, such as the files that are installed and the registry entries that are created, and from which it automatically reads data during maintenance or uninstallation).

Note ▪ *If you selected the* ***Show Password dialog box during setup initialization*** *check box in the Password & Copyright panel of the Release Wizard or selected Yes for the Show Password Dialog setting in the Releases view, the default code for the OnCheckMediaPassword event handler function calls* **LogWriteCustomString** *with szKey set to MEDIA_PASSWORD_KEY in order to store a password-protected installation's password (as entered by the end user) so that maintenance and upgrade operations do not require that the same password be reentered. That default code also calls* **LogWriteCustomString** *with szKey set to MEDIA_PASSWORD_KEY in order to check whether the password is already stored before querying the end user for the password.*

To execute script code only when the product is being completely uninstalled, use an if-then statement:

```
if REMOVEALLMODE!=0 then
    /* this code is executed only during uninstallation */
```

```
endif;
```

To perform specific uninstallation actions when a particular feature is uninstalled, override the feature's UnInstalling event with the appropriate code.

LogReadCustomString Example

Project ▪ *This information applies to InstallScript projects.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates the LogWriteCustomString, LogWriteCustomNumber,
//  LogReadCustomString, and LogReadCustomNumber functions.
//
//---------------------------------------------------------------------------

//  during installation, write some custom data to the log file
function OnMoved( )
    LIST listDrives;
    NUMBER nDriveCount, nvIgnore;
    STRING svDate;
begin

if (!MAINTENANCE) then
    // get current date
    GetSystemInfo(DATE, nvIgnore, svDate);

    // get current count of available drive letters
    listDrives = ListCreate(STRINGLIST);
    GetValidDrivesList(listDrives, -1, -1);
    nDriveCount = ListCount(listDrives);
    ListDestroy(listDrives);

    // write custom data to .ilg log file
    LogWriteCustomString("InstallDate", svDate);
    LogWriteCustomNumber("DriveCount", nDriveCount);
endif;

end;


// during a complete uninstallation, read custom data back from the log file
function OnMoving( )
    NUMBER nvDriveCount;
    STRING svInstallDate;
begin

if (REMOVEALLMODE) then
    LogReadCustomNumber("DriveCount", nvDriveCount);
    LogReadCustomString("InstallDate", svInstallDate);
    SprintfBox(INFORMATION, "Custom Log Data",
```

```
        "During installation, the drive count " +
        "was %d, and the date was %s.",
        nvDriveCount, svInstallDate);
endif;

end;
```

LogWriteCustomNumber

Project ▪ *This information applies to InstallScript projects.*

LogWriteCustomNumber writes the number specified by nValue to the log file in the custom logging section under the key name specified by szKey.

Syntax

```
LogWriteCustomNumber( szKey, nValue );
```

Parameters

Table 91 ▪ LogWriteCustomNumber Parameters

Parameter	Description
szKey	Specifies the key name that identifies the number being written to the log file. All key names written to a particular log file must be unique, regardless of whether they are written with LogWriteCustomNumber or LogWriteCustomString. If you specify a key name that already exists in the custom logging section, its value is overwritten.
nValue	Specifies the number to be written to the log file.

Return Values

Table 92 ▪ LogWriteCustomNumber Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully wrote the number to the log file.
< ISERR_SUCCESS	Indicates that the function was unable to write the number to the log file.

Additional Information

LogWriteCustomNumber fails if you call it while logging is disabled.

Custom log file entries do not affect maintenance or uninstallation of the product unless you add code to the script to read custom values and perform actions based on those values. **LogWriteCustomNumber** cannot write data to the maintenance/uninstallation section of the log file (that is, the section where the installation automatically writes data, such as the files that are installed and the registry entries that are created, and from which it automatically reads data during maintenance or uninstallation).

To execute script code only when the product is being completely uninstalled, use an if-then statement:

```
if REMOVEALLMODE!=0 then
    /* this code is executed only during uninstallation */
endif;
```

To perform specific uninstallation actions when a particular feature is uninstalled, override the feature's UnInstalling event with the appropriate code.

LogWriteCustomNumber Example

Project ▪ *This information applies to InstallScript projects.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates the LogWriteCustomString, LogWriteCustomNumber,
//  LogReadCustomString, and LogReadCustomNumber functions.
//
//---------------------------------------------------------------------------

//  during installation, write some custom data to the log file
function OnMoved( )
    LIST listDrives;
    NUMBER nDriveCount, nvIgnore;
    STRING svDate;
begin

if (!MAINTENANCE) then
    // get current date
    GetSystemInfo(DATE, nvIgnore, svDate);

    // get current count of available drive letters
    listDrives = ListCreate(STRINGLIST);
    GetValidDrivesList(listDrives, -1, -1);
    nDriveCount = ListCount(listDrives);
    ListDestroy(listDrives);

    // write custom data to .ilg log file
    LogWriteCustomString("InstallDate", svDate);
    LogWriteCustomNumber("DriveCount", nDriveCount);
endif;

end;
```

```
// during a complete uninstallation, read custom data back from the log file
function OnMoving( )
    NUMBER nvDriveCount;
    STRING svInstallDate;
begin

if (REMOVEALLMODE) then
    LogReadCustomNumber("DriveCount", nvDriveCount);
    LogReadCustomString("InstallDate", svInstallDate);
    SprintfBox(INFORMATION, "Custom Log Data",
        "During installation, the drive count " +
        "was %d, and the date was %s.",
        nvDriveCount, svInstallDate);
endif;

end;
```

LogWriteCustomString

Project ▪ *This information applies to InstallScript projects.*

LogWriteCustomString writes the string specified by szValue to the log file in the custom logging section under the key name specified by szKey.

Syntax

```
LogWriteCustomString( szKey, szValue );
```

Parameters

Table 93 ▪ LogWriteCustomString Parameters

Parameter	Description
szKey	Specifies the key name that identifies the string being written to the log file. All key names written to a particular log file must be unique, regardless of whether they are written with LogWriteCustomString or LogWriteCustomNumber. If you specify a key name that already exists in the custom logging section, its value is overwritten.
szValue	Specifies the value to be written to the log file.

Return Values

Table 94 ▪ LogWriteCustomString Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully wrote the string to the log file.
< ISERR_SUCCESS	Indicates that the function was unable to write the string to the log file.

Additional Information

LogWriteCustomString fails if you call it while logging is disabled.

Custom log file entries do not affect maintenance or uninstallation of the product unless you add code to the script to read custom values and perform actions based on those values. **LogWriteCustomString** cannot write data to the maintenance/uninstallation section of the log file (that is, the section where the installation automatically writes data, such as the files that are installed and the registry entries that are created, and from which it automatically reads data during maintenance or uninstallation).

Note ▪ *If you selected the* ***Show Password dialog box during setup initialization*** *check box in the Password & Copyright panel of the Release Wizard or selected Yes for the Show Password Dialog setting in the Releases view, the default code for the OnCheckMediaPassword event handler function calls* **LogWriteCustomString** *with szKey set to MEDIA_PASSWORD_KEY in order to store a password-protected installation's password (as entered by the end user) so that maintenance and upgrade operations do not require that the same password be reentered. That default code also calls* **LogWriteCustomString** *with szKey set to MEDIA_PASSWORD_KEY in order to check whether the password is already stored before querying the end user for the password.*

To execute script code only when the product is being completely uninstalled, use an if-then statement:

```
if REMOVEALLMODE!=0 then
    /* this code is executed only during uninstallation */
endif;
```

To perform specific uninstallation actions when a particular feature is uninstalled, override the feature's UnInstalling event with the appropriate code.

LogWriteCustomString Example

Project ▪ *This information applies to InstallScript projects.*

```
//---------------------------------------------------------------------------
//
//  InstallShield Example Script
//
//  Demonstrates the LogWriteCustomString, LogWriteCustomNumber,
//  LogReadCustomString, and LogReadCustomNumber functions.
//
//---------------------------------------------------------------------------

//  during installation, write some custom data to the log file
function OnMoved( )
    LIST listDrives;
    NUMBER nDriveCount, nvIgnore;
    STRING svDate;
begin

if (!MAINTENANCE) then
    // get current date
    GetSystemInfo(DATE, nvIgnore, svDate);

    // get current count of available drive letters
    listDrives = ListCreate(STRINGLIST);
    GetValidDrivesList(listDrives, -1, -1);
    nDriveCount = ListCount(listDrives);
    ListDestroy(listDrives);

    // write custom data to .ilg log file
    LogWriteCustomString("InstallDate", svDate);
    LogWriteCustomNumber("DriveCount", nDriveCount);
endif;

end;


// during a complete uninstallation, read custom data back from the log file
function OnMoving( )
    NUMBER nvDriveCount;
    STRING svInstallDate;
begin

if (REMOVEALLMODE) then
    LogReadCustomNumber("DriveCount", nvDriveCount);
    LogReadCustomString("InstallDate", svInstallDate);
    SprintfBox(INFORMATION, "Custom Log Data",
        "During installation, the drive count " +
        "was %d, and the date was %s.",
        nvDriveCount, svInstallDate);
endif;

end;
```

LongPathFromShortPath

Use the **LongPathFromShortPath** function to convert a short file name to its equivalent long file name.

For an explanation of long file names, see Long File Names.

Syntax

```
LongPathFromShortPath ( svPath );
```

Parameters

Table 95 ▪ LongPathFromShortPath Parameters

Parameter	Description
svPath	Specifies a short file name and returns its associated long file name.

Return Values

Table 96 ▪ LongPathFromShortPath Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that the function was not successful.

LongPathFromShortPath Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions LongPathToShortPath and
 * LongPathFromShortPath.
 *
 * First, LongPathToShortPath is called to convert a long path
 * to a short path.  Then LongPathFromShortPath is called to
 * convert the short path to a long path.  The result of each
 * is displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define LONG_PATH "C:\\Program files"
#define TITLE "LongPathToShortPath & LongPathFromShortPath"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LongPathFromShortPath(HWND);

function ExFn_LongPathFromShortPath(hMSI)
    STRING svPath, szTitle, szMsg;
begin

    // Prompt user to enter a long path.
    szMsg    = "Please select an existing long path:";
    AskPath (szMsg, LONG_PATH, svPath);

    // Display the long path.
    szMsg = "The long path is shown below: \n\n%s";
    SprintfBox (INFORMATION, TITLE, szMsg, svPath);

    //Convert the long path to a short path.
    if (LongPathToShortPath (svPath) < 0) then;
        MessageBox ("LongPathToShortPath failed.", SEVERE);
        abort;
    else
        // Display the short path.
        szMsg = "The short path is shown below: \n\n%s";
        SprintfBox (INFORMATION, TITLE, szMsg, svPath);
    endif;

    // Restore the long path from the short path.
    if (LongPathFromShortPath (svPath) < 0) then
        MessageBox ("LongPathFromShortPath failed.", SEVERE);
    else
        // Display the restored long path.
        szMsg = "The restored long path is shown below: \n\n%s";
        SprintfBox (INFORMATION, TITLE, szMsg, svPath);
    endif;

end;
```

LongPathToQuote

The **LongPathToQuote** function places double quotation marks around a long file name or removes the double quotation marks from a long file name.

For an explanation of long file names, see Long File Names.

Add double quotation marks to long file names that contain spaces before passing the long file names to the command line. You must remove the double quotation marks from long file names before converting them to short file names using the LongPathToShortPath function. If you do not, the quoted long file name remains intact.

Note ▪ *This function adds quotation marks only if there is a space character in the file name. For example, quotation marks are not added around C:\\ThisismyApp because it is a long file name without a space.*

Syntax

```
LongPathToQuote ( svPath, nParameter );
```

Parameters

Table 97 ▪ LongPathToQuote Parameters

Parameter	Description
svPath	Specifies a long file name and returns that name with or without quotation marks, depending on the value passed in nParameter.
nParameter	Specifies whether quotation marks are to be added to the long path or removed from the long path. Pass one of the following predefined constants in this parameter: • **TRUE**—Quotation marks are added to the long path. • **FALSE**—Quotation marks are removed from the long path.

Return Values

Table 98 ▪ LongPathToQuote Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that the function was not successful.

LongPathToQuote Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the LongPathToQuote function.
 *
 * This script calls LongPathToQuote to place double quotation
 * marks around a long file name.  The result is displayed in
 * in a dialog.  Then, LongPathToQuote is called again to
 * remove the quotation marks and the result displayed in a
```

```
 * dialog.
 *
\*-----------------------------------------------------------------*/

// Define a constant for the base path (a long file name).
#define BASE_PATH "C:\\Program Files"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LongPathToQuote(HWND);

function ExFn_LongPathToQuote(hMSI)
    STRING  svPath, szMainDirectory, szMsg;
begin

    // Set up parameter for call to LongPathToQuote.
    svPath = BASE_PATH;

    // Place double quotation marks around the long file name in svPath.
    if (LongPathToQuote (svPath, TRUE) < 0) then
        MessageBox ("First call to LongPathToQuote failed.", SEVERE);
        abort;
    endif;

    // Display the quoted long file name in svPath.
    szMsg = "The quoted long file name:\n\n" + svPath;
    MessageBox (szMsg, INFORMATION);

    // Remove the quotation marks from the long file name in svPath.
    if (LongPathToQuote (svPath, FALSE) < 0) then
        MessageBox ("Second call to LongPathToQuote failed.", SEVERE);
        abort;
    endif;

    // Display the long file name with quotation marks removed.
    szMsg = "The unquoted long file name is shown below: \n\n" + svPath;

    MessageBox (szMsg, INFORMATION);

end;
```

LongPathToShortPath

The **LongPathToShortPath** function converts a long file name to its equivalent short file name. The parameter svPath can be an absolute path or a relative path, and it may include a file name; but the folder or file it specifies must exist on the target system.

For an explanation of long file names, see Long File Names.

Syntax

```
LongPathToShortPath ( svPath );
```

Parameters

Table 99 ▪ LongPathToShortPath Parameters

Parameter	Description
svPath	Specifies a long file name and returns its associated short file name. ***Note ▪*** *LongPathToShortPath removes trailing backslashes from long file names.*

Return Values

Table 100 ▪ LongPathToShortPath Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that the function was not successful.

Additional Information

Since **LongPathToShortPath** can succeed only if the specified folder or file can be found on the target system, you may need to set the current folder before specifying a relative path. For example, if svPath contains the relative path `InstallShield`, which exists in the folder `C:\Program Files`, the setup is not able to find it unless the current folder is `C:\Program Files`. Use the ChangeDirectory function to change the current folder when necessary before calling **LongPathToShortPath** so that the target folder or path can be found.

LongPathToShortPath Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions LongPathToShortPath and
 * LongPathFromShortPath.
 *
 * First, LongPathToShortPath is called to convert a long path
 * to a short path.  Then LongPathFromShortPath is called to
 * convert the short path to a long path.  The result of each
 * is displayed in a message box.
 *
\*---------------------------------------------------------------*/
```

```
#define LONG_PATH "C:\\Program Files"
#define TITLE "LongPathToShortPath & LongPathFromShortPath"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LongPathToShortPath(HWND);

function ExFn_LongPathToShortPath(hMSI)
   STRING svPath, szTitle, szMsg;
begin

    // Prompt user to enter a long path.
    szMsg    = "Please select an existing long path:";
    AskPath (szMsg, LONG_PATH, svPath);

    // Display the long path.
    szMsg = "The long path is shown below: \n\n%s";
    SprintfBox (INFORMATION, TITLE, szMsg, svPath);

    //Convert the long path to a short path.
    if (LongPathToShortPath (svPath) < 0) then;
        MessageBox ("LongPathToShortPath failed.", SEVERE);
        abort;
    else
        // Display the short path.
        szMsg = "The short path is shown below: \n\n%s";
        SprintfBox (INFORMATION, TITLE, szMsg, svPath);
    endif;

    // Restore the long path from the short path.
    if (LongPathFromShortPath (svPath) < 0) then
        MessageBox ("LongPathFromShortPath failed.", SEVERE);
    else
        // Display the restored long path.
        szMsg = "The restored long path is shown below: \n\n%s";
        SprintfBox (INFORMATION, TITLE, szMsg, svPath);
    endif;

end;
```

LOWORD

The **LOWORD** function extracts the low-order word (two bytes) from the 32-bit integer value specified by lValue.

Syntax

```
LOWORD ( lValue );
```

Parameters

Table 101 ▪ LOWORD Parameters

Parameter	Description
lValue	Specifies the 32-bit integer from which you want to extract the lower two bytes.

Return Values

This function returns the low-order word (lower two bytes) of the integer.

LOWORD Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates HIWORD and LOWORD.
 *
 * This example script shows how to use HIWORD and LOWORD to
 * to get the low-order word and the high-order word from a value.
\*---------------------------------------------------------------*/

#define TITLE_TEXT "LOWORD/HIWORD Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_LOWORD(HWND);

function ExFn_LOWORD(hMSI)
    STRING  szMsg;
    NUMBER  nData, nLOWORD, nHIWORD;
begin

    nData = 305419896; // hex value: 12345678
    // Get the low-order word, 22136 (hex value: 5678).

    nLOWORD = LOWORD (nData);

    // Get the high-order word, 4660 (hex value: 1234).
    nHIWORD  = HIWORD (nData);

    // Display the results.
    szMsg  = "LOWORD: %ld\nHIWORD: %ld";
    SprintfBox (INFORMATION, TITLE_TEXT, szMsg, nLOWORD, nHIWORD);

end;
```

MaintenanceStart

The **MaintenanceStart** function creates a registry key and associated values that are used during initialization for maintenance or uninstallation and that provide information about the application to Add or Remove Programs. This function is called by the default code for the OnMoveData event handler.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

MaintenanceStart creates the following values under the application uninstallation registry key:

Table 102 ▪ Application Uninstallation Registry Key Values

Value Name	Value Data
Comments	The value of the system variable IFX_PRODUCT_COMMENTS, if non-null; otherwise, the function does not create an entry.
Contact	The value of the system variable IFX_PRODUCT_SUPPORT_CONTACT, if non-null; otherwise, the function does not create an entry.
DisplayIcon	The value of the system variable IFX_PRODUCT_ICON, if non-null; otherwise, the function does not create an entry.
DisplayName	The value of the system variable IFX_PRODUCT_NAME, if non-null; otherwise, the function does not create an entry.
DisplayVersion	The value of the system variable IFX_PRODUCT_VERSION.
HelpLink	The value of the system variable IFX_PRODUCT_SUPPORT_URL, if non-null; otherwise, the function does not create an entry.
HelpTelephone	The value of the system variable IFX_PRODUCT_SUPPORT_PHONE, if non-null; otherwise, the function does not create an entry.
InstallDate	The date on which the installation is run, in the format *yyyymmdd*.
InstallLocation	The value of the system variable TARGETDIR.
InstallSource	The value of the system variable SRCDIR.
Language	The value of the system variable SELECTED_LANGUAGE.
LogFile	<DISK1TARGET>\Setup.ilg
LogMode	The value of the system variable MAINT_OPTION.

Table 102 ▪ Application Uninstallation Registry Key Values (cont.)

Value Name	Value Data
ModifyPath	The value of the system variable UNINSTALL_STRING if ADDREMOVE_HIDECHANGEOPTION is FALSE and either of the following two conditions is true: ● ADDREMOVE_HIDEREMOVEOPTION is non-zero ● ADDREMOVE_HIDEREMOVEOPTION and ADDREMOVE_COMBINEDBUTTON are both FALSE Otherwise, the function does not create an entry.
NoModify	The value of the system variable ADDREMOVE_HIDEREMOVEOPTION.
NoRemove	The value of the system variable ADDREMOVE_HIDEREMOVEOPTION.
NoRepair	1 if either ADDREMOVE_HIDECHANGEOPTION or ADDREMOVE_HIDEREMOVEOPTION is non-zero; otherwise, the function does not create an entry.
ProductGuid	The value of the system variable PRODUCT_GUID.
ProductId	The value of the system variable IFX_PRODUCT_REGISTEREDSERIALNUM, if non-null; otherwise, the function does not create an entry.
Publisher	The value of the system variable IFX_COMPANY_NAME, if non-null; otherwise, the function does not create an entry.
Readme	The value of the system variable IFX_PRODUCT_README, if non-null; otherwise, the function does not create an entry.
RegCompany	The value of the system variable IFX_PRODUCT_REGISTEREDCOMPANY, if non-null; otherwise, the function does not create an entry.
RegOwner	The value of the system variable IFX_PRODUCT_REGISTEREDOWNER, if non-null; otherwise, the function does not create an entry.
SystemComponent	1 if the system variable ADDREMOVE_SYSTEMCOMPONENT is non-zero; otherwise, the function does not create an entry.
UninstallString	The value of the system variable UNINSTALL_STRING. Additionally, the value of the system variable ADDREMOVE_STRING_REMOVEONLY is appended to this registry data if ADDREMOVE_HIDEREMOVEOPTION is FALSE and either of the following two conditions is true: ● ADDREMOVE_HIDECHANGEOPTION is non-zero ● ADDREMOVE_HIDECHANGEOPTION and ADDREMOVE_COMBINEDBUTTON are both FALSE

Table 102 ▪ Application Uninstallation Registry Key Values (cont.)

Value Name	Value Data
URLInfoAbout	The value of the system variable IFX_PRODUCT_URL, if non-null; otherwise, the function does not create an entry.
URLUpdateInfo	The value of the system variable IFX_PRODUCT_UPDATE_URL, if non-null; otherwise, the function does not create an entry.
Version	The packed DWORD equivalent of the data in the DisplayVersion value.
VersionMajor	The first byte of the data in the Version value.
VersionMinor	The second byte of the data in the Version value.

Syntax

```
MaintenanceStart ( );
```

Parameters

None

Return Values

Table 103 ▪ MaintenanceStart Return Values

Return Value	Description
0	Indicates that the function successfully created the registry key and its associated values.
< 0	Indicates that the function was unable to create the registry key and its associated values. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

InstallScript installations always create VersionMajor and VersionMinor registry values in the Uninstall key. This applies to new installations that are created in InstallShield 2023, as well as installations that are upgraded from InstallShield 2009 or earlier. Previously, in InstallShield 2009 and earlier, the names of the values that InstallScript installations created were MajorVersion and MinorVersion; these are no longer created.

When the **MaintenanceStart** function is called, it creates the VersionMajor and VersionMinor value names in the registry. By default, it also deletes the MajorVersion and MinorVersion value names if they exist. If you do not want the MajorVersion and MinorVersion value names to be deleted from target systems, you can use the REGDB_OPTIONS option called REGDB_OPTION_NO_DELETE_OLD_MAJMIN_VERSION. If you want to continue using only the MajorVersion and MinorVersion value names, you must delete VersionMajor and VersionMinor after **MaintenanceStart** returns.

MediaGetData

Project ▪ *This information applies to InstallScript projects.*

The **MediaGetData** function retrieves information about a file media library.

MediaGetData calls MediaGetDataEx(szMediaSource, nInfo, nvResult, svResult, FALSE). For information on parameters and return values for **MediaGetData**, see MediaGetDataEx.

Syntax

```
MediaGetData ( szMediaSource, nInfo, nvResult, svResult );
```

MediaGetDataEx

Project ▪ *This information applies to InstallScript projects.*

The **MediaGetDataEx** function retrieves information about a file media library, including media information that is stored in the project's string entries.

Syntax

```
MediaGetDataEx ( szMediaSource, nInfo, nvResult, svResult, bCheckStringTable );
```

Parameters

Table 104 ▪ MediaGetDataEx Parameters

Parameter	Description
szMediaSource	Specifies the name of the file media library whose information is to be retrieved; typically, the value of this argument is the system variable MEDIA.
nInfo	Specifies the type of information to retrieve. Pass one of the following predefined constants in this parameter: • **MEDIA_FIELD_ADDREMOVE_NOMODIFY**—Retrieves the setting that you specified in the Disable Change Button setting in the General Information view. The value is returned in nvResult; 0 corresponds to No and 1 corresponds to Yes. • **MEDIA_FIELD_ADDREMOVE_NOREMOVE**—Retrieves the setting that you specified in the Disable Remove Button setting in the General Information view. The value is returned in nvResult; 0 corresponds to No and 1 corresponds to Yes. • **MEDIA_FIELD_COMPANY_NAME—**Retrieves the company name that you specified in the General Information view. The company name is returned in svResult. • **MEDIA_FIELD_MEDIA_FLAGS**—Retrieves the format of the specified file media library. The number returned in nvResult includes any applicable values from among the following bit flags: MEDIA_FLAG_FORMAT_DIFFERENTIAL: Indicates a differential file media library. MEDIA_FLAG_UPDATEMODE_SUPPORTED: Indicates an update enabled file media library. This flag is always set. • **MEDIA_FIELD_PREVIOUS_VERSIONS—**Retrieves the version information that you specified in the Supported Version(s) property of the Releases view or in the Update panel in the Release Wizard. The version information is returned in svResult. • **MEDIA_FIELD_PRODUCT_COMMENTS—**Retrieves the comments that you specified in the ARP Comments setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_EXE—**Retrieves the executable name that you specified in the General Information view. The executable name is returned in svResult.

Table 104 ▪ MediaGetDataEx Parameters (cont.)

Parameter	Description
nInfo (cont.)	• **MEDIA_FIELD_PRODUCT_ICON—**Retrieves the display icon that you specified in the Display Icon setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_NAME—**Retrieves the product name that you specified in the General Information view. The product name is returned in svResult. • **MEDIA_FIELD_PRODUCT_README—**Retrieves the readme file that you specified in the Read Me setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_SUPPORT_CONTACT—**Retrieves the support contact that you specified in the Support Contact setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_SUPPORT_PHONE—**Retrieves the support phone number that you specified in the Support Phone Number setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_SUPPORT_URL**—Retrieves the support URL that you specified in the Support URL setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_UPDATE_URL**—Retrieves the product update URL that you specified in the Product Update URL setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_URL**—Retrieves the publisher/product URL that you specified in the Publisher/Product URL setting in the General Information view. The value is returned in svResult. • **MEDIA_FIELD_PRODUCT_VERSION**—Retrieves the version information that you specified in the General Information view. The version information is returned in svResult. • **MEDIA_FIELD_TARGETDIR**—Retrieves the value of TARGETDIR that you specified in the General Information view.
bCheckStringTable	Specifies whether svResult returns the string that you entered in InstallShield (FALSE) or, if the string that you entered in InstallShield is a string identifier, the string value that is associated with that identifier (TRUE). If bCheckStringTable is TRUE but the string that you entered in InstallShield is not a string identifier, svResult returns the string that you entered in InstallShield.

Return Values

Table 105 ▪ MediaGetDataEx Return Values

Return Value	Description
0	MediaGetData successfully retrieved the requested information.
< 0	MediaGetData failed to retrieve the requested information.

MessageBeep

The **MessageBeep** function plays the default system sound.

Tip ▪ *You can also give audio cues by calling PlayMMedia to play an audio file.*

Syntax

```
MessageBeep ( nReserved );
```

Parameters

Table 106 ▪ MessageBeep Parameters

Parameter	Description
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

This function has no return values.

MessageBeep Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the MessageBeep function.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_MessageBeep(HWND);
```

```
function ExFn_MessageBeep(hMSI)
begin

    // Play the default system sound.
    MessageBeep (0);

    // Display a message box.
    MessageBox ("Please listen for a sound.", INFORMATION);

    // Play the default system sound.
    MessageBeep (0);

end;
```

MessageBox

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **MessageBox** function presents a dialog that contains a message, an icon that indicates the nature of the message (information, warning, or severe), and an OK button. The default title depends on the value of nType, which also indicates the icon type. For example, if you pass INFORMATION in nType, the title **Information** appears in the title bar. The titles are blank by default, unless you set them by calling SetDialogTitle before calling **MessageBox**. If the titles are blank, the title bar text for message box is the product name (from IFX_SETUP_TITLE).

This function uses the Microsoft Windows API **MessageBox**. The operating environment, not the installation, determines the size and location of the message box. The operating environment also generates the text for the OK button in the local language (the language that the operating system is running under). You cannot change the text on this button. For more information regarding the use of Windows **MessageBox** types, consult the description of the **MessageBox** Windows API function in the appropriate Windows SDK.

Note the following when using Windows message box constants:

- Some Windows **MessageBox** type constants are predefined in the `ISRTWindows.h` file that is provided in the *`InstallShield Program Files Folder`*`\Script\Isrt\Include` folder. This file is automatically included in your installation when you include `Ifx.h` in your script. You do not need to redefine any constants that are defined in `ISRTWindows.h`; doing so will result in a compiler warning. To determine which constants are predefined, refer to the `ISRTWindows.h` file.
- To use constants that are not defined in `ISRTWindows.h`, you must define them (using #define) in the declaration block of your installation script. You cannot simply include the `Windows.h` file that is usually part of a C++ program. The values that you need to assign to the undefined constants can generally be found in an include file that is provided with the appropriate Windows SDK or development tool. (For Microsoft Visual C++, most constants can be found in the `Winuser.h` file, which is located in the *`InstallShield Program Files Folder`*`\Script\Resource` folder.)

- Windows and InstallShield message box constants cannot be used together in an installation. If an InstallShield message box constant is combined with a Windows message box constant using the OR operator (|), the Windows message box constant is ignored.
- Some Windows message box styles are not supported on some Windows platforms. To determine whether a particular style is supported on the operating systems that are targeted by the installation, consult the appropriate Windows SDK.
- When a Windows message box style is used by the **MessageBox** function, the caption (title) of the message box is **Install**. If you need to display a different caption, use the MessageBoxEx function.

Syntax

```
MessageBox ( szMsg, nType );
```

Parameters

Table 107 ▪ MessageBox Parameters

Parameter	Description
szMsg	Specifies the message to display. InstallShield does not automatically break the text of the message into separate lines to fit in the message box. If the message is too long for one line, insert a line break by embedding newline escape characters (\n) at appropriate places in the string.
nType	Specifies the type of message box to create and the type of icon to display in the message box. Pass one of the following predefined constants in this parameter: • INFORMATION • WARNING • SEVERE Any Windows API MessageBox type can also be specified in this parameter. Multiple styles can be combined logically using the OR operator to produce the required MessageBox type.

Return Values

The return value is not significant unless you are using standard Microsoft Windows message box styles. If you are using these styles, the return value is the same as the return value from the MessageBox API functions.

Additional Information

The dialog that is displayed by the MessageBox function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

MessageBox Example

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

Note *▪ To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the MessageBox function.
 *
 * This script displays three message boxes, each with a
 * different message and icon.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_MessageBox(HWND);

function ExFn_MessageBox(hMSI)
    STRING szMsg;
begin

    // Display a message box that shows the information icon.
    szMsg = "This will install Example Program.";
    MessageBox (szMsg, INFORMATION);

    // Display a message box that shows the warning icon.
    szMsg = "Installing this version will replace previous one.";
    MessageBox (szMsg, WARNING);

    // Display a message box that shows the severe icon.
    szMsg = "Cannot install this application on floppy drives.";
    MessageBox (szMsg, SEVERE);

end;
```

MessageBoxEx

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **MessageBoxEx** function presents a dialog that contains a message, an icon that indicates the nature of the message (information, warning, or severe), and an OK button. The title is set by szCaption.

This function uses the Microsoft Windows API MessageBox. The operating environment, not InstallShield, determines the size and location of the message box. The operating environment also generates the text for the OK button in the local language (the language that the operating system is running under). You cannot change the text in this button. For more information regarding the use of Windows MessageBox types, consult the description of the MessageBox Windows API function in the appropriate Windows SDK.

Note the following when using Windows message box constants:

- Some Windows **MessageBox** type constants are predefined in the `ISRTWindows.h` file that is provided in the *`InstallShield Program Files Folder`*`\Script\Isrt\Include` folder. This file is automatically included in your installation when you include `Ifx.h` in your script. You do not need to redefine any constants that are defined in `ISRTWindows.h`; doing so will result in a compiler warning. To determine which constants are predefined, refer to the `ISRTWindows.h` file.
- To use constants that are not defined in `ISRTWindows.h`, you must define them (using #define) in the declaration block of your installation script. You cannot simply include the `Windows.h` file that is usually part of a C++ program. The values that you need to assign to the undefined constants can generally be found in an include file that is provided with the appropriate Windows SDK or development tool. (For Microsoft Visual C++, most constants can be found in the `Winuser.h` file, which is located in the *`InstallShield Program Files Folder`*`\Script\Resource` folder.)
- Windows and InstallShield message box constants cannot be used together in an installation. If an InstallShield message box constant is combined with a Windows message box constant using the OR operator, the Windows message box constant will be ignored.
- Some Windows message box styles are not supported on some Windows platforms. To determine whether a particular style is supported on the operating system(s) targeted by the installation, consult the appropriate Windows SDK.

Syntax

```
MessageBoxEx( szMsg, szCaption, nType );
```

Parameters

Table 108 ▪ MessageBoxEx Parameters

Parameter	Description
szMsg	Specifies the message to display. InstallShield does not automatically break the text of the message into separate lines to fit in the message box. If the message is too long for one line, insert a line break by embedding newline escape characters (\n) at appropriate places in the string.
szCaption	Specifies the title to display. If you pass a null string ("") in this parameter, the value of the system variable IFX_SETUP_TITLE is used as the dialog title.
nType	Specifies the type of message box to create and the type of icon to display in the message box. Pass one of the following predefined constants in this parameter (Explorer shell icons are shown): • INFORMATION • WARNING • SEVERE Any Windows API MessageBox type can also be specified in this parameter. Multiple styles can be combined logically with the OR operator (|) to produce the required MessageBox type.

Return Values

The return value is not significant unless you are using standard Microsoft Windows message box styles. If you are using these styles, the return value is the same as the return value from the MessageBox API functions.

Additional Information

The message box that is displayed by the MessageBoxEx function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

NumToStr

The **NumToStr** function converts a number to a string.

Syntax

```
NumToStr ( svString, nValue );
```

Parameters

Table 109 ▪ NumToStr Parameters

Parameter	Description
svString	Returns the string equivalent of nValue.
nValue	Specifies the number to convert to a string.

Return Values

Table 110 ▪ NumToStr

Return Value	Description
0	Indicates that the function successfully converted the number to a string.
< 0	Indicates that the function failed to convert the number to a string.

NumToStr Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the NumToStr function
 *
 * This script calls NumToStr convert the numeric value of free
 * disk space available on the system to a string so that it
 * can be displayed by the MessageBox function.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_NumToStr(HWND);

function ExFn_NumToStr(hMSI)
    STRING  svString;
    NUMBER  nSpace, nResult;
begin

    // Get the amount of free space on drive C.
    nSpace  = GetDiskSpace ("C:");
```

```
    // Convert the number to a string.
    nResult = NumToStr (svString, nSpace);

    if (nResult < 0) then
        MessageBox ("NumToStr failed.", SEVERE);
    else
        // Display the amount of free space on drive C.
        MessageBox (svString + " bytes free on drive C.", INFORMATION);
    endif;

end;
```

OpenFile

The **OpenFile** function opens an existing text file or binary file. Before you open the file you must set the file mode by calling OpenFileMode.

Tip ▪ *Note the following:*

- *After you open a text file, call GetLine and WriteLine to read from and write to the file. When you finish reading from or writing to a file with GetLine or WriteLine, you must close the file using the CloseFile function.*
- *After you open a binary file, call ReadBytes and WriteBytes to read from and write to the file.*
- *You can use SeekBytes to position the file pointer before writing to a binary file.*
- *You can also search, read from, and write to text files using the FileGrep, FileInsertLine, and FileDeleteLine functions. However, these functions do not require you to open or close the files (this is handled internally).*
- *Use CreateFile to create a file. CreateFile leaves the new file open in append mode (text files) or read/write mode (binary files).*

Syntax

```
OpenFile ( nvFileHandle, szPath, szFileName );
```

Parameters

Table 111 ▪ OpenFile Parameters

Parameter	Description
nvFileHandle	Returns the file handle of the file that was opened. Use this handle to identify the file when you call other file-related InstallScript functions.
szPath	Specifies the path—which may include a drive designation—of the file you want to open. You can specify a valid Uniform Resource Locator (URL) in this parameter, after setting the file mode to FILE_MODE_NORMAL or FILE_MODE_BINARYREADONLY (by calling OpenFileMode). If you pass a CGI or ASP request (for example, "http://www.mydomain.net/login.asp?name=Me&pwd=wow"), the response is sent to memory and can be read by ReadBytes. To check the validity of a URL, call Is(VALID_PATH, szURL). If you pass a null string ("") in this parameter, the function fails.
szFileName	Specifies the unqualified name—that is, without a drive designation or path—of the file you want to open. If you pass a null string ("") in this parameter, the function fails.

Return Values

Table 112 ▪ OpenFile Return Values

Return Value	Description
0	Indicates that the function successfully opened the file.
< 0	Indicates that the function was unable to open the file.

OpenFile Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the OpenFile and CloseFile functions.
 *
 * OpenFile is called to open a file, which is then read into
 * a list.  The file is then closed and the list is displayed.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference an existing file
 *       in an existing directory.
 *
\*---------------------------------------------------------------*/
```

```
#define EXAMPLE_FILE "Readme.txt"
#define EXAMPLE_DIR "C:\\Windows"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_OpenFile(HWND);

function ExFn_OpenFile(hMSI)
    STRING  svLine;
    NUMBER  nvFileHandle;
    LIST    listID;
begin

    // Set the file mode to normal.
    OpenFileMode (FILE_MODE_NORMAL);

    // Open the text file.
    if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_FILE) < 0) then
        MessageBox ("OpenFile failed.", SEVERE);
        abort;
    endif;

    // Create an empty string list.
    listID = ListCreate (STRINGLIST);

    // Read lines from the text file into the string list.
    while GetLine (nvFileHandle, svLine) = 0
        ListAddString (listID, svLine, AFTER);
    endwhile;

    // Close the file.
    if (CloseFile (nvFileHandle) < 0) then
        MessageBox ("CloseFile failed.", SEVERE);
    endif;

    // Display the text that was read from the file.
    SdShowInfoList ("", "", listID);

end;
```

OpenFileMode

The **OpenFileMode** function sets the mode of the file you want to open or create. The argument you pass as the parameter nMode sets the file mode to one of the following:

- ANSI or Unicode text file in append mode.
- ANSI or Unicode text file in read-only mode.
- Binary file in read/write mode.
- Binary file in read-only mode.

After you set the file mode, call OpenFile to open an existing file or CreateFile to create and open a new file.

Syntax

```
OpenFileMode ( nMode );
```

Parameters

Table 113 ▪ OpenFileMode Parameters

Parameter	Description
nMode	Specifies which mode to use to open a file. Pass one of the following predefined constants in this parameter: • **FILE_MODE_APPEND**—This constant allows a text file to be opened or created in append mode. When a file is opened in append mode using **OpenFile**, the file pointer is at the end of the file. You can use the WriteLine function to append lines to the end of the file. Files created using **CreateFile** are new (empty), so lines appended to the files are written at the beginning of the files. Note that if you open a file in append mode, the **GetLine** function will fail if you call it because the file pointer is at the end of the file. • **FILE_MODE_APPEND_UNICODE**—Indicates that **CreateFile** should create new files as Unicode files, instead of the default of ANSI. This option does not affect how existing files are opened. Existing files are always opened and saved in the existing format. To convert a file from one type to another, use the **ListReadFromFile** and **ListWriteToFileEx** with the appropriate nOptions. • **FILE_MODE_NORMAL**—This constant allows a text file to be opened in read-only mode. When a file is opened in read-only mode using **OpenFile**, the file pointer is at the beginning of the file. You can use the **GetLine** function to read from the file. Files created using **CreateFile** when FILE_MODE_NORMAL is in effect will actually be created in FILE_MODE_APPEND mode. • **FILE_MODE_BINARY**—This constant allows a binary file to be opened and created in read/write mode. When you open or create a file in binary mode with **OpenFile** or **CreateFile**, you can call **ReadBytes** to read from the file and **WriteBytes** to write to the file. Writing to a binary file begins at the current file pointer position, which for a newly opened or created file is position 0—the beginning of the file. If you want to append to an existing binary file opened using **OpenFile**, you must use **SeekBytes** to position the file pointer before writing. To open a file on a CD-ROM or on a read-only drive, call **OpenFileMode** to set the file mode to read-only (FILE_MODE_BINARYREADONLY). • **FILE_MODE_BINARYREADONLY**—This constant is just like the constant FILE_MODE_BINARY, except that it opens the binary file in read-only mode. When opening a binary file on CD-ROM or read-only drives, use this constant to open a binary file. FILE_MODE_BINARY will fail opening binary files on CD-ROM or read-only drives.

Return Values

Table 114 ▪ OpenFileMode Return Values

Return Value	Description
0	Indicates that the function successfully set the file mode.

Table 114 ▪ OpenFileMode Return Values (cont.)

Return Value	Description
< 0	Indicates that the function was unable to set the file mode.

OpenFileMode Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the OpenFileMode function.
 *
 * This script opens a text file in read-only (FILE_MODE_NORMAL)
 * mode.  It then retrieves and displays the first line from
 * the file.
 *
 * Next, it opens a file in binary mode, positions the file
 * pointer at the 15th byte and reads 28 bytes from the file.
 *
 * Note: In order for this script to run correctly, you must set
 *       the preprocessor constants so that they reference
 *       existing files in an existing directory.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR       "C:\\"
#define EXAMPLE_TEXT_FILE "ISExampl.txt"
#define EXAMPLE_BIN_FILE  "ISExampl.bin"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_OpenFileMode(HWND);

function ExFn_OpenFileMode(hMSI)
    STRING svLine, svString;
    NUMBER nvFileHandle;
begin

    // Set the file mode to normal.
    OpenFileMode (FILE_MODE_NORMAL);

    // Open the file.
    if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_TEXT_FILE) < 0) then
        MessageBox ("OpenFile failed.", SEVERE);
        abort;
    endif;

    // Get the first line of the text file.
    GetLine (nvFileHandle, svLine);
```

```
    // Display the line.
    MessageBox (svLine, INFORMATION);

    // Close the file.
    CloseFile (nvFileHandle);

    // Set the file mode to binary read/write.
    OpenFileMode (FILE_MODE_BINARY);

    // Open the file.
    if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_BIN_FILE) < 0) then
        MessageBox ("OpenFile failed.", SEVERE);
    else
        // Move the file pointer to byte 15.
        SeekBytes (nvFileHandle, 15, FILE_BIN_START);

        // Read 28 bytes from the binary file into svString.
        if (ReadBytes (nvFileHandle, svString, 0, 28) < 0) then
            MessageBox ("ReadBytes failed.", SEVERE);
        else
            // Display the string.
            MessageBox (svString, INFORMATION);
        endif;

        // Close the binary file.
        CloseFile (nvFileHandle);
    endif;

end;
```

ParsePath

The **ParsePath** function retrieves the specified part of an existing path. The function works with any valid path, including short paths, long paths, and UNC paths that may or may not include a specific file name. These are some sample paths that can be parsed with this function.

- \Path1\Path2\Filename.exe
- FileName
- Filename.exe
- \Path1\Path2\Filename
- D:
- D:\
- \\Server Name\Share Name\Share Directory
- Any other legal DOS path

Syntax

```
ParsePath ( svReturnString, szPath, nOperation );
```

Parameters

Table 115 ▪ ParsePath Parameters

Parameter	Description
svReturnString	Returns the part of the path in szPath that is specified by nOperation.
szPath	Specifies the path to parse. When specifying a path that does not include a file name, you must append a backslash to the end of the path before passing it to ParsePath; otherwise the last part of the path will be interpreted as a file name.
nOperation	Specifies which element of the path to return. Pass one of the following predefined constants in this parameter: • **DIRECTORY**—Indicates that the path minus the disk drive letter and file name should be returned in svReturnString. When this option is used with a UNC path, ParsePath returns the path without the server and shared device name, and without the file name if one was specified. For example, the UNC path \\TheServer\TheSharedDevice\TheApp\TheFile.exe is returned in svReturnString as \TheApp\. • **DISK**—Indicates that the disk drive designation (drive letter followed by a colon) should be returned in svReturnString. When this option is used with a UNC path, ParsePath returns the server and shared device name. For example, the UNC path \\TheServer\TheSharedDevice\TheApp\TheFile.exe is returned in svReturnString as \\TheServer\TheSharedDevice. • **EXTENSION_ONLY**—Indicates that the file extension should be returned in svReturnString. It does not include the period. • **FILENAME**—Indicates that the complete file name (that is, with its file extension) should be returned in svReturnString. • **FILENAME_ONLY**—Indicates that the file name only (that is, without its file extension) should be returned in svReturnString. • **PATH**—Indicates that the path minus the file name should be returned in svReturnString. This option differs from DIRECTORY in that the drive designation (if specified in szPath) is included in the returned path. When szPath specifies a UNC path the server and shared device name are included in the returned path. For example, the UNC path \\TheServer\TheSharedDevice\TheApp\TheFile.exe is returned in svReturnString as \\TheServer\TheSharedDevice\TheApp\.

Return Values

Table 116 ▪ ParsePath Return Values

Return Value	Description
0	Indicates that the function successfully parsed the path string.
< 0	Indicates that the function was unable to parse the path string.

ParsePath Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ParsePath function.
 *
 * The ParsePath is called six times to retrieve various
 * information from a fully-qualified file name.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_PATH "C:\\Windows\\Readme.txt"
#define TITLE_TEXT   "ParsePath example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ParsePath(HWND);

function ExFn_ParsePath(hMSI)
    STRING szMsg, svReturnString;
begin

    // Get the disk letter from the path.
    if (ParsePath (svReturnString, EXAMPLE_PATH, DISK) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
    else
        szMsg = "nOperation = DISK\n\nParsed Path: %s";
        SprintfBox (INFORMATION, TITLE_TEXT , szMsg, svReturnString);
    endif;

    // Get the full path.
    szMsg = "nOperation = PATH\n\nParsed Path: %s";

    if (ParsePath (svReturnString, EXAMPLE_PATH, PATH) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svReturnString);
    endif;

    // Get the directory name.
    if (ParsePath (svReturnString, EXAMPLE_PATH, DIRECTORY) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
    else
        szMsg = "nOperation = DIRECTORY\n\nParsed Path: %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svReturnString);
    endif;

    // Get the file name and extension.
    if (ParsePath (svReturnString, EXAMPLE_PATH, FILENAME) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
```

```
    else
        szMsg = "nOperation = FILENAME\n\nParsed Path: %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svReturnString);
    endif;

    // Get file name without extension.
    if (ParsePath (svReturnString, EXAMPLE_PATH, FILENAME_ONLY) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
    else
        szMsg    = "nOperation = FILE_NAME_ONLY\n\nParsed Path: %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svReturnString);
    endif;

    // Get the file extension.
    if (ParsePath (svReturnString, EXAMPLE_PATH, EXTENSION_ONLY) < 0) then
        MessageBox ("ParsePath failed", SEVERE);
    else
        szMsg    = "nOperation = EXTENSION_ONLY\n\nParsed Path: %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svReturnString);
    endif;

end;
```

ParseUrl

The **ParseUrl** function retrieves the parts of the specified URL. The function works with any valid URL.

Syntax

```
ParseUrl ( szUrl, pISUrlComponents );
```

Parameters

Table 117 ▪ ParseUrl Parameters

Parameter	Description
szUrl	Specifies the URL to parse.
pISUrlComponents	Returns a pointer to an ISURL_COMPONENTS data structure that contains the parts of the specified URL.

Return Values

Table 118 ▪ ParseUrl Return Values

Return Value	Description
0	Indicates that the function successfully parsed the path string.
< 0	Indicates that the function was unable to parse the path string.

ParseUrl Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ParseUrl function.
 *
\*---------------------------------------------------------------*/

function OnBegin()
    ISURL_COMPONENTS ISUrlComponents;
    STRING szUrl;
begin
    szUrl =
        "http://myusername:mypassword@www.mydomain.com:8080/" +
        "myfolder/mypage.asp?mykey=myvalue";
    ParseUrl ( szUrl, &ISUrlComponents );
    SprintfBox ( INFORMATION , "ParseUrl" ,
        "scheme = %s\nscheme number = %ld\nusername = %s\npassword = %s" +
        "\nhostname = %s\nport = %ld\nurlpath = %s\nextrainfo = %s",
        ISUrlComponents.szScheme, ISUrlComponents.nInternetScheme,
        /* nInternetScheme equals 3 for HTTP and 4 for HTTPS. */
        ISUrlComponents.szUserName, ISUrlComponents.szPassword,
        ISUrlComponents.szHostName, ISUrlComponents.nInternetPort,
        ISUrlComponents.szUrlPath, ISUrlComponents.szExtraInfo );
    abort;
end;
```

That script produces the following output:

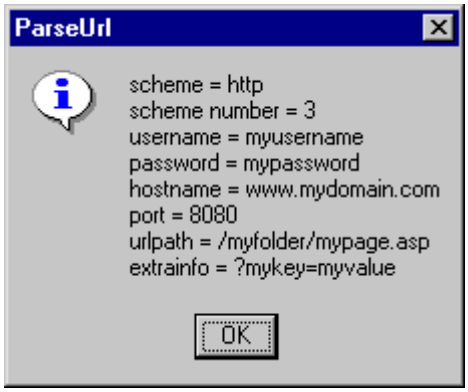

Figure 1: ParseUrl Output

PathAdd

The **PathAdd** function adds a path to the search path in the path buffer. With this function you can specify the position of the directory in relation to an existing directory in the path buffer. In addition, you can add the directory as the first or the last directory of the path buffer.

This function has no relationship to the path statement in the Autoexec.bat file or the path environment variable. It acts only on the path buffer, which helps you build, modify, and manipulate search paths. You can then add the modified path string to the Autoexec.bat file using the various batch file functions.

Syntax

```
PathAdd ( szDir, szRefDir, bRefDir, bPosition );
```

Parameters

Table 119 ▪ PathAdd Parameters

Parameter	Description
szDir	Specifies a path to add to the path buffer.  ***Note ▪*** *If you specify a directory in szDir that currently exists in the path buffer, InstallShield does not duplicate it, and the position of the pre-existing directory is not modified. InstallShield ignores a backslash at the end of the directory name.*
szRefDir	Specifies the path in the current path buffer relative to which the new path will be added.
bRefDir	Specifies whether or not szRefDir is a fully qualified path. Pass one of the following predefined constants in this parameter: ● **FULL**—szRefDir is a fully qualified path—it includes a drive designation and the complete path. ● **PARTIAL**—szRefDir is the directory name only—without drive or path information.
bPosition	Specifies the position relative to szRefDir at which szDir is to be inserted. Pass one of the following predefined constants in this parameter: ● **AFTER**—Specifies that szDir is to be inserted after szRefDir. If szRefDir specifies a null string (“”), szDir is inserted at the end of the path in the path buffer. ● **BEFORE**—Specifies that szDir is to be inserted before szRefDir. If szRefDir specifies a null string (“”), szDir is inserted at the front of the path in the path buffer.

Return Values

Table 120 ▪ PathAdd Return Values

Return Value	Description
0	Indicates that the function successfully added a directory to the path buffer.
< 0	Indicates that the function was unable to add a directory to the path buffer.

PathAdd Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PathAdd function.
```

```
 *
 * This example script shows how to add paths to a search path
 * in the path buffer.  It begins by initializing the path buffer
 * with a search path. Then, it adds a new path to the front of
 * the search path.  Next, it gets the modified search path from
 * the search buffer and displays it.
 *
 * It then initializes the path buffer with the modified search
 * path and adds a new path before the last path in the path
 * buffer.  Finally, it gets the modified search path from the
 * search buffer and displays it.
 *
 * Note: PathGet is called after the first PathAdd statement
 *       only so the value of the path buffer can be displayed
 *       for demonstration purposes.  In a production script,
 *       you would finish building the search path in the buffer
 *       before calling PathGet.
 *
\*-----------------------------------------------------------------*/

#define TITLE "Path buffer example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathAdd(HWND);

function ExFn_PathAdd(hMSI)
    STRING svSearchPath;
begin

    // Set up the search path to pass as a parameter to PathSet.
    svSearchPath = "C:\\DOS;C:\\Windows;C:\\Temp";

    // Initialize the path buffer.
    PathSet (svSearchPath);

    // Display the initial search path.
    SprintfBox (INFORMATION,TITLE,
                "The starting search path is %s.",svSearchPath);

    // Add C:\MSOffice as the first path in the search path.
    if (PathAdd("C:\\MSOffice", "", FULL, BEFORE) < 0) then
        MessageBox ("Unable to add C:\\MsOffice to path buffer.", SEVERE);
        abort;
    endif;

    // Get the search path from the path buffer; this call also releases
    // the memory allocated for the path buffer.
    PathGet (svSearchPath);

    // Display the search path.
    // svSearchPath will contain C:\MSOffice;C:\DOS;C:\Windows;C:\Temp.
    SprintfBox (INFORMATION,TITLE,
                "C:\\MSOffice added before first path.\n\nThe search path is %s.",
                svSearchPath);
```

```
    // Initialize path buffer to hold the search path.
    PathSet (svSearchPath);

    // Add C:\APP2 before C:\Temp in the path buffer.
    if (PathAdd ("C:\\APP2", "Temp", PARTIAL, BEFORE) < 0) then
        MessageBox ("Unable to add C:\\APP2 to path buffer.", SEVERE);
        abort;
    endif;

    // Get the search path from the path buffer; this call also releases
    // the memory allocated for the path buffer.
    PathGet (svSearchPath);

    // Display the modified search path.
    // svSearchPath will contain C:\MSOffice;C:\DOS;C:\Windows;C:\App2;C:\Temp.
    SprintfBox (INFORMATION,TITLE,
                "C:\\APP2 added before C:\\Temp.\n\nThe search path is %s.",
                svSearchPath);

end;
```

PathDelete

The **PathDelete** function deletes a specific directory in the path buffer. You can specify the name of the directory or enter a fully qualified path.

This function has no relationship to the path statement in the Autoexec.bat file or the path environment variable. It acts only on the path buffer, which helps you build, modify, and manipulate search paths.

Tip ▪ *Call PathGet to get the contents of the path buffer. Call PathSet to set contents of the path buffer.*

Syntax

```
PathDelete ( szDir, bDir );
```

Parameters

Table 121 ▪ PathDelete Parameters

Parameter	Description
szDir	Specifies the path to remove from the path buffer.
bDir	Specifies whether or not szRefDir is a fully qualified path. Pass one of the following predefined constants in this parameter: • **FULL**—szRefDir is a fully qualified path—it includes a drive designation and the complete path. • **PARTIAL**—szRefDir is the directory name only—without drive or path information.

Return Values

Table 122 ▪ PathDelete Return Values

Return Value	Description
0	Indicates that the function successfully deleted a directory from the path buffer.
< 0	Indicates that the function was unable to delete a directory from the path buffer.

PathDelete Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *

 * InstallShield Example Script
 *
 * Demonstrates the PathDelete function.
 *
 * This example script shows how to delete paths from the path
 * buffer.  It begins by initializing the path buffer with a
 * search path.  Then, it deletes any path that includes a
 * reference to "Temp".  Next, it gets the modified search path
 * from the search buffer and displays it.
 *
 * It then initializes the path buffer with the modfied search
 * path and deletes a specific path.  Finally, it gets the
 * search path from the search buffer and displays it.
 *
 * Note: PathGet is called after the first PathDelete statement
 *       only so the value of the path buffer can be displayed
 *       for demonstration purposes.  In a production script,
 *       you would finish building the search path in the buffer
```

```
 *       before calling PathGet.
 *
\*------------------------------------------------------------------*/

#define TITLE "Path buffer example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathDelete(HWND);

function ExFn_PathDelete(hMSI)
    STRING svSearchPath;
begin

    // Set up the search path to pass as a parameter to PathSet.
    svSearchPath = "C:\\DOS;C:\\WINDOWS;C:\\TEMP;" +
                   "C:\\EXAMPLE\\SOURCE;D:\\WORK\\TEMP";

    // Initialize the path buffer.
    PathSet (svSearchPath);

    // Display the initial search path.
    SprintfBox (INFORMATION,TITLE,
               "The starting search path is %s.",svSearchPath);

    // Delete C:\Temp from the path buffer.
    if (PathDelete ("TEMP", PARTIAL) < 0) then
        MessageBox ("First call to PathDelete failed.", SEVERE);
    endif;

    // Get the search path from the path buffer; this call also releases
    // the memory allocated for the path buffer.
    PathGet (svSearchPath);

    // Display the search path.
    // svSearchPath will contain C:\DOS;C:\WINDOWS;C:\EXAMPLE\SOURCE.
    SprintfBox (INFORMATION, TITLE,
               "All paths referencing 'Temp' were deleted.\n\nThe search path is %s.",
               svSearchPath);

    // Set up the path buffer again.
    PathSet (svSearchPath);

    // Delete C:\\EXAMPLE\\SOURCE from the path buffer.
    if (PathDelete ("C:\\EXAMPLE\\SOURCE", FULL) < 0) then
        MessageBox ("Second call to PathDelete failed.",SEVERE);
    endif;

    // Get the search path from the path buffer; this call also releases
    // the memory allocated for the path buffer.
    PathGet (svSearchPath);

    // Display the search path.
    // svSearchPath will contain C:\DOS;C:\WINDOWS.
    SprintfBox (INFORMATION, TITLE,
```

```
                "C:\\EXAMPLE\\SOURCE was deleted.\n\nPath is %s.",
                svSearchPath);

end;
```

PathFind

The **PathFind** function searches the path buffer for a specific directory. You can specify the directory with either a fully qualified path or the directory name only.

This function has no relationship to the path statement in the Autoexec.bat file or the path environment variable. It acts only on the path buffer, which helps you build, modify, and manipulate search paths. You can then add this temporary path string to the Autoexec.bat file using the various batch file functions.

Syntax

```
PathFind ( szDir, svResult, bDir, bSearch );
```

Parameters

Table 123 ▪ PathFind Parameters

Parameter	Description
szDir	Specifies the path to find in the path buffer.
svResult	Returns the full directory and path found in the path buffer returned by the function.
bDir	Specifies whether or not szDir contains a fully qualified or an unqualified directory name. Pass one of the following predefined constants in this parameter: • **FULL—**szRefDir is a fully qualified path—it includes a drive designation and the complete path to a directory. • **PARTIAL—**szRefDir is the directory name only, without drive or path information.
bSearch	Specifies where to begin the search. Pass one of the following predefined constants in this parameter: • **CONTINUE—**Continues searching the path buffer at the location where the previous search was terminated. • **RESTART—**Starts the search from the beginning of the path buffer.

Return Values

Table 124 ▪ PathFind Return Values

Return Value	Description
0	Indicates that the function successfully searched the path buffer for a directory.
< 0	Indicates that the function was unable to successfully search the path buffer for a directory.

PathFind Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PathSet, PathFind, and PathGet functions.
 *
 * First, PathSet is called to place a search path into the path
 * buffer.  Then PathFind is then called to search the path
 * buffer for instances of a specific path.  Finally, PathGet
```

```
 * is called to return the contents of the path buffer.
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathFind(HWND);

function ExFn_PathFind(hMSI)
    STRING szString, szMsg, svResult, svString, szDir;
    NUMBER nResult;
    BOOL   bDir, bSearch;
begin

    // Set up the search path to pass as a parameter to PathSet.
    szString = "C:\\DOS;C:\\USERS\\BIN;C:\\MSC\\BIN;";

    // Place the search path into the path buffer
    if (PathSet (szString) < 0) then
        // Report an error; then terminate.
        MessageBox ("PathSet failed.", SEVERE);
        abort;
    else
        szMsg = "PathSet set the path buffer to: %s";
        SprintfBox (INFORMATION, "PathSet Example", szMsg, szString);
    endif;

    // Set PathFind variables.
    szDir = "BIN";

    // Search the path buffer for paths that include a folder named "BIN".
    nResult = PathFind(szDir, svResult, PARTIAL, RESTART);

    // Error check PathFind.
    if (nResult < 0) then
        MessageBox("PathFind failed.", SEVERE);
        abort;
    endif;

    // Loop through the string to find all occurrences of the szDir string.

    while (nResult = 0)
        SprintfBox(INFORMATION, "PathFind example",
                   "Search for %s.\n\nFound:  %s", szDir, svResult);
        nResult = PathFind(szDir, svResult, PARTIAL, CONTINUE);
    endwhile;

    // Get the contents of the path buffer.
    if (PathGet (svString) < 0) then
        MessageBox ("PathGet failed.", SEVERE);
    else
        // Display the path string.
        SprintfBox (INFORMATION, "Path Get Example", "Path is: %s", svString);
    endif;
```

```
end;
```

PathGet

The **PathGet** function retrieves the search path currently stored in the path buffer, which is a temporary storage area created by a call to PathSet. The path buffer enables you to build and edit a search path. When the path you are editing is complete, call PathGet to place the search path into a string variable so that you can pass it to other functions in your setup.

This function has no relationship to the path statement in the Autoexec.bat file or the path environment variable. It acts on the path buffer only, which helps you build, modify, and manipulate search paths. You can then add this temporary path string to the Autoexec.bat file using the appropriate batch file functions.

***Tip** ▪ PathGet retrieves the search path from the path buffer and releases the memory allocated to the path buffer. A subsequent call to PathGet will fail unless the path buffer is reinitialized by a call to PathSet.*

Syntax

```
PathGet ( svString );
```

Parameters

Table 125 ▪ PathGet Parameters

Parameter	Description
svString	Returns the contents of the path buffer.

Return Values

Table 126 ▪ PathGet Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the path currently stored in the path buffer.
< 0	Indicates that the function was unable to retrieve the path string currently stored in the temporary path string buffer.

PathGet Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the PathSet, PathFind, and PathGet functions.
 *
 * First, PathSet is called to place a search path into the path
 * buffer.  Then PathFind is then called to search the path
 * buffer for instances of a specific path.  Finally, PathGet
 * is called to return the contents of the path buffer.
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathGet(HWND);

function ExFn_PathGet(hMSI)
    STRING szString, szMsg, svResult, svString, szDir;
    NUMBER nResult;
    BOOL   bDir, bSearch;
begin

    // Set up the search path to pass as a parameter to PathSet.
    szString = "C:\\DOS;C:\\USERS\\BIN;C:\\MSC\\BIN;";

    // Place the search path into the path buffer
    if (PathSet (szString) < 0) then
        // Report an error; then terminate.
        MessageBox ("PathSet failed.", SEVERE);
        abort;
    else
        szMsg = "PathSet set the path buffer to: %s";
        SprintfBox (INFORMATION, "PathSet Example", szMsg, szString);
    endif;

    // Set PathFind variables.
    szDir = "BIN";

    // Search the path buffer for paths that include a folder named "BIN".
    nResult = PathFind(szDir, svResult, PARTIAL, RESTART);

    // Error check PathFind.
    if (nResult < 0) then
        MessageBox("PathFind failed.", SEVERE);
        abort;
    endif;

    // Loop through the string to find all occurrences of the szDir string.
    while (nResult = 0)
        SprintfBox(INFORMATION, "PathFind example",
                   "Search for %s.\n\nFound:  %s", szDir, svResult);
        nResult = PathFind(szDir, svResult, PARTIAL, CONTINUE);
    endwhile;

    // Get the contents of the path buffer.
    if (PathGet (svString) < 0) then
        MessageBox ("PathGet failed.", SEVERE);
```

```
    else
        // Display the path string.
        SprintfBox (INFORMATION, "Path Get Example" ,"Path is: %s", svString);
    endif;

end;
```

PathMove

The **PathMove** function repositions a directory in the path buffer to another location. You can also use this function to position the directory relative to another directory or as the first or the last item in the path string.

This function has no relation to the PATH statement in the Autoexec.bat file or the PATH environment variable. It acts only on the path buffer, which helps you build, modify, and manipulate search paths. You can then add this temporary path string to Autoexec.bat using the various batch file functions.

Tip ▪ *Call PathGet to get the contents of the path buffer. Call PathSet to set contents of the path buffer.*

Syntax

```
PathMove ( szDir, szRefDir, bDir, bRefDir, bPosition );
```

Parameters

Table 127 ▪ PathMove Parameters

Parameter	Description
szDir	Specifies a full or partial path to reposition in the path buffer.
szRefDir	Specifies the path in the path buffer relative to which the path in szDir will be moved. To move the path in szDir to the beginning or end of the path in the path buffer, pass a null string ("") in this parameter.
bDir	Specifies whether szDir contains a fully qualified or an unqualified directory name. Pass one of the following predefined constants in this parameter: • **FULL**—Specifies that szDir contains a fully qualified directory name. • **PARTIAL**—Specifies that szDir contains the directory name only.
bRefDir	Specifies whether szRefDir contains a fully qualified or an unqualified directory name. Pass one of the following predefined constants in this parameter: • **FULL**—Specifies that szRefDir contains a fully qualified directory name. • **PARTIAL**—Specifies that szRefDir contains the directory name only.
bPosition	Specifies the position relative to szRefDir to which szDir is to be moved. Pass one of the following predefined constants in this parameter: • **AFTER**—Specifies that szDir is to be positioned after szRefDir. If szRefDir specifies a null string (""), szDir is positioned at the end of the path in the path buffer. • **BEFORE**—Specifies that szDir is to be positioned before szRefDir. If szRefDir specifies a null string (""), szDir is positioned at the front of the path in the path buffer.

Return Values

Table 128 ▪ PathMove Return Values

Return Value	Description
0	Indicates that the function successfully repositioned a directory in the path buffer.
< 0	Indicates that the function was unable to reposition a directory in the path buffer.

PathMove Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function,

execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PathMove functions.
 *
 * This example script shows how to reposition paths in the path
 * buffer.  It begins by initializing the path buffer with a
 * search path.  Then, it moves one path ahead of another.
 * Next, it gets the modfied search path from the search buffer
 * and displays it.
 *
 * It then initializes the path buffer with the modified search
 * path and moves one path after another path.  Finally, it gets
 * the modfied search path from the search buffer and displays
 * it.
 *
 * Note: PathGet is called after the first PathMove statement
 *       only so the value of the path buffer can be displayed
 *       for demonstration purposes.  In a production script,
 *       you would finish building the search path in the buffer
 *       before calling PathGet.
 *
\*---------------------------------------------------------------*/

#define TITLE "Path buffer example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathMove(HWND);

function ExFn_PathMove(hMSI)
    STRING svSearchPath;
begin

    // Set up the search path to pass as a parameter to PathSet.
    svSearchPath = "C:\\MsOffice;C:\\DOS;C:\\Windows;C:\\App2;C:\\Temp";

    // Initialize the path buffer.
    PathSet (svSearchPath);

    // Display the initial search path.
    SprintfBox (INFORMATION, TITLE,
               "The starting search path is %s.",svSearchPath);

    // Move C:\App2 before C:\DOS.
    if (PathMove("C:\\App2", "C:\\DOS", FULL, FULL, BEFORE) < 0) then
        MessageBox ("Unable to move C:\\App2.", SEVERE);
        abort;
    endif;

    // Get the search path from the path buffer and release
    // the memory allocated for the path buffer.
```

```
    PathGet (svSearchPath);

    // Display the search path.
    // svSearchPath will contain C:\MSOFFICE;C:\APP2;C:\DOS;C:\WINDOWS;C:\TEMP
    SprintfBox (INFORMATION, TITLE,
                "C:\\App2 moved before C:\\DOS.\n\nThe search path is %s.",
                svSearchPath);

    // Initialize the path buffer with the search path.
    PathSet (svSearchPath);

    // Move C:\DOS after C:\Temp.
    if (PathMove ("C:\\DOS", "TEMP", FULL, PARTIAL, AFTER) < 0) then
        MessageBox ("Unable to move C:\\DOS.", SEVERE);
    endif;

    // Get the search path from the path buffer and release
    // the memory allocated for the path buffer.
    PathGet (svSearchPath);

    // Display the search path.
    // svSearchPath will contain C:\MSOFFICE;C:\APP2;C:\WINDOWS;C:\TEMP;C:\DOS
    SprintfBox (INFORMATION, TITLE,
                "C:\\DOS moved after C:\\Temp.\n\nThe search path is %s.",
                svSearchPath);

end;
```

PathSet

The **PathSet** function stores a search path string in the path buffer. You can then manipulate this buffer using the other path functions. The value of szString should be an absolute path (a path that includes a drive specification, for example, "C:\\Program Files\\AppName").

This function has no relation to the PATH statement in the Autoexec.bat file or the PATH environment variable. It acts only on the path buffer, which helps you build, modify, and manipulate search paths. You can then add this temporary path string to the Autoexec.bat file or PATH environment variable.

Syntax

```
PathSet ( szString );
```

Parameters

Table 129 ▪ PathSet Parameters

Parameter	Description
szString	Specifies a search path to store in the path buffer. The search path should be fully qualified; that is it should include a drive designation and the complete path to a directory.

Return Values

Table 130 ▪ PathSet Return Values

Return Value	Description
0	Indicates that the function successfully stored a search path string in the path buffer.
< 0	Indicates that the function was unable to store a search path string in the path buffer.

PathSet Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PathSet, PathFind, and PathGet functions.
 *
 * First, PathSet is called to place a search path into the path
 * buffer.  Then PathFind is then called to search the path
 * buffer for instances of a specific path.  Finally, PathGet
 * is called to return the contents of the path buffer.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PathSet(HWND);

function ExFn_PathSet(hMSI)
    STRING szString, szMsg, svResult, svString, szDir;
    NUMBER nResult;
    BOOL   bDir, bSearch;
begin

    // Set up the search path to pass as a parameter to PathSet.
```

```
    szString = "C:\\DOS;C:\\USERS\\BIN;C:\\MSC\\BIN;";

    // Place the search path into the path buffer
    if (PathSet (szString) < 0) then
        // Report an error; then terminate.
        MessageBox ("PathSet failed.", SEVERE);
        abort;
    else
        szMsg = "PathSet set the path buffer to: %s";
        SprintfBox (INFORMATION, "PathSet Example", szMsg, szString);
    endif;

    // Set PathFind variables.
    szDir = "BIN";

    // Search the path buffer for paths that include a folder named "BIN".
    nResult = PathFind(szDir, svResult, PARTIAL, RESTART);

    // Error check PathFind.
    if (nResult < 0) then
        MessageBox("PathFind failed.", SEVERE);
        abort;
    endif;

    // Loop through the string to find all occurrences of the szDir string.
    while (nResult = 0)
        SprintfBox(INFORMATION, "PathFind example",
                  "Search for %s.\n\nFound:  %s", szDir, svResult);
        nResult = PathFind(szDir, svResult, PARTIAL, CONTINUE);
    endwhile;

    // Get the contents of the path buffer.
    if (PathGet (svString) < 0) then
        MessageBox ("PathGet failed.", SEVERE);
    else
        // Display the path string.
        SprintfBox (INFORMATION, "Path Get Example" ,"Path is: %s", svString);
    endif;

end;
```

PlaceBitmap

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **PlaceBitmap** function inserts an image into the installation window. The image source is specified by szName; it can be a bitmap file (.bmp), metafile (.wmf file), or dynamic link library (.dll).

Syntax

```
PlaceBitmap ( szName, nID_BITMAP, nDx, nDy, nDrawOp );
```

Parameters

Table 131 ▪ PlaceBitmap Parameters

Parameter	Description
szName	Specifies the fully qualified name of the bitmap file (.bmp), metafile (.wmf file), or dynamic link library (.dll) of the image to be displayed. InstallShield recognizes bitmap files and metafiles by their file extension. Bitmap files must have the extension .bmp. Metafiles must have the extension .wmf. Dynamic link libraries must have the extension .dll. If a file name is specified with no extension, InstallShield assumes the extension .dll. To specify an alternate transparent color, place a semicolon after the file name and follow it with a set of RGB color values. (RGB color is specified with three numeric values, separated by commas.) That color is then used as the transparent color for the bitmap specified by szName. Note that it does *not* affect bitmaps that are already displayed; nor does it become the default transparent color for bitmaps displayed by subsequent calls to PlaceBitmap. The parameter below specifies white as the transparent color: `SUPPORTDIR ^ "Bitmap.bmp;255,255,255" When nDrawOptions is set to REMOVE, this parameter is ignored.`
nID_BITMAP	Specifies the bitmap's resource ID if the bitmap resides in a .dll. If the bitmap source is a metafile or bitmap file, specifies a value that is not in use for an image currently on display; images that are displayed simultaneously must have unique ID numbers. When nDrawOptions is set to REMOVE, this parameter must contain the ID of a displayed image.
nDx	Pass either a number or the CENTERED constant in this parameter: ● Pass a number to specify the horizontal distance in pixels between the edge of installation window and the edge of the image when nDrawOp is set to LOWER_LEFT, LOWER_RIGHT, UPPER_LEFT, or UPPER_RIGHT. ● Pass the CENTERED constant to center the image on the horizontal axis when nDrawOp is set to LOWER_LEFT, LOWER_RIGHT, UPPER_LEFT, or UPPER_RIGHT. The image will be offset from the upper or lower edge of the installation window by the number of pixels specified in nDy. Since the CENTERED constant — when passed in nDx — centers the image horizontally, the argument in nDrawOp will affect only the vertical placement of the image.

Table 131 ▪ PlaceBitmap Parameters (cont.)

Parameter	Description
nDy	Pass either a number or the CENTERED constant in this parameter: ● Pass a number to specify the vertical distance in pixels between the edge of installation window and the edge of the image when nDrawOp is set to LOWER_LEFT, LOWER_RIGHT, UPPER_LEFT, or UPPER_RIGHT. ● Pass the CENTERED constant to center the image on the vertical axis when nDrawOp is set to LOWER_LEFT, LOWER_RIGHT, UPPER_LEFT, or UPPER_RIGHT. The image will be offset from the right or left edge of the installation window by the number of pixels specified in nDx. Since the CENTERED constant — when passed in nDy — centers the image vertically, the argument in nDrawOp will affect only the horizontal placement of the image.  ***Note ▪*** *You can pass the CENTERED constant in both the nDx and nDy parameters to center the image in the installation window. This is equivalent to passing the CENTERED constant in the nDrawOp parameter.*

Table 131 ▪ PlaceBitmap Parameters (cont.)

Parameter	Description
nDrawOp	Specifies the bitmap's placement location, sets placement options, or removes a previously placed bitmap. Pass one of the following predefined constants in this parameter: • **BITMAPICON**—Indicates that the bitmap has transparent parts. You can use the bitwise OR operator (|) to combine this constant with any of the other constants except TILED, FULLSCREEN or FULLSCREENSIZE. When BITMAPICON is ORed with one of those constants, the bitwise operation is ignored and BITMAPICON is used. BITMAPICON has no effect when szName specifies a metafile or a 24-bit bitmap. Note that when you specify BITMAPICON, the bitmap is displayed normally, even if a special effect has been enabled with SetDisplayEffect. • **TILED**—The bitmap is tiled across the main installation window. This constant is normally used to create an installation background. When this constant is specified, location options are ignored and the bitmap is displayed normally, even if a special effect has been enabled with SetDisplayEffect. • **FULLSCREEN**—Draw the image to fill the entire installation window. The image is not resized when its drawn. If a bitmap image is smaller than the InstallShield main window, it is centered in the window and the background is filled with the current background color. The default value is teal; it can be changed using the SetColor function. When this constant is specified, location options are ignored and the bitmap is displayed normally, even if a special effect has been enabled with SetDisplayEffect. • **FULLSCREENSIZE**—Draw and stretch the image to fill the entire installation window. When this constant is specified, location options are ignored and the bitmap is displayed normally, even if a special effect has been enabled with SetDisplayEffect.
nDrawOp (continued)	• **CENTERED**—Places the bitmap in the center of the installation window. • **LOWER_LEFT**—Places the bitmap in the lower left corner of the InstallShield installation window. • **LOWER_RIGHT**—Places the bitmap in the lower right corner of the InstallShield installation window. • **UPPER_LEFT**—Places the bitmap in the upper left corner of the InstallShield installation window. • **UPPER_RIGHT**—Places the bitmap in the upper right corner of the InstallShield installation window. • **REMOVE**—Removes a previously placed bitmap or metafile. Any special display effects that have been enabled with SetDisplayEffect are ignored.

Return Values

Table 132 ▪ PlaceBitmap Return Values

Return Value	Description
0	Indicates that the function successfully found and placed the image.
< 0	Indicates that the function was unable to find or place the image.

Comments

InstallShield supports 2-color, 16-color, 256-color and true color (24-bit) bitmaps. Two-color, 16-color and 256-color bitmaps can have transparent portions.

Transparent bitmaps are useful for displaying images that appear to be integrated with the background window. Pixels in the bitmap that match a specified transparent color are not displayed; the background pixel at that location remains visible. In setups, transparent bitmaps that incorporate the company name and its logo in an artful design are often used as titles in the installation window.

To specify a transparent bitmap, you must pass the constant BITMAPICON in the parameter nDrawOp. You must also consider which color in the bitmap is to be transparent. The default transparent color is purple (RGB(255,0,255)). To specify a different transparent color, use the parameter szName as described below.

Because metafiles are drawn rather than placed, they are intrinsically transparent. If BITMAPICON is specified for a metafile, that parameter is ignored.

Note ▪ *Many special display effects are available for non-transparent bitmaps by using the SetDisplayEffect function. That function also provides limited display effects for metafiles.*

The location of the bitmap within the window can be specified in one of two ways:

- By passing one of the location constants in the parameter nDrawOp.
- By passing a vertical and horizontal offset from the edge of the installation window in nDx and nDy.
- By passing the CENTERED constant in either nDx or nDy in combination with a horizontal or vertical offset.

Always remove any bitmaps or metafiles that are no longer needed by calling PlaceBitmap with the constant REMOVE as the parameter nDrawOp. Removing an unneeded bitmap is recommended even if another bitmap covers that bitmap completely because the palette entries for the first bitmap will not be released until the bitmap is removed.

Tip ▪ *A true color bitmap that is displayed on a system running in 16-color or 256-color mode will use only those colors available in the color palette; no additional colors will be allocated for the bitmap, even when additional color palette entries are available. If you anticipate that a setup with 24-bit bitmaps will be run on 16- or 256-color systems, include 16- or 256-color versions of the bitmaps. Then call GetSystemInfo with the COLORS parameter to determine the current color mode before selecting the bitmap to display.*

Call SetDisplayEffect to set special effects for non-tiled, full-screen, transparent bitmaps; you can also set limited special effects for metafiles.

InstallShield does not support 24-bit transparent bitmaps. If you include a transparent color in a 24-bit bitmap and specify the BITMAPICON constant, the color will be displayed normally.

When you place a 256-color bitmap on a system running in 256-color mode, InstallShield attempts to allocate the bitmap's color palette into the system color palette. If multiple 256-color bitmaps are placed, InstallShield attempts to merge the color palettes of all visible bitmaps into the system color palette, giving precedence to the most recently placed bitmap. This behavior may cause previously placed bitmaps to change colors when additional bitmaps are displayed.

On a system running in 256-color mode with a 256-color dithered background, bitmaps that include many colors may cause some of the color palette entries used for the background to be reallocated; this can cause a gradient effect to appear in the background. Setups with bitmaps that use many colors should not use a 256-color gradient background if they will run on 256-color systems.

System color palettes exist only on systems that are running in 256-color mode. Systems running in high color (16-bit) or true color (24-bit) modes and systems running under in 65535 (16-bit) color mode do not have a system color palette. On these systems there are no color palette handling issues to consider; colors are displayed directly using the RGB color value. See Preventing Color Distortion for more information.

Because metafiles are rendered, they do not include a custom color palette. When a metafile is displayed on a 256-color system, no color palette handling takes place; the metafile is drawn with the colors currently available in the color palette. For that reason, you should not use metafiles that display colors other than the standard 16 colors in setups that will run on 256-color systems.

PlaceBitmap Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PlaceBitmap function.
 *
 * PlaceBitmap is called to display and remove bitmaps on the
 * screen.  The SetDisplayEffect function sets the display
 * effect for the bitmap.
 *
 * Note: Before running this script, set the constant BMP_PATH
 *       so that it references an existing bitmap file on the
 *       target system.
 *
\*---------------------------------------------------------------*/

#define BMP_PATH  "C:\\Windows\\Bubbles.bmp"
#define BITMAP_ID_1 12
#define BITMAP_ID_2 13
#define BITMAP_ID_3 14

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Placebitmap(HWND);

function ExFn_Placebitmap(hMSI)
begin
```

```
    Enable ( BACKGROUND );

    // Display the bitmap in the upper left corner.
    PlaceBitmap (BMP_PATH, BITMAP_ID_1, 10, 12, UPPER_LEFT);

    // Set bitmap reveal effect.
    SetDisplayEffect (EFF_REVEAL);

    // Display the bitmap in the lower right corner.
    PlaceBitmap (BMP_PATH, BITMAP_ID_2, 10, 10, LOWER_RIGHT);

    Delay(3);

    // Remove the bitmap in the upper left corner.
    PlaceBitmap ("", BITMAP_ID_2, 0, 0, REMOVE);

    // Remove the bitmap in the lower right corner.
    PlaceBitmap ("", BITMAP_ID_1, 0, 0, REMOVE);

    // Set bitmap fade in effect.
    SetDisplayEffect (EFF_FADE);

    // Display the bitmap at the center of screen.
    PlaceBitmap (BMP_PATH, BITMAP_ID_3, CENTERED, CENTERED, 0);
    Delay (3);

    // Remove the bitmap at the center of the screen.
    PlaceBitmap ("", BITMAP_ID_3, 0, 0, REMOVE);
    Delay (1);

end;
```

PlaceWindow

The **PlaceWindow** function changes the position of user interface objects. This includes billboards, Adobe Flash application files, and AVI files that are displayed at run time through **PlayMMedia**. Specify the distance between the sides of the object and the edges of the screen in nDx and nDy.

When using this function, be aware that an installation runs on a variety of screen resolutions. You may want to determine the extents of the screen before you position the objects. The distance is measured in pixels and is between the edge of the object and the edge of the corner of the specified screen.

Note ▪ *The* **PlaceWindow** *function does not have any effect on the type of billboard that is displayed on a progress dialog. To learn more about the different types of billboards, see Billboard Styles and File Types for InstallScript and InstallScript MSI Projects.*

Restrictions

This function cannot be used to position message boxes or custom dialogs.

- Message boxes cannot be positioned with this function because they are created using the Windows API. A message box's position is determined by the Windows API and is not under the control of an installation.
- Custom dialogs cannot be positioned with this function. **PlaceWindow** does not work in conjunction with the **AskOptions**, **AskPath**, **AskText**, or **EnterDisk** functions. By default, a dialog appears in the center of the desktop, unless the background window mode is enabled. If the installation is in window mode, the dialog appears in the center of the background window.

Syntax

```
PlaceWindow ( nObject, nDx, nDy, nCorner );
```

Parameters

Table 133 ▪ PlaceWindow Parameters

Parameter	Description
nObject	Specifies the object whose position is to be changed. Pass one of the following predefined constants in this parameter: • **ASKOPTIONS**—Moves the AskOptions dialog. • **ASKPATH**—Moves the AskPath dialog. • **ASKTEXT**—Moves the AskText dialog. • **BACKGROUND**—Moves the background window. • **BILLBOARD**—Sets the location of billboards used during the file transfer process. • **ENTERDISK**—Moves the EnterDisk dialog. • **MMEDIA_AVI**—Sets the window position for the next .avi file to be played. By default, the .avi file is played at run time in a window in the left corner of the screen, 10 pixels from the left and 10 pixels from the top. • **MMEDIA_SWF**—Sets the window position for the Adobe Flash application file (.swf) to be played. • **STATUS**—Moves the progress indicator. • **STATUSDLG**—Moves the dialog style progress indicator. • **STATUSEX**—Moves the Setup Status dialog. • **STATUSOLD**—Moves the old style progress indicator.  ***Tip ▪*** *When you call PlaceWindow to move the progress indicator or status dialog, be sure to pass the correct constant for the feedback object you have enabled in your setup. For example, if you called Enable (STATUSOLD), you must pass STATUSOLD to PlaceWindow.*
nDx	Specifies the distance in pixels between the appropriate edge of the object and the edge of the screen on the horizontal axis.
nDy	Specifies the distance in pixels between the appropriate edge of the object and the edge of the screen on the vertical axis.

Table 133 ▪ PlaceWindow Parameters (cont.)

Parameter	Description
nCorner	Specifies from which corner to measure the distances expressed in nDx and nDy. Pass one of the following predefined constants in this parameter: • **LOWER_LEFT**—Measures nDx from the left and nDy from the bottom of the main InstallShield window. • **LOWER_RIGHT**—Measures the nDx from the right and nDy from the bottom of the main InstallShield window. • **UPPER_LEFT**—Measures the nDx from the left and nDy from the top of the main InstallShield window. • **UPPER_RIGHT**—Measures the nDx from the right and nDy from the top of the main InstallShield window. • **CENTERED**—Centers the user interface object within the window.  ***Note ▪*** *CENTERED can also be placed in nDx or nDy to center an object only horizontally or only vertically.*

Return Values

Table 134 ▪ PlaceWindow Return Values

Return Value	Description
0	Indicates that the function successfully changed the position of the object.
< 0	Indicates that the function was unable to change the position of the object.

Additional Information

Use the PlayMMedia function if you want your installation to play an Adobe Flash application file (.swf) or an AVI file.

PlaceWindow Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PlaceWindow function.
 *
```

```
 * PlaceWindow is called to place the background window 50
 * pixels to the right and below the upper left-hand corner
 * of the display.
 *
\*------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PlaceWindow(HWND);

function ExFn_PlaceWindow(hMSI)
begin

    Enable ( BACKGROUND );

    Enable ( DEFWINDOWMODE );

    MessageBox ("This is the default position of the background window.",
                INFORMATION);

    // Delay calling PlaceWindow for three seconds.
    Delay(3);

    // Change the position of the background window.
    if (PlaceWindow (BACKGROUND, 50, 50, UPPER_LEFT) < 0) then
        MessageBox ("PlaceWindow failed.", SEVERE);
    else
        MessageBox ("This is the new position of the background window.",
                    INFORMATION);
        // Delay exiting script for three seconds.
        Delay(3);
    endif;

end;
```

PlayMMedia

The **PlayMMedia** function plays an Adobe Flash application file (.swf), an AVI file, or a sound file (MIDI or WAVE).

Tip ▪ *If you are using* **PlayMMedia** *to display an Flash file or an AVI file, the installation must display a background window. For more information, see Displaying a Background Window in InstallScript and InstallScript MSI Installations.*

InstallShield has support for displaying a Flash file as a billboard for your installation without displaying a background window. To learn more, see Billboard Styles and File Types for InstallScript and InstallScript MSI Projects.

Syntax

```
PlayMMedia (nType, szFileName, nOperation, nReserved);
```

Parameters

Table 135 ▪ PlayMMedia Parameters

Parameter	Description
nType	Specify the type of file that you want your installation to play. Pass one of the following predefined constants in this parameter: • **MMEDIA_AVI**—The file is an AVI file. • **MMEDIA_MIDI**—The file is of MIDI sound format. • **MMEDIA_SWF**—The file is an Adobe Flash application file (.swf). • **MMEDIA_WAVE**—The file is of WAVE sound format.
szFileName	Specify the fully qualified name of the file to be played.
nOperation	Specify the play mode. Pass any of the following predefined constants in this parameter: • **MMEDIA_PLAYSYNCH**—Play synchronously. • **MMEDIA_PLAYASYNCH**—Play asynchronously. This constant can be combined with MMEDIA_PLAYCONTINUOUS by using the OR operator (|). • **MMEDIA_PLAYCONTINUOUS**—Play in a continuous loop. This value cannot be used when playing a sound/AVI file in synchronous mode. It can be used only with files being played in asynchronous mode. Combine it with MMEDIA_PLAYASYNCH by using the OR operator (|). • **MMEDIA_STOP**—Stop playing.  ***Note ▪*** *A Flash file plays only once asynchronously, regardless of whether any MMEDIA_PLAY* constants are passed in nOperation.*
nReserved	Pass the number zero in this parameter. No other value is allowed.

Return Values

Table 136 ▪ PlayMMedia Return Values

Return Value	Description
0	The function successfully played the file.
< 0	The function was unable to play the file. One example of when this occurs is if you specified a Flash file for **PlayMMedia** but the Flash Player is not present on the target system.

Additional Information

If you are using a Flash file or an AVI file, you can use **SizeWindow** and **PlaceWindow** to control the size and placement of the background window that displays the Flash or AVI file.

PlayMMedia Example

To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the PlayMMedia function.
 *
 * This script plays an AVI file during the setup.
 *
 * Note: To run this example script, create a project (or
 *       insert into project) with several features and/or
 *       subfeatures with components containing files.  Then
 *       add an AVI file to Disk 1 in the Support Files view in
 *       the IDE.  Change the file name in #define SOURCE line
 *       below to specify your AVI file.
 *
 * Warning: Since this example does not include uninstallation
 *          functionality, use this example only with projects
 *          that do not overwrite important files, install
 *          shared files, or update the registry.
 *
\*---------------------------------------------------------------*/

#define SOURCE  SRCDIR + "windy7(1).avi"
#define TITLE1  "Playing AVI synchronously..."
#define TITLE2  "Playing AVI asynchronously and continuously..."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_PlayMMedia(HWND);

function ExFn_PlayMMedia(hMSI)
    NUMBER nvDisk;
begin

    Enable ( BACKGROUND );

    // First, play the AVI synchronously to demonstrate how this causes
    // it to play by itself, with no other events taking place.
    SetTitle (TITLE1, 16, YELLOW);
    PlaceWindow (MMEDIA_AVI, 10, 10, UPPER_RIGHT);

    if (PlayMMedia (MMEDIA_AVI, SOURCE, MMEDIA_PLAYSYNCH, 0) < 0) then
        MessageBox ("Unable to play AVI file.", WARNING);
    endif;

    // Now play the AVI asynchronously.  The AVI continues executing
```

```
    // as the file transfer occurs.
    SetTitle (TITLE2, 16, YELLOW);

    PlaceWindow (MMEDIA_AVI, 10, 10, LOWER_RIGHT);

    if (PlayMMedia (MMEDIA_AVI, SOURCE,
                    MMEDIA_PLAYASYNCH | MMEDIA_PLAYCONTINUOUS, 0) < 0) then
        MessageBox ("Unable to play AVI file.", WARNING);
    endif;

    Enable (STATUSDLG);
    Enable (INDVFILESTATUS);

    StatusUpdate (ON, 99);

    // Transfer the files.
    ComponentMoveData (MEDIA, nvDisk, 0);

    Disable (INDVFILESTATUS);
    Disable (STATUSDLG);

    // The AVI will stop playing when the setup exits.  But you can
    // stop it explicitly like this:
    PlayMMedia (MMEDIA_AVI, SOURCE, MMEDIA_STOP, 0);

end;
```

PostShowComponentDlg

Caution ▪ *This function is not supported in InstallShield because it is no longer required. The functions that required PreShowComponentDlg in InstallShield Professional 2.03 are not supported for use in Basic MSI projects. If you want to use one of these functions in your setup project, you must convert your Basic MSI project to the InstallScript MSI project type and add the function to the script.*

The **PostShowComponentDlg** function converts InstallShield Professional components back to InstallShield–Windows Installer Edition features. You must call PostShowComponentDlg after calling a component dialog or function in your script. This function selects Windows Installer features based upon component selection.

Syntax

```
PostShowComponentDlg (hMSI);
```

Parameters

Table 137 ▪ PostShowComponentDlg Parameters

Parameter	Description
hMSI	The handle to the Windows Installer (MSI) database that is passed to your entry-point function.

Return Values

Table 138 ▪ PostShowComponentDlg Return Values

Return Value	Description
0	Indicates that the function successfully converted InstallShield Professional components back to Windows Installer features.
< 0	Indicates that the function was unable to convert InstallShield Professional components back to Windows Installer features.

PreShowComponentDlg

Caution ▪ *This function is not supported in InstallShield because it is no longer required. The functions that required PreShowComponentDlg in InstallShield Professional 2.03 are not supported for use in Basic MSI projects. If you want to use one of these functions in your setup project, you must convert your Basic MSI project to the InstallScript MSI project type and add the function to the script.*

The **PreShowComponentDlg** function converts InstallShield–Windows Installer Edition features to InstallShield Professional components. It also initializes feature costing functionality.

Syntax

```
PreShowComponentDlg (hMSI);
```

Parameters

Table 139 ▪ PreShowComponentDlg Parameters

Parameter	Description
hMSI	The handle to the Windows Installer (MSI) database that is passed to your entry-point function.

Return Values

Table 140 ▪ PreShowComponentDlg Parameters

Return Value	Description
0	Indicates that the function successfully converted Windows Installer features to InstallShield Professional components.
< 0	Indicates that the function was unable to convert Windows Installer features to InstallShield Professional components.

ProgDefGroupType

The **ProgDefGroupType** function sets the value of the ALLUSERS system variable. For more details, see ALLUSERS.

Syntax

```
ProgDefGroupType ( nType );
```

Parameters

Table 141 ▪ ProgDefGroupType Parameters

Parameter	Description
nType	Specifies the value to use for the InstallScript variable ALLUSERS. Pass one of the following predefined constants in this parameter: • **PERSONAL**—Set ALLUSERS equal to FALSE. • **COMMON**—Set ALLUSERS equal to TRUE.

Return Values

Table 142 ▪ ProgDefGroupType Return Values

Return Value	Description
0	This function always returns zero.

Built-In Functions (Q-R)

For a list of functions by category, see Built-In Functions by Category.

QueryProgItem

The GetShortcutInfo function supersedes the **QueryProgItem** function.

The **QueryProgItem** function checks for the existence of a specific program item or subfolder name. If the InstallScript engine finds the item or subfolder, **QueryProgItem** returns its attributes. The attributes include the product's command line, working directory, icon path, shortcut key, and minimize flag.

To use **QueryProgItem**, enter information in the parameters szFolderName and szItemName. The InstallScript engine fills the remaining parameters with the program item's attributes.

Syntax

```
QueryProgItem ( szFolderName, szItemName, svCmdLine, svWrkDir, svIconPath, nvIconIndex, svShortCutKey,
    nvMinimizeFlag );
```

Parameters

Table 1 ▪ QueryProgItem Parameters

Parameter	Description
szFolderName	Specifies the name of the folder that contains the item or subfolder. You can specify a fully qualified path for szFolderName, such as: `"C:\\ProgramData\\Microsoft\\Windows\\Start Menu\\Programs\\Games"` If szFolderName is null, **QueryProgItem** searches the default Programs directory. If you do not specify an absolute path (a path that includes a drive specification, for example, "C:\\Program Files\\AppName") for szFolderName, **QueryProgItem** searches for a subfolder under the default Programs directory; the location depends on the value of the InstallScript variable ALLUSERS, as well as the version of Windows on the target system. You can also use an InstallScript system variable: ● **FOLDER_DESKTOP**—Queries items in the Desktop folder. ● **FOLDER_STARTUP**—Queries items in the Startup menu. ● **FOLDER_STARTMENU**—Queries items in the Start menu. ● **FOLDER_PROGRAMS**—Queries items in the Start\Programs menu. Or you could use a relative path, such as: `FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"`
szItemName	Specifies the name of the program item or subfolder to find.
svCmdLine	Returns either the command line of the item's executable file or the complete path to the subfolder.
svWrkDir	Returns the full path of the working directory of the program item. (Not applicable if szItemName is a subfolder.)
svIconPath	Returns the fully qualified file name of the .ico file or .exe file. (Not applicable if szItemName is a subfolder.)
nvIconIndex	Returns the index of the icon used for the program item. (Not applicable if szItemName is a subfolder.)
svShortCutKey	Returns the item's shortcut key. (Not applicable if szItemName is a subfolder.)

Table 1 ▪ QueryProgItem Parameters (cont.)

Parameter	Description
nvMinimizeFlag	(Not applicable if szItemName is a subfolder.) Returns one of the following constants, indicating whether an application window is minimized when first displayed: • **NULL**—Indicates that the application's window is not minimized upon startup. • **RUN_MINIMIZED**—Indicates that the application's window is minimized upon startup.

Return Values

Table 2 ▪ QueryProgItem Return Values

Return Value	Description
IS_ITEM (0)	Indicates szItemName is a program item or shortcut in szFolderName.
IS_FOLDER (1)	Indicates szItemName is a subfolder in szFolderName.
< 0	Indicates that the function was unable to find the program item or subfolder name. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

The location of the Start menu is different under different languages. The InstallScript engine automatically selects the correct path.

QueryProgItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the QueryProgItem function.
 *
 * QueryProgItem is called to find the attributes of a target
 * file or folder.
 *
 * Note: Before running this script, set the defined constants
 *       FOLDER_NAME and ITEM_NAME so that they reference an
```

```
 *       existing folder name and folder item.
 *
\*------------------------------------------------------------------*/
// Define constants to reference the file or folder name.
#define FOLDER_NAME  "C:\\Windows\\Start Menu\\Programs"
#define ITEM_NAME    "InstallShield"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_QueryProgItem(HWND);

function ExFn_QueryProgItem(hMSI)
    STRING   svCmdLine, svWrkDir, svIconPath;
    STRING   svShortCutKey, svGroupPath, szTitle, szMsg, szInfo, svMinFlag;
    STRING   svMinimizeFlag;
    NUMBER   nvIconIndex, nvMinimizeFlag, nResult, nvMinFlag;
    LIST     listInfo, listID;
begin

    // Search for an item in the FOLDER_NAME folder.
    nResult = QueryProgItem (FOLDER_NAME, ITEM_NAME, svCmdLine, svWrkDir,
                             svIconPath, nvIconIndex, svShortCutKey,
                             nvMinimizeFlag);

    // Create string list.
    listInfo = ListCreate (STRINGLIST);

    // Error check QueryProgItem.
    if (nResult < 0) then
        // Report the error; then abort.
        MessageBox("QueryProgItem failed.", SEVERE);
        abort;
    // Check if the item is an application.
    elseif (nResult = IS_ITEM) then
        // Add the command line to the string list.
        Sprintf(szInfo, "The command line of %s: %s", ITEM_NAME, svCmdLine);
        ListAddString(listInfo, szInfo, AFTER);

        // Add the working directory to string list.
        Sprintf(szInfo, "The working directory of %s: %s", ITEM_NAME, svWrkDir);
        ListAddString(listInfo, szInfo, AFTER);

        // Add the icon path to string list.
        Sprintf(szInfo, "The icon path of %s: %s", ITEM_NAME, svIconPath);
        ListAddString(listInfo, szInfo, AFTER);

        // Add icon index to string list.
        Sprintf(szInfo, "The index of the icon: %d", nvIconIndex);
        ListAddString(listInfo, szInfo, AFTER);

        // Add shortcut key to string list.
        Sprintf (szInfo, "The shortcut key of %s: %s", ITEM_NAME,
                svShortCutKey);
        ListAddString(listInfo, szInfo, AFTER);
```

```
        // Check if the item is a folder.
    elseif (nResult = IS_FOLDER) then
        // Add a message to string list.
        Sprintf (szInfo, "The item is a subfolder.  QueryProgItem does not " +
                "retrieve very much information about subfolders.");
        ListAddString(listInfo, szInfo, AFTER);
    endif;

    // Display the string list.
    szTitle = "QueryProgItem Example";
    szMsg   = "The following are attributes of the item:";
    SdShowInfoList(szTitle, szMsg, listInfo);

    // Destroy the list.
    ListDestroy (listID);

end;
```

QueryShellMgr

The **QueryShellMgr** function obtains the name of the program shell being used by Microsoft Windows. For example, if the program shell is Explorer, QueryShellMgr returns the string “Explorer.exe” in svShellMgrName.

Syntax

```
QueryShellMgr ( svShellMgrName );
```

Parameters

Table 3 ▪ QueryShellMgr Parameters

Parameter	Description
svShellMgrName	Returns the unqualified name (that is, without the drive designation or path) of the shell manager that is currently running.

Return Values

Table 4 ▪ QueryShellMgr Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the name of the program shell.
< 0	Indicates that the function was unable to retrieve the name of the program shell. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

If the shell on the target system is not Explorer, you may need to launch that shell with the LaunchApp function. The InstallScript functions that create program folders and program icons use a DDE conversation with the shell to create the program folders and program items. Most alternate shells such as the Norton Desktop emulate the Explorer shell. Therefore, they can create program folders and items.

In shells that do not emulate the Explorer shell, InstallShield cannot use the program folder and program item functions to create or modify the program folders and program items. Check with the manufacturer of the shell to determine how it handles the creation of program folders and program items using Microsoft DDE specifications.

QueryShellMgr Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the QueryShellMgr function.
 *
```

```
 * QueryShellMgr is called to find the name of the shell
 * manager.  The name is then displayed in a message box.
 *
\*------------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_QueryShellMgr(HWND);

function ExFn_QueryShellMgr(hMSI)
    STRING svShellMgrName, szTitle, szMsg;
    NUMBER nReturn;
begin

    // Get the name of the program shell.
    nReturn = QueryShellMgr (svShellMgrName);

    if (nReturn < 0) then
        // Report an error.
        MessageBox ("Could not retrieve the program shell.", SEVERE);
    else
        // Display the name of the shell.
        MessageBox ("The shell manager is " + svShellMgrName + ".", INFORMATION);
    endif;

end;
```

ReadArrayProperty

Project ▪ *This information applies to InstallScript projects.*

The **ReadArrayProperty** function is called in an object script to read the value of a specified property whose value is an array.

Syntax

```
ReadArrayProperty ( nPropertyBag, szPropertyName, ArrayPointer );
```

Parameters

Table 5 ▪ ReadArrayProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored. (The value of nPropertyBag is passed by the setup engine to the ReadProperties function block within which ReadBoolProperty is called. This value is placed in the object script when you use the Add New Property dialog in the InstallScript view.)
szPropertyName	Specifies the name of the property whose value you want to read.
ArrayPointer	Returns a pointer to the specified array property.

Return Values

Table 6 ▪ ReadArrayProperty Return Values

Return Value	Description
0	This function always returns zero (0).

ReadBoolProperty

Project ▪ *This information applies to InstallScript projects.*

The **ReadBoolProperty** function is called in an object script to read the value of a specified property whose value is a Boolean.

Syntax

```
ReadBoolProperty ( nPropertyBag, szPropertyName, bvPropertyValue );
```

Parameters

Table 7 ▪ ReadBoolProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored. (The value of nPropertyBag is passed by the setup engine to the ReadProperties function block within which ReadBoolProperty is called. This value is placed in the object script when you use the Add New Property dialog in the InstallScript view.)
szPropertyName	Specifies the name of the property whose value you want to read.
bvPropertyValue	Returns the value of the specified property.

Return Values

Table 8 ▪ ReadBoolProperty Return Values

Return Value	Description
0	This function always returns zero (0).

ReadBytes

The **ReadBytes** function reads a specific number of bytes from a file starting at the current file pointer location. When this function returns, InstallShield relocates the file pointer to the new position at the end of the bytes read from the file.

Note ▪ *Before you can read from the file, which may be a file on the Internet, you must open the file in binary mode by calling OpenFileMode and OpenFile.*

The parameter nIndex is an index into the value specified by svString. Use the parameter nBytes to specify how many bytes beyond the parameter nIndex to read from the file. If the nIndex plus nBytes is a value larger than the length of the svString, only the number of bytes from the index of the string to the end of the string are read from the file. For example, if svString is declared to be 100 bytes long, the parameter nIndex is declared as 50 bytes and the parameter nBytes is 75 bytes, only the bytes between 49 and 99 (50 bytes instead of 75 bytes) are read.

Syntax

```
ReadBytes ( nFileHandle, svString, nIndex, nBytes );
```

Parameters

Table 9 ▪ ReadBytes Parameters

Parameter	Description
nFileHandle	Specifies the file handle to a file opened in binary mode.
svString	Returns the bytes read from the file. The variable passed in this parameter must have been declared with an explicit size, and it must be large enough to accommodate the number of bytes specified by nBytes.
nIndex	Specifies an index into svString; data from the file is inserted into the string at this location.
nBytes	Specifies the number of bytes to read from the file. Bytes are read starting from the current location of the file pointer. InstallShield relocates the file pointer as the bytes are read.

Return Values

Table 10 ▪ ReadBytes Return Values

Return Value	Description
X	Indicates that the function successfully read bytes from the file, where X is the actual number of bytes returned in svString.
< 0	Indicates that the function was unable to successfully read from the file.

ReadBytes Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ReadBytes and SeekBytes functions.
 *
 * SeekBytes is called to position a file pointer to a
```

```
 * specific location in a file that has been opened in binary
 * mode.  ReadBytes then reads a specific number of bytes,
 * starting at this location. The bytes are read into a string,
 * which is then displayed in a message box.
 *
 * Note: The defined constants EXAMPLE_DIR and EXAMPLE_BIN must
 *       be set to an existing directory and file on the target
 *       system.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR "C:\\"
#define EXAMPLE_BIN "Example.bin"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ReadBytes(HWND);

function ExFn_ReadBytes(hMSI)
    STRING svString;
    NUMBER nvFileHandle;
begin

    // Set the file mode to read/write.
    OpenFileMode (FILE_MODE_BINARY);

    // Open a binary file.
    if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_BIN) < 0) then
        // Report an error; then abort.
        SprintfBox (SEVERE, "CopyBytes Example", "Could not open %s.",
                    EXAMPLE_BIN);
        abort;
    endif;

    // Set the file pointer to the 16th byte in the file.
    SeekBytes (nvFileHandle, 15, FILE_BIN_START);

    // Read the next twenty-eight bytes into svString.
    if (ReadBytes (nvFileHandle, svString, 0, 28) < 0) then
        // Report an error.
        MessageBox ("ReadBytes failed.", SEVERE);
    else
        // Display the string.
        SprintfBox (INFORMATION, "ReadBytes Example", "Bytes read: %s",
                    svString);
    endif;

    // Close the file.
    CloseFile (nvFileHandle);

end;
```

ReadNumberProperty

Project *▪ This information applies to InstallScript projects.*

The **ReadNumberProperty** function is called in an object script to read the value of a specified property whose value is a number.

Syntax

```
ReadNumberProperty ( nPropertyBag, szPropertyName, nvPropertyValue );
```

Parameters

Table 11 ▪ ReadNumberProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored. (The value of nPropertyBag is passed by the setup engine to the ReadProperties function block within which ReadBoolProperty is called. This value is placed in the object script when you use the Add New Property dialog in the InstallScript view.)
szPropertyName	Specifies the name of the property whose value you want to read.
nvPropertyValue	Returns the value of the specified property.

Return Values

Table 12 ▪ ReadNumberProperty Return Values

Return Value	Description
0	This function always returns zero (0).

ReadStringProperty

Project *▪ This information applies to InstallScript projects.*

The **ReadStringProperty** function is called in an object script to read the value of a specified property whose value is a string.

Syntax

```
ReadStringProperty ( nPropertyBag, szPropertyName, svPropertyValue );
```

Parameters

Table 13 ▪ ReadStringProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored. (The value of nPropertyBag is passed by the setup engine to the ReadProperties function block within which ReadBoolProperty is called. This value is placed in the object script when you use the Add New Property dialog in the InstallScript view.)
szPropertyName	Specifies the name of the property whose value you want to read.
svPropertyValue	Returns the value of the specified property.

Return Values

Table 14 ▪ ReadStringProperty Return Values

Return Value	Description
0	This function always returns zero (0).

RebootDialog

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **RebootDialog** function displays a message box that enables end users to specify whether they want to restart the computer. The selected option is performed at the end of the installation.

When you call a function with the SHAREDFILE or LOCKEDFILE option and locked .dll or .exe files are encountered, updated versions of the locked files are copied to the target system and the system variable BATCH_INSTALL is set to TRUE. **RebootDialog** automatically commits the locked files for update when the system is restarted, unless the user selects the **No, I will restart my computer later** option.

The InstallScript engine makes every attempt not to restart the system when other instances of the installation are running. Because of this, you must make sure all other instances of the installation are shut down before calling **RebootDialog**. Your message to end users should request that they ensure all other applications are shut down before restarting the system.

Note ▪ *An alternative to the* **RebootDialog** *function is SdFinishReboot, which has a better look and feel than the* **RebootDialog** *dialog.*

Syntax

```
RebootDialog ( szTitle, szMsg, nDefChoice );
```

Parameters

Table 15 ▪ RebootDialog Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title Restarting Windows, pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
nDefChoice	Specifies the default option button selection. Pass one of the following predefined constants in this parameter: • **SYS_BOOTMACHINE**—The option to reboot the computer (Yes, I want to restart my computer now) is the default option button selection. • **0**—The option to not restart the computer (No, I will restart my computer later) is the default option button selection.

Return Values

Table 16 ▪ RebootDialog Return Values

Return Value	Description
WILL_REBOOT	Indicates that the end user selected the Yes, I want to restart my computer now option button.
0	Indicates that the end user selected the No, I will restart my computer later option button.

Additional Information

The message box that is displayed by the **RebootDialog** function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

RebootDialog Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RebootDialog function.
 *
 * This script calls RebootDialog to display a dialog that
 * asks the user whether or not to reboot the computer. The call
 * to RebootDialog passes a null string in parameter 2 to display
 * the default message and 0 in parameter 3 to make the default
 * selection "No, I will restart my computer later."
 *
 * Warning: If the end user selects Yes in this dialog, the
 *          computer is rebooted.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "RebootDialog Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RebootDialog(HWND);

function ExFn_RebootDialog(hMSI)
    NUMBER nvDefChoice;
begin

    // Query to reboot computer.
    RebootDialog (TITLE_TEXT, "", 0);

end;
```

RegDBConnectRegistry

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBConnectRegistry** function creates a connection to a remote registry. After you have opened the connection, you can create, delete, or retrieve registry keys, value names, and value pairs on a remote registry much as you would on a local registry. This functionality is also supported on 64-bit systems with some limitations.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

RegDBConnectRegistry allows you to edit only one registry root key each time the remote registry is opened, and you can edit only keys and values under either HKEY_LOCAL_MACHINE or HKEY_USERS. When you call RegDBConnectRegistry, you must specify which root key you want to be able to edit. If you want to edit the other root key or one its subkeys, you must close and re-open the connection.

Caution ▪ *Because you set the root key by calling RegDBConnectRegistry, you cannot call RegDBSetDefaultRoot after you have established a connection to a remote registry. When you call RegDBDisConnectRegistry, all calls to registry-related functions affect the local registry, and you can then call RegDBSetDefaultRoot to change the root key.*

Note ▪ *If you are trying to open a registry on a remote Windows system, you must have administrator privileges. This function is intended for use by system administrators for network installations.*

Syntax

```
RegDBConnectRegistry ( szRemoteSystem, nKeyType, nReserved );
```

Parameters

Table 17 ▪ RegDBConnectRegistry Parameters

Parameter	Description
szRemoteSystem	Specifies the name of the system with which to connect, such as “RemoteSys”. If you pass a null string ("") in this parameter, the function creates a connection to the local registry.
nKeyType	Specifies one of the following constants: HKEY_LOCAL_MACHINE or HKEY_USERS.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 18 ▪ RegDBConnectRegistry Return Values

Return Value	Description
0	Indicates this function successfully established a connection to the system registry.
REGDB_ERR_CONNECTIONEXISTS (-6)	A connection to a remote registry already exists. It must be closed using RegDBDisConnectRegistry before you can call RegDBConnectRegistry again.
REGDB_ERR_CORRUPTEDREGISTRY (-4)	Indicates that the remote registry is corrupted and cannot be accessed.
REGDB_ERR_INITIALIZATION (-2)	Indicates that the registry services could not be initialized. Make sure Remote Administration is enabled and that you have appropriate privileges to be able to write to the registry.
REGDB_ERR_INVALIDHANDLE (-5)	The key name provided for the remote registry is not allowed.
REGDB_ERR_INVALIDNAME (-3)	Indicates that the system in szRemoteSystem could not be found. Check the name and try again.
-1	Other error.

You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBConnectRegistry Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBConnectRegistry function and
 * RegDBDisConnectRegistry function.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid remote computer
 *       with remote administration enabled.  Both computers
 *       must also have the remote-registry service enabled.
 *
\*---------------------------------------------------------------*/

#define REMOTE "IShield_NT1"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBConnectRegistry(HWND);

function ExFn_RegDBConnectRegistry(hMSI)
    STRING szRemoteMachine, szKey, szTitle, szMsg;
    NUMBER nKeyType, nReturn;
begin

    szTitle         = "RegDBConnectRegistry & RegDBDisConnectRegistry";
    szRemoteMachine = REMOTE;
    nKeyType        = HKEY_LOCAL_MACHINE;
    szMsg           = "Setup will now connect to %s.";

    SprintfBox (INFORMATION, szTitle, szMsg, szRemoteMachine);

    // Connect to the remote computer's registry.  All registry-related
    // function calls will now alter only the remote computer.
    nReturn = RegDBConnectRegistry (szRemoteMachine, nKeyType, 0);

    if (nReturn < 0) then
        szMsg = "RegDBConnectRegistry failed.\n\nCould not connect to remote " +
                "system.";
        MessageBox (szMsg, SEVERE);
```

```
        abort;
    else
        szMsg = "Successfully connected to %s.";
        SprintfBox (INFORMATION, szTitle, szMsg, szRemoteMachine);
    endif;

    // Create a key on the remote computer.
    szKey   = "SOFTWARE\\InstallShield\\Test Key";
    nReturn = RegDBCreateKeyEx(szKey, "");

    if (nReturn < 0) then
        szMsg = "RegDBCreateKeyEx failed.\n\n\Could not create key on remote " +
                "machine.";
        MessageBox (szMsg , SEVERE);
    else
        szMsg = "Successfully created %s on %s.";
        SprintfBox (INFORMATION, szTitle, szMsg, szKey, szRemoteMachine);

        // Verify that the key now exists in the remote registry.
        nReturn = RegDBKeyExist(szKey);

        if (nReturn < 0) then
            szMsg = "RegDBKeyExist failed.\n\nRemote key does not exist.";
            MessageBox (szMsg, SEVERE);
        else
            szMsg = "%s exists.";
            SprintfBox (INFORMATION, szTitle, szMsg, szKey);
        endif;
    endif;

    // Delete the key that was created on the remote computer.
    nReturn = RegDBDeleteKey(szKey);

    if (nReturn < 0) then
        MessageBox("RegDBDeleteKey failed.\n\nRemote key could not be deleted.",
                   INFORMATION);
    else
        szMsg = "Successfully deleted %s on %s.";
        SprintfBox(INFORMATION, szTitle, szMsg, szKey, szRemoteMachine);
    endif;

    // Disconnect from the remote registry.  All registry-related functions
    // will now alter only the local registry.
    nReturn = RegDBDisConnectRegistry(0);

    if (nReturn < 0) then
        MessageBox("RegDBDisConnectRegistry failed.\n\nRemote registry still " +
                   "connected.", SEVERE);
    else
        MessageBox("RegDBDisConnectRegistry successful.\n\nRemote registry " +
                   "disconnected.", INFORMATION);
    endif;

end;
```

RegDBCopyKeys

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBCopyKeys** function copies the registry keys and values under the key specified by szSourceKey to the key specified by szTargetKey.

Note *▪ This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBCopyKeys ( szSourceKey, szTargetKey, nRootKeySource, nRootKeyTarget );
```

Parameters

Table 19 ▪ RegDBCopyKeys Parameters

Parameter	Description
szSourceKey	Specifies the name of the key whose subkeys and values are to be copied. Separate different levels in the subkey with a double backslash (\\).
szTargetKey	Specifies the name of the key to be copied to. Separate different levels in the subkey with a double backslash (\\). If this key does not exist, RegDBCopyKeys creates it. If this key does exist, any existing values under the key that have the same names as values under szSourceKey are overwritten; this includes values under identically named subkeys.
nRootKeySource	Specifies the root key of szSourceKey. Pass one of the following predefined constants in this parameter: • HKEY_CLASSES_ROOT • HKEY_CURRENT_USER • HKEY_LOCAL_MACHINE • HKEY_USERS • HKEY_CURRENT_CONFIG • HKEY_DYN_DATA
nRootKeyTarget	Specifies the root key of szTargetKey. Pass one of the following predefined constants in this parameter: • HKEY_CLASSES_ROOT • HKEY_CURRENT_USER • HKEY_LOCAL_MACHINE • HKEY_USERS • HKEY_CURRENT_CONFIG • HKEY_DYN_DATA

Return Values

Table 20 ▪ RegDBCopyKeys Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully copied the keys and values.
< ISERR_SUCCESS	Indicates that the function was unable to copy the keys and values. You can obtain the error message text associated with a large negative return value—for example,-2147024891(0x80070005)—by calling FormatMessage.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBCopyValues

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBCopyValues** function copies the registry values under the key specified by szSourceKey to the key specified by szTargetKey.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBCopyValues ( szSourceKey, szTargetKey, nRootKeySource, nRootKeyTarget );
```

Parameters

Table 21 ▪ RegDBCopyValues Parameters

Parameter	Description
szSourceKey	Specifies the name of the key whose values are to be copied. Separate different levels in the subkey with a double backslash (\\).
szTargetKey	Specifies the name of the key to be copied to. Separate different levels in the subkey with a double backslash (\\). If this key does not exist, RegDBCopyKeys creates it. If this key does exist, any existing values under the key that have the same names as values under szSourceKey are overwritten.
nRootKeySource	Specifies the root key of szSourceKey. Pass one of the following predefined constants in this parameter: • HKEY_CLASSES_ROOT • HKEY_CURRENT_USER • HKEY_LOCAL_MACHINE • HKEY_USERS • HKEY_CURRENT_CONFIG • HKEY_DYN_DATA
nRootKeyTarget	Specifies the root key of szTargetKey. Pass one of the following predefined constants in this parameter: • HKEY_CLASSES_ROOT • HKEY_CURRENT_USER • HKEY_LOCAL_MACHINE • HKEY_USERS • HKEY_CURRENT_CONFIG • HKEY_DYN_DATA

Return Values

Table 22 ▪ RegDBCopyValues Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully copied the values.
< ISERR_SUCCESS	Indicates that the function was unable to copy the values. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBCreateKeyEx

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBCreateKeyEx** function creates a key in the registry. You can also associate a class object with the newly created key (advanced users only). The newly created key does not have a value associated with it.

When logging is enabled, the InstallScript engine logs each key in the path that is passed through szKey to **RegDBCreateKeyEx**. For example, you might pass the following for szKey:

"Software" ^ IFX_COMPANY_NAME ^ IFX_PRODUCT_NAME

In this case, the InstallScript engine logs several keys:

- Software
- The value of the IFX_COMPANY_NAME variable
- The value of the IFX_PRODUCT_NAME variable

The log flags a key as "created" if it did not already exist. In the aforementioned example, the Software key already exists on all target systems (HKEY_LOCAL_MACHINE or HKEY_CURRENT_USER). The Software key is logged, but its "created" flag would be false, indicating that the key should not be removed during uninstallation. Any keys that are created and logged (because they did not already exist at the time the installation was running) are removed during uninstallation.

When a key is uninstalled, all of its subkeys are also uninstalled. Therefore, if you use **RegDBCreateKeyEx** to create a key or keys under a key that is already logged for uninstallation, the keys that you create will be uninstalled when the higher-level key is uninstalled. This behavior occurs regardless of whether logging is enabled when the installation creates your keys and regardless of the order in which the installation creates the keys. Therefore, in the aforementioned example, if logging is also enabled for a second installation that likewise uses **RegDBCreateKeyEx** to create a key for a different product under the IFX_COMPANY_NAME key that the first installation created, and the then end user uninstalls the first product, the entire IFX_COMPANY_NAME key, with both of the product subkeys, are removed. This may make the second product behave unexpectedly.

If you want to be able to share registry keys among multiple installations, it is recommended that you use the Registry view to configure the registry entries, instead of using the **RegDBCreateKeyEx** function. In the Registry view of an InstallScript project, you can mark a registry keys as shared (by right-clicking the key and then clicking **Shared among several applications**). During the uninstallation, the InstallScript engine removes a shared key only if no other logged installations that share the key still exist on the machine.

To view all of the registry keys that were logged during an installation and find out how each of their "created" flags were set, use the InstallShield Cabinet and Log File Viewer.

For more information about logging, see InstallScript Functions that Are Logged for Uninstallation.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBCreateKeyEx ( szKey, szClass );
```

Parameters

Table 23 ▪ RegDBCreateKeyEx Parameters

Parameter	Description
szKey	Specify the name of the key to create. Separate different levels in the subkey with a double backslash (\\). If the root key is HKEY_CLASSES_ROOT, you do not need to specify the HKEY_CLASSES_ROOT in this parameter. Unless you specify otherwise, the InstallScript engine creates the key as a subkey of HKEY_CLASSES_ROOT. To specify a different root key, you can call RegDBSetDefaultRoot before calling **RegDBCreateKeyEx**.
szClass	Specify the class name to associate with this key.

Return Values

Table 24 ▪ RegDBCreateKeyEx Return Values

Return Value	Description
0	Indicates that the function successfully created the subkey.
< 0	Indicates that the function was unable to create the subkey. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

RegDBCreateKeyEx is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.

Note ▪ *Windows does not allow the creation of a key directly under HKEY_LOCAL_MACHINE or HKEY_USERS.*

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS constant.

RegDBCreateKeyEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBCreateKeyEx and RegDBKeyExist functions.
 *
 * First, RegDBCreateKeyEx is called to create a subkey with no
 * class value in the HKEY_CLASSES_ROOT key.  Then, RegDBKeyExist
 * is then called to check if the key was created.
 *
 * RegDBCreateKeyEx is called again to create a multi-level subkey
 * with a class value associated with it under HKEY_CLASSES_ROOT.
 * Then RegDBKeyExist is called again to check for the existence
 * of the new key.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "RegDBCreateKeyEx & RegDBKeyExist"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBCreateKeyEx(HWND);

function ExFn_RegDBCreateKeyEx(hMSI)
    STRING szKey, szClass, szKeyRoot, szMsg, svLogFile;
    NUMBER nResult1, nResult2;
begin

    // Create a key with no class value.
    szKey   = "CreateKeyExample";
    szClass = "";

    if (RegDBCreateKeyEx(szKey, szClass) < 0) then
        MessageBox ("First call to RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "Successfully created: %s", szKey);

        // Check to see if the key just created exists.
        if (RegDBKeyExist (szKey) < 0) then
            MessageBox ("First call to RegDBKeyExist failed.", SEVERE);
        else
```

```
            SprintfBox (INFORMATION, TITLE_TEXT, "%s exists.", szKey);
        endif;
    endif;

    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    endif;

    // Create a key with more than one sublevel and a class value.
    szKey     = "ShareWare\\Games\\CoolChess";
    szClass   = "LastPlayed";
    szKeyRoot = "ShareWare";

    if (RegDBCreateKeyEx(szKey, szClass) < 0) then
        MessageBox ("Second call to RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "Successfully created: %s", szKey);

        // Check if the newly created multi-level key exists.
        if (RegDBKeyExist (szKeyRoot) < 0) then
            MessageBox ("Second call to RegDBKeyExist failed.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE_TEXT, "%s exists.", szKey);
        endif;
    endif;

    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    endif;

end;
```

RegDBDeleteItem

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

RegDBDeleteItem is a special registry-related function designed to work with certain predefined registry keys. The **RegDBDeleteItem** function deletes values under the per application paths key or the application uninstallation key, depending on the value of nItem. Calling **RegDBDeleteItem** with either the REGDB_APPPATH or the REGDB_APPPATH_DEFAULT option results in the deletion of the per application paths key.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBDeleteItem( nItem );
```

Parameters

Table 25 ▪ RegDBDeleteItem Parameters

Parameter	Description
nItem	Specifies the item to delete. Pass one of the following predefined constants in this parameter: • **REGDB_APPPATH**—The data of the Path value under the per-application paths key. This key is deleted by the installation as a result of calling CreateInstallationInfo. You must call **CreateInstallationInfo** to create this key before calling **RegDBDeleteItem**. (In an event-based script, **CreateInstallationInfo** is called in the default **OnMoveData** event handler code.) • **REGDB_APPPATH_DEFAULT**—The data of the DefaultPath value under the per-application paths key. This key is created by the installation as a result of calling **CreateInstallationInfo**. You must call **CreateInstallationInfo** to create this key before calling **RegDBDeleteItem**. (In an event-based script, **CreateInstallationInfo** is called in the default **OnMoveData** event handler code.) • **REGDB_UNINSTALL_COMMENTS**—The data of the Comments value under the uninstallation key. • **REGDB_UNINSTALL_CONTACT**—The data of the Contact value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAY_VERSION**—The data of the DisplayVersion value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAYICON**—The data of the DisplayIcon value under the uninstallation key. • **REGDB_UNINSTALL_HELPLINK**—The data of the HelpLink value under the uninstallation key. • **REGDB_UNINSTALL_HELPTELEPHONE**—The data of the HelpTelephone value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLDATE**—The data of the InstallDate value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLLOC**—The data of the InstallLocation value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLSOURCE**—The data of the InstallSource value under the uninstallation key. • **REGDB_UNINSTALL_LANGUAGE**—The data of the Language value under the uninstallation key. • **REGDB_UNINSTALL_LOGFILE**—The data of the LogFile value under the uninstallation key. • **REGDB_UNINSTALL_MAINT_OPTION**—The data of the LogMode value under the uninstallation key.

Table 25 ▪ RegDBDeleteItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_MAJOR_VERSION**—The data of the VersionMajor value under the uninstallation key. • **REGDB_UNINSTALL_MAJOR_VERSION_OLD**—The data of the MajorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION**—The data of the VersionMinor value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION_OLD**—The data of the MinorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MODIFYPATH**—The data of the ModifyPath value under the uninstallation key. • **REGDB_UNINSTALL_NAME**—The data of the DisplayName value under the uninstallation key. • **REGDB_UNINSTALL_NOMODIFY**—The data of the NoModify value under the uninstallation key. • **REGDB_UNINSTALL_NOREMOVE**—The data of the NoRemove value under the uninstallation key. • **REGDB_UNINSTALL_NOREPAIR**—The data of the NoRepair value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTGUID**—The data of the ProductGuid value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTID**—The data of the ProductId value under the uninstallation key. • **REGDB_UNINSTALL_PUBLISHER**—The data of the Publisher value under the uninstallation key. • **REGDB_UNINSTALL_README**—The data of the Readme value under the uninstallation key. • **REGDB_UNINSTALL_REGCOMPANY**—The data of the RegCompany value under the uninstallation key. • **REGDB_UNINSTALL_REGOWNER**—The data of the RegOwner value under the uninstallation key.

Table 25 ▪ RegDBDeleteItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_STRING**—The data of the UninstallString value under the uninstallation key. The UninstallString value is created when the MaintenanceStart or DeinstallStart functions are called. • **REGDB_UNINSTALL_SYSTEMCOMPONENT**—The data of the SystemComponent value under the uninstallation key. • **REGDB_UNINSTALL_URLINFOABOUT**—The data of the URLInfoAbout value under the uninstallation key. • **REGDB_UNINSTALL_URLUPDATEINFO**—The data of the URLUpdateInfo value under the uninstallation key. • **REGDB_UNINSTALL_VERSION**—The data of the Version value under the uninstallation key. When this constant is used, szValue specifies the installed product's version number expressed as a string, for example, "16777216".  ***Important ▪*** *Do not use REGDB_WINCURRVER_REGOWNER or REGDB_WINCURRVER_REGORGANIZATION with this function. Windows sets these values, and they should not be deleted by an installation.*

Return Values

Table 26 ▪ RegDBDeleteItem Return Values

Return Value	Description
0	Indicates that the function successfully set the value.
< 0	Indicates that the function failed.

Additional Information

- By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.
- **RegDBDeleteItem** does not write anything to the uninstall log file; thus, calling this function does not have any effect how the application is uninstalled.

RegDBDeleteKey

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBDeleteKey** function deletes a specific key and its associated value from the registry. All subkeys of the deleted key are also deleted, along with their associated values.

InstallShield assumes the key specified in szSubKey is a subkey of HKEY_CLASSES_ROOT. You can use RegDBSetDefaultRoot to specify another root key.

RegDBDeleteKey is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.

Note *▪ This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBDeleteKey ( szSubKey );
```

Parameters

Table 27 ▪ RegDBDeleteKey Parameters

Parameter	Description
szSubKey	Specifies the name of the key to delete. Separate different levels in the subkey with a double backslash (\\).

Return Values

Table 28 ▪ RegDBDeleteKey Return Values

Return Value	Description
0	Indicates that the function successfully deleted the key.
< 0	Indicates that the function was unable to delete the key. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

- By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.
- **RegDBDeleteKey** does not write anything to the uninstall log file; thus, calling this function does not have any effect how the application is uninstalled.

RegDBDeleteKey Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBDeleteKey function.
 *
 * This example creates and then deletes a registry key.
 * Almost all of the examples provided with the registry functions
 * use this function to delete a key. Please refer to those
 * examples for more information.
 *
\*---------------------------------------------------------------*/
```

```
#define TITLE_TEXT "RegDBDeleteKey Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBDeleteKey(HWND);

function ExFn_RegDBDeleteKey(hMSI)
    STRING szKey, szClass, szKeyRoot, szMsg, svLogFile;
    NUMBER nResult1, nResult2;
begin

    // Set up parameters for call to RegDBCreateKeyEx.
    szKey   = "DeleteMeKey";
    szClass = "";

    // Create a key with no class value.
    if (RegDBCreateKeyEx (szKey, szClass) < 0) then
        MessageBox ("RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "%s successfully created.", szKey);
    endif;

    // Call RegDBDeleteKey to delete the key just created.
    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "%s successfully deleted.", szKey);
    endif;

end;
```

RegDBDeleteValue

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBDeleteValue** function deletes a value from a specific key in the registry. InstallShield assumes that the key specified in szSubKey is a subkey of HKEY_CLASSES_ROOT. You must use RegDBSetDefaultRoot to specify another root key.

RegDBDeleteKey is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.

Note *▪ This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBDeleteValue ( szSubKey, szValue );
```

Parameters

Table 29 ▪ RegDBDeleteValue Parameters

Parameter	Description
szSubKey	Specifies the name of the registry key that contains the value name to delete. Separate different levels in the subkey with a double backslash (\\).
szValue	Specifies the name of the value you want to delete.

Return Values

Table 30 ▪ RegDBDeleteValue Return Values

Return Value	Description
0	Indicates that the function successfully deleted the value.
< 0	Indicates that the function was unable to delete the value.

Additional Information

- By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.
- **RegDBDeleteValue** does not write anything to the uninstall log file; thus, calling this function does not have any effect how the application is uninstalled.

RegDBDeleteValue Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBDeleteValue function.
 *
 * RegDBDeleteValue is called to delete the value name "Cursive"
 * from the following registry key:
 *
```

```
 * "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Fonts".
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference an existing subkey
 *       and value on the target system.
 *
\*---------------------------------------------------------------*/

#define SUBKEY "\\Software\\Microsoft\\Windows\\CurrentVersion\\Fonts"
#define VALUE  "Cursive"
#define TITLE  "RegDBDeleteValue Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBDeleteValue(HWND);

function ExFn_RegDBDeleteValue(hMSI)
    STRING szSubKey, szValue, szTitle;
    NUMBER nReturn;
begin

    // Set the root key.
    RegDBSetDefaultRoot (HKEY_LOCAL_MACHINE);

    // Set the name of the subkey.
    szSubKey = SUBKEY;
    szValue  = VALUE;

    // Delete the subkey.
    nReturn = RegDBDeleteValue (szSubKey, szValue);

    // Report the results of the deletion.
    if (nReturn < 0) then
        MessageBox ("RegDBDeleteValue failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "%s successfully deleted.", szValue);
    endif;

end;
```

RegDBDisConnectRegistry

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBDisConnectRegistry** function closes a connection to a remote registry that you established by calling RegDBConnectRegistry.

After calling RegDBDisConnectRegistry, all calls to the InstallScript registry-related functions affect the local system's registry. For more information on special registry-related functions, see Special Registry-Related Functions.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBDisConnectRegistry ( nReserved );
```

Parameters

Table 31 ▪ RegDBDisConnectRegistry Parameters

Parameter	Description
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 32 ▪ RegDBDisConnectRegistry Return Values

Return Value	Description
0	Indicates that this function successfully closed a connection to the registry on the remote system.
< 0	Indicates that this function failed to close the registry connection.

RegDBDisConnectRegistry Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBConnectRegistry function and
 * RegDBDisConnectRegistry function.
 *
 * Note: In order for this script to run properly, you must set
 *       the preprocessor constants to a valid remote computer
 *       with remote administration enabled.  Both computers
 *       must also have the remote-registry service enabled.
 *
\*---------------------------------------------------------------*/

#define REMOTE "IShield_NT1"

// Include Ifx.h for built-in InstallScript function prototypes.
```

```
#include "Ifx.h"

   export prototype ExFn_RegDBDisConnectRegistry(HWND);

function ExFn_RegDBDisConnectRegistry(hMSI)
    STRING szRemoteMachine, szKey, szTitle, szMsg;
    NUMBER nKeyType, nReturn;
begin

    szTitle         = "RegDBConnectRegistry & RegDBDisConnectRegistry";
    szRemoteMachine = REMOTE;
    nKeyType        = HKEY_LOCAL_MACHINE;
    szMsg           = "Setup will now connect to %s.";

    SprintfBox (INFORMATION, szTitle, szMsg, szRemoteMachine);

    // Connect to the remote computer's registry.  All registry-related
    // function calls will now alter only the remote computer.
    nReturn = RegDBConnectRegistry (szRemoteMachine, nKeyType, 0);

    if (nReturn < 0) then
        szMsg = "RegDBConnectRegistry failed.\n\nCould not connect to remote " +
                "system.";
        MessageBox (szMsg, SEVERE);
        abort;
    else
        szMsg = "Successfully connected to %s.";
        SprintfBox (INFORMATION, szTitle, szMsg, szRemoteMachine);
    endif;

    // Create a key on the remote computer.
    szKey   = "SOFTWARE\\InstallShield\\Test Key";
    nReturn = RegDBCreateKeyEx(szKey, "");

    if (nReturn < 0) then
        szMsg = "RegDBCreateKeyEx failed.\n\n\Could not create key on remote " +
                "machine.";
        MessageBox (szMsg , SEVERE);
    else
        szMsg = "Successfully created %s on %s.";
        SprintfBox (INFORMATION, szTitle, szMsg, szKey, szRemoteMachine);

        // Verify that the key now exists in the remote registry.
        nReturn = RegDBKeyExist(szKey);

        if (nReturn < 0) then
            szMsg = "RegDBKeyExist failed.\n\nRemote key does not exist.";
            MessageBox (szMsg, SEVERE);
        else
            szMsg = "%s exists.";
            SprintfBox (INFORMATION, szTitle, szMsg, szKey);
        endif;
    endif;

    // Delete the key that was created on the remote computer.
    nReturn = RegDBDeleteKey(szKey);
```

```
    if (nReturn < 0) then
        MessageBox("RegDBDeleteKey failed.\n\nRemote key could not be deleted.",
                   INFORMATION);
    else
        szMsg = "Successfully deleted %s on %s.";
        SprintfBox(INFORMATION, szTitle, szMsg, szKey, szRemoteMachine);
    endif;

    // Disconnect from the remote registry.  All registry-related functions
    // will now alter only the local registry.
    nReturn = RegDBDisConnectRegistry(0);

    if (nReturn < 0) then
        MessageBox("RegDBDisConnectRegistry failed.\n\nRemote registry still " +
                   "connected.", SEVERE);
    else
        MessageBox("RegDBDisConnectRegistry successful.\n\nRemote registry " +
                   "disconnected.", INFORMATION);
    endif;

end;
```

RegDBGetAppInfo

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBGetAppInfo** function retrieves from the registry the value of a particular value name under the application information key of your main application. RegDBGetAppInfo is a special registry-related function, designed to work with certain predefined registry keys.

Note *▪ The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBGetAppInfo ( szName, nvType, svValue, nvSize );
```

Parameters

Table 33 ▪ RegDBGetAppInfo Parameters

Parameter	Description
szName	Specifies the value name of the value to retrieve.
nvType	Returns one of the following predefined constants, which identifies the type of data returned in svValue: • **REGDB_STRING—**String variable, no newline characters allowed. • **REGDB_STRING_EXPAND—**String variable holding an expandable environment variable expression, such as "%MYPATH%". • **REGDB_STRING_MULTI—**String variable, newline characters allowed. • **REGDB_NUMBER—**Number expressed as a string and passed in a string variable. • **REGDB_BINARY—**Binary data stored in a string.
svValue	Returns the value of the value name specified in szName.
nvSize	Returns the size—in bytes—of the return value.

Return Values

Table 34 ▪ RegDBGetAppInfo Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the value.
< 0	Indicates that the function was unable to retrieve the value.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBGetAppInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetAppInfo and RegDBGetAppInfo functions.
 *
 * Before calling either of these functions, you must call
 * InstallationInfo to set the application information.
 *
\*---------------------------------------------------------------*/

#define  COMPANY_NAME          "Example_Company"
#define  PRODUCT_NAME          "Example_App"
#define  PRODUCT_VERSION       "5.0"
#define  PRODUCT_KEY           "EXAMPLE.EXE"
#define  DEINSTALL_KEY         "Example_DeinstKey"
#define  UNINSTALL_NAME        "Example_App_5.0"
#define  DEFAULT_LOG_PATH      "EXAMPLE"
#define  TITLE                 "RegDBGetAppInfo"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBGetAppInfo(HWND);

function ExFn_RegDBGetAppInfo(hMSI)
    STRING  szStrName, szStrValue, svStrValue, szTitle, szMsg, svLogFile;
    NUMBER  nvSize, nvType;
begin

    // Set the root key.
    RegDBSetDefaultRoot (HKEY_LOCAL_MACHINE);

    // Set the name to be used with REGDB_STRING.
    szStrName  = "ExampleStringValue";
    szStrValue = "ExampleStringSetting";

    // Set up the application information prior to using RegDBSetAppInfo
    // and RegDBGetAppInfo.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME, PRODUCT_VERSION, PRODUCT_KEY);
    DeinstallStart(DEFAULT_LOG_PATH, svLogFile, DEINSTALL_KEY, 0);

    // Set value of type REGDB_STRING
    if (RegDBSetAppInfo (szStrName, REGDB_STRING, szStrValue, -1) < 0) then
        MessageBox ("Failed to set key and value of REGDB_STRING type.", SEVERE);
        abort;
    endif;

    // RegDBGetAppInfo is called to return the values and compare all the setup
    // parameters.
    if (RegDBGetAppInfo (szStrName, nvType, svStrValue, nvSize) < 0) then
        MessageBox ("Failed to get application information value.", SEVERE);
        abort;
    else
        // Check to see if the value retrieved is the same as the value set.
        if (nvType != REGDB_STRING) then
            MessageBox ("Type comparison failed.", WARNING);
        endif;
```

```
        if (szStrValue != svStrValue) then
            MessageBox ("Sub key value comparison Failed.", WARNING);
        else
            szMsg = "Set values: %s = %s\n\nReturn values: %s = %s";
            SprintfBox (INFORMATION, TITLE, szMsg, szStrName, szStrValue,
                        szStrName, svStrValue);
        endif;

        if (nvSize != StrLength(szStrValue)) then
            MessageBox ("Size Comparison failed.", WARNING);
        else
            szMsg = "Size in bytes entered: %d\n\nSize in bytes returned: %d";
            SprintfBox (INFORMATION, TITLE, szMsg,
                        nvSize, StrLength(szStrValue) + 1);
        endif;
    endif;

end;
```

RegDBGetDefaultRoot

Project *▪ For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBGetDefaultRoot** function returns the root key that is used by the general registry-related functions.

Note *▪ This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBGetDefaultRoot ( );
```

Parameters

None.

Return Values

- HKEY_CLASSES_ROOT
- HKEY_CURRENT_USER
- HKEY_LOCAL_MACHINE
- HKEY_USERS
- HKEY_CURRENT_CONFIG
- HKEY_DYN_DATA

- HKEY_USER_SELECTABLE

Note ▪ *The return value HKEY_USER_SELECTABLE indicates that a subsequent registry function call uses HKEY_LOCAL_MACHINE as the root key if the ALLUSERS system variable is non-zero when the function is called, or uses HKEY_CURRENT_USER as the root key if ALLUSERS is FALSE when the function is called.*

RegDBGetItem

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBGetItem** function retrieves values under the per-application paths key or the application uninstallation key, depending on the value of nItem. **RegDBGetItem** is a special registry-related function, designed to work with certain predefined registry keys.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBGetItem ( nItem, svValue );
```

Parameters

Table 35 ▪ RegDBGetItem Parameters

Parameter	Description
nItem	Specifies which item to retrieve. Pass one of the following predefined constants in this parameter: • **REGDB_APPPATH**—The data of the Path value under the per application paths key. • **REGDB_APPPATH_DEFAULT**—The data of the DefaultPath value under the per application paths key. • **REGDB_UNINSTALL_COMMENTS**—The data of the Comments value under the uninstallation key. • **REGDB_UNINSTALL_CONTACT**—The data of the Contact value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAY_VERSION**—The data of the DisplayVersion value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAYICON**—The data of the DisplayIcon value under the uninstallation key. • **REGDB_UNINSTALL_HELPLINK**—The data of the HelpLink value under the uninstallation key. • **REGDB_UNINSTALL_HELPTELEPHONE**—The data of the HelpTelephone value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLDATE**—The data of the InstallDate value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLLOC**—The data of the InstallLocation value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLSOURCE**—The data of the InstallSource value under the uninstallation key. • **REGDB_UNINSTALL_LANGUAGE**—The data of the Language value under the uninstallation key. • **REGDB_UNINSTALL_LOGFILE**—The data of the LogFile value under the uninstallation key. • **REGDB_UNINSTALL_MAINT_OPTION**—The data of the LogMode value under the uninstallation key.

Table 35 ▪ RegDBGetItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_MAJOR_VERSION**—The data of the VersionMajor value under the uninstallation key, if it is present. If it is not present, the function checks the data of the MajorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MAJOR_VERSION_OLD**—The data of the MajorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION**—The data of the VersionMinor value under the uninstallation key, if it is present. If it is not present, the function checks the data of the MinorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION_OLD**—The data of the MinorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MODIFYPATH**—The data of the ModifyPath value under the uninstallation key. • **REGDB_UNINSTALL_NAME**—The data of the DisplayName value under the uninstallation key. When this constant is used, szValue specifies the application name shown in the list of uninstallable applications in the Control Panel. • **REGDB_UNINSTALL_NOMODIFY**—The data of the NoModify value under the uninstallation key. • **REGDB_UNINSTALL_NOREMOVE**—The data of the NoRemove value under the uninstallation key. • **REGDB_UNINSTALL_NOREPAIR**—The data of the NoRepair value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTGUID**—The data of the ProductGuid value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTID**—The data of the ProductId value under the uninstallation key. • **REGDB_UNINSTALL_PUBLISHER**—The data of the Publisher value under the uninstallation key. • **REGDB_UNINSTALL_README**—The data of the Readme value under the uninstallation key. • **REGDB_UNINSTALL_REGCOMPANY**—The data of the RegCompany value under the uninstallation key. • **REGDB_UNINSTALL_REGOWNER**—The data of the RegOwner value under the uninstallation key.

Table 35 ▪ RegDBGetItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_STRING**—The data of the UninstallString value under the uninstallation key. • **REGDB_UNINSTALL_SYSTEMCOMPONENT**—The data of the SystemComponent value under the uninstallation key. • **REGDB_UNINSTALL_URLINFOABOUT**—The data of the URLInfoAbout value under the uninstallation key. • **REGDB_UNINSTALL_URLUPDATEINFO**—The data of the URLUpdateInfo value under the uninstallation key. • **REGDB_UNINSTALL_VERSION**—The data of the Version value under the uninstallation key. When this constant is used, svValue returns the installed product's version number expressed as a string, for example, "16777216". • **REGDB_WINCURRVER_REGORGANIZATION**—The data of the RegisteredOrganization value under the current version key. • **REGDB_WINCURRVER_REGOWNER**—The data of the RegisteredOwner value under the current version key.
svValue	Returns the value of the item.

Return Values

Table 36 ▪ RegDBGetItem Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the value of the item.
< 0	Indicates that the function was unable to retrieve the value of the item.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

Project *▪ In an InstallScript installation, calling* **RegDBSetItem** *with REGDB_APPPATH or REGDB_APPPATH_DEFAULT before calling* **CreateInstallationInfo** *has no net effect. This is because* **CreateInstallationInfo** *overwrites registry information that is created by* **RegDBSetItem**, *thus nullifying the call. Calling* **RegDBSetItem** *with any other constant before calling* **MaintenanceStart** *has no net effect. This is because* **MaintenanceStart** *overwrites the registry data created by* **RegDBSetItem**, *thus nullifying the call. (In an event-based script,* **CreateInstallationInfo** *and* **MaintenanceStart** *are called in the default OnMoveData event handler code.)*

In an InstallScript MSI installation, the uninstallation information is created during file transfer by the Windows Installer. Therefore, if you call **RegDBSetItem** *in an InstallScript MSI installation, you should call it only after file transfer.*

RegDBGetItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetItem and RegDBGetItem functions.
 *
 * This script sets several registry keys;  then it gets those
 * keys and displays their current values.
 *
\*---------------------------------------------------------------*/

#define  COMPANY_NAME       "ExampleCompany"
#define  PRODUCT_NAME       "ExampleProduct"
#define  VERSION_NUMBER     "5.00.00"
#define  PRODUCT_KEY        "EXAMPLE.EXE"
#define  DEINST_KEY         "ExampleDeinstKey"
#define  APP_DEF_LOG_PATH   "C:\\EXAMPLE\\TEMP"
#define  APP_PATH           "C:\\EXAMPLE"
#define  APP_DEF_PATH       "C:\\EXAMPLE\\TARGET"
#define  UNINSTALL_NAME     "ExampleUninstallName"
#define  TITLE              "RegDBSetItem Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBGetItem(HWND);

function ExFn_RegDBGetItem(hMSI)
    STRING svLogFile, svValue, szTitle;
begin

    // Set the root key.
    RegDBSetDefaultRoot (HKEY_LOCAL_MACHINE);

    // Set installation and uninstallation information in
    // order to call RegDBSetItem and RegDBGetItem.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME, VERSION_NUMBER, PRODUCT_KEY);
    DeinstallStart (APP_DEF_LOG_PATH, svLogFile, DEINST_KEY, 0);

    // Set the value of the application path key in the
    // registry to the value of szAppPath.
    if (RegDBSetItem (REGDB_APPPATH, APP_PATH) < 0) then
        MessageBox ("Unable to set application path key.", SEVERE);
    else
```

```
            SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the application " +
                        "path key to %s.", APP_PATH);
        endif;

        // Set the value of the application default path key in
        // the registry to the value of szAppDefPath.
        if (RegDBSetItem(REGDB_APPPATH_DEFAULT, APP_DEF_PATH) < 0) then
            MessageBox ("Unable to set application default path key.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the application " +
                        "default path key to %s.", APP_DEF_PATH);
        endif;

        // Set the value of the uninstall name key in the
        // registry to the value of szUninstallName.
        if (RegDBSetItem (REGDB_UNINSTALL_NAME, UNINSTALL_NAME) < 0) then
            MessageBox ("Unable to set uninstall name key.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the uninstall " +
                        "name key to %s.", UNINSTALL_NAME);
        endif;

        // Set up title parameter for call to SprintfBox.
        szTitle = "RegDBGetItem";

        // Get the value of the application path key from the registry.
        if (RegDBGetItem (REGDB_APPPATH, svValue) < 0) then
            MessageBox ("Unable to get value of application path key.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                        "of the application path key: %s.", svValue);
        endif;

        // Get the value of the application default path key in
        // the registry.
        if (RegDBGetItem (REGDB_APPPATH_DEFAULT, svValue) < 0) then
            MessageBox ("Unable to get application default path key", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                        "of the application default path key: %s.", svValue);
        endif;

        // Get the value of the uninstall name key from the registry.
        if (RegDBGetItem (REGDB_UNINSTALL_NAME, svValue) < 0) then
            MessageBox ("Unable to get application uninstall name key.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                        "of the uninstallation name key: %s.", svValue);
        endif;

    end;
```

RegDBGetKeyValueEx

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBGetKeyValueEx** function retrieves the value of a particular value name under a specified key in the registry. By default, InstallShield assumes this key is a subkey of HKEY_CLASSES_ROOT. You can use **RegDBSetDefaultRoot** to specify another root key.

RegDBGetKeyValueEx is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBGetKeyValueEx ( szKey, szName, nvType, svValue, nvSize );
```

Parameters

Table 37 ▪ RegDBGetKeyValueEx Parameters

Parameter	Description
szKey	Specifies the name of the key whose value is to be retrieved. Separate different levels in the subkey with a double backslash (\\).
szName	Specifies the value name under szKey of the value to retrieve. To retrieve the default value of the key, pass a null string ("").
nvType	Returns one of the following predefined constants, which identifies the type of data returned in svValue: • **REGDB_STRING**—String variable, no newline characters allowed. • **REGDB_STRING_EXPAND**—String variable holding an expandable environment variable expression such as "%MYPATH%". • **REGDB_STRING_MULTI**—String variable, newline characters allowed. • **REGDB_NUMBER**—Number expressed as a string and passed in a string variable. • **REGDB_BINARY**—Binary data stored in a string.  ***Note ▪*** *When data type REGDB_STRING_MULTI is retrieved, use* **StrGetTokens** *with null string ("") to parse the multiple null terminated strings into a list of strings. That is, if svValue has the resulting multiple strings after a call to* **RegDBGetKeyValueEx**, `StrGetTokens( listID, svValue, "")` *can be used to parse the strings and put them in a string list (listID).*
svValue	Returns the value that was specified by szKey and svName. Note that a number value is returned as a string.
nvSize	Returns the size—in bytes—of the value returned in svValue.

Return Values

Table 38 ▪ RegDBGetKeyValueEx Return Values

Return Value	Description
0	Indicates that the function successfully retrieved the value.
< 0	Indicates that the function was unable to retrieve the value.

RegDBGetKeyValueEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetKeyValueEx and RegDBGetKeyValueEx
 * functions.
 *
 * RegDBCreateKeyEx is called to create a test subkey in the
 * HKEY_CLASSES_ROOT key.  The value of a key is set in integer
 * form using the REGDB_NUMBER option of the RegDBSetKeyValueEx
 * function.  After this value is set, it is retrieved using
 * the RegDBGetKeyValueEx function and verified.
 *
\*---------------------------------------------------------------*/

#define TITLE "RegDBSetKeyValueEx & RegDBGetKeyValueEx"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBGetKeyValueEx(HWND);

function ExFn_RegDBGetKeyValueEx(hMSI)
    STRING szKey, szNumName, szNumValue, svNumValue, szTitle, szMsg;
    NUMBER nType, nSize, nvType, nvSize;
begin

    // Create a key to test.
    szKey = "TestKey";

    if (RegDBCreateKeyEx (szKey, "") < 0) then
        MessageBox ("RegDBCreateKeyEx failed.", SEVERE);
        abort;
    endif;

    // Set up parameters for call to RegDBSetKeyValueEx.
    szNumName  = "TestValue";
    szNumValue = "12345";
    nType      = REGDB_NUMBER;
    nSize      = -1;

    // Set a key name and a value associated with it.
    if (RegDBSetKeyValueEx (szKey, szNumName, nType, szNumValue,
                            nSize) < 0) then
        MessageBox ("RegDBSetKeyValueEx failed.", SEVERE);
        abort;
    else
        // Display what RegDBSetKeyValueEx has done.
        szMsg = "%s set to: %s";
        SprintfBox (INFORMATION, TITLE, szMsg, szNumName, szNumValue);
    endif;
```

```
    // Retrieve key value information.
    if (RegDBGetKeyValueEx (szKey, szNumName, nvType, svNumValue,
                            nvSize) < 0) then
        MessageBox ("RegDBGetKeyValueEx failed.", SEVERE);
    else
        // Check to see if the value returned is the same as the value set.
        if (nvType != REGDB_NUMBER) then
            MessageBox ("Type comparison failed.", SEVERE);
        endif;

        if (svNumValue != szNumValue) then
            MessageBox ("Subkey value comparison failed.", SEVERE);
        endif;

        // Display what RegDBGetKeyValueEx retrieved.
        szMsg = "%s has value: %s\n\nThis data is %d bytes.";
        SprintfBox (INFORMATION, TITLE, szMsg, szNumName, svNumValue, nvSize);
    endif;

    // Delete the created test key.
    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    endif;

end;
```

RegDBGetUninstCmdLine

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBGetUninstCmdLine** function gets the registered command line for the uninstallation that is specified by szUninstallKey and returns the command line in svUninstCmdLine.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBGetUninstCmdLine ( szUninstallKey, svUninstCmdLine );
```

Parameters

Table 39 ▪ RegDBGetUninstCmdLine Parameters

Parameter	Description
szUninstallKey	Specifies the name of a subkey under the target registry's <root key>\Software\Microsoft\Windows\CurrentVersion\Uninstall key; the function first checks for the subkey under the root key HKEY_CURRENT_USER, and if it does not find the subkey there, it checks under HKEY_LOCAL_MACHINE. For setups created with InstallShield Professional 5.53 or earlier, this is typically the name of the application; for setups created with InstallShield Professional 6.0 or later, this is the application's product GUID including the surrounding braces ({}).
svUninstCmdLine	Returns the uninstallation command line that is specified in szUninstallKey's UninstallString value's data.

Return Values

Table 40 ▪ RegDBGetUninstCmdLine Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully got the command line.
< ISERR_SUCCESS	The function failed to get the command line.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBKeyExist

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBKeyExist** function checks for the existence of a specific key in the registry. By default, InstallShield assumes this key is a subkey of HKEY_CLASSES_ROOT. If you want to use a different main key, use RegDBSetDefaultRoot to specify another root key.

RegDBKeyExist is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.

***Note** ▪ This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBKeyExist ( szSubKey );
```

Parameters

Table 41 ▪ RegDBKeyExist Parameters

Parameter	Description
szSubKey	Specifies the name of the key to find. You do not have to include the HKEY_CLASSES_ROOT key (or another root key you specified) in this parameter. Separate different levels in the subkey with a double backslash (\\).

Return Values

Table 42 ▪ RegDBKeyExist Return Values

Return Value	Description
1	Indicates that the function found the key name in the registry.
< 0	Indicates that the function was unable to find the key name in the registry.

This function never returns zero (0).

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBKeyExist Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBCreateKeyEx and RegDBKeyExist functions.
 *
 * First, RegDBCreateKeyEx is called to create a subkey with no
 * class value in the HKEY_CLASSES_ROOT key.  Then, RegDBKeyExist
 * is then called to check if the key was created.
 *
 * RegDBCreateKeyEx is called again to create a multi-level subkey
 * with a class value associated with it under HKEY_CLASSES_ROOT.
 * Then RegDBKeyExist is called again to check for the existence
 * of the new key.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "RegDBCreateKeyEx & RegDBKeyExist"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBKeyExist(HWND);

function ExFn_RegDBKeyExist(hMSI)
    STRING szKey, szClass, szKeyRoot, szMsg, svLogFile;
    NUMBER nResult1, nResult2;
begin

    // Create a key with no class value.
    szKey   = "CreateKeyExample";
    szClass = "";

    if (RegDBCreateKeyEx(szKey, szClass) < 0) then
        MessageBox ("First call to RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "Successfully created: %s", szKey);

        // Check to see if the key just created exists.
        if (RegDBKeyExist (szKey) < 0) then
            MessageBox ("First call to RegDBKeyExist failed.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE_TEXT, "%s exists.", szKey);
        endif;
    endif;

    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
```

```
    endif;

    // Create a key with more than one sublevel and a class value.
    szKey     = "ShareWare\\Games\\CoolChess";
    szClass   = "LastPlayed";
    szKeyRoot = "ShareWare";

    if (RegDBCreateKeyEx(szKey, szClass) < 0) then
        MessageBox ("Second call to RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, TITLE_TEXT, "Successfully created: %s", szKey);

        // Check if the newly created multi-level key exists.
        if (RegDBKeyExist (szKeyRoot) < 0) then
            MessageBox ("Second call to RegDBKeyExist failed.", SEVERE);
        else
            SprintfBox (INFORMATION, TITLE_TEXT, "%s exists.", szKey);
        endif;
    endif;

    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    endif;

end;
```

RegDBQueryKey

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBQueryKey** function allows users to query a key for its subkeys and value names. The keys can be enumerated dynamically at run time using this function. RegDBQueryKey is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBQueryKey ( szSubKey, nItem, listResults );
```

Parameters

Table 43 ▪ RegDBQueryKey Parameters

Parameter	Description
szSubKey	Specifies subkeys under one of the root keys that were set by a previous call to RegDBSetDefaultRoot. Use backslashes to specify deeper levels of subkeys. To retrieve the root key, pass a null string (“”).
nItem	Specifies which items should be placed in the list. Pass one of the following predefined constants in this parameter: • **REGDB_KEYS—**The string list returned in listResults will contain a list of all the subkeys under this key. • **REGDB_NAMES—**The string list returned in listResults will contain the names of all named values for this key.
listResults	Returns the results of the query in a string list. The list identified by listResults must already have been initialized by a call to ListCreate.

Return Values

Table 44 ▪ RegDBQueryKey Return Values

Return Value	Description
0	Indicates function was successful.
< 0	Indicates function failed.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function’s string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBQueryKey Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the RegDBQueryKey function.
 *
 * First, RegDBQueryKey is called to query the subkeys under the
 * key KEY1.  The list returned by RegDBQueryKey is displayed
 * in a dialog.
 *
 * Then RegDBQueryKey is called to query the subkeys under the
 * key KEY2.  This list is also displayed in a dialog.
 *
\*------------------------------------------------------------*/

#define KEY1  "SOFTWARE"
#define KEY2  "SOFTWARE\\Microsoft"
#define TITLE "RegDBQueryKey Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBQueryKey(HWND);

function ExFn_RegDBQueryKey(hMSI)
    STRING szMsg;
    NUMBER nReturn, nItem;
    LIST   listSubKeys, listNames;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Create the lists to hold values returned by RegDBQueryKey.
    listSubKeys  = ListCreate(STRINGLIST);
    listNames    = ListCreate(STRINGLIST);

    if ((listNames = LIST_NULL) || (listSubKeys  = LIST_NULL)) then
        MessageBox ("Unable to create necessary lists.", SEVERE);
        abort;
    endif;

    RegDBSetDefaultRoot(HKEY_LOCAL_MACHINE);

    // Get the list of subkeys.
    nReturn = RegDBQueryKey(KEY1, REGDB_KEYS, listSubKeys );

    if (nReturn < 0) then
        MessageBox("First call to RegDBQueryKey failed.", SEVERE);
    else
        szMsg = "Subkeys under " + KEY1 + " key:";
        SdShowInfoList(TITLE, szMsg, listSubKeys );
    endif;

    // Get the list of subkeys.
     nReturn  = RegDBQueryKey(KEY2, REGDB_NAMES, listNames);

    if (nReturn < 0) then
        MessageBox("Second call to RegDBQueryKey failed.", SEVERE);
```

```
    else
        szMsg = "Named values under " + KEY2 + " key";
        SdShowInfoList(TITLE, szMsg, listNames);
    endif;

    // Remove the lists from memory.
    ListDestroy (listNames);
    ListDestroy (listSubKeys );

end;
```

RegDBQueryKeyCount

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBQueryKeyCount** function returns the number of subkeys or values under szKey. nItem specifies whether subkeys or values are counted.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBQueryKeyCount ( szKey, nItem );
```

Parameters

Table 45 ▪ RegDBQueryKeyCount Parameters

Parameter	Description
szKey	Specifies a key under the root key that was set by a previous call to RegDBSetDefaultRoot. Use backslashes to specify deeper levels of subkeys. To specify the root key, pass a null string ("").
nItem	Specifies which items should be counted. Pass one of the following predefined constants in this parameter: • **REGDB_KEYS—**The number of subkeys is returned. • **REGDB_NAMES—**The number of values is returned.

Return Values

Table 46 ▪ RegDBQueryKeyCount Return Values

Return Value	Description
X	The number of items of the specified type under the specified key.
< ISERR_SUCCESS	Indicates that the function could not determine the number of items. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

- **RegDBQueryKeyCount** is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.
- By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBQueryStringMultiStringCount

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBQueryStringMultiStringCount** function returns the number of strings contained in the multistring value specified by szValue under the key specified by szKey.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBQueryStringMultiStringCount ( szKey, szValue );
```

Parameters

Table 47 ▪ RegDBQueryStringMultiStringCount Parameters

Parameter	Description
szKey	Specifies a key under the root key that was set by a previous call to RegDBSetDefaultRoot. Use backslashes to specify deeper levels of subkeys. To specify the root key, pass a null string ("").
szValue	Specifies the multistring value under szKey to check.

Return Values

Table 48 ▪ RegDBQueryStringMultiStringCount Return Values

Return Value	Description
X	The number of substrings in the specified multistring value under the specified key.
< ISERR_SUCCESS	Indicates that the function could not determine the number of substrings. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

- **RegDBQueryStringMultiStringCount** is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions. For more information on special registry-related functions, see Special Registry-Related Functions.
- By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBSetAppInfo

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBSetAppInfo** function sets the value of a particular value name under the application information key in the registry. RegDBSetAppInfo is a special registry-related function, designed to work with certain predefined registry keys.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBSetAppInfo ( szName, nType, szValue, nSize );
```

Parameters

Table 49 ▪ RegDBSetAppInfo Parameters

Parameter	Description
szName	Specifies the value name whose information is to be set.
nType	Specifies the type of data you are setting. Pass one of the following predefined constants in this parameter: • **REGDB_STRING—**String variable, no newline characters allowed. • **REGDB_STRING_EXPAND—**String variable holding an expandable environment variable expression, such as "%MYPATH%". • **REGDB_STRING_MULTI—**String variable, newline characters allowed. • **REGDB_NUMBER—**Number expressed as a string and passed in a string variable. • **REGDB_BINARY—**Binary data stored in a string.
szValue	Specifies the value to set for the value name.
nSize	Specifies the size, in bytes, of the data passed to RegDBSetAppInfo. Pass -1 in this parameter to indicate that InstallShield should determine the size of the data.

Return Values

Table 50 ▪ RegDBSetAppInfo Return Values

Return Value	Description
0	Indicates that the function successfully assigned the value to the value name.
< 0	Indicates that the function was unable to assign the value.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBSetAppInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetAppInfo and RegDBGetAppInfo functions.
 *
 * Before calling either of these functions, you must call
 * InstallationInfo to set the application information.
 *
\*---------------------------------------------------------------*/

#define  COMPANY_NAME          "Example_Company"
#define  PRODUCT_NAME          "Example_App"
#define  PRODUCT_VERSION       "5.0"
#define  PRODUCT_KEY           "EXAMPLE.EXE"
#define  DEINSTALL_KEY         "Example_DeinstKey"
#define  UNINSTALL_NAME        "Example_App_5.0"
#define  DEFAULT_LOG_PATH      "EXAMPLE"
#define  TITLE                 "RegDBGetAppInfo"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBSetAppInfo(HWND);

function ExFn_RegDBSetAppInfo(hMSI)
    STRING  szStrName, szStrValue, svStrValue, szTitle, szMsg, svLogFile;
    NUMBER  nvSize, nvType;
begin

    // Set the root key.
    RegDBSetDefaultRoot (HKEY_LOCAL_MACHINE);

    // Set the name to be used with REGDB_STRING.
    szStrName  = "ExampleStringValue";
    szStrValue = "ExampleStringSetting";

    // Set up the application information prior to using RegDBSetAppInfo
    // and RegDBGetAppInfo.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME, PRODUCT_VERSION, PRODUCT_KEY);
    DeinstallStart(DEFAULT_LOG_PATH, svLogFile, DEINSTALL_KEY, 0);

    // Set value of type REGDB_STRING
    if (RegDBSetAppInfo (szStrName, REGDB_STRING, szStrValue, -1) < 0) then
        MessageBox ("Failed to set key and value of REGDB_STRING type.", SEVERE);
        abort;
    endif;

    // RegDBGetAppInfo is called to return the values and compare all the setup
```

```
    // parameters.
    if (RegDBGetAppInfo (szStrName, nvType, svStrValue, nvSize) < 0) then
        MessageBox ("Failed to get application information value.", SEVERE);
        abort;
    else
        // Check to see if the value retrieved is the same as the value set.
        if (nvType != REGDB_STRING) then
            MessageBox ("Type comparison failed.", WARNING);
        endif;

        if (szStrValue != svStrValue) then
            MessageBox ("Sub key value comparison Failed.", WARNING);
        else
            szMsg = "Set values: %s = %s\n\nReturn values: %s = %s";
            SprintfBox (INFORMATION, TITLE, szMsg, szStrName, szStrValue,
                        szStrName, svStrValue);
        endif;

        if (nvSize != StrLength(szStrValue)) then
            MessageBox ("Size Comparison failed.", WARNING);
        else
            szMsg = "Size in bytes entered: %d\n\nSize in bytes returned: %d";
            SprintfBox (INFORMATION, TITLE, szMsg,
                        nvSize, StrLength(szStrValue) + 1);
        endif;
    endif;

end;
```

RegDBSetDefaultRoot

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBSetDefaultRoot** function sets the root key that is used by the general registry-related functions. Most InstallScript registry functions work on the HKEY_CLASSES_ROOT as the default registry hive. Using this function, you can specify another key, such as HKEY_LOCAL_MACHINE, HKEY_CURRENT_USER, or HKEY_USERS, as the root key.

You cannot use **RegDBSetDefaultRoot** to change the root key of keys created or handled using the special registry-related functions. For more information, see Special Registry-Related Functions.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBSetDefaultRoot ( nRootKey );
```

Parameters

Table 51 ▪ RegDBSetDefaultRoot Parameters

Parameter	Description
nRootKey	Specify one of the following constants for the root key: • HKEY_CLASSES_ROOT • HKEY_CURRENT_USER • HKEY_LOCAL_MACHINE • HKEY_USERS • HKEY_CURRENT_CONFIG • HKEY_DYN_DATA • HKEY_USER_SELECTABLE If you pass HKEY_USER_SELECTABLE as the argument, a subsequent registry function call uses HKEY_LOCAL_MACHINE as the root key if the ALLUSERS system variable is non-zero when the function is called, or uses HKEY_CURRENT_USER as the root key if ALLUSERS is FALSE when the function is called.  ***Note ▪*** *Windows does not allow the creation of a key directly under HKEY_LOCAL_MACHINE or HKEY_USERS.*

Return Values

Table 52 ▪ RegDBSetDefaultRoot Return Values

Return Value	Description
0	Indicates that the function successfully set the key.
< 0	Indicates that the function was unable to set the key.

RegDBSetDefaultRoot Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetDefaultRoot function.
 *
```

```
 * RegDBSetDefaultRoot is called to set the default root key for
 * the RegDBCreateKeyEx function.
 *
 * Note:  Windows does not allow the creation of a key
 *        directly under HKEY_LOCAL_MACHINE or HKEY_USERS.
 *
\*---------------------------------------------------------------*/

#define TITLE "RegDBSetDefaultRoot Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBSetDefaultRoot(HWND);

function ExFn_RegDBSetDefaultRoot(hMSI)
    STRING szKey, szClass, szMsg, szTitle;
    NUMBER nRootKey;
begin

    // Create a subkey in the HKEY_CLASSES_ROOT key (default).
    szKey   = "Test Key";
    szClass = "";

    if (RegDBCreateKeyEx (szKey, szClass) < 0) then
        MessageBox ("RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        szMsg = "Successfully created %s in HKEY_CLASSES_ROOT.";
        SprintfBox (INFORMATION, TITLE, szMsg, szKey);
    endif;

    // Set the root key to HKEY_LOCAL_MACHINE.
    nRootKey = HKEY_LOCAL_MACHINE;

    if (RegDBSetDefaultRoot (nRootKey) < 0) then
        MessageBox ("First call to RegDBSetDefaultRoot failed.", SEVERE);
    else
        MessageBox ("Root key successfully set to HKEY_LOCAL_MACHINE.",
                    INFORMATION);
    endif;

    // Create a subkey in the HKEY_LOCAL_MACHINE key.
    if (RegDBCreateKeyEx (szKey, szClass) < 0) then
        MessageBox ("RegDBCreateKeyEx failed.", SEVERE);
        abort;
    else
        szMsg = "Successfully created %s in HKEY_LOCAL_MACHINE";
        SprintfBox (INFORMATION, TITLE, szMsg, szKey);
    endif;

    // Delete the example subkey in HKEY_LOCAL_MACHINE.
    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    else
        szMsg = "Successfully deleted %s in HKEY_LOCAL_MACHINE";
```

```
        SprintfBox (INFORMATION, TITLE, szMsg, szKey);
    endif;

    // Set the root key to HKEY_CLASSES_ROOT again.
    nRootKey = HKEY_CLASSES_ROOT;

    if (RegDBSetDefaultRoot (nRootKey) < 0) then
        MessageBox ("Second call to RegDBSetDefaultRoot failed.", SEVERE);
    else
        MessageBox ("Root key successfully set to HKEY_CLASSES_ROOT.",
                    INFORMATION);
    endif;

    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    else
        szMsg = "Successfully deleted %s in HKEY_CLASSES_ROOT";
        SprintfBox (INFORMATION, TITLE, szMsg, szKey);
    endif;

end;
```

RegDBSetItem

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

RegDBSetItem is a special registry-related function, designed to work with certain predefined registry keys. The **RegDBSetItem** function assigns values under the per application paths key or the application uninstallation key, depending on the value of nItem. Calling **RegDBSetItem** with either the REGDB_APPPATH or the REGDB_APPPATH_DEFAULT option results in the creation of the per application paths key.

Note ▪ *The InstallScript engine currently does not support writing or reading Add or Remove Programs information for a product in the 64-bit part of the registry. Therefore, using the REGDB_OPTION_WOW64_64KEY option with the REGDB_OPTIONS system variable is not supported for this registry function. Enabling the REGDB_OPTION_WOW64_64KEY option has no effect on where registry entries are created by this function.*

Syntax

```
RegDBSetItem ( nItem, szValue );
```

Parameters

Table 53 ▪ RegDBSetItem Parameters

Parameter	Description
nItem	Specifies the item to set. Pass one of the following predefined constants in this parameter: • **REGDB_APPPATH**—The data of the Path value under the per-application paths key. This key is created by the installation as a result of calling CreateInstallationInfo. You must call **CreateInstallationInfo** to create this key before calling **RegDBSetItem**. (In an event-based script, **CreateInstallationInfo** is called in the default **OnMoveData** event handler code.) • **REGDB_APPPATH_DEFAULT**—The data of the DefaultPath value under the per-application paths key. This key is created by the installation as a result of calling **CreateInstallationInfo**. You must call **CreateInstallationInfo** to create this key before calling **RegDBSetItem**. (In an event-based script, **CreateInstallationInfo** is called in the default **OnMoveData** event handler code.) • **REGDB_UNINSTALL_COMMENTS**—The data of the Comments value under the uninstallation key. • **REGDB_UNINSTALL_CONTACT**—The data of the Contact value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAY_VERSION**—The data of the DisplayVersion value under the uninstallation key. • **REGDB_UNINSTALL_DISPLAYICON**—The data of the DisplayIcon value under the uninstallation key. • **REGDB_UNINSTALL_HELPLINK**—The data of the HelpLink value under the uninstallation key. • **REGDB_UNINSTALL_HELPTELEPHONE**—The data of the HelpTelephone value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLDATE**—The data of the InstallDate value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLLOC**—The data of the InstallLocation value under the uninstallation key. • **REGDB_UNINSTALL_INSTALLSOURCE**—The data of the InstallSource value under the uninstallation key. • **REGDB_UNINSTALL_LANGUAGE**—The data of the Language value under the uninstallation key. • **REGDB_UNINSTALL_LOGFILE**—The data of the LogFile value under the uninstallation key. • **REGDB_UNINSTALL_MAINT_OPTION**—The data of the LogMode value under the uninstallation key.

Table 53 ▪ RegDBSetItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_MAJOR_VERSION**—The data of the VersionMajor value under the uninstallation key. • **REGDB_UNINSTALL_MAJOR_VERSION_OLD**—The data of the MajorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION**—The data of the VersionMinor value under the uninstallation key. • **REGDB_UNINSTALL_MINOR_VERSION_OLD**—The data of the MinorVersion value under the uninstallation key. • **REGDB_UNINSTALL_MODIFYPATH**—The data of the ModifyPath value under the uninstallation key. • **REGDB_UNINSTALL_NAME**—The data of the DisplayName value under the uninstallation key. When this constant is used, szValue specifies the application name shown in the list of uninstallable applications in the Control Panel. In an InstallScript or InstallScript MSI project, an easier way to set this value is to set the system variable UNINSTALL_DISPLAYNAME directly. • **REGDB_UNINSTALL_NOMODIFY**—The data of the NoModify value under the uninstallation key. • **REGDB_UNINSTALL_NOREMOVE**—The data of the NoRemove value under the uninstallation key. • **REGDB_UNINSTALL_NOREPAIR**—The data of the NoRepair value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTGUID**—The data of the ProductGuid value under the uninstallation key. • **REGDB_UNINSTALL_PRODUCTID**—The data of the ProductId value under the uninstallation key. • **REGDB_UNINSTALL_PUBLISHER**—The data of the Publisher value under the uninstallation key. • **REGDB_UNINSTALL_README**—The data of the Readme value under the uninstallation key. • **REGDB_UNINSTALL_REGCOMPANY**—The data of the RegCompany value under the uninstallation key. • **REGDB_UNINSTALL_REGOWNER**—The data of the RegOwner value under the uninstallation key.

Table 53 ▪ RegDBSetItem Parameters (cont.)

Parameter	Description
nItem (cont.)	• **REGDB_UNINSTALL_STRING**—The data of the UninstallString value under the uninstallation key. The UninstallString value is created when the MaintenanceStart or DeinstallStart functions are called. • **REGDB_UNINSTALL_SYSTEMCOMPONENT**—The data of the SystemComponent value under the uninstallation key. • **REGDB_UNINSTALL_URLINFOABOUT**—The data of the URLInfoAbout value under the uninstallation key. • **REGDB_UNINSTALL_URLUPDATEINFO**—The data of the URLUpdateInfo value under the uninstallation key. • **REGDB_UNINSTALL_VERSION**—The data of the Version value under the uninstallation key. When this constant is used, szValue specifies the installed product's version number expressed as a string, for example, "16777216".  ***Important ▪*** *Do not use REGDB_WINCURRVER_REGOWNER or REGDB_WINCURRVER_REGORGANIZATION with this function. Windows sets these values, and they should not be set by an installation.*
szValue	Specifies the value to assign to the specified item.

Return Values

Table 54 ▪ RegDBSetItem Return Values

Return Value	Description
0	Indicates that the function successfully set the value.
< 0	Indicates that the function failed.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBSetItem Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetItem and RegDBGetItem functions.
 *
 * This script sets several registry keys;  then it gets those
 * keys and displays their current values.
 *
\*---------------------------------------------------------------*/

#define  COMPANY_NAME       "ExampleCompany"
#define  PRODUCT_NAME       "ExampleProduct"
#define  VERSION_NUMBER     "5.00.00"
#define  PRODUCT_KEY        "EXAMPLE.EXE"
#define  DEINST_KEY         "ExampleDeinstKey"
#define  APP_DEF_LOG_PATH   "C:\\EXAMPLE\\TEMP"
#define  APP_PATH           "C:\\EXAMPLE"
#define  APP_DEF_PATH       "C:\\EXAMPLE\\TARGET"
#define  UNINSTALL_NAME     "ExampleUninstallName"
#define TITLE               "RegDBSetItem Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBSetItem(HWND);

function ExFn_RegDBSetItem(hMSI)
    STRING svLogFile;
    STRING svValue, szTitle;
begin

    // Set the root key.
    RegDBSetDefaultRoot (HKEY_LOCAL_MACHINE);

    // Set installation and uninstallation information in
    // order to call RegDBSetItem and RegDBGetItem.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME, VERSION_NUMBER, PRODUCT_KEY);
    DeinstallStart (APP_DEF_LOG_PATH, svLogFile, DEINST_KEY, 0);

    // Set the value of the application path key in the
    // registry to the value of szAppPath.
    if (RegDBSetItem (REGDB_APPPATH, APP_PATH) < 0) then
        MessageBox ("Unable to set application path key.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the application " +
                    "path key to %s.", APP_PATH);
    endif;

    // Set the value of the application default path key in
    // the registry to the value of szAppDefPath.
    if (RegDBSetItem(REGDB_APPPATH_DEFAULT, APP_DEF_PATH) < 0) then
        MessageBox ("Unable to set application default path key.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the application " +
                    "default path key to %s.", APP_DEF_PATH);
```

```
    endif;

    // Set the value of the uninstall name key in the
    // registry to the value of szUninstallName.
    if (RegDBSetItem (REGDB_UNINSTALL_NAME, UNINSTALL_NAME) < 0) then
        MessageBox ("Unable to set uninstall name key.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBSetItem set the uninstall " +
                    "name key to %s.", UNINSTALL_NAME);
    endif;

    // Set up title parameter for call to SprintfBox.
    szTitle = "RegDBGetItem";

    // Get the value of the application path key from the registry.
    if (RegDBGetItem (REGDB_APPPATH, svValue) < 0) then
        MessageBox ("Unable to get value of application path key.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                    "of the application path key: %s.", svValue);
    endif;

    // Get the value of the application default path key in
    // the registry.
    if (RegDBGetItem (REGDB_APPPATH_DEFAULT, svValue) < 0) then
        MessageBox ("Unable to get application default path key", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                    "of the application default path key: %s.", svValue);
    endif;

    // Get the value of the uninstall name key from the registry.
    if (RegDBGetItem (REGDB_UNINSTALL_NAME, svValue) < 0) then
        MessageBox ("Unable to get application uninstall name key.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE, "RegDBGetItem retrieved the value " +
                    "of the uninstallation name key: %s.", svValue);
    endif;

end;
```

RegDBSetKeyValueEx

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBSetKeyValueEx** function sets the value of a particular value name under a specified key in the registry.

If the value name does not already exist, **RegDBSetKeyValueEx** creates it. If the value data already exists, **RegDBSetKeyValueEx** overwrites it.

If the key does not already exist, **RegDBSetKeyValueEx** calls RegDBCreateKeyEx, passing the key from the szKey parameter to create it.

RegDBSetKeyValueEx is a general registry-related function, designed to work with all registry keys, including those handled by the special registry-related functions.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBSetKeyValueEx ( szKey, szName, nType, szValue, nSize );
```

Parameters

Table 55 ▪ RegDBSetKeyValueEx Parameters

Parameter	Description
szKey	Specifies the name of the key. Separate different levels in the subkey with a double backslash (\\). If the root key is HKEY_CLASSES_ROOT, you do not need to specify the HKEY_CLASSES_ROOT in this parameter. Unless you specify otherwise, the InstallScript engine assumes that the value that is being set is under the key HKEY_CLASSES_ROOT. To specify a different root key, you can call RegDBSetDefaultRoot before calling **RegDBSetKeyValueEx**.
szName	Specifies the value name for the value data to set be set. To set the default value of the key specified in szKey, pass a null string ("") in this parameter.
nType	Specifies the type of data to be set. Pass one of the following predefined constants in this parameter: • **REGDB_STRING**—A string variable; no newline characters allowed. • **REGDB_STRING_EXPAND**—A string variable holding an expandable environment variable expression, such as "%MYPATH%". • **REGDB_STRING_MULTI**—A string variable; newline characters allowed. • **REGDB_NUMBER**—A number expressed as a string and passed in string variable. Creates data of type DWORD. When nType is REGDB_NUMBER, passing a decimal string in szValue results in a numeric value being stored in the registry. This numeric value is then displayed as a hexadecimal number followed by its decimal equivalent in parentheses. You cannot pass a hexadecimal number in the string in szValue—it *must* be a decimal number. • **REGDB_BINARY**—Binary data stored in a string.
szValue	Specifies the value to associate with the value name. All values must be passed as string variables. Numbers must be expressed as strings. The InstallScript engine converts them to numbers internally.
nSize	Specifies the size—in bytes—of the data to be set. You can specify -1 in this parameter when nType is REGDB_STRING, REGDB_STRING_EXPAND, or REGDB_NUMBER, and the InstallScript engine will set the size. However, with REGDB_BINARY and REGDB_STRING_MULTI, you must always specify the number of bytes of binary data that you are storing.

Return Values

Table 56 ▪ RegDBSetKeyValueEx Return Values

Return Value	Description
0	Indicates that the function successfully set the key.
< 0	Indicates that the function was unable to set the key.

Additional Information

By default, any text that is surrounded by angle brackets—for example, "<my registry entry text>"—in this function's string arguments is interpreted as a text substitution and is processed accordingly. To disable text substitution processing for the string arguments of registry functions, call **Disable** with the REGISTRYFUNCTIONS_USETEXTSUBS argument.

RegDBSetKeyValueEx Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegDBSetKeyValueEx and RegDBGetKeyValueEx
 * functions.
 *
 * RegDBCreateKeyEx is called to create a test subkey in the
 * HKEY_CLASSES_ROOT key.  The value of a key is set in integer
 * form using the REGDB_NUMBER option of the RegDBSetKeyValueEx
 * function.  After this value is set, it is retrieved using
 * the RegDBGetKeyValueEx function and verified.
 *
\*---------------------------------------------------------------*/

#define TITLE "RegDBSetKeyValueEx & RegDBGetKeyValueEx"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RegDBSetKeyValueEx(HWND);

function ExFn_RegDBSetKeyValueEx(hMSI)
    STRING szKey, szNumName, szNumValue, svNumValue, szTitle, szMsg;
    NUMBER nType, nSize, nvType, nvSize;
begin

    // Create a key to test.
    szKey = "TestKey";
```

```
    if (RegDBCreateKeyEx (szKey, "") < 0) then
        MessageBox ("RegDBCreateKeyEx failed.", SEVERE);
        abort;
    endif;

    // Set up parameters for call to RegDBSetKeyValueEx.
    szNumName  = "TestValue";
    szNumValue = "12345";
    nType      = REGDB_NUMBER;
    nSize      = -1;

    // Set a key name and a value associated with it.
    if (RegDBSetKeyValueEx (szKey, szNumName, nType, szNumValue,
                            nSize) < 0) then
        MessageBox ("RegDBSetKeyValueEx failed.", SEVERE);
        abort;
    else
        // Display what RegDBSetKeyValueEx has done.
        szMsg = "%s set to: %s";
        SprintfBox (INFORMATION, TITLE, szMsg, szNumName, szNumValue);
    endif;

    // Retrieve key value information.
    if (RegDBGetKeyValueEx (szKey, szNumName, nvType, svNumValue,
                            nvSize) < 0) then
        MessageBox ("RegDBGetKeyValueEx failed.", SEVERE);
    else
        // Check to see if the value returned is the same as the value set.
        if (nvType != REGDB_NUMBER) then
            MessageBox ("Type comparison failed.", SEVERE);
        endif;

        if (svNumValue != szNumValue) then
            MessageBox ("Subkey value comparison failed.", SEVERE);
        endif;

        // Display what RegDBGetKeyValueEx retrieved.
        szMsg = "%s has value: %s\n\nThis data is %d bytes.";
        SprintfBox (INFORMATION, TITLE, szMsg, szNumName, svNumValue, nvSize);
    endif;

    // Delete the created test key.
    if (RegDBDeleteKey (szKey) < 0) then
        MessageBox ("RegDBDeleteKey failed.", SEVERE);
    endif;

end;
```

RegDBSetVersion

Project ▪ *For InstallScript MSI and Basic MSI projects, it is recommended that you use the Registry view in InstallShield instead of creating registry keys and values through InstallScript code. Handling all of your registry changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **RegDBSetVersion** function places the value of the system variable IFX_PRODUCT_VERSION as the data for the Version value under the application uninstallation registry key, creating the registry value if it does not already exist. If IFX_PRODUCT_VERSION is not in packed DWORD format, the function fails.

Note ▪ *This function supports the 64-bit parts of the registry by using the REGDB_OPTION_WOW64_64KEY option. For more information, see REGDB_OPTIONS.*

Syntax

```
RegDBSetVersion ( );
```

Parameters

None.

Return Values

Table 57 ▪ RegDBSetVersion Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully placed the data in the registry value.
< ISERR_SUCCESS	The function failed to place data in the registry.

Additional Information

RegDBSetVersion is called by the default code for the OnMoveData event handler function.

RegisterFontResource

The **RegisterFontResource** function registers or unregisters the font resource specified by szFileName. This function is called by the default code for the OnInstalledFontFile and OnUninstallingFontFile event handler functions.

Syntax

```
RegisterFontResource ( szFileName, svFontTitle, bRegister, nOptions );
```

Parameters

Table 58 ▪ RegisterFontResource Parameters

Parameter	Description
szFileName	Specifies the fully qualified file name of the font file (.fnt, .fon, .fot, .mmm, .otf, .pfb, .pfm, .ttc, or .ttf file) to be registered or unregistered. Typically you would install a font file to FOLDER_FONTS. Only a font file that exists on the target system can be registered, and you must unregister a font file before you remove it from the system.
svFontTitle	This parameter must be a variable name and not a literal value. When RegisterFontResource is called, this parameter specifies the title for the font, if its value is not a null string (""); when RegisterFontResource returns, this parameter contains the title that was used when registering or unregistering the font file. If the font file being registered or unregistered is a TrueType font file, you can specify in this parameter a string variable whose value is a null string. In this case RegisterFontResource attempts to get the title by internally calling GetTrueTypeFontFileInfo; if this fails, the file name of the font file is used as the title. If the REGFONT_OPTION_DONTUPDATEREGISTRY option is specified in this function's fourth argument, svFontTitle is ignored.
bRegister	Specifies whether to register the font resource (TRUE) or unregister the font resource (FALSE).

Table 58 ▪ RegisterFontResource Parameters (cont.)

Parameter	Description
nOptions	Specifies various options. Pass one of the following constants in this parameter, or combine these constants using the OR operator (|): • **REGFONT_OPTION_DEFAULT—**Specifies that the function has its default behavior. • **REGFONT_OPTION_DONTBROADCASTFONTCHANGEMSG—**Specifies that the function does not send a message to top level windows indicating that font information has changed after registering or registering the font. You should specify this flag only if your installation sends this message manually after calling this function by calling the Windows API function PostMessage as in the following example: `PostMessage( HWND_BROADCAST,  WM_FONTCHANGE, 0, 0 );` You would typically use this flag if you are calling RegisterFontResource multiple times to update multiple fonts and then calling PostMessage. • **REGFONT_OPTION_DONTUPDATEREGISTRY—**Specifies that the function does not add the font registration information to the registry or remove the font information from the registry. If you specify this option for font registration, the font is available only until the next time the system is rebooted. Note that if this option is specified svFontTitle is ignored.

Return Values

Table 59 ▪ RegisterFontResource Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully registered or unregistered the font.
< ISERR_SUCCESS	Indicates that the function was unable to register or unregister the font.

Additional Information

- Font information is written to HKEY_LOCAL_MACHINE in all cases, so typically in order to install a font the end user must have administrator privileges on the system.

- The function calls PostMessage instead of SendMessage to send the WM_FONTCHANGE message. This is because SendMessage (when used with HWND_BROADCAST) waits for all open windows to respond to the message before returning, which could cause the installation to freeze if an open window on the system fails to respond to the message. Since the function calls PostMessage, the function could return before Windows has processed the message and released the font from the font cache; so when using this function to uninstall fonts, it is recommended that you wait a few seconds (by calling Delay) before removing the font file.
- If you call this function in a feature event or a file install event (such as OnInstallingFile or OnInstalledFile) the font registration is associated with the corresponding feature and the font is automatically unregistered before the file or feature is uninstalled.

RegisterFontResource Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RegisterFontResource function.
 *
\*---------------------------------------------------------------*/

function OnBegin()
    string szFileName, svFontTitle;
begin
    szFileName = FOLDER_FONTS ^ "Estre.ttf";
    svFontTitle = "Estrangelo Edessa";
    RegisterFontResource ( szFileName, svFontTitle, TRUE, REGFONT_OPTION_DEFAULT );
    // If you cut and paste this sample script into a project
    // and run it, the following line aborts execution of the script.
    abort;
end;
```

ReleaseDialog

The **ReleaseDialog** function frees all memory associated with the custom dialog identified in szDialogName. Call this function after calling EndDialog. Call this function outside the message-handling case statement.

Syntax

```
ReleaseDialog ( szDialogName );
```

Parameters

Table 60 ▪ ReleaseDialog Parameters

Parameter	Description
szDialogName	Specifies the name of the dialog to destroy.

Return Values

Table 61 ▪ ReleaseDialog Return Values

Return Value	Description
0	Indicates that the function successfully freed all memory associated with the custom dialog.
DLG_ERR (-1)	Function failed. The dialog name may be invalid.
DLG_ERR_ENDDLG (-2)	ReleaseDialog was called before EndDialog. You must call EndDialog first to remove the dialog.

ReleaseDialog Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DefineDialog, EndDialog, and ReleaseDialog
 * functions.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap.  The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * In order to use this dialog as a custom dialog, the
 * script first defines it by calling DefineDialog.  It then
 * displays the dialog by calling WaitOnDialog.  When an event
```

```
 * ends dialog processing, EndDialog is called to close the
 * dialog.  Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_ReleaseDialog(HWND);

function ExFn_ReleaseDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Define the name of a dialog to pass as first
    // parameter to DefineDialog.
    szDialogName = "ExampleDialog";

    // DefineDialog's second parameter will be 0 because the
    // .dll file is in _isres.dll.
    hInstance = 0;

    // DefineDialog's third parameter will be null; installation will
    // search for the dialog in _isuser.dll and _isres.dll.
    szDLLName = "";

    // DefineDialog's fifth parameter will be null because the
    // dialog is identified by its ID in the fourth parameter.
    szDialog = "";

    // This value is reserved and must be 0.
    hwndParent = 0;

    // Define the dialog. The installation's main window will own the
    // dialog (indicated by HWND_INSTALL in parameter 7).
    nResult  = DefineDialog (szDialogName, hInstance, szDLLName,
                             RES_DIALOG_ID, szDialog, hwndParent,
                             HWND_INSTALL, DLG_MSG_STANDARD|DLG_CENTERED);

    // Check for an error.
    if (nResult < 0) then
        MessageBox ("An error occurred while defining the dialog.", SEVERE);
        bDone = TRUE;
        abort;
    endif;
```

```
    // Initialize the indicator used to control the while loop.
    bDone = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

RenameFile

The **RenameFile** function changes the name of a file or directory and/or moves a file or directory (and its subdirectories and files) from one parent directory to another.

Note ▪ *Note the following:*

- *If szSource and szTarget reference the same directory or—when using unqualified names, if SRCDIR and TARGETDIR reference the same directory for an InstallScript installation (or if SRCDIR and INSTALLDIR reference the same directory for a Basic MSI or InstallScript MSI installation)—the file or directory that is*

specified by szSource is renamed, unless a file or directory with the name that is specified by szTarget already exists in that directory.

- *If szSource and szTarget reference different directories or—when using unqualified names, if SRCDIR and TARGETDIR reference different directories for an InstallScript installation (or if SRCDIR and INSTALLDIR reference different directory for a Basic MSI or InstallScript MSI installation)—the file or directory that is specified by szSource is moved to the new directory and given the name that is specified by szTarget, unless a file or directory with that name already exists in that directory.*

Syntax

```
RenameFile ( szSource, szTarget );
```

Parameters

Table 62 ▪ RenameFile Parameters

Parameter	Description
szSource	Specifies the name of the file or directory to be renamed or moved. If szFileOld specifies a fully qualified file name or directory (it includes a path), **RenameFile** renames or moves the file or directory in the specified directory. If szSource contains an unqualified file name or directory name (without path information), **RenameFile** renames or moves the file or directory in the directory specified by the system variable SRCDIR. ***Note ▪*** *Wildcard characters are not permitted. Only one file or one directory (including its subdirectories and folders) can be renamed or moved with each call to* **RenameFile**.
szTarget	Specifies a new name and/or location for the file or directory. If szFileNew specifies a fully qualified file name or directory (it includes a path), **RenameFile** renames the file or moves it to the specified directory. If szFileNew contains an unqualified file name or directory name (without path information), **RenameFile** either renames the file or directory, or moves the file or directory to the directory specified by the system variable TARGETDIR (for an InstallScript installation) or the system variable INSTALLDIR (for a Basic MSI or InstallScript MSI installation).

Return Values

Table 63 ▪ RenameFile Return Values

Return Value	Description
0	Indicates that the function successfully changed the name of the file or directory or moved the file or directory.
< 0	Indicates that the function was unable to change the name of the file or folder or move the file or folder.

RenameFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the RenameFile function.
 *
 * First, RenameFile is called to rename FILENAME1 to FILENAME2.
 * It is then called again to move the FILENAME2 file to the
 * TARGET directory.
 *
 * This can also be done in one call to RenameFile.  The third
 * call to RenameFile demonstrates this by renaming and moving
 * the FILENAME2 file from the TARGET directory to the SOURCE
 * directory, with the FILENAME1 file name.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they specify valid file names and
 *       paths on the target system.
 *
\*---------------------------------------------------------------*/

#define FILENAME1  "ISExampl.txt"
#define FILENAME2  "ISExampl.bak"
#define SOURCE_DIR "C:\\ISExampl\\Source"
#define TARGET_DIR "C:\\ISExampl\\Target"
#define TITLE      "RenameFile Example"


#include "ifx.h"

function OnBegin()
begin

   // Set up system variables for rename operation.
   SRCDIR    = SOURCE_DIR;
   TARGETDIR = SOURCE_DIR;

   // Rename FILENAME1 to FILENAME2.
   if (RenameFile (FILENAME1, FILENAME2) < 0) then
      MessageBox("First call to RenameFile failed.", SEVERE);
      abort;
   else
      szMsg = "%s successfully renamed to %s.";
      SprintfBox(INFORMATION, szTitle, szMsg, FILENAME1, FILENAME2);
   endif;

   // Set up system variables to move a file from one directory to another.
   SRCDIR    = SOURCE_DIR;
   TARGETDIR = TARGET_DIR;

   // Move the file from the SOURCE to the TARGET directory.
   if (RenameFile(FILENAME2, FILENAME2) < 0) then
      MessageBox("Second call to RenameFile failed.", SEVERE);
      abort;
   else
      szMsg = "%s successfully moved to %s.";
      SprintfBox(INFORMATION, TITLE, szMsg, FILENAME2, TARGETDIR);
   endif;
```

```
    // Set up system variables to move the file back to its original location.
    SRCDIR    = TARGET_DIR;
    TARGETDIR = SOURCE_DIR;

    // Rename the file and move it from the TARGET directory
    // to the SOURCE directory.
    if (RenameFile(FILENAME2, FILENAME1) < 0) then
       MessageBox("Third call to RenameFile failed.", SEVERE);
       abort;
    else
       szMsg = "%s successfully renamed %s and moved to the directory %s.";
       SprintfBox(INFORMATION, TITLE, szMsg, FILENAME2, FILENAME1, TARGETDIR);
    endif;

end;
```

ReplaceFolderIcon

The ReplaceShortcut function supersedes the **ReplaceFolderIcon** function.

The **ReplaceFolderIcon** function replaces a shortcut in a specified folder. You must specify an existing folder, either one you have created with the CreateProgramFolder function or one that already exists on the user's system.

Syntax

```
ReplaceFolderIcon ( szProgramFolder, szItemName, szNewItem, szCmdLine, szWorkingDir, szIconPath, nIcon,
    szShortCutKey, nFlag );
```

Parameters

Table 64 ▪ ReplaceFolderIcon Parameters

Parameter	Description
szProgramFolder	Specify the name of the folder that contains the shortcut to replace.
szItemName	Specify the name of the shortcut to replace.
szNewItem	Specify the name of the shortcut as it should appear after the replacement.
szCmdLine	Specify one of the following: ● The fully qualified name of the executable associated with the icon, including any command-line parameters. ● The fully qualified path if szItemName is a subfolder.
szWorkingDir	Specify the directory where the application's program files are located. (Not applicable if szItemName is a subfolder.) To make the directory that contains the program file the working directory, pass a null string ("") in this parameter.
szIconPath	Specify the name of an icon file or a valid Windows executable that contains the new icon.
nIcon	If you specified an executable file for szIconPath, specify the icon index in the executable file. Otherwise, enter the number 0 for nIcon.
szShortCutKey	Specify the string that contains the shortcut key sequence the user can press to start the program. For example, if you wanted the user to be able to open the application by depressing the "Ctrl," the "Alt," and then the "1" key, specify "Ctrl + Alt + 1" in this parameter.
nFlag	Specify one or more options. Pass the following predefined constants in this parameter. To specify more than one option, combine constants with the OR (|) operator. ● **NULL**—Indicates no options. ● **REPLACE**—Indicates that the existing icon should be replaced with the new icon. ● **RUN_MAXIMIZED**—Indicates that the program should be maximized when launched. ● **RUN_MINIMIZED**—Indicates that the program should be minimized when launched.

Return Values

Table 65 ▪ ReplaceFolderIcon Return Values

Return Value	Description
0	Indicates that the function successfully replaced the shortcut.
< 0	Indicates that the function was unable to replace the icon. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

ReplaceFolderIcon Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ReplaceFolderIcon function.
 *
 * Note: In order for this script to run correctly, you must set
 *       preprocessor constants to valid file names and a path
 *       on the target system.  To easily create this example
 *       folder and icon, run the AddFolderIcon example #3.
 *
\*---------------------------------------------------------------*/

#define FOLDER      "C:\\Windows\\"
#define NEW_PROGRAM "C:\\WINDOWS\\WRITE.EXE"
#define NEW_PARAM   "C:\\WINDOWS\\README.TXT"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ReplaceFolderIcon(HWND);

function ExFn_ReplaceFolderIcon(hMSI)
    STRING szProgramFolder, szItemName, szNewItem, szCmdLine, szWorkingDir;
    STRING szShortCutKey, szIconPath, szProgram, szParam;
    NUMBER nIcon, nFlag;
begin

    szProgramFolder = FOLDER ^ "Example folder";
    szItemName      = "Notepad Example";
    szNewItem       = "New Wordpad Example";

    // Make sure the space is not seen as a delimiter.
    szProgram = NEW_PROGRAM;
```

```
    LongPathToQuote (szProgram, TRUE);

    szParam = NEW_PARAM;
    LongPathToShortPath(szParam);

    szCmdLine      = szProgram + " " + szParam;
    szWorkingDir   = "";
    szIconPath     = "";
    nIcon          = 0;
    szShortCutKey  = "";
    nFlag          = REPLACE|RUN_MAXIMIZED;

    // Display the folder on the screen.
    ShowProgramFolder (szProgramFolder, SW_SHOW);

    // Replace the "Notepad Example" icon with "New Wordpad Example".
    if (ReplaceFolderIcon (szProgramFolder, szItemName, szNewItem, szCmdLine,
                           szWorkingDir, szIconPath, nIcon, szShortCutKey,
                           nFlag) < 0) then
        MessageBox ("ReplaceFolderIcon failed.", SEVERE);
    else
        MessageBox ("Icon successfully replaced.", INFORMATION);
    endif;

end;
```

ReplaceProfString

In Windows Installer based projects, all .ini file changes should be created in the INI Files view of the IDE. Handling all of your .ini file changes in this way allows for a clean uninstallation through the Windows Installer service.

The **ReplaceProfString** function replaces a profile string in an .ini file. This function can replace values of duplicate keys (non-unique keys) such as those found in the [386Enh] section of the System.ini file (device = ...). The function searches for a szKeyName = szOrigValue, and replaces the line. If it is not found, it adds the szKeyName = szReplaceValue line to the beginning of the szSectionName section.

If you are adding unique keys (that is, keys that are all different for a given section), use the WriteProfString function.

Use this function to replace only non-unique key names, such as the device= line in the System.ini file.

Syntax

```
ReplaceProfString ( szFileName, szSectionName, szKeyName, szOrigValue, szReplaceValue );
```

Parameters

Table 66 ▪ ReplaceProfString Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file in which the profile string is to be replaced. If the file name is unqualified (that is, if a drive designation and path are *not* included), InstallShield searches for the file in the Windows folder. If the file does not exist, it is created in the specified folder; if a path is not included in file name, the file is created in the Windows folder. Note that if the file name is qualified with a path that does not exist, ReplaceProfString will fail.
szSectionName	Specifies the name of the .ini file section to search for szKeyName. The section name should *not* be enclosed within delimiting brackets ([ ]). The search for this name is *not* case sensitive.
szKeyName	Specifies the name of the key to replace. If the key does not exist, it is created.
szOrigValue	Specifies the current value of the key specified by szKeyName.
szReplaceValue	Specifies the new value to assign to szKeyName. The value of this parameter will appear to the right of the equal sign in the profile string (szKeyName = szValue).

Return Values

Table 67 ▪ ReplaceProfString Return Values

Return Value	Description
0	Indicates that the function successfully replaced or added the profile string.
< 0	Indicates that the function was unable to replace or add the profile string.

Additional Information

Changes made to .ini files can be logged for uninstallation. However, there are some important restrictions to be

aware of. For more information, see Uninstalling Initialization (.ini) File Entries.

ReplaceProfString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ReplaceProfString function.
 *
 * ReplaceProfString is called for the first time to replace
 * the szKeyName key value szOrigValue with the value
 * szReplaceValue.  Then ReplaceProfString is called again to
 * replace the newly set value of szKeyName, szReplaceValue,
 * with szOrigValue.
 *
 * NOTE: In order for this script to run properly, you must set
 *       the constant EXAMPLE_INI to reference an existing
 *       initialization file on the target system.  That file
 *       should include the following lines:
 *
 *       [Old Section]
 *       Old Key=Old value
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_INI "C:\\ISExampl.ini"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ReplaceProfString(HWND);

function ExFn_ReplaceProfString(hMSI)
    STRING szSectionName, szKeyName, szOrigValue, szReplaceValue;
begin

    szSectionName  = "Old Section";
    szKeyName      = "Old Key";
    szOrigValue    = "Old value";
    szReplaceValue = "New value";

    // Replace szOrigValue with szReplaceValue.
    if (ReplaceProfString (EXAMPLE_INI, szSectionName, szKeyName, szOrigValue,
                           szReplaceValue) < 0) then
        MessageBox("ReplaceProfString failed.", SEVERE);
        abort;
    else
        SprintfBox (INFORMATION, "Replacement Successful",
                    "Original:  %s\nNew:  %s", szOrigValue, szReplaceValue);
```

```
    endif;

    // Replace szReplaceValue with szOrigValue.
    if (ReplaceProfString(EXAMPLE_INI, szSectionName, szKeyName, szReplaceValue,
                          szOrigValue) < 0) then;
        MessageBox("ReplaceProfString failed.", SEVERE);
    else
        SprintfBox (INFORMATION, "Replacement Successful",
                    "Original:  %s\nNew:  %s", szReplaceValue, szOrigValue);
    endif;

end;
```

ReplaceShortcut

The **ReplaceShortcut** function replaces a shortcut in a specified folder. You must specify an existing folder, either one that you have created with the CreateShortcutFolder function or one that already exists on the end user's system.

Syntax

```
ReplaceShortcut (szShortcutFolder, szName, szNewItem, szCmdLine, szWorkingDir, szIconPath, nIcon,
    szShortCutKey, nFlag);
```

Parameters

Table 68 ▪ ReplaceShortcut Parameters

Parameter	Description
szShortcutFolder	Specify the name of the folder that contains the shortcut that you want to replace.
szName	Specify the name of the shortcut that you want to replace.
szNewItem	Specify the name of the shortcut as it should appear after the replacement.
szCmdLine	Specify one of the following: ● The fully qualified name of the executable file that is associated with the icon, including any command-line parameters. ● The fully qualified path if szName is a subfolder.
szWorkingDir	If szName is not a subfolder, specify the directory that contains the product's program files. To make the directory that contains the product's program files the working directory, pass a null string ("") in this parameter.
szIconPath	Specify the name of an alternate icon file or a valid executable file that contains the new icon.
nIcon	If you specified an executable file for szIconPath, specify the icon index in the executable file. Otherwise, enter the number 0 for nIcon.
szShortCutKey	Specify the string that contains the shortcut key sequence the end user can press to start the program. For example, if you want the end user to be able to open the application by pressing the "Ctrl," the "Alt," and then the "1" key, specify "Ctrl + Alt + 1" in this parameter.

Table 68 ▪ ReplaceShortcut Parameters (cont.)

Parameter	Description
nFlag	Pass one or more of the following predefined constants in this parameter. To pass two or more predefined constants in this parameter, combine those constants with the bitwise OR operator (|). • **CS_OPTION_FLAG_REPLACE_EXISTING**—Replace an existing shortcut. • **CS_OPTION_FLAG_RUN_MAXIMIZED**—The target of the shortcut is maximized when launched. • **CS_OPTION_FLAG_RUN_MINIMIZED**—The target of the shortcut is minimized when launched. • **CS_OPTION_FLAG_PREVENT_PINNING**—Do not allow the shortcut to be pinned to the Start menu or taskbar on Windows Vista or later systems. This option hides the context menu commands that enable end users to pin the shortcut to the taskbar and to the Start menu. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. • **CS_OPTION_FLAG_NO_NEW_INSTALL_HIGHLIGHT**—Do not highlight the shortcut as newly installed after end users install your product on Windows Vista or later systems. This has the same effect as clearing the **Highlight newly installed programs** check box in the Customize Start Menu dialog box for an individual item on a target system. You may want to use this option for shortcuts that are for tools and secondary products that are part of your installation. • **CS_OPTION_FLAG_NO_STARTSCREEN_PIN**—Do not pin the shortcut to the Start screen by default on Windows 8 target systems. If you pass this constant, the installation sets a Windows Shell property that was introduced in Windows 8. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. • **NULL**—Indicates no options. For more information on CS_OPTION_FLAG_PREVENT_PINNING and CS_OPTION_FLAG_NO_STARTSCREEN_PIN, see the Additional Information section.

Return Values

Table 69 ▪ ReplaceShortcut Return Values

Return Value	Description
0	Indicates that the function successfully replaced the shortcut.
< 0	Indicates that the function was unable to replace the shortcut. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

Note the following details about two of the nFlag constants.

CS_OPTION_FLAG_PREVENT_PINNING

If you configure the shortcut to prevent pinning to the taskbar and the Start menu, the target of the shortcut is ineligible for inclusion in the most frequently used list on the Start menu.

Shortcuts that contain certain strings cannot be pinned to the taskbar or the Start menu, and they cannot be displayed in the most frequently used list. Examples are:

- Documentation
- Help
- Install
- Remove
- Setup
- Support

CS_OPTION_FLAG_NO_STARTSCREEN_PIN

Note that Windows 8 maintains information about shortcut pinning to the Start screen after a shortcut is removed by uninstalling the application. Therefore, the CS_OPTION_FLAG_NO_STARTSCREEN_PIN constant has no effect on the target system if the shortcut has already been installed on it. Thus, when you are testing this functionality, ensure that you test on a clean machine—one on which this shortcut and its target have never been installed.

ReplaceShortcut Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the ReplaceShortcut function.
 *
 * Note: In order for this script to run correctly, you must set
 *       preprocessor constants to valid file names and a path
 *       on the target system. To easily create this example
 *       shortcut, run the CreateShortcut example 3.
 *
\*---------------------------------------------------------------*/

#define FOLDER      "C:\\Windows\\"
#define NEW_PROGRAM "C:\\WINDOWS\\WRITE.EXE"
#define NEW_PARAM   "C:\\WINDOWS\\README.TXT"

function OnFirstUIAfter()
    STRING szShortcutFolder, szName, szNewItem, szCmdLine, szWorkingDir;
    STRING szIconPath, szShortCutKey, szProgram, szParam;
    NUMBER nIcon, nFlag;
begin

    szShortcutFolder = FOLDER ^ "Example folder 3";
    szName           = "Notepad Example 3";
    szNewItem        = "New Wordpad Example";

    // Make sure the space is not seen as a delimiter.
    szProgram = NEW_PROGRAM;
    LongPathToQuote (szProgram, TRUE);

    szParam = NEW_PARAM;
    LongPathToShortPath(szParam);

    szCmdLine      = szProgram + " " + szParam;
    szWorkingDir   = "";
    szIconPath     = "";
    nIcon          = 0;
    szShortCutKey  = "";
    nFlag          = CS_OPTION_FLAG_REPLACE_EXISTING|CS_OPTION_FLAG_RUN_MAXIMIZED;

    // Display the folder on the screen.
    ShowProgramFolder (szShortcutFolder, SW_SHOW);

    // Replace the Notepad Example 3 shortcut with New Wordpad Example.
    if (ReplaceShortcut (szShortcutFolder, szName, szNewItem, szCmdLine,
                         szWorkingDir, szIconPath, nIcon, szShortCutKey,
                         nFlag) < 0) then
        MessageBox ("ReplaceShortcut failed.", SEVERE);
    else
        MessageBox ("Shortcut successfully replaced.", INFORMATION);
    endif;

end;
```

Resize

The **Resize** function resizes an InstallScript array.

Syntax

```
Resize ( Array , nNewSize );
```

Parameters

Table 70 ▪ Resize Parameters

Parameter	Description
Array	Specifies the name of the array variable.
nNewSize	Specifies the new size to be given to the array.

Return values

The **Resize** function returns the new size of the array.

RGB

The **RGB** function creates a custom color value that can be used with SetColor and SetTitle.

Syntax

```
RGB ( constRed, constGreen, constBlue );
```

Parameters

Table 71 ▪ RGB Parameters

Parameter	Description
constRed	Specifies a numeric constant, ranging in value from 0 to 255, that indicates the amount of red in the custom color.
constGreen	Specifies a numeric constant, ranging in value from 0 to 255, that indicates the amount of green in the custom color.
constBlue	Specifies a numeric constant, ranging in value from 0 to 255, that indicates the amount of green in the custom color.

Return Values

This function returns a number value for a custom color that can be used when calling SetColor and SetTitle.

RGB Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the RGB function.
 *
 * The first call to RGB returns the value of the background
 * color to Grey;  the second call returns the background color
 * to red;  the third call returns the background color to blue.
 * The values returned by the calls to RGB are passed to
 * SetColor to change the background color.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_RGB(HWND);

function ExFn_RGB(hMSI)
begin

    Enable ( BACKGROUND );

    // Change the background color to light grey.
    SetColor (BACKGROUND, RGB(198,198,198));

    Delay (3);

    // Change the background color to red.
    SetColor (BACKGROUND, RGB(255,0,0));

    Delay (3);

    // Change the background color to blue.
    SetColor (BACKGROUND, RGB(0, 0, 255));

    Delay (3);

end;
```

Built-In Functions (S-T)

For a list of functions by category, see Built-In Functions by Category.

SdAskDestPath

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdAskDestPath** function creates a dialog that allows the end user to select an alternate destination path. When the end user clicks Browse in this dialog, the SelectDir function is called to open a second dialog that enables the end user either to select an existing folder or to enter a new folder name.

Syntax

```
SdAskDestPath ( szTitle, szMsg, svDir, nReserved );
```

Parameters

Table 1 ▪ SdAskDestPath Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Choose Folder”), pass a null string (“”) in this parameter.
szMsg	Specifies the text to display in the dialog. The text is considered a static control. Use the %P place holder in your message string to insert the product name (if any) that has been specified by a previous call to SdProductName. To display the default instructions for this dialog, pass a null string ("").
svDir	Specifies the name of the directory to be selected by default. Returns the name of the directory selected by the end user.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 2 ▪ SdAskDestPath Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- If the end user specifies an incomplete, invalid, or write-protected path in the second dialog, an error message is displayed. If you want the end user to be able to select folders that are not writable, call the AskPath function instead.
- Setups that run in silent mode should create the new folder if it does not exist before calling SdAskDestPath. This ensures that the confirmation dialog is not displayed. Without this step, two response files are required to handle the two possible conditions.
- In earlier versions of InstallShield Professional, when the end user selected in the Choose Folder dialog a folder that did not exist, a confirmation message box was displayed asking whether the folder should be created. This message box proved to be confusing to many end users, so it has been removed from InstallShield.

SdAskDestPath Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdAskDestPath function.
 *
 * SdAskDestPath is called to prompt the user for a path.
 * Then the selected path is assigned to the system variable
 * INSTALLDIR, which is displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define  TITLE_TEXT "SdAskDestPath Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

function OnBegin()
    STRING svDir;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set default folder name for call to SdAskDestPath.
    svDir = "C:\\ISEXampl\\Target";

    // Display the SdAskDestPath dialog. Pass a null string
    // in the second parameter to display the default message.
    if (SdAskDestPath (TITLE_TEXT, "", svDir, 0) = NEXT) then
        INSTALLDIR = svDir;
    endif;

    // Display the new target directory.
    SprintfBox (INFORMATION, "SdAskDestPath", "Successful.\n\nThe Target " +
               "directory is: " + INSTALLDIR);

end;
```

SdAskDestPath2

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

The **SdAskDestPath** function creates a dialog that allows the end user to select an alternate destination path. When you click the Change button in that dialog, the SelectDir function is called to open a second dialog that enables the end user either to select an existing folder or to enter a new folder name.

Syntax

```
SdAskDestPath2 ( szTitle, szMsg, svDir );
```

Parameters

Table 3 ▪ SdAskDestPath2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title ("Choose Destination Location"), pass a null string ("") in this parameter.
szMsg	Specifies the text to display in the dialog. The text is considered a static control. Use the %P place holder in your message string to insert the product name (if any) that has been specified by a previous call to SdProductName. To display the default instructions for this dialog, pass a null string ("").
svDir	Specifies the name of the directory to be selected by default. Returns the name of the directory selected by the end user.

Return Values

Table 4 ▪ SdAskDestPath2 Return Values

Return Value	Description
NEXT	Indicates that the user selected the Next button.
BACK	Indicates that the user selected the Back button.
< ISERR_SUCCESS	Indicates that the dialog could not be displayed.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- If the end user specifies an incomplete, invalid, or write-protected path in the second dialog, an error message is displayed. If you want the end user to be able to select folders that are not writable, call the AskPath function instead.
- Installations that run in silent mode should create the new folder if it does not exist before calling SdAskDestPath2. This ensures that the confirmation dialog is not displayed. Without this step, two response files are required to handle the two possible conditions.

SdAskDestPath2 Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdAskDestPath2 function.
 *
 * SdProductName is called to set the product name so that it
 * can be displayed in place of the %P placeholder in the
 * SdAskDestPath2 dialog.  Then, SdAskDestPath2 is called to
 * prompt the user for a path.  Finally, the selected path
 * is assigned to the system variable TARGETDIR, which is
 * displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define  TITLE_TEXT "SdAskDestPath2 Example"

   STRING svDir;

#include "ifx.h"

function OnBegin()
begin

   // Set product name.
   SdProductName ("Example Product 5.2");

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set default folder name for call to SdAskDestPath2.
   svDir = "C:\\ISEXampl\\Target";

   // Display the SdAskDestPath2 dialog. Pass a null string
   // in the second parameter to display the default message.
   if (SdAskDestPath2 (TITLE_TEXT, "", svDir ) = NEXT) then
      TARGETDIR = svDir;
   endif;

   // Display the new target directory.
   SprintfBox (INFORMATION, "SdAskDestPath2", "Successful.\n\nThe Target " +
               "directory is: " + TARGETDIR);

end;
```

SdAskOptions

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdAskOptions** function creates a dialog that offers installation options. You can use check boxes or option buttons as the selection mechanism. The information shown beside the button is retrieved from a group of options. The default number of options is four. You can add or subtract the number of options as necessary in the group.

Syntax

```
SdAskOptions ( szTitle, szMsg1, szMsg2, szId, szFeatures, nExclusiveFlag );
```

Parameters

Table 5 ▪ SdAskOptions Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Components”), pass a null string (“”) in this parameter.
szMsg1	Specifies a message to display in the dialog. This static field has an ID of 801. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szMsg2	Specifies a second message to display in the dialog. This static field has an ID of 802.
szId	Specifies an alternate numeric dialog ID. Use only numeric IDs expressed in string form (for example, ID 13001 as “13001”). You can copy the SdAskOptions dialog resource, make limited changes to it, give it a unique numeric ID, and call that dialog by passing its ID as a string in szId. (See above.) To create the standard four-option SdAskOptions dialog, pass a null string (“”) in this parameter.
szFeatures	Specifies the name of the feature that contains the subfeatures to be displayed. The subfeatures are preceded by check boxes or option buttons. To display all top-level features, pass a null string (“”) in this parameter. SdAskOptions searches for the requested features in the file media library or script-created feature set specified by the system variable MEDIA.
nExclusiveFlag	Specifies the type of button you want to display in the dialog. Pass one of the following predefined constants in this parameter: ● **EXCLUSIVE**—Specifies option buttons. ● **NONEXCLUSIVE**—Specifies check boxes.

Return Values

Table 6 ▪ SdAskOptions Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

- If your setup includes required, visible components, do not call SdAskOptions to obtain installation options. Instead, call FeatureDialog, SdFeatureDialog, SdFeatureDialogAdv, SdFeatureMult, or SdAskOptionsList in nonexclusive mode.
- If your setup does not use a setup type dialog, you must call FeatureSetupTypeSet to specify a setup type that has been defined in the IDE's Setup Types view before calling SdAskOptions.
- SdAskOptions operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call SdAskOptions to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling FeatureTransferData.

   You can create more than one dialog of the SdAskOptions type by copying the SdAskOptions dialog resource (located in _isres.dll) using a resource editor, making limited changes to the copy, and giving it a unique ID. You should save the copy to _isuser.dll. When you call SdAskOptions and pass the ID of the customized copy of the dialog in the parameter szId, the customized copy is displayed. Limit your changes to editing existing static text fields and adding static text fields. Adding controls that require handling is not recommended because it requires changing the SdAskOptions source script.

SdAskOptions Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdAskOptions function
 *
 * This script displays a dialog that offers installation
 * options.
 *
 * Note:  To run this example script, create a project (or
 *        insert into a project) with several features and/or
 *        subfeatures.
 *
\*---------------------------------------------------------------*/

// Specify your feature name here.  These are the names you gave to your
// features in the IDE.  A NULL ("") string specifies base features.
```

```
#define FEATURE            ""
#define SDASKOPTSTITLE     "Component Selection"
#define SDASKOPTSMSG1      "Select components to install."
#define SDASKOPTSMSG2      "Your selections will be used to effect file transfer."
#define APPBASE_PATH       "Your Company Name\\Your Product Name"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "ifx.h"

function OnFirstUIBefore()
begin

    // Set a default destination path.
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Get installation options.
    SdAskOptions (SDASKOPTSTITLE, SDASKOPTSMSG1, SDASKOPTSMSG2,
                  "", FEATURE, NONEXCLUSIVE);

end;
```

SdAskOptionsList

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdAskOptionsList** function creates a dialog that displays a list of features for a custom installation.

Syntax

```
SdAskOptionsList ( szTitle, szMsg, szFeatures, nStyle );
```

Parameters

Table 7 ▪ SdAskOptionsList Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Components”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szFeatures	Specifies the name of the feature that contains the subfeatures to be displayed. The subfeatures are preceded by check boxes or option buttons. To display all top-level features, pass a null string (“”) in this parameter. SdAskOptionsList searches for the requested feature(s) in the file media library or script-created feature set specified by the system variable MEDIA.
nStyle	Specifies whether the end user's selection is limited. Pass one of the following predefined constants in this parameter: • **EXCLUSIVE**—Allows the end user to select only one item from the list. Do not use EXCLUSIVE mode if any of szFeatures' subfeatures are required features. • **NONEXCLUSIVE**—Allows the end user to select more than one item from the list, including multiple non-contiguous selections. Also displays two buttons—Select All and Clear All—which allow selection of all options or clearing of all selections.

Return Values

Table 8 ▪ SdAskOptionsList Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- If your setup does not use a setup type dialog, you *must* call FeatureSetupTypeSet to specify a setup type that has been defined in the IDE's Setup Types view before calling SdAskOptionsList.
- SdAskOptionsList operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call SdAskOptionsList to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling FeatureTransferData.

SdAskOptionsList Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 *  InstallShield Example Script
 *
 *  Demonstrates the SdAskOptionsList function with the
 *  NONEXCLUSIVE and EXCLUSIVE options.
 *
\*---------------------------------------------------------------*/

// Define strings. In a real setup you would define these in your string
// tables and precede each constant with @ to use them in your script.
#define COMP_SELECT_TITLE               "Select Components"
#define COMP_SELECT_MSG                 "Select components to install."
#define MY_FEATURE_NAME "DefaultFeature"

#include "ifx.h"

function OnFirstUIBefore()
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Let user select from top-level components, nonexclusively.
   SdAskOptionsList(COMP_SELECT_TITLE, COMP_SELECT_MSG + " NONEXCLUSIVE", "", NONEXCLUSIVE);

   // Let user select from subcomponents of MY_FEATURE_NAME, exclusively.
   SdAskOptionsList(COMP_SELECT_TITLE, COMP_SELECT_MSG + " EXCLUSIVE", MY_FEATURE_NAME, EXCLUSIVE);

end;
```

SdBitmap

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdBitmap** function displays a bitmap on a dialog. The maximum allowable size of the bitmap is 440 pixels wide by 275 pixels high. You can also display a message in the SdBitmap dialog, but only if you use a resource editor to modify the SdBitmap dialog resource so that the control that displays the message is made visible.

Syntax

```
SdBitmap ( szTitle, szMsg, szBitmap );
```

Parameters

Table 9 ▪ SdBitmap Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Welcome”), pass a null string (“”) in this parameter.
szMsg	Pass a null string (“”) in this parameter unless you use a resource editor to modify the SdBitmap dialog to display a message. See the Additional Information section, below.
szBitmap	Specifies the file name of the bitmap to display and, optionally, a set of bitmap attributes. If bitmap attributes are included, the string passed in this parameter should be formatted as follows: `"bitmap file name;transparent flag;3-D flag;Background color"` • **bitmap file name**—Specifies the name of the bitmap file. If the file name is unqualified (that is, if it does not include a drive designation and path), InstallShield searches for the bitmap in SUPPORTDIR. • **transparent flag—**Indicates whether to display the bitmap transparently. When this flag is 1 (true), all portions of the bitmap that are magenta (RGB Value: 255,0,255) will be displayed transparently. The default for this parameter is 0 (non-transparent). • **3-D flag—**Indicates whether to add a 3-D border around the edges of the static field that contains the bitmap. The default for this parameter is 0 (no 3D border). • **background color—**Indicates the color to use for the background of the static text field. Note that this color will be visible only if the bitmap is smaller than the static text field in which it appears or if the transparent flag is set to 1 and the bitmap has transparent areas. The background color must be expressed as an RGB value, that is, as three numeric values separated by commas. The following example displays the bitmap from the file MyBitmap.bmp, which is located in the SUPPORTDIR folder. The bitmap is displayed on a black background and has a three-dimensional border. Any parts of the bitmap that are magenta are displayed in the background color of black. `"MyBitmap.bmp;1;1;0,0,0"`

Return Values

Table 10 ▪ SdBitmap Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.

Table 10 ▪ SdBitmap Return Values (cont.)

Return Value	Description
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

You can use a resource editor to modify the SdBitmap dialog resource so that a message string passed as the parameter szMsg is displayed in the SdBitmap dialog.

The SdBitmap dialog resource is contained in _isres.dll. The resource contains a static text control that receives the string passed as the parameter szMsg. However, by default this static text control is out of view in the SdBitmap dialog (below the dialog). SdBitmap also uses a static text control to display the bitmap image. You can resize the bitmap image static text control and move the message static text control into view in the dialog. The message in szMsg will then be visible when SdBitmap is called.

Be aware that changing the size of the bitmap image static text control may affect the display of your bitmap image. The bitmap image must be small enough to avoid being clipped when SdBitmap centers it in the bitmap image static text control.

This function does not support transparent bitmaps. If you use a transparent bitmap with this function, the transparent portions are displayed normally.

Metafiles are not supported by SdBitmap.

SdBitmap Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdBitmap function.
 *
 * Note: Before running this script, set the defined constant
 *       BITMAP_FILE so that it references a bitmap file
 *       included in the Support Files/Billboards view.
 *
\*---------------------------------------------------------------*/

// The bitmap to display.
#define BITMAP_FILE SUPPORTDIR ^ "MyBitmap.bmp"

// The title to use for the SdBitmap dialog.
#define TITLE_TEXT "SdBitmap Example"

#include "Ifx.h"
```

```
function OnBegin()
begin
   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Display the specified bitmap in a dialog.  Pass a
   // null string in the second parameter because the dialog
   // has not been customized to display a message,
   SdBitmap (TITLE_TEXT, "", BITMAP_FILE);

end;
```

SdConfirmNewDir

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdConfirmNewDir** function creates a dialog that displays a folder name and prompts for confirmation. If the end user clicks the Yes button, this function creates the new folder automatically.

Syntax

```
SdConfirmNewDir ( szTitle, szDir, nReserved );
```

Parameters

Table 11 ▪ SdConfirmNewDir Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Confirm New Folder”), pass a null string (“”) in this parameter.
szDir	Specifies the name of the directory to confirm. (Obtain this information by calling SdAskDestPath.)
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 12 ▪ SdConfirmNewDir Return Values

Return Value	Description
YES (1)	Indicates that the Yes button was clicked. The directory has been confirmed and will be created.
NO (0)	Indicates that the No button was clicked. The specified directory will not be created.
< 0	Indicates that the Yes button was clicked but the function was unable to create the new directory.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- The dialog that is displayed by this function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SdConfirmNewDir Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdConfirmNewDir function.
```

```
 *
 * This example script first calls SdAskDestPath to get the
 * destination folder from the user.  If the folder does not
 * exist, SdConfirmNewDir is then called to ask if the user
 * wants to create the folder.
 *
 * Note: This script creates directories on the local hard disk.
 *
\*---------------------------------------------------------------*/

#define DEFAULT_TARGET_FOLDER "C:\\NONEXIST\\DIR";
#define TITLE_TEXT "SdConfirmNewDir Example"

#include "ifx.h"

function OnBegin()
    NUMBER nResult;
    STRING szMsg, svDir;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

start:
    // Set up parameters for call to SdAskDestPath.
    szMsg = "Select destination folder:";
    svDir = DEFAULT_TARGET_FOLDER

    // Retrieve destination folder from user.
    nResult = SdAskDestPath (TITLE_TEXT, szMsg, svDir, 0);

    // Check if the selected folder exists.
    if (ExistsDir (svDir) = EXISTS) then
        // Inform user that the specified folder already exists.
        szMsg = "folder '%s' already exists.\n\nIn order for this example to " +
                "run properly, please specify a nonexisting folder.";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svDir);

        // Start over.
        goto start;
    else
        // The specified folder does not exist. Request user
        // confirmation to create it.
        nResult = SdConfirmNewDir (TITLE_TEXT, svDir, 0);

        if (nResult = NO) then
            // The user did not want it created select.
            MessageBox ("Selected folder was not created.", INFORMATION);

            // Start over.
            goto start;
        elseif (nResult = YES) then
            // The user wants to create the folder.
            SprintfBox (INFORMATION, TITLE_TEXT, "%s created.", svDir);
        elseif (nResult < 0) then
            // Report the error; then terminate.
```

```
            MessageBox ("SdConfirmNewDir failed.", SEVERE);
            abort;
        endif;
    endif;

end;
```

SdConfirmRegistration

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdConfirmRegistration** function creates a message box that displays the User Name, Company Name, and Serial Number. If a null string (“”) is entered in any field in the dialog, the displayed field will be empty.

Syntax

```
SdConfirmRegistration ( szTitle, szName, szCompany, szSerial, nReserved );
```

Parameters

Table 13 ▪ SdConfirmRegistration Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Registration Confirmation”), pass a null string (“”) in this parameter.
szName	Specifies the end user's name.
szCompany	Specifies the company name.
szSerial	Specifies the serial number. If this parameter contains a null string (“”), the serial number field is not displayed in the dialog.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 14 ▪ SdConfirmRegistration Return Values

Return Value	Description
YES (1)	Indicates that the Yes button was clicked.
NO (0)	Indicates that the No button was clicked.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- The dialog that is displayed by this function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.
- To obtain the serial number and end user’s name and company, call **SdRegisterUserEx**. To obtain only the end user’s name and company, call **SdRegisterUser**.

SdConfirmRegistration Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the SdRegisterUser and SdConfirmRegistration
 * functions.
 *
 * SdRegisterUser is called to prompt for the user's name
 * and company name.  These entries are then confirmed when
 * SdConfirmRegistration is called.
 *
\*---------------------------------------------------------------*/

#define REG_TITLE      "SdRegisterUser Example"
#define REG_MSG        "Please register your product now."
#define CONFIRM_TITLE  "SdConfirmRegistration Example"

#include "Ifx.h"

function OnBegin()
    STRING  svName, svCompany;
    NUMBER  nResult;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    repeat
        // Get the user's name and company name.
        SdRegisterUser (REG_TITLE, REG_MSG, svName, svCompany);

        // Confirm that the information is correct. Pass a null string in
        // parameter four since SdRegisterUser does not get a serial number.
        nResult = SdConfirmRegistration (CONFIRM_TITLE, svName, svCompany, "", 0);
    until nResult = YES;

end;
```

SdCustomerInformation

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdCustomerInformation** function displays a dialog that enables the end user to specify the user name and company name for the product being installed. The dialog may also include radio buttons that let the end user specify whether the product should be installed for all users or only the current user.

You can specify default values for these fields by specifying the appropriate parameters. If you specify a null string (""), the function uses the appropriate script variable.

The Next button becomes enabled only when data exists in both edit fields. The end user cannot leave any field blank.

Syntax

```
SdCustomerInformation ( szTitle, svName, svCompany, bvAllUsers );
```

Parameters

Table 15 ▪ SdCustomerInformation Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Customer Information”), pass a null string ("") in this parameter.
svName	Specifies the default value for the Name edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDOWNER variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **USERNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDOWNER* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **USERNAME**.
svCompany	Specifies the default value for the Company edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDCOMPANY variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **COMPANYNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDCOMPANY* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **COMPANYNAME**.

Table 15 ▪ SdCustomerInformation Parameters (cont.)

Parameter	Description
bvAllUsers	Returns which option the end user selected. After the function returns, bvAllUsers is set to one of the following values: • **TRUE**—The **Anyone who uses this computer [all users]** option is selected. If the end user selects this option in an InstallScript installation, the function sets the system variable ALLUSERS to a non-zero value. If the end user selects this option in an InstallScript MSI installation, the function sets the ALLUSERS property to a value of 2. • **FALSE**—The **Only for me [user name]** option is selected. If the end user selects this option in an InstallScript installation, the function sets the ALLUSERS variable to FALSE. The default option is not based on the current value of the bvAllUsers parameter, but on the ALLUSERS Windows Installer property in an InstallScript MSI installation, or on the ALLUSERS system variable in an InstallScript installation: • If the ALLUSERS property is 2 or the ALLUSERS system variable is non-zero, the all-users option is selected by default. • If the **ALLUSERS** property is 1 or the ALLUSERS system variable is FALSE, the per-user option is selected by default. One or both of the radio buttons can be disabled or hidden by updating script variables as follows: • **DISABLE_PERUSERBTN**—Indicates that the per-user option should be disabled (or hidden if HIDE_DISABLED_BTNS is TRUE) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the per-user option is always hidden on Windows 9x platforms, regardless of the value of this variable. • **DISABLE_ALLUSERBTN**—Indicates that the all-users option should be disabled (or hidden) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the all-users option is always hidden if the installation is being run without administrator or power-user privileges, regardless of the value of this variable. • **HIDE_DISABLED_BTNS**—Indicates that both options should be hidden instead of being disabled. The default value of this variable is TRUE. Note that when this variable is set to TRUE, both options are hidden if either option is determined to be disabled.

Return Values

Table 16 ▪ SdCustomerInformation Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdCustomerInformation Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 *  InstallShield Example Script
 *
 *  Demonstrates the SdCustomerInformation function.
 *  SdCustomerInformation prompts the end user to enter a user
 *  name and company name, and to specify whether the installation is
 *  for anyone who uses the target system or for the current user only.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnFirstUIBefore( )
    // ...other variable declarations...
    STRING  svName, svCompany, szMsg;
    NUMBER  nvUser, nReturn;
begin

// ...show other dialogs...

    // get the end user's name and company name
    SdCustomerInformation("", svName, svCompany, nvUser);

    if (nvUser = 0) then
        szMsg = "per-user installation";
    else
        szMsg = "all-users installation";
    endif;
```

```
    MessageBox("You entered:\n\n" +
        "Name: " + svName + "\n" +
        "Company: " + svCompany + "\n" +
        "Type: " + szMsg,
        INFORMATION);

// ...other dialogs...

end;
```

SdCustomerInformationEx

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdCustomerInformationEx** function displays a dialog that enables the end user to specify the user name, company name, and serial number for the product being installed. The dialog may also include radio buttons that let the end user specify whether the product should be installed for all users or only the current user.

You can specify default values for these fields by specifying the appropriate parameters. If you specify a null string (""), the function uses the appropriate script variable.

The Next button becomes enabled only when data exists in all three edit fields. The end user cannot leave any field blank.

Note *▪ The* **SdCustomerInformationEx** *function does not verify the serial number. To learn how to add code that verifies the serial number, see the sample serial number validation project. This sample project is in one of the Samples subfolders within the InstallShield Program Files folder. The default installation location is* `C:\Program Files\InstallShield\2022\Samples\InstallScript\Serial Number Validation Sample Project`.

Syntax

```
SdCustomerInformationEx ( szTitle, svName, svCompany, svSerial, bvAllUsers );
```

Parameters

Table 17 ▪ SdCustomerInformationEx Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Customer Information”), pass a null string ("") in this parameter.
svName	Specifies the default value for the Name edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDOWNER variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **USERNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDOWNER* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **USERNAME**.
svCompany	Specifies the default value for the Company edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDCOMPANY variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **COMPANYNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDCOMPANY* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **COMPANYNAME**.
svSerial	Specifies the default value for the Serial Number edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDSERIALNUM variable. This variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. The function returns the value that the end user specified in this parameter. The function also sets the value of *IFX_PRODUCT_REGISTEREDSERIALNUM* to the value that the end user specified.

Table 17 ▪ SdCustomerInformationEx Parameters (cont.)

Parameter	Description
bvAllUsers	Returns which option the end user selected. After the function returns, bvAllUsers is set to one of the following values: • **TRUE**—The **Anyone who uses this computer [all users]** option is selected. If the end user selects this option in an InstallScript installation, the function sets the system variable ALLUSERS to a non-zero value. If the end user selects this option in an InstallScript MSI installation, the function sets the ALLUSERS property to a value of 2. • **FALSE**—The **Only for me [user name]** option is selected. If the end user selects this option in an InstallScript installation, the function sets the ALLUSERS variable to FALSE. The default option is not based on the current value of the bvAllUsers parameter, but on the ALLUSERS Windows Installer property in an InstallScript MSI installation, or on the ALLUSERS system variable in an InstallScript installation: • If the ALLUSERS property is 2 or the ALLUSERS system variable is non-zero, the all-users option is selected by default. • If the **ALLUSERS** property is 1 or the ALLUSERS system variable is FALSE, the per-user option is selected by default. One or both of the radio buttons can be disabled or hidden by updating script variables as follows: • **DISABLE_PERUSERBTN**—Indicates that the per-user option should be disabled (or hidden if HIDE_DISABLED_BTNS is TRUE) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the per-user option is always hidden on Windows 9x platforms, regardless of the value of this variable. • **DISABLE_ALLUSERBTN**—Indicates that the all-users option should be disabled (or hidden) in cases where it would normally be enabled. The default value of this variable is FALSE. Note that the all-users option is always hidden if the installation is being run without administrator or power-user privileges, regardless of the value of this variable. • **HIDE_DISABLED_BTNS**—Indicates that both options should be hidden instead of being disabled. The default value of this variable is TRUE. Note that when this variable is set to TRUE, both options are hidden if either option is determined to be disabled.

Return Values

Table 18 ▪ SdCustomerInformationEx Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdCustomerInformationEx Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 *  InstallShield Example Script
 *
 *  Demonstrates the SdCustomerInformationEx function.
 *  SdCustomerInformationEx prompts the end user to enter a user
 *  name, company name, and serial number, and to specify whether
 *  the installation is for anyone who uses the target system
 *  or for the current user only.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnFirstUIBefore( )
    // ...other variable declarations...
    STRING  svName, svCompany, svSerial, szMsg;
    NUMBER  nvUser, nReturn;
begin

// ...show other dialogs...

    // get the end user's name and company name
    SdCustomerInformationEx("", svName, svCompany, svSerial, nvUser);

    if (nvUser = 0) then
        szMsg = "per-user installation";
    else
        szMsg = "all-users installation";
    endif;
```

```
    MessageBox("You entered:\n\n" +
        "Name: " + svName + "\n" +
        "Company: " + svCompany + "\n" +
        "Serial number: " + svSerial + "\n" +
        "Type: " + szMsg,
        INFORMATION);

// ...other dialogs...

end;
```

SdDiskSpace2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdDiskSpace2** function displays a dialog that shows either of the following:

- A list view of volumes, required space, available space, and the difference between available space and required space.
- A warning message indicating that the target system does not have enough available space for the installation to take place. The dialog also displays a list view of volumes, required space, available space, and the difference between available space and required space.

The **SdDiskSpace2** function supersedes the **SdDiskSpaceRequirements** and **SdOutOfDiskSpace** functions.

Syntax

```
SdDiskSpace2 (szTitle, szMsg, bUseOutOfSpaceDialog);
```

Parameters

Table 19 ▪ SdDiskSpace2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Disk Space Requirements” or “Out of Disk Space”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string ("") in this parameter.
bUseOutOfSpaceDialog	Indicates whether to show the dialog that warns that the installation is out of space or the dialog that shows the disk space requirements. Pass one of the following predefined constants in this parameter: • **TRUE**—Show the dialog that displays a warning message indicating that the target system does not have enough available space for the installation to take place. The dialog also displays a list view of volumes, required space, available space, and the difference between available space and required space. • **FALSE**—Show the dialog that displays a list view of volumes, required space, available space, and the difference between available space and required space.

Return Values

Table 20 ▪ SdDiskSpace2 Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the OK button.

Additional Information

Project ▪ *In InstallScript MSI installations, the OnOutOfDiskSpace event handler responds to the Out Of Disk Space event. The default implementation of OnOutOfDiskSpace displays the* **SdDiskSpace2** *dialog, and then aborts the installation.*

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdDiskSpace2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 *  InstallShield Example Script
 *
 *  Demonstrates the SdDiskSpace2 function.
 *  SdDiskSpace2 displays a list view of volumes,
 *  required space, available space, and the difference between
 *  available and required space.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnFirstUIBefore( )
begin

// ... show other dialogs ...

    // display the disk space requirements
    SdDiskSpace2 ("",
        "Review the available and required disk space " +
        "to determine where to install the application.",
        FALSE);

// ... other dialogs ...

end;
```

SdDiskSpaceRequirements

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdDiskSpace2** function displays a list view of volumes, required space, available space, and the difference between available space and required space.

The **SdDiskSpace2** function supersedes the **SdDiskSpaceRequirements** function.

Syntax

```
SdDiskSpaceRequirements (szTitle, szMsg);
```

Parameters

Table 21 ▪ SdDiskSpaceRequirements Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Disk Space Requirements”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string ("") in this parameter.

Return Values

Table 22 ▪ SdDiskSpaceRequirements Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the OK button.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdDisplayTopics

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdDisplayTopics** function creates a dialog that displays information based on topic data. The dialog provides a heading and then topics of titles and descriptions. You can use this dialog to display Help topics, examples, and so on.

Syntax

```
SdDisplayTopics ( szTitle, szMsg, listTopics, listDetails, nReserved );
```

Parameters

Table 23 ▪ SdDisplayTopics Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Custom Installation Help”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
listTopics	Specifies the string list that contains the topics to display.
listDetails	Specifies the string list that contains a description of each topic.
nReserved	Pass 0 (zero) in this parameter. No other value is allowed.

Return Values

Table 24 ▪ SdDisplayTopics Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- In an InstallScript MSI installation, when the end user clicks Next the USERNAME and COMPANYNAME properties are set using the information contained in the svName and svCompany fields, respectively.
- You can modify the font style of description text to distinguish it from title (topic) text. The message and topic titles are always displayed in bold type.
- The message static field must have an ID of 801. The topic identifiers must have numbers in the range of 802 - 849. Description fields have an ID range of 851 - 899.
- The spacing of the static description fields is fixed by the size of the dialog. You cannot dynamically change the spacing in the listDetails list. If the number of topics and descriptions is less than the number of static fields, nothing appears in the white space, but the size of the dialog is not changed.

SdDisplayTopics Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdDisplayTopics function.
 *
 * This example script creates two lists: one for topic titles,
 * one for topic descriptions.  It then calls SdDisplayTopics to
 * display the topics and descriptions.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "SdDisplayTopics Example"
#define MSG_TEXT "Custom setup options let you choose which parts of YourApp to install."

#define TOPIC1 "YourApp Program:"
#define TOPIC2 "YourApp Help:"
#define TOPIC3 "YourApp Examples:"

#define DESC1  "Includes all the files to run and write YourApp."
#define DESC2  "A computer-based tutorial demonstrating how to create programs using YourApp."
#define DESC3  "Several examples applications created using YourApp."

#include "Ifx.h"

function OnBegin()
    LIST listDescriptions, listTopics;
begin

    // Create a list for topics.
    listTopics = ListCreate (STRINGLIST);

    // Create a list for topic descriptions.
    listDescriptions = ListCreate (STRINGLIST);

    if (listTopics = LIST_NULL) || (listDescriptions = LIST_NULL) then
        // Report the error; then terminate.
        MessageBox("Unable to create lists.", INFORMATION);
        abort;
    endif;

    // Build the list of topics.
    ListAddString (listTopics, TOPIC1, AFTER);
    ListAddString (listTopics, TOPIC2, AFTER);
    ListAddString (listTopics, TOPIC3, AFTER);

    // Build the list of topic descriptions.
    ListAddString (listDescriptions, DESC1, AFTER);
    ListAddString (listDescriptions, DESC2, AFTER);
    ListAddString (listDescriptions, DESC3, AFTER);

    // Display the topics and descriptions.
    SdDisplayTopics (TITLE_TEXT, MSG_TEXT, listTopics, listDescriptions, 0);
```

```
    // Remove the lists from memory.
    ListDestroy (listTopics);
    ListDestroy (listDescriptions);

end;
```

SdExceptions

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdExceptions** function displays a message box that informs the end user that a shared, locked (in use), or read-only file has been encountered, and it offers appropriate options.

Syntax

```
SdExceptions (nExceptionType, szFilename);
```

Parameters

Table 25 ▪ SdExceptions Parameters

Parameter	Description
nExceptionType	Specifies which type of file problem has been encountered. Pass one of the following predefined constants in this parameter: • **SHARED**—A shared file's reference count has been reduced to zero. • **READONLY**—A read-only file has been encountered. • **LOCKED**—A locked file has been encountered.
szFilename	Specifies the name of the file that caused the problem.

Return Values

Table 26 ▪ SdExceptions Return Values

Return Value	Description
ERR_RETRY (4)	Indicates that the Retry button was selected.
ERR_IGNORE (5)	Indicates that the Ignore button was selected.
ERR_YES (6)	Indicates that the Yes button was selected.
ERR_NO (7)	Indicates that the No button was selected.
ERR_PERFORM_AFTER_REBOOT (100)	Indicates that the Reboot button was selected.
< 0	Indicates that the dialog could not be displayed.

Additional Information

The dialog that is displayed by this function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SdExceptions Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * The SdExceptions function displays a dialog informing the
 * end user that a shared, locked (in use), or read-only file has
 * been encountered and offering appropriate options.
 *
 * The SdExcpetions function is used in the default code
 * for the following Miscellaneous event handlers:
 *
 *    OnFileLocked
 *    OnFileReadOnly
 *    OnRemovingSharedFile
 *
 * The sample script below uses the OnFileReadOnly event.  To get
 * the SdExceptions prompt, the setup must attempt to overwrite or
 * uninstall a read-only file.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

//---------------------------------------------------------------------------
// OnFileReadOnly
//
// The OnFileReadOnly event is called when a read-only file needs to be
// installed or uninstalled.
//
// szFile will contain the full path of the file that is read-only when the
// event is called.
//
// The event should return one of the following values:
//
// ERR_YES - Indicates that the file should be installed or uninstalled,
//
// ERR_NO - Indicates that the file should not be installed or uninstalled.
//---------------------------------------------------------------------------
function OnFileReadOnly(szFile)
begin
    // TODO: Enable this code if you want to return ERR_YES and simply
    // install or uninstall the read-only file w/o confirmation.
    // return ERR_YES;

    return SdExceptions(READONLY, szFile);

end;
```

SdFeatureDialog

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFeatureDialog** function creates a dialog that displays a list of features in the setup that the user can install and the amount of disk space that each feature occupies. This function is identical to SdFeatureDialogAdv.

The end user can change the destination folder by clicking the Browse button and can check the available disk space on other drives by clicking the Disk Space button.

Syntax

```
SdFeatureDialog ( szTitle, szMsg, svDir, szFeatures );
```

Parameters

Table 27 ▪ SdFeatureDialog Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the name of the folder to be selected by default and returns the name of the folder selected by the end user. The destination folder specified by svDir is not assigned automatically to INSTALLDIR, TARGETDIR, or any other system variable. To apply the value of svDir to the installation, you must assign it to INSTALLDIR (in an InstallScript MSI installation), TARGETDIR (in an InstallScript installation), or to a script-defined variable, if one is in use. If the default folder specified by svDir does not already exist on the end user's system, it is not created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder, you must call ExistsDir when FeatureDialog returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user’s system.
szFeatures	Specifies the name of the feature whose subfeatures are to be displayed. To display all top-level features, pass a null string ("") in this parameter. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls. SdFeatureDialog searches for the requested features in the script-created feature set specified by the system variable MEDIA; see the Additional Information section.

Return Values

Table 28 ▪ SdFeatureDialog Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- A feature's size is displayed as 0 until it is selected. Once it has been selected, its actual size is displayed.

- The required disk space that is displayed by the dialog includes the size of the files that must be installed to enable maintenance and uninstallation. If all application components are deselected, the size of these files is still displayed.
- If your installation does not use a setup type dialog, you must call **FeatureSetupTypeSet** to specify a setup type that has been defined in the Setup Types view before calling **SdFeatureDialog**.
- **SdFeatureDialog** operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call **SdFeatureDialog** to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling **FeatureTransferData**.

- If necessary, feature names are truncated to allow the display of the largest possible feature size. The space required to display the size depends on the maximum feature size (2 GB), the feature size options currently in use, and the font used to display feature information in the dialog. Feature size options are set with the **DialogSetInfo** function.

  When the space required to display the maximum possible size has been determined, all feature names are truncated automatically, if necessary, to fit the remaining space. The name of a feature that requires less space to display its size (or that is not selected) may still be truncated under this method. To maximize performance and ensure that feature names appear complete, make feature names or display names smaller than the space available in the dialog.
- The Available Disk Space dialog cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.
- The Disk Space button has an ID of 101. This button automatically displays the available disk space dialog. You can remove this button/option if you prefer. The Directory static field requires an ID of 851. The list box ID has a multiple selection style.
- In installations that were created with early versions of InstallShield Professional, when the end user selected in the Choose Folder dialog a folder that did not exist, a confirmation message box was displayed asking whether the folder should be created. This message box proved to be confusing to many end users, so it has been removed from InstallShield.

SdFeatureDialog Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFeatureDialog function.
 *
 * This example script displays a dialog that displays a list
 * of features in the setup that the end user can install and the
 * amount of space that each feature occupies.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg, svDir;
begin
    svDir   = TARGETDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display all top-level features available.
    SdFeatureDialog (szTitle, szMsg, svDir, "");

end;
```

SdFeatureDialog2

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFeatureDialog2** function creates a dialog that displays the following:

- A list of features that the end user can install.
- The space required for the selected features and the space that is available in the destination location. A feature's size is displayed as the number 0 until it is selected. When the feature is selected, its actual size is displayed.
- A description of the selected feature—the value of the feature's Description setting.

If a particular feature has subfeatures, the Change button becomes active when the end user clicks the feature. Clicking the Change button launches the Select Subfeatures dialog, where the end user can make further selections.

Syntax

```
SdFeatureDialog2 ( szTitle, szMsg, szDir, szFeatures );
```

Parameters

Table 29 ▪ SdFeatureDialog2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szDir	Specifies the name of the folder to be selected by default and returns the name of the folder selected by the end user. The destination folder specified by szDir is not assigned automatically to INSTALLDIR, TARGETDIR, or any other system variable. To apply the value of szDir to the installation, you must assign it to INSTALLDIR (in an InstallScript MSI installation), TARGETDIR (in an InstallScript installation), or to a script-defined variable, if one is in use. If the default folder specified by szDir does not already exist on the end user’s system, it is not created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder, you must call ExistsDir when **FeatureDialog** returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user’s system.
szFeatures	Specifies the name of the feature whose subfeatures are displayed. To display all top-level features, pass a null string ("") in this parameter. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls. SdFeatureDialog2 searches for the requested features in the script-created feature set specified by the system variable MEDIA; see the Additional Information section.

Return Values

Table 30 ▪ SdFeatureDialog2 Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

- Default selection settings are cleared when the end user selects a feature or subfeature displayed in the dialog. If the end user clears a feature selection, all of its subfeatures are cleared. Conversely, if the end user clears all of a feature's subfeature selections, the feature's selection is cleared.

  When a feature is not selected by default, its subfeatures are not selected by default. If all subfeatures of a feature are not selected by default, the parent feature should not be selected by default. For information on default feature and subfeature selection settings, see FeatureAddItem.

- A feature's size is displayed as the number 0 until it is selected. Once it has been selected, its actual size is displayed.

- The required disk space displayed by the dialog includes the size of the files that must be installed to enable maintenance setups and uninstallation. Even if all application components are deselected, the size of these files is still displayed.

- If your installation does not use a setup type dialog, you must call FeatureSetupTypeSet to specify a setup type that has been defined in the Setup Types view before calling **SdFeatureDialog2**.

- **SdFeatureDialog2** operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call **SdFeatureDialog2** to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling FeatureTransferData.

- If necessary, feature names are truncated to allow the display of the largest possible feature size. The space required to display the size depends on the maximum feature size (2 GB), the feature size options currently in use, and the font used to display feature information in the dialog. Feature size options are set with the DialogSetInfo function.

  When the space required to display the maximum possible size has been determined, all feature names are truncated automatically, if necessary, to fit the remaining space. The name of a feature that requires less space to display its size (or that is not selected) may still be truncated under this method. To maximize performance and ensure that feature names appear complete, make feature names or display names smaller than the space available in the dialog.

- The Select Subfeatures dialog cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SdFeatureDialog2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFeatureDialog2 function.
 *
 * This example script displays a dialog that displays a list
 * of features in the setup that the end user can install and the
 * amount of space that each feature occupies.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg, svDir;
begin
    svDir   = TARGETDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display all top-level features available.
    SdFeatureDialog2 (szTitle, szMsg, svDir, "");

end;
```

SdFeatureDialogAdv

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFeatureDialogAdv** function creates a dialog that displays a list of features in the setup that the end user can install and the amount of disk space that each feature occupies. This function is identical to SdFeatureDialog.

The end user can change the destination folder by clicking the Browse button and can check the available disk space on other drives by clicking the Disk Space button.

Syntax

```
SdFeatureDialogAdv ( szTitle, szMsg, svDir, szFeatures );
```

Parameters

Table 31 ▪ SdFeatureDialogAdv Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the name of the folder to be selected by default and returns the name of the folder selected by the end user. The destination folder specified by svDir is not assigned automatically to INSTALLDIR, TARGETDIR, or any other system variable. To apply the value of svDir to the setup, you must assign it to INSTALLDIR (in an InstallScript MSI installation), TARGETDIR (in an InstallScript installation), or to a script-defined variable, if one is in use. If the default folder specified by svDir does not already exist on the end user's system, it is not created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder, you must call ExistsDir when FeatureDialog returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user's system.
szFeatures	Specifies the name of the feature whose subfeatures are to be displayed. To display all top-level features, pass a null string ("") in this parameter. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls. SdCFeatureDialogAdv searches for the requested features in the script-created feature set specified by the system variable MEDIA; see the Additional Information section.

Return Values

Table 32 ▪ SdFeatureDialogAdv Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- A feature's size is displayed as 0 until it is selected. Once it has been selected, its actual size is displayed.

- The required disk space displayed by the dialog includes the size of the files that must be installed to enable maintenance setups and uninstallation. Even if all application components are deselected, the size of these files is still displayed.
- If your setup does not use a setup type dialog, you *must* call FeatureSetupTypeSet to specify a setup type that has been defined in the IDE's Setup Types view before calling SdFeatureDialogAdv.
- SdFeatureDialogAdv operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call SdFeatureDialogAdv to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling FeatureTransferData.

- If necessary, feature names are truncated to allow the display of the largest possible feature size. The space required to display the size depends on the maximum feature size (2 GB), the feature size options currently in use, and the font used to display feature information in the dialog. Feature size options are set with the DialogSetInfo function.

  When the space required to display the maximum possible size has been determined, all feature names are truncated automatically, if necessary, to fit the remaining space. The name of a feature that requires less space to display its size (or that is not selected) may still be truncated under this method. To maximize performance and ensure that feature names appear complete, make feature names or display names smaller than the space available in the dialog.
- The Available Disk Space dialog cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.
- The Disk Space... button has an ID of 101. This button automatically displays the available disk space dialog. You can remove this button/option if you prefer. The Directory static field requires an ID of 851. The list box ID has a multiple selection style.
- In earlier versions of InstallShield Professional, when the end user selected in the Choose Folder dialog a folder that did not exist, a confirmation message box was displayed asking whether the folder should be created. This message box proved to be confusing to many end users, so it has been removed from InstallShield.

SdFeatureDialogAdv Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFeatureDialogAdv function.
 *
 * This example script displays a dialog that displays a list
 * of features in the setup that the end user can install and the
 * amount of space that each feature occupies.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg, svDir;
begin

    svDir   = TARGETDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display all top-level features available.
    SdFeatureDialogAdv (szTitle, szMsg, svDir, "");

end;
```

SdFeatureMult

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFeatureMult** function creates a dialog that displays the following:

- A list of features and subfeatures that the end user can select for installation. The dialog has two feature lists. If the feature selected in the first list has subfeatures, the subfeatures are displayed in the second list.
- The disk space required for the selected features and the space available in the destination location. A feature's size is displayed as 0 until it is selected. When the end user selects a feature, its actual size is displayed.
- The description of a feature or subfeature. The end user can view the description by clicking on the feature or subfeature.

Syntax

```
SdFeatureMult ( szTitle, szMsg, svDir, szFeatures );
```

Parameters

Table 33 ▪ SdFeatureMult Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the name of the folder to be selected by default and returns the name of the folder selected by the end user. The destination folder specified by svDir is not assigned automatically to INSTALLDIR, TARGETDIR, or any other system variable. To apply the value of svDir to the setup, you must assign it to INSTALLDIR (in an InstallScript MSI installation), TARGETDIR (in an InstallScript installation), or to a script-defined variable, if one is in use. If the default folder specified by svDir does not already exist on the end user's system, it is not created unless the end user clicks the Browse button and follows the steps to create it from the Choose Folder dialog. Therefore, whenever you specify a default folder, you must call ExistsDir when FeatureDialog returns in order to determine whether that folder exists. If it does not exist, call CreateDir to create it on the end user's system.
szFeatures	Specifies the name of the feature whose subfeatures are displayed. To display all top-level features, pass a null string ("") in this parameter. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls. SdFeatureMult searches for the requested features in the script-created feature set specified by the system variable MEDIA; see the Additional Information section.

Return Values

Table 34 ▪ SdFeatureMult Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

- Default selection settings are cleared when the end user selects a feature or subfeature displayed in the dialog. If the end user clears a feature selection, all of its subfeatures are cleared. Conversely, if the end user clears all of a feature's subfeature selections, the feature's selection is cleared.

  When a feature is not selected by default, its subfeatures are not selected by default. If all subfeatures of a feature are not selected by default, the parent feature should not be selected by default. See FeatureAddItem for information on default feature and subfeature selection settings.

- A feature's size is displayed as 0 until it is selected. Once it has been selected, its actual size is displayed.
- The required disk space displayed by the dialog includes the size of the files that must be installed to enable maintenance setups and uninstallation. Even if all application components are deselected, the size of these files is still displayed.
- If your setup does not use a setup type dialog, you *must* call FeatureSetupTypeSet to specify a setup type that has been defined in the IDE's Setup Types view before calling SdFeatureMult.
- SdFeatureMult operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call SdFeatureMult to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling FeatureTransferData.

- If necessary, feature names are truncated to allow the display of the largest possible feature size. The space required to display the size depends on the maximum feature size (2 GB), the feature size options currently in use, and the font used to display feature information in the dialog. Feature size options are set with the DialogSetInfo function.

  When the space required to display the maximum possible size has been determined, all feature names are truncated automatically, if necessary, to fit the remaining space. The name of a feature that requires less space to display its size (or that is not selected) may still be truncated under this method. To maximize performance and ensure that feature names appear complete, make feature names or display names smaller than the space available in the dialog.

- The Select Subfeatures dialog cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SdFeatureMult Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFeatureMult function.
 *
 * This example script displays a dialog that lets the user
 * select features and subfeatures, view feature descriptions,
 * and see the amount of space required for the selected features
 * and the space available on the destination folder.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg, svDir;
begin

    svDir   = TARGETDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display all top-level features available.
    SdFeatureMult (szTitle, szMsg, svDir, "");

end;
```

SdFeatureTree

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFeatureTree** function displays a dialog that contains the following:

- A tree control in which end users can select the features they want on their system and clear the features they do not want on their system.
- A description of the selected feature—the text in the feature's Description property.
- The drive space required to perform the file operations selected in the tree control, and the space available on the drive of the path specified by szDir. The calculation of required drive space takes into account the cluster size on the szDir drive.

Syntax

```
SdFeatureTree ( szTitle, szMsg, szDir, szFeatures, nLevel );
```

Parameters

Table 35 ▪ SdFeatureTree Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title ("Select Features"), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szDir	Specifies the path that is used in calculating required and available drive space. The script variable TARGETDIR should always be specified for this parameter.
szFeatures	Specifies the name of the feature whose subfeatures are displayed. To display all top-level features, pass a null string ("") in this parameter. To learn how to refer to top-level features and subfeatures, see Specifying Features and Subfeatures in Function Calls.
nLevel	Specifies how many levels of features and subfeatures are open in the tree control when the dialog is first displayed. (For example, an nLevel of 2 causes third- and lower-level subfeatures to be closed in the tree control when the dialog is first displayed.)

Return Values

Table 36 ▪ SdFeatureTree Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- The required disk space displayed by the dialog includes the size of the files that must be installed to enable maintenance installations and uninstallation. Even if all application features are deselected, the size of these files is still displayed.

- **SdFeatureTree** operates on the current media, which is specified by the system variable MEDIA. During setup initialization, the installation assigns to MEDIA a media name that is associated with your file media library (`Data1.cab`).

Task ***To display script-created features:***

1. Save the current value of MEDIA in a string variable, for example, szSaveMEDIAValue.
2. Assign to MEDIA the name of the script-created component set.
3. Call **SdFeatureTree** to get end-user selections.
4. Assign to MEDIA the value that you saved in step 1. You must do this before calling **FeatureTransferData**.

SdFeatureTree Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFeatureTree function.
 *
 * This example script displays a dialog that lets the user
 * select features and subfeatures, view feature descriptions,
 * and see the amount of space required for the selected features
 * and the space available on the destination folder.
 *
 *  Comments:  To run this example script, create a project (or
 *             insert into a project) with several features
 *             and/or subfeatures with components containing
 *             files.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg, svDir;
begin

    svDir   = TARGETDIR;
    szTitle = "Select Features";
    szMsg   = "Select the features you want to install on your computer.";

    // Display all top-level features available, with third- and
    // lower-level subfeatures to be closed in the tree control
    // when the dialog is first displayed.
```

```
    SdFeatureTree (szTitle, szMsg, svDir, "", 2);

end;
```

SdFilesInUse

Project ▪ *The InstallScript MSI project type support the* **SdFilesInUse** *function.*

The **SdFilesInUse** *dialog can also be called manually in InstallScript projects, in InstallScript MSI projects, and Basic MSI projects that have InstallScript custom actions; however, the installation must provide the list of applications that are locking files through the nvlistApps parameter, and it must handle the return value appropriately.*

The **SdFilesInUse** function displays a dialog that includes a list box containing a list of the applications that are open and are locking files.

Typically, the OnFilesInUse event handler displays this dialog in an InstallScript MSI installation as a response to an INSTALLMESSAGE_FILESINUSE message sent by the Windows Installer. When this occurs, the Windows Installer provides to the installation the list of applications that are locking files. The list of applications are passed through the szMessage parameter to the OnFilesInUse event. The event passes this information to the **SdFilesInUse** function through the szMessage parameter. The event then passes the return value from the function as the return value of the event, which causes the Windows Installer to act appropriately.

Syntax

```
SdFilesInUse ( byval string szTitle, byval string szMsg, byval string szFilesInUse, byref LIST
    nvlistApps );
```

Parameters

Table 37 ▪ SdFilesInUse Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (Files in Use), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szFilesInUse	When **SdFilesInUse** is called by the OnFilesInUse event handler in an InstallScript MSI installation, this parameter specifies the list of applications that the Windows Installer found to be locking files. The function parses this string in order to display the list of applications in the dialog's list box. If you manually call **SdFilesInUse**, pass an empty string ("") in this parameter. Note that if nvlistApps is a valid string list, this parameter is ignored.
nvlistApps	When **SdFilesInUse** is called by the OnFilesInUse event handler in an InstallScript MSI installation, this parameter is specified as an uninitialized list variable—that is, a variable with a value of 0. If you manually call **SdFilesInUse**, specify a string list of applications that are locking files and that should be displayed in the dialog. Each string in the list indicates one application. (Use the **ListCreate** function and associated list functions to create and initialize the string list.)  ***Note ▪*** *You must provide a variable for this parameter; you cannot specify a literal value.*

Return Values

Table 38 ▪ SdFilesInUse Return Values

Return Value	Description
IDRETRY (4)	Indicates that the end user clicked the Retry button. If you manually call **SdFilesInUse**, you should handle this return value by rechecking locked files and redisplaying the dialog as needed. When **SdFilesInUse** is called by the OnFilesInUse event handler, this value is returned by the event handler, and this is handled by the Windows Installer.
IDIGNORE (5)	Indicates that the end user clicked the Ignore button.

Table 38 ▪ SdFilesInUse Return Values (cont.)

Return Value	Description
IDCANCEL	Indicates that the end user clicked the Exit button. ***Note ▪*** *Note that unlike other script dialogs, this dialog does not call the OnCanceling event handler when the user clicks the Exit button. Therefore, if you are calling this function manually, you must handle this return value manually in order to display the Cancel Setup dialog.*

SdFilesInUse Example

Project ▪ *The InstallScript MSI project type support the* **SdFilesInUse** *function.*

```
/*---------------------------------------------------------------*\
 *
 *  InstallShield Example Script
 *
 *  Demonstrates the SdFilesInUse function. SdFilesInUse displays
 *  a list box dialog that lists applications that are locking
 *  files.
 *
 *  Keep displaying SdFilesInUse if Notepad.exe is running
 *  and user clicks Retry.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"


function OnFirstUIBefore( )
    // ...other variables...
    LIST listID;
    NUMBER nReturn;
begin

    // ...display other dialogs...

// display file-locked dialog only if Notepad.exe running
if (Is(FILE_LOCKED, WINDIR ^ "Notepad.exe")) then
    // create a string list
    listID = ListCreate(STRINGLIST);

    // if an error occurred, report it; then terminate.
    if (listID = LIST_NULL) then
        MessageBox("Unable to create list.", SEVERE);
        abort;
    endif;
```

```
    ListAddString(listID, "Notepad.exe", AFTER);

    AskAgain:

    // display the Files in Use dialog.
    nReturn = SdFilesInUse("", "The following applications are currently locking files.", "", listID);

    // if user clicks RETRY, show locked-file dialog again;
    // otherwise, let the file-transfer process handle it, which might require a reboot
    if (nReturn = IDRETRY) then
        if (Is(FILE_LOCKED, WINDIR ^ "Notepad.exe")) then
            goto AskAgain;
        endif;
    endif;

    // remove the list from memory
    ListDestroy(listID);
endif;

end;
```

SdFinish

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFinish** function displays a dialog to inform the end user that the installation is complete and to provide information or options. The SdFinish dialog displays up to two messages and two check box selection options. For example, you could offer the end user the option of either viewing a README file or launching the application.

To insert the product name into the messages and check box descriptions, use the place holder %P in the strings passed in szMsg1, szMsg2, szOpt1, and szOpt2.

Note *▪ SdFinish has no option to terminate the setup and reboot the end user's computer. When SdFinish returns, the setup continues to execute. To provide the end user with the option to reboot, call SdFinishReboot instead.*

Syntax

```
SdFinish ( szTitle, szMsg1, szMsg2, szOpt1, szOpt2, bvOpt1, bvOpt2 );
```

Parameters

Table 39 ▪ SdFinish Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Complete”), pass a null string (“”) in this parameter.
szMsg1	Specifies the message to display at the top of the dialog. To display the default instructions, which inform the user that the installation is complete, pass a null string (“”) in this parameter.
szMsg2	Specifies the message to display at the bottom of the dialog. To display the default instructions (“Click Finish to complete Setup”), pass a null string (“”) in this parameter.
szOpt1	Specifies the text to display beside the first check box. Pass a null string (“”) in this parameter to hide the check box.
szOpt2	Specifies the text to display beside the second check box. Pass a null string (“”) in this parameter to hide the check box.
bvOpt1	Returns the selection state (TRUE or FALSE) of the first check box.
bvOpt2	Returns the selection state (TRUE or FALSE) of the second check box.

Return Values

Table 40 ▪ SdFinish Return Values

Return Value	Description
NEXT (1)	Indicates that the Finish button was clicked.

Note ▪ *Because SdFinish announces the end of the installation, the Back button is disabled.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdFinish Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function SdFinish.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully-qualified
 *       names of the Windows Notepad executable and a valid
 *       text file in the Support Files/Billboards view.
 *
\*---------------------------------------------------------------*/

//Assign the name of a text file to README FILE
#define NOTEPAD WINDIR ^ "Notepad.exe"
#define README FILE SUPPORTDIR ^ "ReadMe.txt"

#include "Ifx.h"

function OnBegin()
    STRING   szProductName, szTitle;
    STRING   szMsg1, szMsg2, szOpt1, szOpt2;
    BOOL     bvOpt1, bvOpt2;
    NUMBER   nReturn;
begin

    // Set the product name to substitute for the %P place holder.
    szProductName = "My Application";
    SdProductName (szProductName);

    // Setup parameters that will be passed to SdFinish.
    szTitle = "SdFinish Example";
    szMsg1  = "%P Setup is almost complete.\n" +
              "Choose the options you want below.";
    szMsg2  = "Click Finish to complete %P Setup.";
    szOpt1  = "I would like to view the README file.";
    szOpt2  = "I would like to launch %P.";

    // Display the SdFinish dialog.
    SdFinish (szTitle, szMsg1, szMsg2, szOpt1, szOpt2, bvOpt1, bvOpt2);

    if (bvOpt1) then
        // Display the read me file.
        LaunchAppAndWait (NOTEPAD, README FILE, WAIT);
    endif;

    if (bvOpt2) then
        // Because this example does not actually install an
        // application, a message box is displayed in place of
        // the call to LaunchApp that would normally be made here,
        // for example:
        //   LaunchApp (TARGETDIR ^ "MyApp.exe","");
```

```
        SprintfBox (INFORMATION, szTitle, "Launch %s here.", szProductName);
    endif;

end;
```

SdFinishEx

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFinishEx** function calls either SdFinish or SdFinishReboot to display a dialog that informs the end user that the installation is complete and provides information or options. If the system variable BATCH_INSTALL is equal to FALSE (indicating that no locked files were encountered during the setup), SdFinishEx calls SdFinish to display the dialog. If BATCH_INSTALL is equal to a non-zero value, SdFinishEx calls SdFinishReboot to display the dialog.

To insert the product name into the messages and check box descriptions, use the place holder %P in the strings passed in szMsg1, szMsg2, szOpt1, and szOpt2.

Syntax

```
SdFinishEx (szTitle, szMsg1, szMsg2, szOpt1, szOpt2, bvOpt1, bvOpt2);
```

Parameters

The parameters are the same as those of SdFinish. If BATCH_INSTALL is equal to TRUE, these parameters are ignored and SdFinishReboot("", "", SYS_BOOTMACHINE, "", 0) is called.

Return Values

Table 41 ▪ SdFinishEx Return Values

Return Value	Description
0	Indicates that SdFinish was called.
NEXT (1)	Indicates that SdFinishReboot was called and the user chose not to reboot the computer.
< 0	Indicates that SdFinishReboot was called and the user chose to reboot the computer, but the reboot failed.

Additional Information

To display non-default text in the SdFinishReboot dialog, do not call SdFinishEx. Instead, use code like the following:

```
if (!BATCH_INSTALL) then
    SdFinish( szTitle, szMsg1, szMsg2,
```

```
        szOption1, szOption2, bOpt1, bOpt2 );
else
    SdFinishReboot( szRebootTitle, szRebootMsg1,
        SYS_BOOTMACHINE, szRebootMsg2, 0 );
endif;
```

SdFinishEx Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function SdFinishEx.
 *
 * The SdFinishEx function calls either SdFinish or SdFinishReboot
 * to display a dialog informing the end user that the
 * installation is complete and giving the user information or
 * options. If the system variable BATCH_INSTALL is equal to
 * FALSE (0), indicating that no locked files were encountered
 * during the setup, SdFinishEx calls SdFinish to display the
 * dialog. If BATCH_INSTALL is equal to a non-zero value,
 * SdFinishEx calls SdFinishReboot to display the dialog.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg1, szMsg2, szOption1, szOption2;
    NUMBER bOpt1, bOpt2;
begin

    bOpt1  = FALSE;
    bOpt2  = FALSE;
    szMsg1 = SdLoadString(IFX_SDFINISH_MSG1);
    SdFinishEx(szTitle, szMsg1, szMsg2, szOption1, szOption2, bOpt1, bOpt2);
end;
```

SdFinishReboot

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFinishReboot** function at the end of your installation announces that the installation is complete and gives the end user the option to restart the system. Restarting the system allows changes to `Autoexec.bat`, `Config.sys`, and some .ini files to take effect.

The **SdFinishReboot** dialog displays up to two messages in static text fields. Set the value of these fields with the parameters szMsg1 and szMsg2. To insert the product name into the messages, use the place holder %P in the strings passed in szMsg1 and szMsg2.

Syntax

```
SdFinishReboot ( szTitle, szMsg1, nDefOption, szMsg2, nReserved );
```

Parameters

Table 42 ▪ SdFinishReboot Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Complete”), pass a null string (“”) in this parameter.
szMsg1	Specifies the text to display at the top of the dialog, informing the user about the end of the installation. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
nDefOption	Specifies a default radio button option selection. Pass one of the following predefined constants in this parameter: • **SYS_BOOTMACHINE—**Reboot the computer when the setup is finished. • **0—**Do not reboot the computer.
szMsg2	Specifies the text to display at the bottom of the dialog, giving the user information about what to do. To display the default instructions, pass a null string (“”).
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 43 ▪ SdFinishReboot Return Values

Return Value	Description
WILL_REBOOT	Indicates that the user chose to reboot the system.
NEXT (1)	Indicates that the user chose not to reboot the system or restart Windows.
< 0	Indicates that the user chose to either reboot the system or restart Windows, but the reboot or restart failed.

Note ▪ *Because* **SdFinishReboot** *announces the end of the installation, the Back button is disabled.*

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- The installation makes every attempt *not* to reboot the computer when other instances of the installation are running. Because of this, you must ensure that all other instances of the installation are shut down before allowing **SdFinishReboot** to restart Windows or the system. Additionally, your message to the end user should request that if they plan to restart the system later, they should ensure that all other applications are shut down first.

- The installation automatically ensures that locked .dll and .exe files are updated the next time that the system starts.

SdFinishReboot Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFinishReboot dialog.
 *
 * Warning: If you select the reboot option, your computer will
 *          reboot.  Be sure you do not have any unsaved files
 *          open when you select this option.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szTitle, szMsg1, szMsg2;
    NUMBER nDefOption, nReserved;
begin

    // Set up variables to pass as parameters to SdFinishReboot.
    szTitle   = "SdFinishReboot Example";
    szMsg1    = "Setup has completed installing %P.";

    // nDefOption - Specifies a default radio button option selection.
    // SYS_BOOTMACHINE - Reboot the computer when the setup is finished.
    // 0 - Do not reboot the computer.
    nDefOption   = 0;
    szMsg2    = "Click Finish to exit %P setup.";
    nReserved = 0;

    // Display the SdFinishReboot dialog.
    if (SdFinishReboot (szTitle, szMsg1, nOption, szMsg2, nReserved) < 0) then
    // Indicates that the user chose to either reboot the system
    // or restart Windows, but the reboot or restart failed.
        MessageBox ("SdFinishReboot failed.", SEVERE);
    endif;

end;
```

SdFinishUpdate

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SdFinishUpdateEx function supersedes the **SdFinishUpdate** function. **SdFinishUpdate** calls the following:

```
SdFinishUpdateEx( szTitle, szMsg1, szMsg2, "", "", bDefOption );
```

The **SdFinishUpdate** function at the end of your installation displays a dialog that indicates that the installation is complete. The dialog includes the option to check for application updates.

Note *▪* **SdFinishUpdate** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*

Syntax

```
SdFinishUpdate ( szTitle, szMsg1, szMsg2, bDefOption );
```

SdFinishUpdateEx

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFinishUpdateEx** function at the end of your installation displays a dialog that indicates that the installation is complete. The dialog includes the option to check for application updates.

Note *▪* **SdFinishUpdateEx** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*

Syntax

```
SdFinishUpdateEx ( szTitle, szMsg1, szMsg2, szOpt1, szOpt2, bDefOption );
```

Parameters

Table 44 ▪ SdFinishUpdateEx Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Complete”), pass a null string ("") in this parameter.
szMsg1	Specifies the text to display at the top of the dialog, informing the user about the end of the installation. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szMsg2	Specifies the text to display at the bottom of the dialog, providing information to the end user about what to do next. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szOpt1	Specifies the text to display beside the first radio button. To display the default instructions ("Yes, check for program updates. (Recommended)\nPlease ensure that you're connected to the Internet before you proceed."), pass a null string ("") in this parameter.
szOpt2	Specifies the text to display beside the second radio button. To display the default instructions ("No, skip this step."), pass a null string ("") in this parameter.
bDefOption	Specifies the option button that is selected by default. Pass one of the following predefined constants in this parameter: • **TRUE**—Specifies the first option button as the default selection. • **FALSE**—Specifies the second option button as the default selection.

Return Values

Table 45 ▪ SdFinishUpdateEx Return Values

Return Value	Description
TRUE	Indicates that the **Check for program updates** option button is selected.
FALSE	Indicates that the **Skip this step** option is selected.

Note ▪ *Because SdFinishUpdateEx announces the end of the installation, the Back button is disabled.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdFinishUpdateReboot

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdFinishUpdateReboot** function at the end of your installation displays a dialog that indicates that the installation is complete. The dialog gives the end user the option to restart the system and to check for application updates. Restarting the system enables changes to `Autoexec.bat`, `Config.sys`, and some .ini files to take effect.

Note *▪* **SdFinishUpdateReboot** *does not check for updates; to check for updates, add FlexNet Connect API calls in your InstallScript code. For more information, see the FlexNet Connect SDK documentation.*

Syntax

```
SdFinishUpdateReboot ( szTitle, szMsg1, nDefOption, szMsg2, nChkUpdate, nReserved );
```

Parameters

Table 46 ▪ SdFinishUpdateReboot Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Complete”), pass a null string (“”) in this parameter.
szMsg1	Specifies the text to display at the top of the dialog, informing the end user about the end of the installation. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
nDefOption	Specifies a default radio button selection. Pass one of the following predefined constants in this parameter: • **SYS_BOOTMACHINE**—Reboot the computer when the setup is finished. • **0**—Do not reboot the computer.
szMsg2	Specifies the text to display at the bottom of the dialog, giving the end user information about what to do. To display the default instructions, pass a null string (“”).
nvChkUpdate	Returns the state of the FlexNet Connect check box: • **0**—Check box is not selected. Do not check for application updates. • **Other than 0**—Check box is selected. Check for application updates.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 47 ▪ SdFinishUpdateReboot Return Values

Return Value	Description
WILL_REBOOT	Indicates that the end user chose to reboot the system.
NEXT (1)	Indicates that the end user chose not to reboot the system or restart Windows.
< 0	Indicates that the end user chose to either reboot the system or restart Windows, but the reboot or restart failed.

Note ▪ *Because SdFinishUpdateReboot announces the end of the installation, the Back button is disabled.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdFinishUpdateReboot Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdFinishUpdateReboot dialog.
 *
 * This dialog is used at the end of an installation to announce
 * that the installation is complete and gives the user the option
 * to restart the system and to check for application updates.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes
#include "ifx.h"

export prototype ExFn_SdFinishUpdateReboot(HWND);

function ExFn_SdFinishUpdateReboot(hMSI)
    STRING szTitle, szMsg1, szMsg2;
    NUMBER nDefOption, nChkUpdate, nReserved;
begin

    szTitle = "SdFinishUpdateReboot Example";
    szMsg1  = "";
    szMsg2  = "";

// nDefOption - Specifies the option button selected by default.
    // 1 - Yes, check for program updates
    // 0 - No, skip this step
    nDefOption = 1;

    // nChkUpdate - Specifies the default state of the FlexNet Connect check box.
    // nChkUpdate - Returns the state of the FlexNet Connect check box.
    // 0 - Check box is not selected. Do not check for application updates.
    // Other than 0 - Check box is selected. Check for application updates.
    nChkUpdate = 1;
    nReserved = 0;
    SdFinishUpdateReboot ( szTitle, szMsg1, nDefOption, szMsg2, nChkUpdate, nReserved );

end;
```

SdGeneralInit

The **SdGeneralInit** function provides standard dialog initialization, including setting the enable or disable state of the Next, Back, and Cancel buttons. This function also replaces all %P, %VS, and %VI instances with IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and IFX_INSTALLED_DISPLAY_VERSION on static controls with control IDs 700 through 724, and 202.

Syntax

```
SdGeneralInit (szDialog, hwndDialg, nUnused, szUnused);
```

Parameters

Table 48 ▪ SdGeneralInit Parameters

Parameter	Description
szDialog	Name of the dialog created with EzDefineDialog or DefineDialog.
hwndDialog	Handle to the current dialog. This is obtained by calling CmdGetHwndDlg.
nUnused	Unused parameter; pass 0.
szUnused	Unused parameter; pass an empty string ("").

Return Values

None.

SdGeneralInit Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdGeneralInit, which is used to initialize
 * a dialog that is created with the EzDefineDialog function.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap. The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap. Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
 *
 * In order to use this custom dialog, the script first defines
 * it by calling EzDefineDialog. It then displays the dialog
 * and gets dialog events by calling WaitOnDialog. When an
```

```
 * event ends dialog processing, EndDialog is called to close
 * the dialog. Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_EzDefineDialog(HWND);

function ExFn_EzDefineDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Specify a name to identify the custom dialog in this installation.
    szDialogName = "CustomDialog";

    // Define the dialog.  Pass a null string in the second parameter
    // to get the dialog from _isuser.dll or _isres.dll.  Pass a null
    // string in the third parameter because the dialog is identified
    // by its ID in the fourth parameter.
    nResult = EzDefineDialog (szDialogName, "", "", RES_DIALOG_ID);

    if (nResult < 0) then
        // Report an error; then terminate.
        MessageBox ("Error in defining dialog", SEVERE);
        abort;
    endif;

    // Initialize the indicator used to control the while loop.
    bDone = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
```

```
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724 and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
            if (SdIsStdButton( nCmdValue ) && SdDoStdButton( nCmdValue )) then
                bDone = TRUE;
            endif;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

SdInit

The **SdInit** function prepares an installation for Sd dialog function calls by loading required resource strings, restoring the installation's window if it is minimized, and specifying Windows 95-style check boxes in Sd dialogs.

Note ▪ *This function is called automatically by each Sd function. It is unnecessary to call SdInit explicitly unless your script calls DialogSetInfo before calling any of the Sd dialog functions. In that case, your script must call SdInit before it calls DialogSetInfo—otherwise the call to DialogSetInfo has no effect.*

Syntax

```
SdInit ( );
```

Parameters

This function takes no parameters.

Return Values

Table 49 ▪ SdInit Return Values

Return Value	Description
0	Indicates that the setup was initialized for Sd dialog function calls.
1	Indicates that the setup has already been initialized for Sd dialog function calls.

SdInit Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdInit function.
 *
 * Note that SdInit is called automatically by each Sd function.
 * It is unnecessary to call SdInit explicitly unless your script
 * calls DialogSetInfo before calling any of the Sd dialog functions.
 * In that case, your script must call SdInit before it calls
 * DialogSetInfo—otherwise the call to DialogSetInfo has no effect.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING szInfoString;
begin

    // Initialize setup for calls to Sd dialog functions.
    SdInit ();

    // Set check box style for feature selection.
    DialogSetInfo ( DLG_INFO_CHECKSELECTION, szInfoString, CHECKBOX );

    // Get feature selections.
    SdFeatureDialog2 ( "", "", TARGETDIR, "" );

end;
```

SdLicense

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SdLicenseEx function supersedes the **SdLicense** function.

The **SdLicense** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file identified in the parameter szLicenseFile.

The end user can scroll up and down to read the agreement. The end user must choose either the Yes, No, or—if enabled—Back button. Because this is usually the first dialog that you would display, you might want to disable the Back button. If the user selects Yes, the installation continues. If the user selects No, the installation displays the ExitSetup dialog.

Syntax

```
SdLicense ( szTitle, szMsg, szQuestion, szLicenseFile );
```

Parameters

Table 50 ▪ SdLicense Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title (“Software License Agreement”), pass a null string (“”) in this parameter.
szMsg	Specify the message to display in the static text field above the multi-line edit field. To display the default instructions, pass a null string (“”) in this parameter.
szQuestion	Specify the text to display in the static text field below the multi-line edit field. You would likely place a question here, to which the user should respond by selecting either Yes and No. To display the default instructions, pass a null string (“”) in this parameter.
szLicenseFile	Specify the name of the ANSI text file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path.  ***Note ▪*** *This file must be a text file (.txt).*

Return Values

Table 51 ▪ SdLicense Return Values

Return Value	Description
YES (1)	The end user selected the Yes button.
BACK (12)	Indicates that the user selected the Back button.

Note ▪ *This function cannot return NO because if the end user clicks the No button, the ExitSetup dialog is displayed.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicense Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdLicense function.
 *
 * This script calls SdLicense to display a license agreement
 * and prompt the user to accept or reject that agreement.
 *
 * Note: The license agreement is read from a text file that
 *       is stored at the location specified by the constant
 *       LICENSE_PATH.  Before running this script, set that
 *       constant so that it references an existing text file
 *       in the Support Files/Billboards view.
 *
\*---------------------------------------------------------------*/

#define LICENSE_PATH SUPPORTDIR ^ "License.txt"
#define TITLE "SdLicense Example"

#include "Ifx.h"

function OnBegin()
    STRING szMsg, szQuestion;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set up the variables to pass as parameters to SdLicense.
    szMsg      = "Please read the following license agreement. Use " +
                 "the scroll bar to view\nthe rest of this agreement.";
    szQuestion = "Select Yes to accept the agreement.\n" +
                 "Select No to cancel the setup.";

    // Display the SdLicense dialog.
    if (SdLicense (TITLE, szMsg, szQuestion, LICENSE_PATH) = YES) then
        MessageBox ("Continue with the installation.", INFORMATION);
    endif;

end;
```

SdLicense2

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SdLicense2Ex function supersedes the **SdLicense2** function.

The **SdLicense2** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file identified in the parameter szLicenseFile.

The end user can scroll up and down to read the agreement. The end user must select the upper option button for the Next button to become enabled, which allows the installation to continue. Because this is usually the first dialog that you would display, you might want to disable the Back button.

Syntax

```
SdLicense2 ( szTitle, szOpt1, szOpt2, szLicenseFile, bLicenseAccepted );
```

Parameters

Table 52 ▪ SdLicense2 Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title ("License Agreement"), pass a null string ("") in this parameter.
szOpt1	Specify the text to display in the static text field next to the upper option button. To display the default text ("I accept the terms of the license agreement"), pass a null string ("") in this parameter.
szOpt2	Specify the text to display in the static text field next to the lower option button. To display the default text ("I do not accept the terms of the license agreement"), pass a null string ("") in this parameter.
szLicenseFile	Specify the name of the ANSI text file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path.  ***Note ▪*** *This file must be a text file (.txt).*
bLicenseAccepted	Specify the option button that is selected by default. Pass one of the following predefined constants in this parameter: • **TRUE**—Specifies the upper option button as the default selection. • **FALSE**—Specifies the lower option button as the default selection.

Return Values

Table 53 ▪ SdLicense2 Return Values

Return Value	Description
NEXT	The end user selected the upper option button and the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicense2 Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdLicense2 function.
 *
 * This script calls SdLicense2 to display a license agreement
 * and prompt the user to accept or reject that agreement.
 *
 * Note: The license agreement is read from a text file that
 *       is stored at the location specified by the constant
 *       LICENSE_PATH.  Before running this script, set that
 *       constant so that it references an existing text file
 *       on the target system.
 *
\*---------------------------------------------------------------*/



#define LICENSE_PATH "License.txt"
#define TITLE "SdLicense2 Example"

#include "ifx.h"

function OnBegin()
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);


   // Display the SdLicense2 dialog.
   if (SdLicense2 (TITLE, "", "", LICENSE_PATH, FALSE) = NEXT) then
      MessageBox ("Continue with the installation.", INFORMATION);
   endif;

end;
```

SdLicense2Ex

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLicense2Ex** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file (.txt) or a rich text format file (.rtf) identified in the parameter szLicenseFile.

The end user can scroll up and down to read the agreement. The end user must select the upper option button for the Next button to become enabled, which allows the installation to continue. Because this is usually the first dialog that you would display, you might want to disable the Back button.

Syntax

```
SdLicense2Ex (byval string szTitle, byval string szOpt1, byval string szOpt2, byval string
    szLicenseFile, byval bool bLicenseAccepted, byval bool bRtf);
```

Parameters

Table 54 ▪ SdLicense2Ex Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title ("License Agreement"), pass a null string ("") in this parameter.
szOpt1	Specify the text to display in the static text field next to the upper option button. To display the default text ("I accept the terms of the license agreement"), pass a null string ("") in this parameter.
szOpt2	Specify the text to display in the static text field next to the lower option button. To display the default text ("I do not accept the terms of the license agreement"), pass a null string ("") in this parameter.
szLicenseFile	Specify the name of the ANSI text file or .rtf file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/ Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path.  ***Note ▪*** *If you are using an .rtf file, the file size limit is 16 MB.*
bLicenseAccepted	Specify the option button that is selected by default. Pass one of the following predefined constants in this parameter: • **TRUE**—Specifies the upper option button as the default selection. • **FALSE**—Specifies the lower option button as the default selection.
bRtf	Indicate whether to use the dialog with the rich text edit control. Available options are: • **TRUE**—Use the rich text edit control. If you select this option, the file that you specify for szLicenseFile must be an .rtf file. • **FALSE**—Use the standard edit control. If you select this option, the file that you specify for szLicenseFile must be a .txt file.

Return Values

Table 55 ▪ SdLicense2Ex Return Values

Return Value	Description
NEXT	The end user selected the upper option button and the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicense2Rtf

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SdLicense2Ex function supersedes the **SdLicense2Rtf** function.

The **SdLicense2Rtf** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file or rich text format file (.rtf) file identified in the parameter szLicenseFile.

The user can scroll up and down to read the agreement, then must select the upper option button for the Next button to become enabled, which allows the setup to continue. Because this is usually the first dialog you would display, you might want to disable the Back button.

Syntax

```
SdLicense2Rtf ( szTitle, szOpt1, szOpt2, szLicenseFile, bLicenseAccepted );
```

Parameters

Table 56 ▪ SdLicense2Rtf Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title ("License Agreement"), pass a null string ("") in this parameter.
szOpt1	Specify the text to display in the static text field next to the upper option button. To display the default text ("I accept the terms of the license agreement"), pass a null string ("") in this parameter.
szOpt2	Specify the text to display in the static text field next to the lower option button. To display the default text ("I do not accept the terms of the license agreement"), pass a null string ("") in this parameter.
szLicenseFile	Specify the name of the .rtf file or ANSI text file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/ Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path.  ***Note ▪*** *If you are using an .rtf file, the file size limit is 16 MB.*
bLicenseAccepted	Specifies the option button that is selected by default. Pass one of the following predefined constants in this parameter: • **TRUE**–Specifies the upper option button as the default selection. • **FALSE**—Specifies the lower option button as the default selection.

Return Values

Table 57 ▪ SdLicense2Rtf Return Values

Return Value	Description
NEXT	The end user selected the upper option button and the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicense2Rtf Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdLicense2Rtf function.
 *
 * This script calls SdLicense2Rtf to display a license agreement
 * and prompt the user to accept or reject that agreement.
 *
 * Note: The license agreement is read from an RTF file that
 *       is stored at the location specified by the constant
 *       LICENSE_PATH.  Before running this script, set that
 *       constant so that it references an existing RTF file
 *       on the target system.
 *
\*---------------------------------------------------------------*/



#define LICENSE_PATH "License.rtf"
#define TITLE "SdLicense2Rtf Example"

#include "ifx.h"

function OnBegin()
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);


   // Display the SdLicense2Rtf dialog.
   if (SdLicense2Rtf (TITLE, "", "", LICENSE_PATH, FALSE) = NEXT) then
      MessageBox ("Continue with the installation.", INFORMATION);
   endif;

end;
```

SdLicenseEx

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLicenseEx** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file (.txt) or a rich text format file (.rtf).

The end user can scroll up and down to read the agreement. The end user must choose either the Yes, No, or—if enabled—Back button. Because this is usually the first dialog that you would display, you might want to disable the Back button. If the user selects Yes, the installation continues. If the user selects No, the installation displays the ExitSetup dialog.

Syntax

```
SdLicenseEx (byval string szTitle, byval string szMsg, byval string szQuestion, byval string
    szLicenseFile, byval bool bRtf);
```

Parameters

Table 58 ▪ SdLicenseEx Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title (“Software License Agreement”), pass a null string (“”) in this parameter.
szMsg	Specify the message to display in the static text field above the multi-line edit field. To display the default instructions, pass a null string (“”) in this parameter.
szQuestion	Specify the text to display in the static text field below the multi-line edit field. You would likely place a question here, to which the user should respond by selecting either Yes and No. To display the default instructions, pass a null string (“”) in this parameter.
szLicenseFile	Specify the name of the ANSI text file or .rtf file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path. ***Note ▪*** *If you are using an .rtf file, the file size limit is 16 MB.*
bRtf	Indicate whether to use the dialog with the rich text edit control. Available options are: • **TRUE**—Use the rich text edit control. If you select this option, the file that you specify for szLicenseFile must be an .rtf file. • **FALSE**—Use the standard edit control. If you select this option, the file that you specify for szLicenseFile must be a .txt file.

Return Values

Table 59 ▪ SdLicenseEx Return Values

Return Value	Description
YES (1)	The end user selected the Yes button.
BACK (12)	The end user selected the Back button.

Note ▪ *This function cannot return NO because if the end user clicks the No button, the ExitSetup dialog is displayed.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicenseRtf

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SdLicenseEx function supersedes the **SdLicenseRtf** function.

The **SdLicenseRtf** function displays a dialog that contains a license agreement in a multi-line edit field. The license agreement is stored in a text file or rich text format file (.rtf) file identified in the parameter szLicenseFile.

The user can scroll up and down to read the agreement, then must choose either the Yes, No, or—if enabled—the Back button. Because this is usually the first dialog you would display, you might want to disable the Back button. If the user selects Yes, the installation continues. If the user selects No, the installation displays the ExitSetup dialog.

Syntax

```
SdLicenseRtf ( szTitle, szMsg, szQuestion, szLicenseFile );
```

Parameters

Table 60 ▪ SdLicenseRtf Parameters

Parameter	Description
szTitle	Specify the title of the dialog. To display the default title (“Software License Agreement”), pass a null string (“”) in this parameter.
szMsg	Specify the message to display in the static text field above the multi-line edit field. To display the default instructions, pass a null string (“”) in this parameter.
szQuestion	Specify the text to display in the static text field below the multi-line edit field. You would likely place a question here, to which the user should respond by selecting either Yes and No. To display the default instructions, pass a null string (“”) in this parameter.
szLicenseFile	Specify the name of the .rtf file or ANSI text file that contains the license agreement. This file must be added to the appropriate language folder in the Support Files/ Billboards view. You can also specify szLicenseFile by entering the fully qualified name, in quotation marks, or a UNC path. ***Note ▪*** *If you are using an .rtf file, the file size limit is 16 MB.*

Return Values

Table 61 ▪ SdLicenseRtf Return Values

Return Value	Description
YES (1)	The end user selected the Yes button.
BACK (12)	The end user selected the Back button.

Note ▪ *This function cannot return NO because if the end user clicks the No button, the ExitSetup dialog is displayed.*

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdLicenseRtf Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdLicenseRtf function.
 *
 * This script calls SdLicenseRtf to display a license agreement
 * and prompt the user to accept or reject that agreement.
 *
 * Note: The license agreement is read from an RTF file that
 *       is stored at the location specified by the constant
 *       LICENSE_PATH.  Before running this script, set that
 *       constant so that it references an existing RTF file
 *       in the Support Files/Billboards view.
 *
\*---------------------------------------------------------------*/

#define LICENSE_PATH SUPPORTDIR ^ "License.rtf"
#define TITLE "SdLicenseRtf Example"

#include "Ifx.h"

function OnBegin()
    STRING szMsg, szQuestion;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set up the variables to pass as parameters to SdLicense.
    szMsg      = "Please read the following license agreement. Use " +
                 "the scroll bar to view\nthe rest of this agreement.";
    szQuestion = "Select Yes to accept the agreement.\n" +
                 "Select No to cancel the setup.";

    // Display the SdLicenseRtf dialog.
    if (SdLicenseRtf (TITLE, szMsg, szQuestion, LICENSE_PATH) = YES) then
        MessageBox ("Continue with the installation.", INFORMATION);
    endif;

end;
```

SdLoadString

The **SdLoadString** function returns the string value associated with the specified resource ID. The InstallScript engine first looks for the resource in `_isuser.dll`, if that file exists. If the resource is not found, the InstallScript engine looks in `_isres.dll`.

Syntax

```
SdLoadString (nID);
```

Parameters

Table 62 ▪ SdLoadString Parameters

Parameter	Description
nID	Specifies the identifier of a string resource in `_isuser.dll` or `_isres.dll`. Some valid values of nID can be found in the *`InstallShield Program Files Folder`*`\Script\Ifx\Include` subfolder's `Ifx.h` file. The default OnMaintUIBefore event handler function code uses the following identifiers with their corresponding string values: • **IFX_MAINTUI_MSG**—Do you want to completely remove the selected application and all of its components? • **IFX_ONMAINTUI_CAPTION**—Confirm Uninstall

Return Values

Table 63 ▪ SdLoadString Return Values

Return Value	Description
non-null string value	The string value successfully retrieved by **SdLoadString**.
null string value ("")	Indicates that **SdLoadString** failed.

SdLoadString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdLoadString function.
 *
 * This script calls SdLoadString to get the string resource
```

```
 * that is stored in _isres.dll with the ID IFX_MAINTUI_MSG.
 * That string resource is then displayed in a message box.
 *
\*------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING  svResource;
begin

    // Get the string resource.
    svResource = SdLoadString (IFX_MAINTUI_MSG);

    if (svResource = "") then
        // Report the error.
        MessageBox ("SdLoadString failed.", WARNING);
    else
        // Display the string resource.
        SprintfBox ( INFORMATION , "SdLoadString" ,
                    "Value of string resource %ld:\n%s" , IFX_MAINTUI_MSG,
                    svResource );
    endif;

end;
```

SdLogonUserBrowse

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserBrowse** function displays a dialog that allows the end user to select a domain or server and a user name. This dialog is displayed when an end user clicks the Browse button on the **SdLogonUserInformation** dialog.

Syntax

```
SdLogonUserBrowse();
```

SdLogonUserCreateUser

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserCreateUser** function displays a dialog that allows the end user to enter new user information after the end user clicks the New User Information button on the **SdLogonUserInformation** dialog.

Syntax

```
SdLogonUserCreateUser();
```

SdLogonUserInformation

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserInformation** function displays a dialog that prompts the end user for existing user account information or new user information if an account is to be created during the installation.

If the end user clicks the Browse button next to the User box, the **SdLogonUserBrowse** dialog is displayed.

Syntax

```
SdLogonUserInformation (byval string szTitle, byval string szMsg, byref string szAssociatedAccountName,
    byref string szAssociatePassword);
```

Parameters

Table 64 ▪ SdLogonUserInformation Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title, pass a null string ("") in this parameter.
szMsg	Specifies the message in the dialog. To display the default title, pass a null string ("") in this parameter.
szAssociatedAccountName	Specifies the BYREF value that is the account name. Example: INSTALLSHIELD\John Smith
szAssociatePassword	Specifies the BYREF value that is the password.

Return Values

Table 65 ▪ SdLogonUserInformation Return Values

Return Value	Description
NEXT	Indicates that the user selected the Next button
BACK	Indicates that the user selected the Back button.
< ISERR_SUCCESS	Indicates that the dialog could not be displayed.

SdLogonUserListGroups

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserListGroups** function displays a dialog that allows the end user to select a group from a specified server or domain and populate the Group field in the SdLogonUserCreateUser dialog.

Syntax

```
SdLogonUserListGroups();
```

SdLogonUserListServers

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserListServers** function displays a dialog that allows the end user to browse for the domain or server with which the user account is associated.

Syntax

```
SdLogonUserListServers();
```

SdLogonUserListUsers

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdLogonUserListUsers** function displays a dialog that allows the end user to browse and select an existing user for a specified domain or server.

Syntax

```
SdLogonUserListUsers();
```

SdMakeName

The **SdMakeName** function creates a section name for a custom dialog. This section name is used in writing to and reading from an .iss file, which is used when running an InstallScript-based installation project's Setup.exe in silent mode.

Syntax

```
SdMakeName ( svSection, szDlg, szUnused, nvDlgName );
```

Parameters

Table 66 ▪ SdMakeName Parameters

Parameter	Description
svSection	Specifies the section name (for example, "MyDlg-0"). InstallShield places a value into this variable using the variables szDlg and nvDlgName. This value is used by SilentReadData and SilentWriteData.
szDlg	Specifies the name of the custom dialog (for example, "MyDlg") for which to create a section name.
szUnused	This parameter is not used; pass a null string ("") in this parameter.
nvDlgName	Specifies the counter that records the number of times SdMakeName is called for the dialog named in szDlg. InstallShield automatically increments this counter. For sections to be properly named, you must use a unique variable name in this parameter for each different custom dialog. A simple way to do this is to use the dialog name in szDlg to name the variable. For example, when szDlg is "MyDlgOne," name the variable in this parameter nvMyDlgOne, and when szDlg is "MyDlgTwo," name the variable nvMyDlgTwo.

Return Values

None.

SdMakeName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdMakeName, SilentReadData, and
 * SilentWriteData.
 *
 * This example script shows how to handle a custom dialog
 * in a silent installation.  The resource .dll for the example
 * custom dialog shown below should be stored in a compressed
 * form under the Support Files/Billboards view of InstallShield.
 *
 * The example dialog was built from the custom dialog
 * template provided with InstallShield.
 *
 * Dialog control IDs and other information are included in
```

```
 * the Resource.h file (not shown).  This file, which is included
 * in the first line of the example, must be inserted in the
 * InstallScript view of InstallShield.
 *
 * The example creates a text file called Cominit.txt.  If the
 * installation runs in silent mode, SilentReadData is called
 * and the custom dialog control selections are read from
 * the .iss file.  The selections are then saved in the file
 * Cominit.txt as a means of demonstrating that they were
 * successfully read from the .iss file.  If the installation
 * runs in normal mode, the custom dialog is displayed
 * and the selections are recorded in the .iss file and
 * displayed in message boxes.  The initial .ISS file text is
 * shown after the example script.
 *
\*---------------------------------------------------------------*/

#include "Resource.h"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SdMakeName(HWND);

function ExFn_SdMakeName(hMSI)
    BOOL bDone;
    STRING svSection, svComPort, svPulse, svTone, svDial9, svVal;
    NUMBER nvCommDialog, nCmdValue, nPulseState, nToneState;
    NUMBER nDial9State, nResult, nvHandle;
    LIST listID;
    HWND hwndDlg;
begin

    // Open the text file COMINIT.TXT so custom dialog selections
    // from the .ISS file can be stored in it.
    OpenFileMode (FILE_MODE_APPEND);
    OpenFile (nvHandle, "c:\\rul", "cominit.txt");

    // If operating in silent mode, then read from the .ISS file.
    if (MODE=SILENTMODE) then
        SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

        SilentReadData (svSection, "Result", DATA_NUMBER, svVal, nResult);

        if (nResult = 1) then

            // Read the data from the .ISS file. For purposes of
            // writing the results to a text file, read the
            // data as strings.
            SilentReadData (svSection, "nPulseState", DATA_STRING,
                            svPulse, nResult);

            SilentReadData (svSection, "nToneState", DATA_STRING,
                            svTone, nResult);

            SilentReadData (svSection, "nDial9State", DATA_STRING,
```

```
                        svDial9, nResult);

            // Store the custom dialog selections in
            // the text file COMINIT.TXT.
            svVal = "Pulse box is: " ^ svPulse;
            WriteLine(nvHandle, svVal);

            svVal = "Tone  box is: " ^ svTone;
            WriteLine(nvHandle, svVal);

            svVal = "Dial9 box is: " ^ svDial9;
            WriteLine(nvHandle, svVal);
        endif;

    // If not in silent mode, then call and handle the custom dialog
    // as you normally would.
    else
        listID = ListCreate (STRINGLIST);
        ListAddString (listID,  "COMM1:", AFTER);
        ListAddString (listID,  "COMM2:", AFTER);
        ListAddString (listID,  "COMM3:", AFTER);
        ListAddString (listID,  "COMM4:", AFTER);

        EzDefineDialog ("MYCOMDIALOG", SUPPORTDIR^"RESOURCE.DLL",
                        "COMM_DIALOG",0);

        bDone = FALSE;

        while (bDone=FALSE)
            nCmdValue = WaitOnDialog ("MYCOMDIALOG");

            switch (nCmdValue)
                case DLG_INIT:
                    // Initialize the back, next, and cancel button enable/disable states
                    // for this dialog and replace %P, %VS, %VI with
                    // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                    // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724
                    // and 202.
                    hwndDlg = CmdGetHwndDlg("MYCOMDIALOG");
                    SdGeneralInit("MYCOMDIALOG", hwndDlg, 0, "");
                    CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                    CtrlSetList ("MYCOMDIALOG", ID_COMPORT, listID);
                    CtrlSetState ("MYCOMDIALOG", ID_DIAL9, BUTTON_CHECKED);
                case OK:
                    CtrlGetCurSel ("MYCOMDIALOG", ID_COMPORT, svComPort);
                    nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);
                    nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);
                    nDial9State = CtrlGetState ("MYCOMDIALOG", ID_DIAL9);
                    nResult = NEXT;
                    bDone = TRUE;
                case BACK:
                    nResult = BACK;
                    bDone = TRUE;
                case RES_PBUT_CANCEL:
                    // The user clicked the Cancel button.
                    Do (EXIT);
```

```
        case DLG_CLOSE:
            // The user clicked the window's close button.
            Do (EXIT);
        case ID_PULSE:
            nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);

            if (nPulseState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
            else
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
            endif;
        case ID_TONE:
            nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);

            if (nPulseState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
            else
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
            endif;
        case DLG_ERR:
            MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
            abort;
    endswitch;

endwhile;

EndDialog ("MYCOMDIALOG");
ReleaseDialog ("MYCOMDIALOG");

SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

SilentWriteData (svSection, "nPulseState", DATA_NUMBER,
                 svPulse, nPulseState);

SilentWriteData (svSection, "nToneState", DATA_NUMBER,
                 svTone, nToneState);
SilentWriteData (svSection, "nDial9State", DATA_NUMBER,
                 svDial9, nDial9State);

if (nPulseState = BUTTON_CHECKED) then
    MessageBox ("The Pulse button was checked.", INFORMATION);
else
    MessageBox ("The Pulse button was unchecked.", INFORMATION);
endif;

if (nToneState = BUTTON_CHECKED) then
    MessageBox ("The Tone button was checked.", INFORMATION);
else
    MessageBox ("The Tone button was unchecked.", INFORMATION);
endif;

if (nDial9State = BUTTON_CHECKED) then
```

```
            MessageBox ("The Dial9 button was checked.", INFORMATION);
        else
            MessageBox ("The Dial9 button was unchecked.", INFORMATION);
        endif;

    endif;

    // Close the text file COMINIT.TXT
    CloseFile (nvHandle);

end;


/*The following is the initial .iss file text for the above example, where <PRODUCT_GUID> represents
your project's GUID, including the
surrounding braces. Note that -1001 is the numeric value of BUTTON_CHECKED and -1002 is the numeric value
of BUTTON_UNCHECKED.

[InstallShield Silent]
Version=v9.00
File=Response File
[Application]
Name=MyDialog
Version=4.0
Company=My Software Company
[<PRODUCT_GUID>-DlgOrder]
Dlg0=<PRODUCT_GUID>-COMM_DIALOG-0
Count=1
[<PRODUCT_GUID>-COMM_DIALOG-0]
nPulseState=-1001
nToneState=-1002
nDial9State=-1001
Result=1
*/
```

SdOptionsButtons

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdOptionsButtons** function displays a dialog that contains from one to four push button controls that have bitmap images. A short text description is displayed next to each control.

Important *▪ Do not change the control identifiers of the push button controls on the* **SdOptionsButtons** *dialog, or set one of the push button controls as the default control. If you change the control identifiers or set one of the these controls as the default control of the dialog, the* **SdOptionsButtons** *dialog will not work as expected.*

Note ▪ *Although* **SdOptionsButtons** *can be used as a setup type dialog, the* **SdSetupTypeEx** *dialog is the recommended dialog for allowing the end user to select a setup type because it does not require any customization. If you call* **SdOptionsButtons** *to get the end user's setup type selection, you must then call* **FeatureSetupTypeSet** *to establish the selected setup type for your setup.*

Syntax

```
SdOptionsButtons (szTitle, szMsg, listButton, listDescription);
```

Parameters

Table 67 ▪ SdOptionsButtons Parameters

Parameter	Description
szTitle	Specifies the dialog title. To display the default title (“Select Features”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display on the dialog. To display the default instructions for this dialog (“Please select the features that you want to install.”), pass a null string ("") in this parameter.
listButton	Specifies a string list that contains from one to four elements. Each element is a formatted string that specifies an image to be displayed on a button. One button is displayed for each string element in the list. The string list elements should have the following format: `@@ResourceID;ScaleFactor` *ResourceID* indicates the resource identifier number that should be used to look up either a .png image (stored as resource type PNG) or a bitmap image (stored as resource type RT_BITMAP). *ScaleFactor* indicates the DPI scale percentage for which the image is intended. For example, the scale factor can be 100% (96 DPI), 125% (120 DPI), 150% (144 DPI), or 200% (192 DPI). If the scale factor that is specified for an image is 200, the image will be shrunk down for display on target systems that are running less than 200% DPI scaling. On a 200% target system, it will be displayed at 1:1. If the scale factor that is specified for the image is100, the image will be scaled up for display on target systems that are running 200% DPI scaling.

Table 67 ▪ SdOptionsButtons Parameters (cont.)

Parameter	Description
listButton (cont.)	The previous format for identifying bitmap images (.bmp) still works, but it does not have support for scaling, or for .png images: `@BitmapResourceID;TransparentFlag;3-DFlag;<unused>;TransparentColorKey` *BitmapResourceID* indicates the resource identifier number for the bitmap image. *TransparentFlag* is 1 (true) or 0 (false), indicating whether the color that is specified in the *TransparentColorKey* field will be transparent when the bitmap is displayed. *TransparentColorKey* specifies an RGB value that is a transparent color for the bitmap. InstallShield provides four default bitmaps in `_isres.dll` that can be used by this function. These bitmaps have IDs of 12001 through 12004 and correspond to the Typical, Portable, Compact, and Custom setup types in the example script. If you are using this dialog for another purpose or if you want to use setup types other than the types provided in `_isres.dll`, you must to add your own custom buttons to the `_isuser.dll` dialog template and then include the customized `_isuser.dll` with your installation.  ***Tip ▪*** *To determine the bitmap IDs of bitmap controls created in the Dialog Editor, you need to build your project and open the .rc file to locate the bitmap IDs. The .rc file is located in your project folder (by default, C:\InstallShield 2022 Projects\`Your Project Name`). Adding additional bitmap controls may change the bitmap IDs. Because of this, you need to rebuild your project and open the .rc file again to find the updated bitmap IDs.*
listDescription	Specifies a string list that contains from one to four string elements, each corresponding to a string in the parameter listButton. Each string is a text description to be displayed with its corresponding button.

Return Values

Table 68 ▪ SdOptionsButtons Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.
101	Indicates that the button corresponding to the first string element in listButton was selected.
102	Indicates that the button corresponding to the second string element in listButton was selected.
103	Indicates that the button corresponding to the third string element in listButton was selected.
104	Indicates that the button corresponding to the fourth string element in listButton was selected.

Note ▪ *To prevent the user from exiting the dialog without clicking a particular button, call the* **Disable** *function to disable the Next button before you call* **SdOptionsButtons**.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdOptionsButtons Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdOptionsButtons function.
 *
 * This script allows the user to select a setup type.  First,
 * two lists are created, one for the setup type button icons,
 * another for the setup type descriptions.  Then the buttons
 * and descriptions are added to the lists.  Next, the dialog
 * is presented.  When the user clicks a setup type button, the
```

```
 * dialog closes and the user's selection is displayed in a
 * message box.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING  szTitle, szMsg;
    LIST    listButton, listDesc;
    NUMBER  nResult;
begin

    // Disable the Back and Next buttons in setup dialogs.
    Disable (BACKBUTTON);
    Disable (NEXTBUTTON);

    // Create the lists for buttons and descriptions.
    listButton = ListCreate (STRINGLIST);
    listDesc = ListCreate (STRINGLIST);

    if (listButton = LIST_NULL) || (listDesc = LIST_NULL) then
        // Report the error; then terminate.
        MessageBox ("Unable to create lists.", INFORMATION);
        abort;
    endif;

    // Add the bitmap buttons to listButton.
    ListAddString (listButton, "@12001;1;255,0,255", AFTER);
    ListAddString (listButton, "@12002;1;255,0,255", AFTER);
    ListAddString (listButton, "@12003;1;255,0,255", AFTER);
    ListAddString (listButton, "@12004;1;255,0,255", AFTER);

    // Add the descriptions to listDesc.
    ListAddString (listDesc, "Typical\n" +
                   "Recommended for most computers.", AFTER);
    ListAddString (listDesc, "Portable\n" +
                   "The application will be set up with "  +
                   "options that are useful for portable " +
                   "computers.", AFTER);
    ListAddString (listDesc, "Compact\n" +
                   "To save disk space, none of the " +
                   "optional features will be " +
                   "installed.", AFTER);
    ListAddString (listDesc, "Custom\n" +
                   "For advanced users and system " +
                   "administrators only.  You can " +
                   "customize all available Setup " +
                   "options.", AFTER);

    // Display the dialog.
    nResult = SdOptionsButtons (szTitle, szMsg, listButton, listDesc);

    // Display a message showing which button was selected.
    switch (nResult)
        case 101:
```

```
            MessageBox ("Typical installation selected.", INFORMATION);
        case 102:
            MessageBox ("Portable installation selected.", INFORMATION);
        case 103:
            MessageBox ("Compact installation selected.", INFORMATION);
        case 104:
            MessageBox("Custom installation selected.", INFORMATION);
        default:
            MessageBox ("SdOptionsButtons:\n\n An error occurred.", SEVERE);
    endswitch;

    Enable(NEXTBUTTON);

    // Destroy the lists.
    ListDestroy (listButton);
    ListDestroy (listDesc);

end;
```

SdOutOfDiskSpace

Project ▪ *This information applies to InstallScript MSI projects.*

The **SdOutOfDiskSpace** function displays a dialog warning the end user that the target system does not have enough available space for the application installation to take place. It also displays a list view of volumes, required space, available space, and the difference between available space and required space.

In an InstallScript MSI installation, this function is triggered when an INSTALLMESSAGE_OUTOFDISKSPACE message is detected. This message comes from the MSI engine.

The **SdDiskSpace2** function supersedes the **SdOutOfDiskSpace** function.

Syntax

```
SdOutOfDiskSpace ( szTitle, szMsg );
```

Parameters

Table 69 ▪ SdOutOfDiskSpace Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Out of Disk Space”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string (“”) in this parameter.

Return Values

Table 70 ▪ SdOutOfDiskSpace Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the OK button.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdPatchWelcome

Project *▪ This information applies to InstallScript MSI projects.*

The **SdPatchWelcome** function creates a dialog that displays a welcome message to the end user during a patch installation.

Syntax

```
SdPatchWelcome ( szTitle, szMsg );
```

Parameters

Table 71 ▪ SdPatchWelcome Parameters

Parameter	Description
szTitle	Specifies the text to display in the title of the dialog. To display the default title (“Welcome”), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the Welcome dialog. To include in this message the product name set by a previous call to SdProductName, insert the place holder %P anywhere in the message string. When the message is displayed, %P is replaced by the product name. To display the default welcome message, pass a null string ("") in this parameter.

Return Values

Table 72 ▪ SdPatchWelcome Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- If you call **SdPatchWelcome** but SD_NDLG_PATCHWELCOME—its dialog resource (12059)—cannot be found in the `_isres.dll` file of the installation, **SdWelcome** is called automatically instead of **SdPatchWelcome** to display a dialog that is similar to the **SdPatchWelcome** dialog. In this case, the values for szTitle and szMsg are passed to the **SdWelcome** function, or custom strings are used if szTitle and szMsg are blank. This occurs only if you are patching a product whose installation was created with InstallShield Developer 7, or the dialog template has been removed manually.

  Note that when this occurs, the dialog uses the same template as **SdWelcome**; thus, any changes to the **SdWelcome** dialog template affect the **SdPatchWelcome** dialog as well.

  Note that in this scenario, silent mode is not supported, and it does not work correctly.

SdPatchWelcome Example

Project ▪ *This information applies to InstallScript MSI projects.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdPatchWelcome function.
 *
```

```
 * This function displays a welcome message to the end user during
 * a patch installation.  This function is called in the default
 * script for the OnPatchUIBefore event, which can be found in the
 * Miscellaneous event category for InstallScript MSI projects.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg;
begin
   // Display SdPatchWelcome with default title and message
   szTitle = "";
   szMsg   = "";
   SdPatchWelcome(szTitle, szMsg);

end;
```

SdProductName

The **SdProductName** function sets the value of the system variable IFX_PRODUCT_DISPLAY_NAME, which makes your product name available to all instances of the %P place holder. The %P place holder is found in static text fields in some Sd dialogs. In addition, some Sd dialog functions, such as SdFinish, allow you to include %P in strings passed as parameters to functions.

Syntax

```
SdProductName ( szProductName );
```

Parameters

Table 73 ▪ SdProductName Parameters

Parameter	Description
szProductName	Specifies the name of the product that is being installed. This name replaces the product name placeholder (%P) wherever it appears in appropriate static fields in Sd dialogs. ***Caution ▪*** *If you want to include an ampersand (&) in your product name, you must use two ampersands (&&) to display the name properly in end user dialogs. For example, to display "New & Improved Product", you should enter the product name as New && Improved Product.*

Return Values

This function does not return a value.

Additional Information

Rather than call SdProductName, for example,

```
SdProductName( "My Product Name" );
```

you can simply assign the desired value to IFX_PRODUCT_DISPLAY_NAME, for example,

```
IFX_PRODUCT_DISPLAY_NAME = "My Product Name";
```

SdProductName Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdProductName.
 *
 * The function SdProductName is called to set the product name to
 * substitute for the %P place holder, which is embedded in the
 * message strings passed to Sd dialogs.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING   szProductName, szTitle;
begin

    // Set the product name to substitute for the %P place holder.
    szProductName = "My Application";
    SdProductName (szProductName);

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Display the SdWelcome dialog. The null string in parameter
    // two specifies the default message, which uses the %P place holder.
    szTitle = "SdProductName Example";
    SdWelcome (szTitle, "");

end;
```

SdRegisterUser

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdRegisterUser** function displays a dialog that enables the end user to specify the user name and company name for the product being installed.

You can specify default values for these fields by specifying the appropriate parameters. If you specify a null string (""), the function uses the appropriate script variable.

The Next button becomes enabled only when data exists in both edit fields. The end user cannot leave any field blank.

Syntax

```
SdRegisterUser ( szTitle, szMsg, svName, svCompany );
```

Parameters

Table 74 ▪ SdRegisterUser Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“User Information”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svName	Specifies the default value for the Name edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDOWNER variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **USERNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDOWNER* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **USERNAME**.
svCompany	Specifies the default value for the Company edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDCOMPANY variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **COMPANYNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDCOMPANY* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **COMPANYNAME**.

Return Values

Table 75 ▪ SdRegisterUser Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdRegisterUser Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdRegisterUser and SdConfirmRegistration
 * functions.
 *
 * SdRegisterUser is called to prompt for the user's name
 * and company name.  These entries are then confirmed when
 * SdConfirmRegistration is called.
 *
\*---------------------------------------------------------------*/

#define REG_TITLE      "SdRegisterUser Example"
#define REG_MSG        "Please register your product now."
#define CONFIRM_TITLE  "SdConfirmRegistration Example"

#include "Ifx.h"

function OnBegin()
    STRING  svName, svCompany;
    NUMBER  nResult;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    repeat
        // Get the user's name and company name.
        SdRegisterUser (REG_TITLE, REG_MSG, svName, svCompany);

        // Confirm that the information is correct. Pass a null string in
        // parameter four since SdRegisterUser does not get a serial number.
        nResult = SdConfirmRegistration (CONFIRM_TITLE, svName, svCompany, "", 0);
    until nResult = YES;

end;
```

SdRegisterUserEx

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdRegisterUserEx** function displays a dialog that enables the end user to specify the user name, company name, and serial number for the product being installed.

You can specify default values for these fields by specifying the appropriate parameters. If you specify a null string (""), the function uses the appropriate script variable.

The Next button becomes enabled only when data exists in all three edit fields. The end user cannot leave any field blank.

Note *▪ The* **SdRegisterUserEx** *function does not verify the serial number. To learn how to add code that verifies the serial number, see the sample serial number validation project. This sample project is in one of the Samples subfolders within the InstallShield Program Files folder. The default installation location is* `C:\Program Files\InstallShield\2022\Samples\InstallScript\Serial Number Validation Sample Project`.

Syntax

```
SdRegisterUserEx ( szTitle, szMsg, svName, svCompany, svSerial );
```

Parameters

Table 76 ▪ SdRegisterUserEx Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“User Information”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svName	Specifies the default value for the Name edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDOWNER variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **USERNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDOWNER* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **USERNAME**.
svCompany	Specifies the default value for the Company edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDCOMPANY variable. For an InstallScript project, this variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. For an InstallScript MSI project, the default value of the variable is always read from the Windows Installer property **COMPANYNAME**. The function returns the value that the end user specified in this parameter. In an InstallScript installation, the function also sets the value of *IFX_PRODUCT_REGISTEREDCOMPANY* to the value that the end user specified. In an InstallScript MSI installation, the function automatically updates the Windows Installer property **COMPANYNAME**.
svSerial	Specifies the default value for the Serial Number edit field when the function is called. If a null string ("") is specified, the default value is the current value of the IFX_PRODUCT_REGISTEREDSERIALNUM variable. This variable is read from the registry in a first-time installation or the corresponding text substitution in maintenance mode. The function returns the value that the end user specified in this parameter. The function also sets the value of *IFX_PRODUCT_REGISTEREDSERIALNUM* to the value that the end user specified.

Return Values

Table 77 ▪ SdRegisterUserEx Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdRegisterUserEx Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function SdRegisterUserEx.
 *
 * SdRegisterUserEx is called to collect installation information
 * from the user.  The information is stored in a list and
 * displayed in SdShowInfoList.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING  szTitle, szMsg, svName, svCompany, svSerial;
    LIST    listData;
begin

    // Create the list.
    listData = ListCreate (STRINGLIST);

    // Set up parameters for call to SdRegisterUserEx.
    szTitle = "SdRegisterUserEx Example";
    szMsg   = "Please enter your name, company, and serial number.";

    // Retrieve registration information.
    SdRegisterUserEx (szTitle, szMsg, svName, svCompany, svSerial);

    // Add the information to the list.
```

```
    ListAddString (listData, "User Information: ", AFTER);
    ListAddString (listData, "          " + svName, AFTER);
    ListAddString (listData, "          " + svCompany, AFTER);
    ListAddString (listData, "          " + svSerial, AFTER);
    ListAddString (listData, "", AFTER);

    // Display user selections from list in SdShowInfoList.
    szMsg   = "The user name, company name, and serial number " +
        "entered in SdRegisterUserEx.";
    SdShowInfoList(szTitle, szMsg, listData);

end;
```

SdRMFilesInUse

Project ▪ *The InstallScript MSI project type support the* **SdFilesInUse** *function.*

The **SdRMFilesInUse** function displays a dialog that includes a list box containing a list of the applications that are open and are locking files. The dialog also includes two radio buttons that allow end users to specify whether the installation should attempt to use the Restart Manager to shut down the applications that are locking files or overwrite the locked files (which most likely results in the need for a reboot to complete the installation).

Typically, the OnRMFilesInUse event handler displays this dialog in an InstallScript MSI installation as a response to an INSTALLMESSAGE_FILESINUSE message sent by the Windows Installer. When this occurs, the Windows Installer provides to the installation the list of applications that are locking files. The list of applications are passed through the szMessage parameter to the OnRMFilesInUse event. The event passes this information to the **SdRMFilesInUse** function through the szMessage parameter. The event then passes the return value from the function as the return value of the event, which causes the Windows Installer to act appropriately.

Project ▪ *The* **SdRMFilesInUse** *dialog can also be called manually in InstallScript projects and in InstallScript MSI projects; however, the installation must provide the list of applications that are locking files through the nvlistApps parameter, and it must handle the return value appropriately. It must also interact with the Restart Manager to attempt to shut down applications that are locking files if the end user selects the corresponding option on the* **SdRMFilesInUse** *dialog.*

Syntax

```
SdRMFilesInUse ( byval string szTitle, byval string szMsg, byval string szFilesInUse, byref LIST
    nvlistApps, byref BOOL bvCloseRestart );
```

Parameters

Table 78 ▪ SdRMFilesInUse Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (Files in Use), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szFilesInUse	When **SdRMFilesInUse** is called by the OnRMFilesInUse event handler in an InstallScript MSI installation, this parameter specifies the list of applications that the Windows Installer found to be locking files. The function parses this string in order to display the list of applications in the dialog's list box. If you manually call **SdFilesInUse**, pass an empty string ("") in this parameter. Note that if nvlistApps is a valid string list, this parameter is ignored.
nvlistApps	When **SdRMFilesInUse** is called by the OnRMFilesInUse event handler in an InstallScript MSI installation, this parameter is specified as an uninitialized list variable—that is, a variable with a value of 0. If you manually call **SdRMFilesInUse**, specify a string list of applications that are locking files and that should be displayed in the dialog. Each string in the list indicates one application. (Use the **ListCreate** function and associated list functions to create and initialize the string list.)  ***Note ▪*** *You must provide a variable for this parameter; you cannot specify a literal value.*
bvCloseRestart	Indicates the default for the aforementioned radio buttons. TRUE indicates that the close-and-restart-applications radio button is the default. FALSE indicates that the ignore-and-reboot-later radio button should be the default.  ***Project ▪*** *In InstallScript MSI projects, the OnRMFilesInUse event sets the value of bvCloseRestart based on the current value of the Windows Installer property called MSIRESTARTMANAGERCONTROL Property.* When the **SdRMFilesInUse** function returns, this value indicates which radio button the end user selected—TRUE for the close-and-restart-applications option or FALSE for the ignore-and-reboot-later option. Note that the function also returns the same information in the return value of the function.

Return Values

Table 79 ▪ SdRMFilesInUse Return Values

Return Value	Description
IDOK	Indicates that the end user selected the close-and-restart-applications option and then clicked the OK button.
IDIGNORE (5)	Indicates that the end user selected the ignore-and-reboot-later option and then clicked the OK button. Note that this value can be returned even though the dialog does not include an Ignore button.
IDCANCEL	Indicates that the end user clicked the Exit button. ***Note ▪*** *Note that unlike other script dialogs, this dialog does not call the OnCanceling event handler when the user clicks the Exit button. Therefore, if you are calling this function manually, you must handle this return value manually in order to display the Cancel Setup dialog.*

SdSelectFolder

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdSelectFolder** function displays folders for selection. **SdSelectFolder** enables you to offer a default selection. The end user can also enter a new folder name. **SdSelectFolder** returns only the selected or entered folder name. It cannot create the folder.

Syntax

```
SdSelectFolder ( szTitle, szMsg, svDefGroup );
```

Parameters

Table 80 ▪ SdSelectFolder Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Select Program Folder”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svDefGroup	Returns the name of the selected folder.

Return Values

Table 81 ▪ SdSelectFolder Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- If **ProgDefGroupType** is called before calling **SdSelectFolder**, the program folders displayed by **SdSelectFolder** (Common or Personal) depend on the parameter that was passed to **ProgDefGroupType**.

SdSelectFolder Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdSelectFolder function.
 *
 * SdSelectFolder is called to prompt the user to select a
 * folder.
 *
 * Note: Before running this script, verify that the constant
```

```
 *       DEF_FOLDER references an existing folder on the
 *       target computer.
 *
\*---------------------------------------------------------------*/

#define DEF_FOLDER "Startup"

#include "Ifx.h"

function OnBegin()
    STRING   szTitle, szMsg, svDefGroup;
begin

    // Set up parameters for call to SdSelectFolder.
    szTitle   = "SdSelectFolder Example";
    szMsg     = "";
    svDefGroup = DEF_FOLDER;

    // Get user's folder selection.
    SdSelectFolder (szTitle, szMsg, svDefGroup);

end;
```

SdSetupCompleteError

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdSetupCompleteError** function displays a dialog to inform the end user that the installation was interrupted before it could be completed. It also informs the end user that the product has not been installed and that the target system was not modified.

Syntax

```
SdSetupCompleteError ( szTitle, szMsg1, szMsg2 );
```

Parameters

Table 82 ▪ SdSetupCompleteError Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“InstallShield Wizard Completed”), pass a null string ("") in this parameter.
szMsg1	Specifies the message to display at the top of the dialog. To display the default instructions, which inform the end user that the installation has been interrupted and the product has not been installed, pass a null string ("") in this parameter.
szMsg2	Specifies the message to display at the bottom of the dialog. To display the default instructions (“Click Finish to exit the wizard”), pass a null string ("") in this parameter.

Return Values

Table 83 ▪ SdSetupCompleteError Return Values

Return Value	Description
NEXT (1)	Indicates that the Finish button was clicked.

Additional Information

If you write your own procedural script, that is, a program/endprogram block, you can use the **SdSetupCompleteError** function to display a dialog if the end user cancels the installation. If you are using the default script event model, you do not need to call this function.

Because **SdSetupCompleteError** indicates that the installation was interrupted and cannot be completed, the Back button is disabled.

The **SdSetupCompleteError** dialog is a variation of the **SdFinish** dialog. In a silent response file (.iss), the **SdSetupCompleteError** dialog is referred to as **SdFinish**.

SdSetupCompleteError Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdSetupCompleteError function.
```

```
 *
 * SdSetupCompleteError function displays a dialog to inform
 * the end user that the installation was interrupted before it
 * could be completed. It also informs the end user that the
 * application has not been installed and that the target system
 * was not modified.  This function is only available for MSI
 * based projects.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING   szTitle, szMsg1, szMsg2;
begin
    // Set up parameters for call to SdSetupCompleteError.
    szTitle = "SdSetupCompleteError Example";
    szMsg1  = "";
    szMsg2  = "";
    SdSetupCompleteError ( szTitle, szMsg1, szMsg2 );

end;
```

SdSetupType

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdSetupType** function displays a dialog that enables the end user to select one of the three standard setup types: Typical, Compact, or Custom. These setup options are displayed with standard description text. If you want to add other setup types or change the displayed setup type names or descriptions, call SdSetupTypeEx instead.

The dialog also displays a default destination path. A browse button launches a dialog that allows the end user to change the destination path, either by entering a new folder name or by selecting an existing folder from a list. If the end user enters the name of a folder that does not exist, this function automatically creates the specified folder. The fully qualified path of the specified folder is returned in svDir.

Caution *▪ If the end user returns to the SdSetupType dialog after using a feature dialog to select and deselect features associated with the selected setup type, those choices are lost. This occurs because the SdSetupType function automatically resets the default feature selections for the selected setup type each time it is called.*

Syntax

```
SdSetupType ( szTitle, szMsg, svDir, nReserved );
```

Parameters

Table 84 ▪ SdSetupType Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Type”), pass a null string (“”) in this parameter.
szMsg	Specifies a message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svDir	Specifies a default folder name. Returns the name of the folder selected by the end user.
nReserved	Reserved for future use. Pass 0 (zero) in this parameter.

Return Values

Table 85 ▪ SdSetupType Return Values

Return Value	Description
TYPICAL (301)	Indicates that the user selected Typical Setup.
COMPACT (302)	Indicates that the user selected Compact Setup.
CUSTOM (303)	Indicates that the user selected Custom Setup.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

- In an InstallScript project, if you do not display a setup type dialog, your script must do one of the following:
  - Select a setup type.
  - Call a feature selection dialog function such as SdFeatureTree.
  - Directly select features.
- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdSetupType Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdSetupType.
 *
 * This function displays a dialog that enables the end user
 * to select one of the three standard setup types: Typical,
 * Compact, or Custom.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING   szTitle, szMsg, svDir;
    NUMBER   nReserved, nResult;
begin

    // Display the SdSetupType dialog.
    szTitle = "SdSetupType Example";
    szMsg   = "";
    // Default destination folder displayed in dialog.
    svDir   = "C:\\Example";
    nReserved = 0;
    nResult = SdSetupType (szTitle, szMsg, svDir, nReserved);

    // Set TARGETDIR to the user selected destination folder.
    TARGETDIR = svDir;

    // Retrieve user selected setup type.
    switch(nResult)

        case CUSTOM: MessageBox("Custom setup type selected", 0);

        case TYPICAL: MessageBox("Typical setup type selected", 0);

        case COMPACT: MessageBox("Compact setup type selected", 0);

    endswitch;

end;
```

SdSetupType2

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdSetupType2** function displays a dialog that enables the end user to select one of the two standard setup types: Typical or Custom. These setup options are displayed with standard description text. If you want to add other setup types or change the displayed setup type names or descriptions, call SdSetupTypeEx instead.

The dialog also displays a default destination path. A browse button launches a dialog that allows the end user to change the destination path, either by entering a new folder name or by selecting an existing folder from a list. If the end user enters the name of a folder that does not exist, this function automatically creates the specified folder. The fully qualified path of the specified folder is returned in svDir.

Caution ▪ *If the end user returns to the SdSetupType2 dialog after using a feature dialog to select and deselect features associated with the selected setup type, those choices are lost. This occurs because the SdSetupType2 function automatically resets the default feature selections for the selected setup type each time it is called.*

Syntax

```
SdSetupType2 ( szTitle, szMsg, svDir, nReserved );
```

Parameters

Table 86 ▪ SdSetupType2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Type”), pass a null string (“”) in this parameter.
szMsg	Specifies a message to display in the dialog. This text is considered a static control. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svDir	Specifies a default folder name. Returns the name of the folder selected by the end user.
nReserved	Reserved for future use. Pass 0 (zero) in this parameter.

Return Values

Table 87 ▪ SdSetupType2 Return Values

Return Value	Description
COMPLETE (304)	Indicates that the user selected the Complete setup type.
TYPICAL (301)	Indicates that the user selected the Typical setup type.
CUSTOM (303)	Indicates that the user selected the Custom setup type.
BACK (12)	Indicates that the user clicked the Back button.

Additional Information

- In an InstallScript project, if you do not display a setup type dialog, your script must do one of the following:
  - Select a setup type.
  - Call a feature selection dialog function such as SdFeatureTree.
  - Directly select features.
- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdSetupType2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function SdSetupType2.
 *
 * SdSetupType2 is called to collect installation information
 * from the user.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnBegin()
    STRING   szTitle, szMsg, svDir;
    STRING  svSetupType;
    NUMBER   nResult;
begin
    // Disable Back button
    Disable(BACKBUTTON);

    // Set up parameters for call to SdSetupType2.
    szTitle = "SdSetupType2 Example";
    szMsg   = "Choose the type of installation by clicking one of the buttons.";

    // Retrieve setup type and directory information.
    svDir = TARGETDIR;
    nResult = SdSetupType2 (szTitle , szMsg, svDir, 0);
    TARGETDIR = svDir;

    // Create a string that describes the selected setup type.
    switch (nResult)

        case COMPLETE:
                        svSetupType = "COMPLETE: Application will be installed " +
                        "with all options.";
        case CUSTOM:
                        svSetupType = "CUSTOM: You select the options that you " +
                        "want installed.";
        default:
                        MessageBox ("Invalid setup type selection!", SEVERE);
                        abort;
    endswitch;

    MessageBox("Setup Type: " + svSetupType, 0);

end;
```

SdSetupTypeEx

Project *▪ This information applies to InstallScript MSI projects.*

The **SdSetupTypeEx** function displays a dialog that enables the end user to select the setup type when you specify setup types beyond Complete and Custom. The dialog displays the names of the setup types as you specified them in the Setup Types view.

Syntax

```
SdSetupTypeEx ( szTitle, szMsg, szReserved, svSetupType, nReserved );
```

Parameters

Table 88 ▪ SdSetupTypeEx Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Setup Type”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to be displayed in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szReserved	Pass a null string (“”) in this parameter. No other value is allowed.
svSetupType	Specifies a default setup type and returns the setup type selected by the end user. The string returned in this parameter will match the name of the setup type as you specified it in the IDE.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 89 ▪ SdSetupTypeEx Return Values

Return Value	Description
0	Indicates that SdSetupTypeEx was successful.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

- In an InstallScript project, if you do not display a setup type dialog, your script must do one of the following:
  - Select a setup type
  - Call a feature selection dialog function such as SdFeatureTree.
  - Directly select features.
- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdSetupTypeEx Example

Project ▪ *This information applies to InstallScript MSI projects.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdSetupTypeEx function.
 *
 * The SdSetupTypeEx function displays a dialog that enables
 * the end user to select the setup type when you specify setup
 * types beyond Complete and Custom. The dialog
 * displays the names of the setup types you create in the IDE's
 * Setup Types view.
 *
 * This sample sets the default setup type in the SdSetupTypeEx
 * dialog to "Complete".
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnBegin()
    STRING szTitle, szMsg, szReserved, svSetupType;
    NUMBER nReserved;
begin
    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set up the variables to pass as parameters to SdSetupTypeEx.
    szTitle= "SdSetupTypeEx Sample";
    szMsg= "";
    szReserved  = "";

    // Specifies a default setup type (as specified in the Setup Type
    // view) and returns the setup type selected by the end user
    svSetupType = "Complete";
    nReserved   = 0;

    // Display the SdSetupTypeEx dialog.
    SdSetupTypeEx(szTitle, szMsg, szReserved, svSetupType, nReserved);

    // Display a MessageBox with the setup type selected by the end user
    MessageBox("Setup Type selected: " + svSetupType, 0);

end;
```

SdShowAnyDialog

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowAnyDialog** function displays a custom or modified dialog. This function is recommended for advanced users only.

Syntax

```
SdShowAnyDialog ( szTitle, szID, nID, nReserved );
```

Parameters

Table 90 ▪ SdShowAnyDialog Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Welcome”), pass a null string (“”) in this parameter.
szID	Specifies the string identifier that identifies the dialog. If this parameter contains a null string (“”), SdShowAnyDialog uses the value in nID.
nID	Specifies the numeric value that identifies the dialog. If you entered a value in szID, this parameter is ignored.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 91 ▪ SdShowAnyDialog Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.
- In order to use the SdShowAnyDialog function, you must know the ID of either the modified dialog in _isres.dll or the custom dialog in _isuser.dll that you want to display.
- If the dialog has only static controls, you do not need to modify the SdShowAnyDialog script file. However, if your dialog has any other controls, you must modify the Sdsadlg.rul file—located in the Script\Isrt\Src folder of your InstallShield program files folder—in order to process the feedback from the user.

SdShowAnyDialog Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowAnyDialog function.
 *
 * SdShowAnyDialog is called twice, first with the ID of the
 * Welcome dialog, then with the ID of the Finish dialog
 * box.
 *
\*---------------------------------------------------------------*/

#define TITLE "SdShowAnyDialog Example"

#include "Ifx.h"

function OnBegin()
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set up the product name so that it can be displayed
    // in place of the %P placeholder in Sd dialogs.
    SdProductName ("ExampApp");

    // Display the SdWelcome dialog.
    SdShowAnyDialog (TITLE, "", SD_NDLG_WELCOME, 0);

    // Display the SdFinish dialog.
    SdShowAnyDialog (TITLE, "", SD_NDLG_FINISH, 0);

end;
```

SdShowDlgEdit1

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowDlgEdit1** function creates a general dialog that displays a message and one single-line edit field. You can specify a title for the dialog.

Syntax

```
SdShowDlgEdit1 ( szTitle, szMsg, szField1, svEdit1 );
```

Parameters

Table 92 ▪ SdShowDlgEdit1 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Edit Data”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To include in this message the product name set by a previous call to SdProductName, insert the place holder %P anywhere in the message string. When the message is displayed, %P is replaced by the product name.
szField1	Specifies a field name to be displayed to the left of the edit field. The default field name is “Field 1:”. To display the default name, pass a null string (“”) in this parameter. The maximum number of characters that can be displayed is approximately 10. The actual maximum depends on the combined width of each character in the field name. If the field name exceeds the available space, it will be truncated on the right when the dialog is displayed.
svEdit1	Specifies an initial value for the edit field; returns the value of the edit field when the dialog is closed.

Return Values

Table 93 ▪ SdShowDlgEdit1 Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdShowDlgEdit1 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

```
/*---------------------------------------------------------------*
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowDlgEdit1 function.
 *
 * This example script calls SdShowDlgEdit1 to obtain the name
 * of a folder, which is then displayed in a message box.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg, szField1, svEdit1;
begin
   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set up parameters for call to SdShowDlgEdit1.
   szTitle  = "SdShowDlgEdit1 Example";
   szMsg    = "Please choose a folder for YourApp:";
   szField1 = "Target:";
   svEdit1  = "C:\\Example\\Target\\YourApp";

   // Get a target folder name from the user.
   if (SdShowDlgEdit1 (szTitle, szMsg, szField1, svEdit1) < 0) then
      // Report an error.
      MessageBox ("SdShowDlgEdit1 failed.", SEVERE);

   else
      // Display svEdit1 string variable.
      SprintfBox (INFORMATION, szTitle, "You selected %s", svEdit1);

   endif;

end;
```

SdShowDlgEdit2

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowDlgEdit2** function creates a general dialog that displays a message and two single-line edit fields. You can specify a title for the dialog.

Syntax

```
SdShowDlgEdit2 ( szTitle, szMsg, szField1, szField2, svEdit1, svEdit2 );
```

Parameters

Table 94 ▪ SdShowDlgEdit2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. If you pass a null string ("") in this parameter, the default title ("Edit Data") is displayed.
szMsg	Specifies the message to display in the dialog. To include in this message the product name set by a previous call to SdProductName, insert the place holder %P anywhere in the message string. When the message is displayed, %P is replaced by the product name.
szField1	Specifies a field name to be displayed to the left of the first edit field. The default field name is "Field 1:" ; to display the default name, pass a null string ("") in this parameter. The maximum number of characters that can be displayed is approximately 10. The actual maximum depends on the combined width of each character in the field name. If the field name exceeds the available space, it will be truncated on the right when the dialog is displayed.
szField2	Specifies a field name for the second edit field. "Field 2:" is the default.
svEdit1	Specifies an initial value for the first edit field; returns the value of the first edit field when the dialog is closed.
svEdit2	Specifies an initial value for the second edit field; returns the value of the second edit field when the dialog is closed.

Return Values

Table 95 ▪ SdShowDlgEdit2 Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdShowDlgEdit2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowDlgEdit2 function.
 *
 * This script displays a dialog that prompts the user to
 * specify a source folder and a target folder. It then displays
 * the user's selections in a message box.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg, szField1, szField2, svEdit1, svEdit2;
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set up parameters for call to SdShowDlgEdit2.
   szTitle  = "SdShowDlgEdit2 Example";
   szMsg    = "All files within the Source directory will be copied into " +
              "the Target directory.";
   szField1 = "Source:";
   szField2 = "Target:";
   svEdit1  = "C:\\Example\\Source";
   svEdit2  = "C:\\Example\\Target";

   // Get source and target folder names.
   if (SdShowDlgEdit2 (szTitle, szMsg, szField1, szField2,
                       svEdit1,  svEdit2) < 0) then
      // Report an error.
      MessageBox ("SdShowDlgEdit2 failed.", SEVERE);

   else
      // Display the user's selections.
      SprintfBox (INFORMATION, szTitle, "svEdit1: %s\n\nsvEdit2: %s",
                  svEdit1, svEdit2);
   endif;

end;
```

SdShowDlgEdit3

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowDlgEdit3** function creates a general dialog that displays a message and three single-line edit fields. You can specify a title for the dialog in szTitle.

Syntax

```
SdShowDlgEdit3 ( szTitle, szMsg, szField1, szField2, szField3, svEdit1, svEdit2, svEdit3 );
```

Parameters

Table 96 ▪ SdShowDlgEdit3 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. If you pass a null string ("") in this parameter, the default title ("Edit Data") is displayed.
szMsg	Specifies the message to display in the dialog. To include in this message the product name set by a previous call to SdProductName, insert the place holder %P anywhere in the message string. When the message is displayed, %P is replaced by the product name.
szField1	Specifies a field name to be displayed to the left of the first edit field. The default field name is "Field 1:". To display the default name, pass a null string ("") in this parameter. The maximum number of characters that can be displayed is approximately 10. The actual maximum depends on the combined width of the characters in the field name. If the field name is too large for the available space, it will be truncated on the right when the dialog is displayed.
szField2	Specifies a field name for the second edit field. "Field 2:" is the default.
szField3	Specifies a field name for the third edit field. "Field 3:" is the default.
svEdit1	Specifies an initial value for the first edit field; returns the value of the first edit field when the dialog is closed.
svEdit2	Specifies an initial value for the second edit field; returns the value of the second edit field when the dialog is closed.
svEdit3	Specifies an initial value for the third edit field; returns the value of the third edit field when the dialog is closed.

Return Values

Table 97 ▪ SdShowDlgEdit3 Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdShowDlgEdit3 Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowDlgEdit3 function.
 *
 * This script calls SdShowDlgEdit3 to get three folder names
 * from the user.  These are then displayed in a message box.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg, szField1, szField2, szField3, svEdit1, svEdit2;
   STRING svEdit3;
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set up parameters for call to SdShowDlgEdit3.
   szTitle   = "SdShowDlgEdit3 Example";
   szMsg     = "Please choose up to two valid directories in Backup: or " +
               "Alternate: to back up the source directory.\n\n";
   szField1  = "Directory";
   szField2  = "Backup";
   szField3  = "Alternate";
   svEdit1   = "C:\\YourApp";
   svEdit2   = "C:\\Backup1";
   svEdit3   = "C:\\Backup2";

   // Get three folder names from the user.
   if (SdShowDlgEdit3 (szTitle, szMsg, szField1, szField2, szField3,
                       svEdit1, svEdit2, svEdit3) < 0) then
      // Report an error.
      MessageBox ("SdShowDlgEdit3 failed.", SEVERE);

   else
      // Display the folder names specified by the user.
      szMsg = "svEdit1: %s\n\nsvEdit2: %s\n\nsvEdit3: %s";
      SprintfBox (INFORMATION, szTitle, szMsg, svEdit1, svEdit2, svEdit3);

   endif;

end;
```

SdShowFileMods

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowFileMods** function creates a dialog that displays changes you want to make to a file. These choices are available:

- Make changes to the target file.
- Make changes to the alternate file, which is a copy of the target file, but incorporates changes.
- Do not make any changes. SdShowFileMods does not make changes to a file. You must write those changes into your script using the appropriate file functions.

Syntax

```
SdShowFileMods ( szTitle, szMsg, szTargetFile, szAltFile, listChanges, nvSelection );
```

Parameters

Table 98 ▪ SdShowFileMods Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Modifying File”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szTargetFile	Specifies the name of the file to modify. This will be displayed with the first radio button.
szAltFile	Specifies an alternate name to give the file if the end user decides to make the changes. This will be displayed with the second radio button. To use the name of file specified in szTargetFile with the extension .bak, pass a null string (“”) in this parameter.
listChanges	Specifies the name of a string list that contains the list of changes to make to the file. This list is placed in a multi-line edit field that allows the end user to select the changes to be implemented.
nvSelection	Returns the ID of the button selected by the end user: • **101**—“Let Setup modify the <szTargetFile> file.” • **102**—“Save the required changes to <szAltFile> file.” • **103**—“Do not make any changes.”

Return Values

Table 99 ▪ SdShowFileMods Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdShowFileMods Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowFileMods function.
 *
 * This script displays a list of changes to make to a specified
 * file.  The user may elect to make those changes, to save the
 * changes to a new file, or not to make or save the changes.
 *
 * Note: SdShowFileMods does not itself modify or create files.
 *       It simply obtains the user's choice.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szTitle, szMsg, szTargetFile, szAltFile;
   NUMBER nvSelection;
   LIST   listID;
begin

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set up variables for call to SdShowFileMods.
   szTitle = "SdShowFileMods Example";

   szMsg = "Choose what option to take";
   szTargetFile = "Example.txt";
   szAltFile = "Example.new";

   // Create a list to hold file modification details.
   listID = ListCreate (STRINGLIST);

   // Add file modification details to the list.
   ListAddString (listID, "PATH = C:\\Example", AFTER);
   ListAddString (listID, "FILES = 40", AFTER);

   // Present options and get the user's choice.
   SdShowFileMods (szTitle, szMsg, szTargetFile, szAltFile,
                   listID, nvSelection);

   // Handle the user's selection.
   switch(nvSelection)
```

```
      case 101:
         SprintfBox (INFORMATION, szTitle, "Setup modified the %s file.",
                     szTargetFile);

      case 102:
         SprintfBox (INFORMATION, szTitle, "The required changes were saved " +
                     "to the %s file.", szAltFile);

      case 103:
         SprintfBox (INFORMATION, szTitle, "No changes were made.");

   endswitch;

end;
```

SdShowInfoList

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowInfoList** function creates a dialog that displays a list of scrollable messages. SdShowInfoList can display lists of up to approximately 57,200 characters.

Syntax

```
SdShowInfoList ( szTitle, szMsg, listID );
```

Parameters

Table 100 ▪ SdShowInfoList Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Information”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display on one line above the information box. If the message is too long to fit on one line, it is truncated on the right. If the message includes a newline escape sequence (\n), the text following that escape sequence is not displayed. To display the default message (“Text”), pass a null string (“”) in this parameter.
listID	Specifies the list of messages to display in the dialog. All messages that appear in the dialog are read only.

Return Values

Table 101 ▪ SdShowInfoList Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.
BACK (12)	Indicates that the Back button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdShowInfoList Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowInfoList function.
 *
 * This script calls GetSystemInfo to retrieve information about
 * the user's system.  The ListAdd function is used to add the
 * information to a string list, which is displayed by
```

```
 * calling SdShowInfoList function.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING  szTitle, szMsg, svReturn, szInfo;
   NUMBER  nvReturn;
   LIST    listInfo;
begin

   // Create a list to hold system information.
   listInfo = ListCreate (STRINGLIST);

   // Check if the system has a CD-ROM drive.
   GetSystemInfo (CDROM, nvReturn, svReturn);

   if (nvReturn = TRUE) then
      szInfo = "Your machine has a CD-ROM Drive.";
   else
      szInfo = "Your machine does not have a CD-ROM drive.";
   endif;

   // Add the CD-ROM info to the list.
   ListAddString (listInfo, szInfo, AFTER);

   // Check the time on the system.
   GetSystemInfo (TIME, nvReturn, svReturn);
   Sprintf (szInfo, "The time now is %s.", svReturn);

   // Add the time to the list.
   ListAddString (listInfo, szInfo, AFTER);

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Set up title and message parameters for call to SdShowInfoList.
   szTitle  = "SdShowInfoList Example";
   szMsg    = "Following is some information related to your system:";

   // Display the information.
   SdShowInfoList (szTitle, szMsg, listInfo);

end;
```

SdShowMsg

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdShowMsg** function provides a simple way to display an informative message that remains on screen while script processing continues.

The **SdShowMsg** function opens or closes a small modeless window that displays the message specified by szMsg. When bShow is TRUE, the window is opened, the message is displayed in the window, and processing continues with the next statement in the script. Note that the **SdShowMsg** window is positioned at the center of the setup window. When bShow is FALSE, szMsg is ignored and the **SdShowMsg** window is closed.

Note ▪ *When the* **SdShowMsg** *window is open, subsequent calls to* **SdShowMsg** *with TRUE in the second parameter are ignored. To change the message, you must first close the window by calling* **SdShowMsg** *with FALSE in the second parameter and then call* **SdShowMsg** *again with the new message in szMsg and TRUE in the second parameter.*

Syntax

```
SdShowMsg ( szMsg, bShow );
```

Parameters

Table 102 ▪ SdShowMsg Parameters

Parameter	Description
szMsg	Specifies the message to display in the window. To display the default message (“Setup is searching for installed features”), pass a null string (“”) in this parameter. This parameter is ignored when bShow is FALSE. **SdShowMsg** is designed to display a message on a single line. Do not embed newline characters (\n) in szMsg.  ***Note ▪*** *The* **SdShowMsg** *window is sized horizontally to display the value of szMsg on a single line. If the length of the message exceeds the maximum width of the window, the message is truncated to fit the window.*
bShow	Specifies whether to open or close the window. Pass one of the following predefined constants in this parameter: ● **TRUE**—Opens the window if it is not already open. ● **FALSE**—Closes the window if it is open.

Return Values

This function always returns 0.

Additional Information

- The dialog that is displayed by the **SdShowMsg** function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

- The Dialog Editor does not support dialogs, such as **SdShowMsg**, that do not have a title bar. Therefore, this dialog is not displayed in the Dialogs view as one of the dialogs that you can edit. To customize this dialog, use the **SdShowMsg** call.

SdShowMsg Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SdShowMsg dialog.
 *
 * SdShowMsg is called to display a message for three seconds.
 * It's then called again to remove the message from the screen.
 * A final call to SdShowMsg displays another message.
 *
\*---------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
   STRING szMsg;
begin

   // Display a message on the screen.
   szMsg = "This message will appear for three seconds.";
   SdShowMsg (szMsg, TRUE);

   // Delay for 3 seconds.
   Delay (3);

   // Remove message from screen.
   SdShowMsg (szMsg, FALSE);

   // Display another message on the screen.
   szMsg = "This is another message which will " +
      "appear for a mere three seconds.";
   SdShowMsg (szMsg, TRUE);
   Delay(3);

   // Remove message from screen.
   SdShowMsg (szMsg, FALSE);

end;

// Source file:Is5fn157.rul
```

SdStartCopy

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdStartCopy** function creates a multi-line edit field displaying the settings and selections made during the installation. The end user can click the Back button on the dialog to return to previous dialogs in order to change settings as required. Call SdStartCopy after retrieving the selections from the user, but before beginning the file transfer process.

Use a string list to collect the information obtained during the installation. You then pass the string list to SdStartCopy in the parameter listData. SdStartCopy displays the list and allows the user to verify that the information is correct before continuing with the file transfer process.

Syntax

```
SdStartCopy (szTitle, szMsg, listData);
```

Parameters

Table 103 ▪ SdStartCopy Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title (“Start Copying Files”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the static text field above the multi-line edit field. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
listData	Specifies a string list of information retrieved from the end user. SdStartCopy automatically places each element into the multi-line edit field. If listData has not been initialized by a call to ListCreate, the multi-line edit field is hidden and only the static text field is visible.

Return Values

Table 104 ▪ SdStartCopy Return Values

Return Value	Description
NEXT (1)	Indicates that the user selected the Next button.
BACK (12)	Indicates that the user selected the Back button.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdStartCopy Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the function SdStartCopy, with the use of
 * SdRegisterUserEx and SdSetupType.
 *
 * SdRegisterUserEx and SdSetupType are called to collect
 * installation information from the user.  The information is
```

```
 * stored in a list and displayed by SdStartCopy.
 *
\*------------------------------------------------------------------*/

#include "Ifx.h"

function OnBegin()
    STRING  szTitle, szMsg, svName, svCompany, svSerial, svDir, svSetupType;
    LIST    listData;
    NUMBER  nResult;
begin

start:
    // Create the list.
    listData = ListCreate (STRINGLIST);

    // Set up message parameter for call to SdRegisterUserEx.
    szMsg = "Please enter your name, company, and serial no.";

    // Retrieve registration information.
    SdRegisterUserEx ("Registration", szMsg, svName, svCompany, svSerial);

    // Add the information to the list.
    ListAddString (listData, "User Information: ", AFTER);
    ListAddString (listData, "          " + svName, AFTER);
    ListAddString (listData, "          " + svCompany, AFTER);
    ListAddString (listData, "          " + svSerial, AFTER);
    ListAddString (listData, "", AFTER);

SetupTypeLabel:
   // Set up parameters for call to SdSetupType.
    szMsg = "Choose the type of installation by clicking one of the buttons.";
    svDir = TARGETDIR;

    // Retrieve setup type and directory information.
    nResult = SdSetupType("Select Setup Type", szMsg, svDir, 0);

    // Create a string that describes the selected setup type.
    switch (nResult)
        case TYPICAL:
            svSetupType = "TYPICAL: Application will be installed " +
                          "with the most common options.";
        case COMPACT:
            svSetupType = "COMPACT: Application will be installed " +
                          "with the minimum required options.";
        case CUSTOM:
            svSetupType = "CUSTOM: You select the options that you " +
                          "want installed.";
        case BACK:
            goto start;
        default:
            MessageBox ("Invalid setup type selection!", SEVERE);
            abort;
    endswitch;

    // Add the setup type information to the list.
```

```
    ListAddString(listData, "Setup Type:", AFTER);
    ListAddString(listData, "              " + svSetupType, AFTER);
    ListAddString(listData, "", AFTER);
    ListAddString(listData, "Destination Directory:", AFTER);
    ListAddString(listData, "              " + svDir, AFTER);

    // Set up title and message parameters for call to SdStartCopy.
    szTitle = "SdStartCopy Example";
    szMsg   = "Setup has enough information to begin the file-transfer\n" +
              "operation.  If you want to review or change any of the\n" +
              "settings, click Back.  If you are satisfied with the\n" +
              "settings, click Next to begin copying files.";

    // Call SdStartCopy to display user selections.
    nResult = SdStartCopy (szTitle, szMsg, listData);

    // Handle the user's exit from the SdStartCopy dialog.
    switch(nResult)
        case NEXT:
            MessageBox ("SdStartCopy successful.",INFORMATION);
        case BACK:
            goto SetupTypeLabel;
        default:
            MessageBox ("SdStartCopy failed.", SEVERE);
    endswitch;

end;
```

SdStartCopy2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdStartCopy2** function informs the user that the file transfer process is about to begin. The user can click the Back button to return to previous dialogs in order to change settings as required. Call SdStartCopy2 after retrieving the selections from the user, but before beginning the file transfer process.

Syntax

```
SdStartCopy2 ( szTitle, szMsg );
```

Parameters

Table 105 ▪ SdStartCopy2 Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title ("Ready to Install the Program"), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the static text field. To display the default instructions for this dialog, pass a null string ("") in this parameter.

Return Values

Table 106 ▪ SdStartCopy2 Return Values

Return Value	Description
NEXT	Indicates that the user selected the Install button.
BACK	Indicates that the user selected the Back button.
< ISERR_SUCCESS	Indicates that the dialog could not be displayed.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdStartCopy2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdProductName, SdWelcome,
 * SdStartCopy2, and SdFinish.
 *
 * First, SdProductName is called to set the product name to
 * substitute for the %P place holder, which is embedded in the
 * message strings passed to SdWelcome and SdFinish.
 *
 * Next, SdWelcome is called to display a welcome message and
 * then SdStartCopy2 is called.  Finally, a call to SdFinish
 * completes the setup process by giving the user final options.
```

```
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference the fully-qualified
 *       names of the Windows Notepad executable and a valid
 *       text file on the target system.
 *
\*---------------------------------------------------------------*/



//Assign the name of a text file to README FILE

#define NOTEPAD "C:\\Windows\\Notepad.exe"
#define README FILE ""

   STRING   szProductName, szTitle, szMsg, szFeatures;
   STRING   szMsg1, szMsg2, szOpt1, szOpt2;
   BOOL     bvOpt1, bvOpt2;
   NUMBER   nReturn;

#include "ifx.h"

function OnBegin()
begin

   // Set the product name to substitute for the %P place holder.
   szProductName = "My Application";
   SdProductName (szProductName);

SdWelcomeLabel:
   szTitle = "SdWelcome Example";

   // Disable the Back button in setup dialogs.
   Disable (BACKBUTTON);

   // Display the SdWelcome dialog. The null string in parameter
   // two specifies the default message, which uses the %P place holder.
   SdWelcome (szTitle, "");

   // Enable the Back button in setup dialogs.
   Enable (BACKBUTTON);

SdStartCopy2Label:
   szTitle = "SdStartCopy2 Example";
   // Display the SdStartCopy2 dialog.
   if (SdStartCopy2 (szTitle, szMsg) = BACK) then
      goto SdWelcomeLabel;
   endif;

   // The %P place holder is embedded in several of the string
   // parameters that will be passed to SdFinish.
   szTitle = "SdFinish Example";
   szMsg1  = "%P Setup is almost complete.\n" +
      "Choose the options you want below.";
   szMsg2  = "Click Finish to complete %P Setup.";
   szOpt1  = "I would like to view the README file.";
```

```
    szOpt2  = "I would like to launch %P.";

    // Display the SdFinish dialog.
    SdFinish (szTitle, szMsg1, szMsg2, szOpt1, szOpt2, bvOpt1, bvOpt2);

    if (bvOpt1) then
      // Display the read me file.
      LaunchAppAndWait (NOTEPAD, READMEFILE, LAAW_OPTION_WAIT);
    endif;

    if (bvOpt2) then
      // Because this example does not actually install an
      // application, a message box is displayed in place of
      // the call to LaunchApp that would normally be made here,
      // for example:
      //   LaunchApp (TARGETDIR^PROGRAMEXECUTABLE,"");

      SprintfBox (INFORMATION, szTitle, "Launch %s here.", szProductName);
    endif;

end;
```

SdSubstituteProductInfo

The **SdSubstituteProductInfo** function replaces any occurrences of the %P, %VS, and %VI placeholders in svString with the values of the system variables IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and IFX_INSTALLED_DISPLAY_VERSION. You can use this function before calling a function, such as MessageBox, that does not automatically perform this replacement before displaying strings.

Syntax

```
SdSubstituteProductInfo ( svString );
```

Parameters

Table 107 ▪ SdSubstituteProductInfo Parameters

Parameter	Description
svString	Specifies the string containing placeholders; returns the string with the placeholders replaced.

Return Values

This function does not return a value.

SdWelcome

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdWelcome** function creates a dialog that displays a welcome message to the end user.

Syntax

```
SdWelcome ( szTitle, szMsg );
```

Parameters

Table 108 ▪ SdWelcome Parameters

Parameter	Description
szTitle	Specifies the text to display in the title of the dialog. To display the default title (“Welcome”), pass a null string (“”) in this parameter.
szMsg	Specifies the message to display in the Welcome dialog. To include in this message the product name set by a previous call to SdProductName, insert the place holder %P anywhere in the message string. When the message is displayed, %P is replaced by the product name. To display the default welcome message (“Welcome to the %P Setup program. This program will install %P on your computer”), pass a null string (“”) in this parameter.

Return Values

Table 109 ▪ SdWelcome Return Values

Return Value	Description
NEXT (1)	Indicates that the Next button was clicked.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdWelcome Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the function SdWelcome.
 *
 * The SdWelcome function displays a dialog that welcomes
 * the end user.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnBegin()
    STRING  szTitle, szProductName;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set the product name to substitute for the %P place holder.
    szProductName = "My Application";
    SdProductName (szProductName);

    szTitle = "SdWelcome Example";

    // Display the SdWelcome dialog. The null string in parameter
    // two specifies the default message, which uses the %P place holder.
    SdWelcome (szTitle, "");

end;
```

SdWelcomeMaint

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SdWelcomeMaint** function displays a dialog that is intended for use at the beginning of a maintenance setup (that is, the re-running of a setup that has already been run). The dialog contains Modify, Repair, and Remove option buttons.

Syntax

```
SdWelcomeMaint (szTitle, szMsg, nType);
```

Parameters

Table 110 ▪ SdWelcomeMaint Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title ("Welcome"), pass a null string ("") in this parameter.
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
nType	Specifies which option button is the default selection. Pass one of the following predefined constants in this parameter: • **MODIFY**—The Modify button is the default selection. • **REPAIR**—The Repair button is the default selection. • **REMOVEALL**—The Remove button is the default selection.

Return Values

Table 111 ▪ SdWelcomeMaint Return Values

Return Value	Description
MODIFY (301)	Indicates that the Modify button was selected when the end user clicked the Next button.
REPAIR (302)	Indicates that the Repair button was selected when the end user clicked the Next button.
REMOVEALL (303)	Indicates that the Remove button was selected when the end user clicked the Next button.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SdWelcomeMaint Example

***Project ▪** This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the function SdWelcomeMaint.
 *
 * The SdWelcomeMaint function displays a dialog that is intended
 * for use at the beginning of a maintenance setup (the re-running
 * of a setup that has already been run). The dialog contains
 * Modify, Repair, and Remove option buttons.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnBegin()
    STRING  szTitle, szProductName;
    NUMBER  nType, nReturn;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);

    // Set the product name to substitute for the %P place holder.
    szProductName = "My Application";
    SdProductName (szProductName);

    szTitle = "SdWelcomeMaint Example";
    //Specifies which option button is the default selection.
    nType = REMOVEALL;

    // Display the SdWelcomeMaint dialog. The null string in
    // parameter two specifies the default message, which uses
    // the %P place holder.
    nReturn = SdWelcomeMaint (szTitle, "", nType);

    switch(nReturn)

    case MODIFY: MessageBox("SdWelcomeMaint selection: Modify", 0);

    case REPAIR: MessageBox("SdWelcomeMaint selection: Repair", 0);

    case REMOVEALL: MessageBox("SdWelcomeMaint selection: Remove", 0);

    endswitch;

end;
```

SeekBytes

The **SeekBytes** function repositions the file pointer within an open binary file. You can move the file pointer a specific number of bytes relative to its current position or relative to the beginning or end of the file.

Note ▪ *Before calling SeekBytes, you must open the file (which can be a file on the Internet) in binary mode by calling OpenFileMode and OpenFile. When you are finished writing bytes to the file, call CloseFile to close the file.*

Syntax

```
SeekBytes ( nFileHandle, nBytes, nPosition );
```

Parameters

Table 112 ▪ SeekBytes Parameters

Parameter	Description
nFileHandle	Specifies the file handle of a file that has been opened in binary mode.
nBytes	Specifies the number of bytes to move the file pointer relative to the position specified by nPosition. If nBytes is a positive number, the file pointer is moved toward the end of the file. If nBytes is a negative number, the file pointer is moved toward the beginning of the file.
nPosition	Specifies the location in the file from which to move the pointer nBytes. Pass one of the following predefined constants in this parameter: • **FILE_BIN_CUR—**Moves the pointer nBytes from its current position. • **FILE_BIN_END—**Moves the pointer nBytes from the end of the file. • **FILE_BIN_START—**Moves the pointer nBytes from the beginning of the file.

Return Values

Table 113 ▪ SeekBytes Return Values

Return Value	Description
0	Indicates that the function successfully repositioned the pointer.
< 0	Indicates that the function was unable to reposition the pointer.

SeekBytes Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the ReadBytes and SeekBytes functions.
 *
 * SeekBytes is called to position a file pointer to a
 * specific location in a file that has been opened in binary
 * mode.  ReadBytes then reads a specific number of bytes,
 * starting at this location. The bytes are read into a string,
 * which is then displayed in a message box.
 *
 * Note: The defined constants EXAMPLE_DIR and EXAMPLE_BIN must
 *       be set to an existing directory and file on the target
 *       system.
 *
\*------------------------------------------------------------*/

#define EXAMPLE_DIR "C:\\"
#define EXAMPLE_BIN "Example.bin"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SeekBytes(HWND);

function ExFn_SeekBytes(hMSI)
   STRING svString;
    NUMBER nvFileHandle;
begin

   // Set the file mode to read/write.
   OpenFileMode (FILE_MODE_BINARY);

   // Open a binary file.
   if (OpenFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_BIN) < 0) then

      // Report an error; then abort.
      SprintfBox (SEVERE, "CopyBytes Example", "Could not open %s.",
                  EXAMPLE_BIN);
      abort;

   endif;

   // Set the file pointer to the 16th byte in the file.
   SeekBytes (nvFileHandle, 15, FILE_BIN_START);

   // Read the next twenty-eight bytes into svString.
   if (ReadBytes (nvFileHandle, svString, 0, 28) < 0) then

      // Report an error.
      MessageBox ("ReadBytes failed.", SEVERE);
   else

      // Display the string.
      SprintfBox (INFORMATION, "ReadBytes Example", "Bytes read: %s",
svString);
```

```
    endif;

    // Close the file.
    CloseFile (nvFileHandle);

end;
```

SelectDir

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SelectDir** function has been superseded by the **SelectDirEx** function. You should use the **SelectDirEx** function when creating new installations. You can call the **SelectDirEx** function with nFlags set to BIF_RETURNONLYFSDIRS | BIF_EDITBOX to achieve the same result as calling the **SelectDir** function with bCreate set to FALSE.

The **SelectDir** function displays a dialog that lets the end user specify the folder into which the application will be installed. The end user can enter a fully qualified folder name or select an existing folder from a list. If the end user enters an invalid folder name or an unqualified folder name, a message box is displayed to prompt the end user to enter a valid name. The fully qualified name of the selected folder is returned in svDir.

If the specified folder does not exist and the parameter bCreate is TRUE, **SelectDir** automatically creates the specified folder. If the parameter bCreate is set to FALSE and a non-existent folder is selected, the end user is not informed, and **SelectDir** does not create it. In this case, it is up to you to handle the selection contained in svDir.

Note *▪* **SelectDir** *is called automatically when the end user clicks the Browse button in the dialogs that are presented by* **AskDestPath**, **SdAskDestPath**, *and other InstallScript functions that obtain a folder name.*

Windows displays this dialog; therefore, the installation cannot change the text of the buttons on the dialog. Windows displays the button text—"Yes" and "No" on English-based systems—in the language of the operating system; no manual localization of this text is required. If you need to display a more flexible dialog, call a Windows API function directly or use a custom dialog.

Syntax

```
SelectDir ( szTitle, szMsg, svDir, bCreate );
```

Parameters

Table 114 ▪ SelectDir Parameters

Parameter	Description
szTitle	Specifies the title of this dialog. To display the default title ("Choose Folder"), pass a null string ("") in this parameter.
szMsg	Specifies the message you want to display in this dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
svDir	Specifies the name of a folder that will appear as the default selection. Returns the fully qualified name of the folder selected by the end user.
bCreate	Specifies whether or not you want InstallShield to create the specified folder if it does not already exist. Pass one of the following predefined constants in this parameter: • **TRUE**—Indicates that the folder should be created if it does not exist. • **FALSE**—Indicates that the folder should not be created if it does not exist.

Return Values

If bCreate is FALSE, this function returns one of the following values:

Table 115 ▪ SelectDir Return Values when bCreate is FALSE

Return Value	Description
IDOK (1)	Indicates that the OK button was selected.
IDCANCEL (2)	Indicates that the CANCEL button was selected.
< 0	Indicates that the function was unable to display the dialog.

If bCreate is TRUE, this function returns one of the following values:

Table 116 ▪ SelectDir Return Values when bCreate is TRUE

Return Value	Description
IDCANCEL (2)	Indicates that the CANCEL button was selected.
0	Indicates that the OK button was selected and the function was able to create the folder specified, if necessary.
< 0	Indicates that the function failed to display the dialog and/or create the specified folder.

Additional Information

- The dialog that is displayed by this function cannot be displayed with a skin; it appears the same, regardless of whether you have specified a skin.
- In early versions of InstallShield Professional, when bCreate was set to TRUE and the end user selected a folder that did not exist, a confirmation message box was displayed asking whether the folder should be created. This message box proved to be confusing to many end users, so it has been removed from InstallShield.

SelectDir Example

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SelectDir function.
 *
 * This script calls SelectDir to display a dialog that
 * allows the user to specify a folder. If the specified folder
 * does not exist, it is not created. Instead, an error message
 * is displayed and the SelectDir dialog is displayed again.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "SelectDir Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SelectDir(HWND);

function ExFn_SelectDir(hMSI)
   STRING  szTitle, szMsg, svDir;
    BOOL    bCreate, bFolderExists;
    NUMBER  nResult;
begin

   // Loop until user cancels or selects an existing folder.
   repeat

      // Set a default folder for the SelectDir dialog.
      svDir = INSTALLDIR;

      // Set the message to display in the SelectDir dialog.
      szMsg   = "Please choose an existing folder.";

      // Get an existing folder name from the user. The fourth
```

```
      // parameter indicates that a non-existing folder should
      // not be created.
      nResult = (SelectDir (TITLE_TEXT, szMsg, svDir, FALSE) < 0) ;

      if nResult = 0 then

         // Determine whether the folder exists.
         bFolderExists = ExistsDir (svDir);

         if bFolderExists = NOTEXISTS then
            // The folder does not exist.  Ask user to select again.
            szMsg = "%s does not exist.\nPlease choose an existing folder.";
            SprintfBox  (WARNING, szTitle, szMsg, svDir);
         endif;

      endif;

   until (nResult = CANCEL) || (bFolderExists = EXISTS);

   if (bFolderExists = EXISTS) then

      // Display the name of the selected folder.
      SprintfBox (INFORMATION, szTitle, "You selected %s.", svDir);

   endif;

end;
```

SelectDirEx

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SelectDirEx** function displays a dialog that enables the end user to select a folder into which the application will be installed. An edit box can also be displayed to enable the end user to specify a new folder.

This function calls the Windows API function SHBrowseForFolder to display the dialog. For more information on SHBrowseForFolder, see the Windows API documentation.

Note *▪ Windows displays this dialog; therefore, the installation cannot change the text of the buttons on the dialog. Windows displays the button text—"Yes" and "No" on English-based systems—in the language of the operating system; no manual localization of this text is required. If you need to display a more flexible dialog, call a Windows API function directly or use a custom dialog.*

Syntax

```
SelectDirEx ( szTitle, szMsg, szEditBoxStatusText, szTreeControlStatusText, nFlags, svDir );
```

Parameters

Table 117 ▪ SelectDirEx Parameters

Parameter	Description
szTitle	Specifies the title of this dialog. To display the default title Choose Folder, pass a null string ("") in this parameter.
szMsg	Specifies the message you want to display in this dialog. To display the default instructions for this dialog (Please choose the installation folder), pass a null string ("") in this parameter.
szEditBoxStatusText	Specifies the static text that accompanies the edit box when nFlags specifies BIF_EDITBOX. If nFlags does not specify BIF_EDITBOX, this parameter is ignored.
szTreeControlStatusText	Specifies the static text to accompany the dialog's tree control when nFlags specifies BIF_STATUSTEXT. If nFlags does not specify BIF_STATUSTEXT, this parameter is ignored.

Table 117 ▪ SelectDirEx Parameters (cont.)

Parameter	Description
nFlags	Specifies the appearance and functionality of the dialog that is displayed by the function by specifying the same flags that are used for the Windows structure BROWSEINFO. Note that if you pass BIF_BROWSEFORCOMPUTER or BIF_BROWSEFORPRINTER, no edit box is displayed. Pass any of the following constants: • **BIF_BROWSEFORCOMPUTER**—Enables the end user to select a computer on the network. The Network Neighborhood is preselected in the tree control and the OK button is enabled only if a valid computer name is selected in the tree control. No edit box is displayed, even if BIF_EDITBOX is specified. • **BIF_BROWSEFORPRINTER**—Enables the end user to select a printer. The My Computer folder is preselected in the tree control. Only computers that include at least one printer are displayed under the Network Neighborhood folder. The OK button is enabled only if a valid printer is selected in the tree control. No edit box is displayed, even if BIF_EDITBOX is specified. • **BIF_DONTGOBELOWDOMAIN**—Network folders below the domain level are not displayed in the tree control. • **BIF_RETURNFSANCESTORS**—Shows folders above svDir. • **BIF_RETURNONLYFSDIRS**—Browses file system folders. The following constants specify other aspects of the dialog: • **BIF_STATUSTEXT**—Displays status text in the dialog. • **BIF_EDITBOX**—Adds an edit field to the Browse dialog. The end user can type a folder name in the edit box. The text specified in the SzEditBoxStaticText parameter appears above the edit box, unless BIF_BROWSEFORCOMPUTER or BIF_BROWSEFORPRINTER is specified. When the end user clicks OK, SelectDirEx checks whether a valid folder name is entered. If not, an error message appears and the dialog is not closed.
svDir	Specifies the name of a folder that will appear as the default selection. Returns the fully qualified name of the folder selected by the end user. If a valid folder name that exists on the target system is specified in this parameter, the specified folder is preselected in the tree control.

Return Values

Table 118 ▪ SelectDirEx Return Values

Return Value	Description
IDOK (1)	Indicates that the end user clicked the OK button.
IDCANCEL (2)	Indicates that the end user clicked the Cancel button.
< 0	Indicates that the function was unable to display the dialog.

Additional Information

The dialog that is displayed by this function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SelectDirEx Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SelectDirEx function.
 *
 * This sample script calls SelectDirEx to display a dialog
 * that allows the user to specify a folder.  If the specified
 * folder does not exist, it is not created;  instead, an error
 * message is displayed and the SelectDirEx dialog is displayed
 * again.
 *
\*---------------------------------------------------------------*/

#include "ifx.h"

function OnBegin()
   STRING  szTitle, szMsg, svDir;
   BOOL    bCreate, bFolderExists;
   NUMBER  nResult;
begin
   // Loop until user cancels or selects an existing folder.
   repeat
      // Set a default folder for the SelectDirEx dialog.
      svDir = TARGETDIR;

      // Set the title to display in the SelectDirEx dialog.
```

```
      szTitle =  "SelectDirEx Example";

      // Set the message to display in the SelectDirEx dialog.
      szMsg   = "Please choose an existing folder.";

      // Get an existing folder name from the user.
      nResult = (SelectDirEx (szTitle, szMsg, "", "",
         BIF_RETURNONLYFSDIRS | BIF_EDITBOX, svDir ) < 0) ;

      if nResult = 0 then
         // Determine whether the folder exists.
         bFolderExists = ExistsDir (svDir);

         if bFolderExists = NOTEXISTS then
            // The folder does not exist.  Ask user to select again.
            szMsg = "%s does not exist.\nPlease choose an existing folder.";
            SprintfBox  (WARNING, szTitle, szMsg, svDir);
         endif;
      endif;
   until (nResult = CANCEL) || (bFolderExists = EXISTS);

   if (bFolderExists = EXISTS) then
      // Display the name of the selected folder.
      SprintfBox (INFORMATION, szTitle, "You selected %s.", svDir);
   endif;
end;
```

SelectFolder

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SelectFolder** function displays a dialog that enables the end user to enter the name of a program folder in an edit field or select a program folder from a list. The function automatically displays all program folders on the system. A default folder name passed in svDefFolder is displayed in the edit field. The selected folder name is returned in svResultFolder.

Caution *▪ If the specified folder does not exist, you must call CreateProgramFolder to create it; SelectFolder will not create the folder.*

Syntax

```
SelectFolder ( szTitle, szDefFolder, svResultFolder );
```

Parameters

Table 119 ▪ SelectFolder Parameters

Parameter	Description
szTitle	Specifies the title of the dialog. To display the default title, Select Program Folder, pass a null string ("") in this parameter.
szDefFolder	Specifies the name of the folder to display as the default folder.
svResultFolder	Returns the name of the folder selected or specified by the end user.

Return Values

Table 120 ▪ SelectFolder Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the Next button.
BACK (12)	Indicates that the end user clicked the Back button.
< 0	Indicates that the function was unsuccessful.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SelectFolder Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SelectFolder function.
 *
 * First, SelectFolder is called to get a folder selection from
 * the user.  Then the name of the selected folder is displayed.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "SelectFolder Example"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_SelectFolder(HWND);

function ExFn_SelectFolder(hMSI)
   STRING svResultFolder;
    NUMBER nReturn;
begin

   // Get folder selection from user. Make "Startup" the
   // default selection
   nReturn = SelectFolder (TITLE_TEXT, "Startup", svResultFolder);

   if (nReturn < 0) then

      // Report an error.
      MessageBox ("SelectFolder failed.", SEVERE);

   else

      // Display the name of the selected folder.
      SprintfBox (INFORMATION, TITLE_TEXT,
                  "Selected folder: %s", svResultFolder);

   endif;

end;
```

SendMessage

The **SendMessage** function sends a message to one or more windows. SendMessage does not return control to the setup script until the message has been processed. The SendMessage function is a direct pass-through to the Windows API SendMessage. Consult the Windows programming documentation for detailed information.

Note ▪ *To send a message using the parameter nMsg or to handle return values, you must define constants in your script that are equivalent to the constants defined in Windows.h. You cannot use #include to include Windows.h in your script.*

Syntax

```
SendMessage ( nHwnd, nMsg, nwParam, nlParam );
```

Parameters

Table 121 ▪ SendMessage Parameters

Parameter	Description
nHwnd	Specifies the handle that identifies the window to receive the message.
nMsg	Specifies the message to send to the window(s).
nwParam	Specifies additional message information.
nlParam	Specifies additional message information.

Return Values

SendMessage returns the value it receives from calling the Windows API of the same name. The return value depends on the message received by the Windows API SendMessage. Consult Windows programming documentation for detailed information on messages returned by the Windows API SendMessage.

Additional Information

Task ***To pass string data in the fourth parameter of SendMessage, do the following:***

1. For projects converted from InstallShield Professional, include the required function declaration by doing one of the following:
   - Remove the preprocessor constant ISINCLUDE_NO_WINAPI_H from the Preprocessor Defines box, which is available on the Compile/Link tab on the Settings dialog box. (To access this dialog box, click Settings on the Build menu.)
   - Place the following code in your script:

     ```
     prototype USER.SendMessageA(HWND, NUMBER, NUMBER, BYREF STRING);
     ```

     (For projects created with InstallShield, `ISRTWindows.h` is included by default in `Ifx.h`, which in turn is included by default in the script.)
2. Call the function as in the following example:

   ```
   USER.SendMessageA( hWnd, LB_GETTEXT, nResult, sResult);
   ```

SendMessage Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the FindWindow and SendMessage functions.
 *
 * This script launches Windows Notepad and then calls
 * FindWindow to locate the Notepad window.  Next, it calls
 * SendMessage to maximize the window;  after a three-second
 * delay, it calls SendMessage again to minimize the
 * window.   When the script ends, Windows NotePad remains
 * open but minimized.  Note that the parameters passed to
 * SendMessage are Windows system messages whose values
 * are defined as constants in this script.
 *
 * Note: Before running this script, set the preprocessor
 *       constant NOTEPAD so that it references the fully-
 *       qualified name of the Windows Notepad executable.
 *
\*---------------------------------------------------------------*/

#define NOTEPAD "C:\\Windows\\Notepad.exe"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SendMessage(HWND);

function ExFn_SendMessage(hMSI)
    NUMBER nMsg, nwParam, nlParam;
    HWND nHwnd;
begin

    // Do not display the setup's background window.
    Disable (BACKGROUND);

    // Open the Windows Notepad.
    if (LaunchApp (NOTEPAD, "") < 0 ) then
        MessageBox ("Unable to launch Notepad.", SEVERE);
        abort;
    endif;

    // Wait three seconds so we can view the window before
    // it's maximized.
    Delay (3);

    // Retrieve the handle of the Notepad window.  The first
    // parameter is the window class.  A null string in the
    // second parameter specifies the topmost Notepad window.
    nHwnd = FindWindow ("NotePAD", "");

    if (nHwnd = NULL) then
        MessageBox ("Unable to find the Notepad window.", SEVERE);
    else
        // Send system command to maximize the window.
        SendMessage (nHwnd, WM_SYSCOMMAND, SC_MAXIMIZE, 0);

        // Wait three seconds so we can view the window
        // before it's minimized.
```

```
        Delay (3);

        // Send system command to minimize the window.
        SendMessage (nHwnd, WM_SYSCOMMAND, SC_MINIMIZE, nlParam);
    endif;

end;
```

ServiceAddService

The **ServiceAddService** function adds the service specified by szServiceName to the list of services registered on the system. You can customize the SERVICE_IS_PARAMS structure to control additional service creation elements. **ServiceAddService** does not install any files; you must install the service file yourself during the installation.

If the service specified by szServiceName already exists, **ServiceAddService** reconfigures it to the parameters specified in the function call. If the existing service is running when **ServiceAddService** is called, the installation attempts to stop the service before attempting to reconfigure the service. If the service cannot be stopped, **ServiceAddService** reconfigures the service and sets BATCH_INSTALL to non-zero so that Windows can complete the service reconfiguration after reboot.

Syntax

```
ServiceAddService ( szServiceName, szServiceDisplayName, szServiceDescription, szServicePathFile,
    bStartService, szStartServiceArgs );
```

Parameters

Table 122 ▪ ServiceAddService Parameters

Parameter	Description
szServiceName	Specifies the name of the service.
szServiceDisplayName	Specifies the display name of the service.
szServiceDescription	Specifies the service description.
szServicePathFile	Specifies the path to the service executable file and, optionally, command line parameters that are passed to the service whenever it is started.
bStartService	Specifies whether to start the service after adding it.
szStartServiceArgs	Specifies command line arguments that are passed to the service only when it is started by the installation.

Return Values

Table 123 ▪ ServiceAddService Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully added or reconfigured the service.
< ISERR_SUCCESS	Indicates that the function was unable to add or reconfigure the service. If this function fails, additional error information may be available by calling **GetExtendedErrInfo** and checking the value of its third argument. (This value typically indicates the result of internally calling the Windows API function **GetLastError** after a call to a Windows API function failed.) You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

If logging is enabled when **ServiceAddService** is called, the service is logged for uninstallation whether or not the service existed already and is removed when the application is uninstalled. If you are adding a service that should not be uninstalled, disable logging before calling this function.

Note that the publicly defined structures—SERVICE_IS_PARAMS and SERVICE_IS_STATUS—are not used when the service is uninstalled automatically. If you want to specify non-default settings when uninstalling the service, disable logging when adding the service and then remove the service manually during uninstallation by calling **ServiceRemoveService** directly from the script.

ServiceExistsService

The **ServiceExistsService** function determines whether the service specified by szServiceName is registered on the system.

Syntax

```
ServiceExistsService ( szServiceName );
```

Parameters

Table 124 ▪ ServiceExistsService Parameters

Parameter	Description
szServiceName	Specifies the name of the service.

Return Values

Table 125 ▪ ServiceExistsService Return Values

Return Value	Description
TRUE	Indicates that the service is registered on the system.
FALSE	Indicates that the service is not registered on the system, or that the setup could not determine whether the service is registered on the system.

ServiceGetServiceState

The **ServiceGetServiceState** function returns in nvServiceState the state of the service that is specified by szServiceName.

Syntax

```
ServiceGetServiceState ( szServiceName, nvServiceState );
```

Parameters

Table 126 ▪ ServiceGetServiceState Parameters

Parameter	Description
szServiceName	Specifies the name of the service.
nvServiceState	Returns one of the following Windows-defined constants specifying the state of the service: • SERVICE_STOPPED • SERVICE_START_PENDING • SERVICE_STOP_PENDING • SERVICE_RUNNING • SERVICE_CONTINUE_PENDING • SERVICE_PAUSE_PENDING • SERVICE_PAUSED

Return Values

Table 127 ▪ ServiceGetServiceState Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function retrieved the state of the service. Additional status information is available in the SERVICE_IS_STATUS system variable.
< ISERR_SUCCESS	Indicates that the function was unable to retrieve the state of the service. If this function fails, additional error information may be available by calling **GetExtendedErrInfo** and checking the value of its third argument. (This value typically indicates the result of internally calling the Windows API function **GetLastError** after a call to a Windows API function failed.) You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

ServiceInitParams

The **ServiceInitParams** function initializes the SERVICE_IS_PARAMS system variable's members to the following default values. This function is called automatically during setup initialization.

Syntax

```
ServiceInitParams ( );
```

System Variable Members

Table 128 ▪ ServiceInitParams System Variable Members

Parameter	Default Value
SERVICE_IS_PARAMS.lpMachineName	NULL
SERVICE_IS_PARAMS.lpDatabaseName	NULL
SERVICE_IS_PARAMS.dwDesiredAccess	SERVICE_ALL_ACCESS
SERVICE_IS_PARAMS.dwServiceType	SERVICE _WIN32_OWN_PROCESS
SERVICE_IS_PARAMS.dwStartType	SERVICE_AUTO_START
SERVICE_IS_PARAMS.dwErrorControl	SERVICE_ERROR_IGNORE
SERVICE_IS_PARAMS.lpLoadOrderGroup	NULL
SERVICE_IS_PARAMS.lpdwTagId	NULL
SERVICE_IS_PARAMS.lpDependencies	NULL
SERVICE_IS_PARAMS.lpServiceStartName	NULL
SERVICE_IS_PARAMS.lpPassword	NULL
SERVICE_IS_PARAMS.nStartServiceWaitCount	INFINITE
SERVICE_IS_PARAMS.nStopServiceWaitCount	INFINITE

Parameters

None.

Return Values

Table 129 ▪ ServiceInitParams Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

ServiceRemoveService

The **ServiceRemoveService** function removes the service that is specified by szServiceName from the service control manager database. If the service is running when the function is called, the installation stops the service before removing the service.

Syntax

```
ServiceRemoveService ( szServiceName );
```

Parameters

Table 130 ▪ ServiceRemoveService Parameters

Parameter	Description
szServiceName	Specifies the name of the service.

Return Values

Table 131 ▪ ServiceRemoveService Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function removed the service from the service control manager database.
< ISERR_SUCCESS	Indicates that the function was unable to remove the service. If this function fails, additional error information may be available by calling **GetExtendedErrInfo** and checking the value of its third argument. (This value typically indicates the result of internally calling the Windows API function **GetLastError** after a call to a Windows API function failed.) You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

ServiceStartService

The **ServiceStartService** function starts the service that is specified by szServiceName. If the service is running when the function is called, the installation stops it and then restarts it.

This function waits for the service to reach its running state before returning; it waits indefinitely as long as the service is updating the dwCheckPoint member of the SERVICE_IS_STATUS structure at least every dwWaitHint milliseconds. To force the function to return after a specific time interval, regardless of whether the service has started, you can change the nStartServiceWaitCount member of the structured variable SERVICE_IS_PARAMS to the appropriate time in seconds.

Syntax

```
ServiceStartService ( szServiceName, szStartServiceArgs );
```

Parameters

Table 132 ▪ ServiceStartService Parameters

Parameter	Description
szServiceName	Specifies the name of the service.
szStartServiceArgs	Specifies a comma-delimited string of arguments to the service.

Return Values

Table 133 ▪ ServiceStartService Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function started the service.
< ISERR_SUCCESS	Indicates that the function was unable to start the service. If this function fails, additional error information may be available by calling **GetExtendedErrInfo** and checking the value of its third argument. (This value typically indicates the result of internally calling the Windows API function **GetLastError** after a call to a Windows API function failed.) You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

ServiceStopService

The **ServiceStopService** function stops the service that is specified by szServiceName.

This function waits for the service to stop before returning; it waits indefinitely as long as the service is updating the dwCheckPoint member of the SERVICE_IS_STATUS structure at least every dwWaitHint milliseconds. To force the function to return after a specific time interval, regardless of whether the service has stopped, you can change the nStopServiceWaitCount member of the structured variable SERVICE_IS_PARAMS to the appropriate time in seconds.

Syntax

```
ServiceStopService ( szServiceName );
```

Parameters

Table 134 ▪ ServiceStopService Parameters

Parameter	Description
szServiceName	Specifies the name of the service.

Return Values

Table 135 ▪ ServiceStopService Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function stopped the service.
< ISERR_SUCCESS	Indicates that the function was unable to stop the service. If this function fails, additional error information may be available by calling **GetExtendedErrInfo** and checking the value of its third argument. (This value typically indicates the result of internally calling the Windows API function **GetLastError** after a call to a Windows API function failed.) You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

ServiceStopServiceEx2

The **ServiceStopServiceEx2** function stops the service that is specified by szServiceName, `bStopDependencies`.

This function stops the services and its dependencies.

Syntax

```
ServiceStopServiceEx2 ( szServiceName, bStopDependencies);
```

Parameters

Table 136 ▪ ServiceStopServiceEx2 Parameters

Parameter	Description
szServiceName	Specifies the name of the service.
bStopDependencies	Specifies to stop all or specific services. • True - Stops all the dependent services • False - Stops only a specific service which doesn't have any dependent services, or one which has dependencies but all of them are already stopped.

Return Values

Table 137 ▪ ServiceStopServiceEx2 Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function has stopped the service Indicates that the function has already stopped the service
< ISERR_GEN_FAILURE	Indicates that the function failed the service

Additional Information

SetColor

The **SetColor** function sets the color of the setup background.

Note ▪ *This function is not supported for use in Basic MSI setup projects.*

Syntax

```
SetColor ( nObject, nColor );
```

Parameters

Table 138 ▪ SetColor Parameters

Parameter	Description
nObject	Specifies the user interface object to change. Pass the following predefined constant in this parameter: ● BACKGROUND—Indicates the background of the setup window. The default color is solid teal: RGB (0,128,128).

Table 138 ▪ SetColor Parameters (cont.)

Parameter	Description
nColor	Specifies a color for the background. For a gradient background color, pass one of the following constants: ● BK_BLUE ● BK_GREEN ● BK_MAGENTA ● BK_ORANGE ● BK_PINK ● BK_RED ● BK_YELLOW For a solid background color, pass one of the following constants or call the RGB function to indicate a particular color (using the values provided in the parentheses): ● BK_SOLIDBLACK (0, 0, 0) ● BK_SOLIDBLUE (0, 0, 255) ● BK_SOLIDGREEN (0, 255, 0) ● BK_SOLIDMAGENTA (255, 0, 127) ● BK_SOLIDORANGE (255, 127, 0) ● BK_SOLIDPINK (255, 0, 255) ● BK_SOLIDRED (255, 0, 0) ● BK_SOLIDWHITE (255, 255, 255) ● BK_SOLIDYELLOW (255, 255, 0) For a custom color, pass the function RGB in this parameter.  ***Note ▪*** *When using an RGB value, you can apply the same method as described in the programming manuals for Microsoft Windows. You specify the mixture of RED, GREEN, and BLUE colors to "mix" the color. Use a number from 0 to 255 to represent the amount of color to use. You must use literal numbers in the parameters of the RGB macro. You can also use a long value that represents the RGB color instead of the RGB statement. To achieve a smoothing effect (gradient) when the background is painted with a custom color, bitwise OR the color with the predefined constant BK_SMOOTH. Note that the smoothing effect is better with 256 colors enabled.*

Return Values

Table 139 ▪ SetColor Return Values

Return Value	Description
0	Indicates that the function successfully set the color of the object.
< 0	Indicates that the function was unable to set the color of the user interface object.

SetColor Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetColor function.
 *
 * The first call to SetColor sets the background color to solid
 * blue.  The second call sets the background color to gradient
 * red.  The last call sets the background color to an RGB value.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetColor(HWND);

function ExFn_SetColor(hMSI)
begin

   // Change the background color to solid blue.
   if (SetColor (BACKGROUND, BK_SOLIDBLUE) < 0) then
      MessageBox ("SetColor failed.", SEVERE);
   endif;

   // Delay for three seconds.
   Delay (3);

   // Change the background color to gradient red.
   if (SetColor (BACKGROUND, BK_RED) < 0) then
      MessageBox ("SetColor failed.", SEVERE);
   endif;

   // Delay for three seconds.
   Delay (3);

   // Change the background color to custom magenta.
```

```
   if (SetColor (BACKGROUND, RGB(100, 50, 150)) < 0) then
      MessageBox ("SetColor failed.", SEVERE);
   endif;

   Delay (3);

end;
```

SetDialogTitle

The **SetDialogTitle** function changes the titles that appear in the title bars of some common built-in dialogs. Specify the dialog using the parameter nDialogId. If you do not use SetDialogTitle, the default title appears.

When you set the title for a particular dialog, InstallShield uses that title for every instance of that type of dialog until you use SetDialogTitle to change the title again. You must call SetDialogTitle separately for each type of dialog whose title you wish to change.

Note ▪ *InstallShield creates message boxes using standard Windows message box functions. Windows determines the OK and Cancel button text for these message boxes. InstallShield cannot control the text used in the buttons inside Windows message boxes.*

Syntax

```
SetDialogTitle ( nDialogId, szTitle );
```

Parameters

Table 140 ▪ SetDialogTitle Parameters

Parameter	Description
nDialogId	Identifies the built-in dialog whose title is to be changed change. Pass one of the following predefined constants in this parameter: • **DLG_ASK_OPTIONS**—Changes the title of the AskOptions dialog. • **DLG_ASK_PATH**—Changes the title of the AskPath dialog. • **DLG_ASK_TEXT**—Changes the title of the AskText dialog. • **DLG_ASK_YESNO**—Changes the title of the AskYesNo dialog. • **DLG_ENTER_DISK—**Changes the title of the EnterDisk dialog. • **DLG_MSG_INFORMATION**—Changes the title of the Information-style MessageBox. • **DLG_MSG_SEVERE**—Changes the title of the Severe-style MessageBox. • **DLG_STATUS**—Changes the title of the dialog-style progress indicator. You must re-enable the dialog-style progress indicator by calling `Enable(STATUSDLG)` after calling SetDialogTitle with the DLG_STATUS option in order for the title change to take effect. • **DLG_MSG_WARNING**—Changes the title of the Warning-style MessageBox. • **DLG_USER_CAPTION**—Changes the MessageBox caption when you use the user-defined message box styles.
szTitle	Specifies the new title.

Return Values

Table 141 ▪ SetDialogTitle Return Values

Return Value	Description
0	Indicates that the function successfully changed the title of the dialog.
< 0	Indicates that the function was unable to change the title of the dialog.

SetDialogTitle Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the SetDialogTitle function.
 *
 * SetDialogTitle is called to change the title of the
 * AskYesNo dialog.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "SetDialogTitle Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetDialogTitle(HWND);

function ExFn_SetDialogTitle(hMSI)
   NUMBER nCheck1, nCheck2;
begin

   // Set the title for the AskYesNo dialog.
   if (SetDialogTitle (DLG_ASK_YESNO, TITLE_TEXT) < 0) then

      // Report an error.
      MessageBox ("SetDialogTitle failed.", SEVERE);

   else

      // Display the AskYesNo dialog with its new title.
      AskYesNo ("Did SetDialogTitle change this title?", YES);

   endif;

end;
```

SetDisplayEffect

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SetDisplayEffect** function specifies the display effect to be used when displaying bitmaps or metafiles with the PlaceBitmap function or when displaying billboards. Once the display effect has been set, all bitmaps subsequently displayed by PlaceBitmap, or billboards, are displayed with this effect until a new effect is set by another call to SetDisplayEffect.

Display effects occur only when placing bitmaps or billboards. No display effects are used when removing bitmaps or billboards.

Note ▪ *A bitmap that is displayed by PlaceBitmap with the option BITMAPICON, FULLSCREEN, FULLSCREENSIZE, or TILED is not displayed with display effects. Instead it is displayed normally. For more information, see PlaceBitmap.*

Syntax

```
SetDisplayEffect ( nEffect );
```

Parameters

Table 142 ▪ SetDisplayEffect Parameters

Parameter	Description
nEffect	Specifies a display effect. Pass one of the following predefined constants in this parameter. Note that these constants are exclusive; you cannot use the bitwise OR operator and specify more than one. Moreover, this parameter has no effect when BITMAPICON, FULLSCREEN, FULLSCREENSIZE, or TILED is specified when displaying a bitmap with PlaceBitmap. • **EFF_FADE**—The bitmap or billboard slowly fades in and out. • **EFF_REVEAL**—The bitmap or billboard gradually fills in from the center toward all sides. • **EFF_HORZREVEAL**—The bitmap or billboard gradually scrolls out horizontally from its center. • **EFF_HORZSTRIPE**—A section of the bitmap or billboard fills in horizontally from the outside in; then the remainder fills in from the center out. • **EFF_VERTSTRIPE**—A section of the bitmap or billboard fills in vertically from the outside in; then the remainder fills in from the center out. • **EFF_BOXSTRIPE**—A section of the bitmap or billboard fills in from all sides; then the remainder fills in toward all sides. • **EFF_NONE**—This option is the default setting. Use it to clear the display effects after calling one of the other options.  ***Note ▪*** *Only EFF_REVEAL and EFF_HORZREVEAL work with metafiles.*

Return Values

Table 143 ▪ SetDisplayEffect Return Values

Return Value	Description
0	Indicates that the function successfully set the display effect.
< 0	Indicates that the function was unable to set the display effect.

SetDisplayEffect Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetDisplayEffect function.
 *
```

```
 * This script displays the same bitmap seven times, with a
 * different effect each time.
 *
 * Note: In order for this script to run correctly, you must
 *       set the constant BITMAP_FILE so that it references an
 *       existing bitmap file on the target system.  The
 *       constant BITMAP_ID can be any integer in this example
 *       since the bitmap is not loaded from a DLL and there
 *       are no other bitmaps on the screen.
 *
\*------------------------------------------------------------*/

#define BITMAP_FILE "C:\\Windows\\Forest.BMP"

// ID to use for the bitmap.
#define BITMAP_ID 1

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetDisplayEffect(HWND);

function ExFn_SetDisplayEffect(hMSI)
begin

   // Open a background window so the effect's name can
   // be shown in the title bar each time the bitmap
   // is displayed.
   Enable (FULLWINDOWMODE);
   Enable (BACKGROUND);

   // 1. Display bitmap using the box stripe effect.
   SetDisplayEffect (EFF_FADE);

   SetTitle ("Fade effect", 0, BACKGROUNDCAPTION);
   PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
   Delay (3);
   PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

   // 2. Display bitmap using the reveal effect.
   SetDisplayEffect (EFF_REVEAL);

   SetTitle("Reveal effect", 0, BACKGROUNDCAPTION);
   PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
   Delay (3);
   PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

   // 3. Display bitmap using the horizontal reveal effect.
   SetDisplayEffect (EFF_HORZREVEAL);

   SetTitle ("Horizontal reveal effect", 0, BACKGROUNDCAPTION);
   PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
   Delay (3);
   PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

   // 4. Display bitmap using the horizontal stripe effect.
```

```
    SetDisplayEffect (EFF_HORZSTRIPE);

    SetTitle ("Horizontal stripe effect", 0, BACKGROUNDCAPTION);
    PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
    Delay (3);
    PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

    // 5. Display bitmap using the vertical stripe effect.
    SetDisplayEffect (EFF_VERTSTRIPE);

    SetTitle ("Vertical stripe effect", 0, BACKGROUNDCAPTION);
    PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
    Delay (3);
    PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

    // 6. Display bitmap using the box stripe effect.
    SetDisplayEffect (EFF_BOXSTRIPE);

    SetTitle ("Box stripe effect", 0, BACKGROUNDCAPTION);
    PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
    Delay (3);
    PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);
    Delay (1);

    // 7. Clear all effects.
    SetDisplayEffect (EFF_NONE);

    SetTitle ("No effect", 0, BACKGROUNDCAPTION);
    PlaceBitmap (BITMAP_FILE, BITMAP_ID, 0, 0, CENTERED);
    Delay (3);
    PlaceBitmap ("", BITMAP_ID, 0, 0, REMOVE);

    Delay (1);

end;
```

SetErrorMsg

When a disk error occurs, the **SetErrorMsg** function sets the corresponding error message that is displayed by the **EnterDiskError** function.

Syntax

```
SetErrorMsg (nErrorID, szText);
```

Parameters

Table 144 ▪ SetErrorMsg Parameters

Parameter	Description
nErrorID	Specifies which error message to customize. Pass one of the following predefined constants in this parameter: • **ERR_BOX_BADPATH**—This message appears when **EnterDiskError** detects a bad path entered by the user. • **ERR_BOX_BADTAGFILE**—This message appears when **EnterDiskError** detects the specified tag file does not exist on the disk. • **ERR_BOX_DISKID**—This message appears when **EnterDiskError** detects the drive specified by the user does not exist.
szText	Specifies the error message to display in the message box.

Return Values

Table 145 ▪ SetErrorMsg Return Values

Return Value	Description
0	Indicates that the function successfully changed the error message.
< 0	Indicates that the function was unable to change the error message.

SetErrorMsg Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetErrorMsg function.
 *
 * This script customizes the error messages displayed after a
 * call to EnterDisk if the next disk in a set of setup disks
 * is not ready in the specified drive.
 *
\*---------------------------------------------------------------*/

// Define the text messages for EnterDisk errors.
#define MSG_DRIVE_DOOR "The drive door is open."
#define MSG_BAD_PATH   "The path does not exist."
#define MSG_BAD_TAG    "Bad tag file."
```

```
#define MSG_BAD_DRIVE  "The specified drive does not exist."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetErrorMsg(HWND);

function ExFn_SetErrorMsg(hMSI)
begin

   // Set the messages for the error boxes of the EnterDisk function.
   SetErrorMsg (ERR_BOX_DRIVEOPEN, MSG_DRIVE_DOOR);
   SetErrorMsg (ERR_BOX_BADPATH, MSG_BAD_PATH  );
   SetErrorMsg (ERR_BOX_BADTAGFILE, MSG_BAD_TAG);
   SetErrorMsg (ERR_BOX_DISKID, MSG_BAD_DRIVE);

   // Prompt the user to specify a disk.
   EnterDisk ("Please enter the 'Examples' disk:", "Example.exe");

end;
```

SetErrorTitle

When a disk error occurs, the **SetErrorTitle** function sets the title bar for the error message that is displayed by the **EnterDiskError** function.

Syntax

```
SetErrorTitle (nErrorID, szText);
```

Parameters

Table 146 ▪ SetErrorTitle Parameters

Parameter	Description
nErrorID	Specifies the error message box whose title you want to customize. Pass one of the following predefined constants in this parameter: • **ERR_BOX_BADPATH**—This message appears when **EnterDiskError** detects a bad path. • **ERR_BOX_BADTAGFILE**—This message box appears when **EnterDiskError** detects that the specified tag file does not exist on the disk. • **ERR_BOX_DISKID**—This message box appears when **EnterDiskError** detects that the specified drive does not exist.
szText	Specifies the title to display in the error message box.

Return Values

Table 147 ▪ SetErrorTitle Return Values

Return Value	Description
0	Indicates that the function successfully changes the text in the title bar.
< 0	Indicates that the function was unable to change the text in the title bar.

SetErrorTitle Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetErrorTitle function.
 *
 * This script customizes the title text for the message box
 * displayed after a call to EnterDisk if the next disk in set
 * of setup disks is not ready in the specified drive.
 *
\*---------------------------------------------------------------*/

// Define the message box title text for EnterDisk errors.
#define MSG_DRIVE_DOOR "Drive door is open."
#define MSG_BAD_PATH   "Path not found."
#define MSG_BAD_TAG    "Bad tag file."
```

```
#define MSG_BAD_DRIVE  "Drive not found."

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetErrorTitle(HWND);

function ExFn_SetErrorTitle(hMSI)
   STRING szText;
    NUMBER nErrorID;
begin

   // Set the message box title for each error that can
   // occur after a call to EnterDisk.
   SetErrorTitle (ERR_BOX_DRIVEOPEN,  MSG_DRIVE_DOOR);
   SetErrorTitle (ERR_BOX_DISKID,     MSG_BAD_DRIVE);
   SetErrorTitle (ERR_BOX_BADTAGFILE, MSG_BAD_TAG);
   SetErrorTitle (ERR_BOX_BADPATH,    MSG_BAD_PATH);

   // Make drive A: the default.

   // Prompt the user to specify a disk.
   EnterDisk ("Please enter the 'Examples' disk:", "Example.exe");

end;
```

SetExtendedErrInfo

Project ▪ *This information applies to InstallScript projects.*

The **SetExtendedErrInfo** function sets error information, which can be retrieved by **GetExtendedErrInfo**.

Syntax

```
SetExtendedErrInfo ( szScriptFile, nLineNumber, nError );
```

Parameters

Table 148 ▪ SetExtendedErrInfo Parameters

Parameter	Description
szScriptFile	Specifies the script file in which the error occurred. To specify the current script file (that is, the script file that contains the call to SetExtendedErrInfo), pass the reserved identifier __FILE__.
nLineNumber	Specifies the line number in which the error occurred. To specify the current line number (that is, the line number of the call to SetExtendedErrInfo), pass the reserved identifier __LINE__.
nError	Specifies the error code for the error.

Return Values

Table 149 ▪ SetExtendedErrInfo Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully set the error information.
< ISERR_SUCCESS	The function failed to set the error information.

SetFileInfo

The **SetFileInfo** function sets the modify date or time stamp of an existing file or changes the file's attributes. To change both a file's date and time you must call SetFileInfo twice, once to change the date and once to change the time. However, you can set multiple file attributes with a single call to SetFileInfo by combining constants in nAttribute with the OR (|) operator.

Note ▪ *You can also use this function to change a folder's attribute. For example, you can use this function to create a hidden folder.*

Syntax

```
SetFileInfo ( szPathFile, nType, nAttribute, szValue );
```

Parameters

Table 150 ▪ SetFileInfo Parameters

Parameter	Description
szPathFile	Specifies the fully qualified name of the file or folder whose date, time, or attributes you want to change.
nType	Specifies the file characteristic to change. Pass one of the following predefined constants in this parameter: • **FILE_ATTRIBUTE—**Indicates that one or more of the file's attributes will be changed. • **FILE_DATE—**Indicates that the file's date stamp will be changed. • **FILE_TIME—**Indicates the file's time stamp will be changed.
nAttribute	Specifies the file attribute when nType is FILE_ATTRIBUTE. (When nType is FILE_DATE or FILE_TIME, pass 0 in this parameter.) To specify more than one file attribute, combine one or more of the following predefined constants with the OR (|) operator: • **FILE_ATTR_ARCHIVED—**Sets the archive attribute. • **FILE_ATTR_HIDDEN—**Sets the hidden attribute. • **FILE_ATTR_READONLY—**Sets the read-only attribute. • **FILE_ATTR_SYSTEM—**Sets the system attribute. • **FILE_ATTR_NORMAL—**When this constant is specified alone, all file attributes are cleared. When the OR operator is used to combine this constant with other file attribute constants, those attributes not included in the OR expression are cleared.
szValue	Specifies one of the following, depending on the value you passed in nType: • **FILE_DATE—**Specifies a date in the format YYYY/MM/DD or YYYY\MM\DD. That date must not be earlier than "1980/01/01". When using backslashes as delimiters, remember that a backslash is inserted into a string as an escape sequence, for example, "1980\\01\\01". • **FILE_TIME—**Specifies a time in the format HH:MM:SS, using a 24-hour clock format; note that the seconds must be a multiple of 2. • **FILE_ATTRIBUTE—**Pass a null string ("") in this parameter.

Return Values

Table 151 ▪ SetFileInfo Return Values

Return Value	Description
0	Indicates that the function successfully set the file's date stamp, time stamp, or attributes.
< 0	Indicates that the function was unable to set the file's date stamp, time stamp, or attributes.

SetFileInfo Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetFileInfo function.
 *
 * SetFileInfo is called to set a file's date, time, and
 * attributes.
 *
 * Note: Before running this script, create a file called
 *       ISExampl.txt in the root of drive C.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_FILE "C:\\ISExampl.txt"

#define TITLE_TEXT   "SetFileInfo Example"

#define NEW_FILE_DATE "2003/09/12"
#define NEW_FILE_TIME "18:30:00"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetFileInfo(HWND);

function ExFn_SetFileInfo(hMSI)
   LIST listID;
begin

   // Create a list to hold messages.
   listID = ListCreate (STRINGLIST);

   // If an error occurred, report it; then terminate.
   if (listID = LIST_NULL) then
```

```
      MessageBox ("Unable to create list required for this example.", SEVERE);
      abort;
   endif;

   // Set the file's date.
   if (SetFileInfo (EXAMPLE_FILE, FILE_DATE, 0, NEW_FILE_DATE) < 0) then
      ListAddString (listID, "Unable to change the file\'s date.", AFTER);

   else
      ListAddString (listID, "File\'s date changed to" + NEW_FILE_DATE + ".",
AFTER);

   endif;

  // Set the file's time.
   if (SetFileInfo (EXAMPLE_FILE, FILE_TIME, 0, NEW_FILE_TIME) < 0) then
     ListAddString (listID, "Unable to change the file\'s time.", AFTER);

   else
     ListAddString (listID, "File\'s date changed to" + NEW_FILE_TIME + ".",
AFTER);

   endif;

   // Clear the file's attributes.
   if (SetFileInfo (EXAMPLE_FILE, FILE_ATTRIBUTE, FILE_ATTR_NORMAL, "") < 0)
then
      ListAddString (listID, "Unable to clear file attributes.", AFTER);

   else
      ListAddString (listID, "File attributes cleared.", AFTER);

   endif;

   // Report the results.
   SdShowInfoList (TITLE_TEXT, "Changes to " + EXAMPLE_FILE, listID);

   // Remove the list from memory.
   ListDestroy (listID);

end;
```

SetFont

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SetFont** function sets the font and style when displaying text strings. You can use standard Windows fonts with this function.

Syntax

```
SetFont ( nItemID, nFontStyle, szFontName );
```

Parameters

Table 152 ▪ SetFont Parameters

Parameter	Description
nItemID	Specifies the item whose font and font style is to be set. Pass the following predefined constant in this parameter: • **FONT_TITLE—**Specifies the main title of the setup procedure, which is displayed in the top left corner of the setup window.
nFontStyle	Specifies font styles. Pass one or more of the following predefined constants in this parameter. All but STYLE_NORMAL can be bitwise ORed to specify multiple styles. • **STYLE_NORMAL—**No bold, italic, or shadow (cannot be ORed) • **STYLE_BOLD—**Bold text. • **STYLE_ITALIC—**Italic text. • **STYLE_SHADOW—**Text with shadow drawn. • **STYLE_UNDERLINE—**Underlined text.
szFontName	Specifies the name of an available Windows font. Valid font names include Courier, Helv, Helvetica, Modern, Roman, Script, Terminal, Times, and TmsRmn. If the specified font is not found with the styles specified, Arial is used.

Return Values

Table 153 ▪ SetFont Return Values

Return Value	Description
0	Indicates that the function successfully set the font.
< 0	Indicates that the function was unable to set the font.

SetFont Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetFont function.
 *
```

```
 * In this script, three different titles are displayed in
 * the setup's main window;  each title remains on the
 * screen for three seconds. The titles are displayed by
 * calls to SetTitle, which also sets the type size and
 * color.  To control the font and font style of the titles,
 * the script calls SetFont before each call to SetTitle.
 *
 *           Font              Size    Style          Color
 *
 * Title 1   Times New Roman    36     Normal         Red
 * Title 2   Courier New        48     Italic         Yellow
 * Title 3   Arial              60     Bold, Shadow   Blue
 *
\*----------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetFont(HWND);

function ExFn_SetFont(hMSI)
begin

    Enable ( BACKGROUND );

    // Title 1: Times Roman, 36pt, Normal, Red.
    if (SetFont (FONT_TITLE, STYLE_NORMAL, "Times New Roman") < 0) then
        MessageBox ("SetFont failed.", SEVERE);
    endif;

    SetTitle ("SetFont Example 1", 36, RGB(255, 0, 0));
    Delay (3);

    // Title 2: Courier New, 48pt, Italic, Yellow.
    if (SetFont (FONT_TITLE, STYLE_ITALIC, "Courier New") < 0) then
        MessageBox ("SetFont failed.", SEVERE);
    endif;

    SetTitle ("SetFont Example 2", 48, RGB(255, 255, 0));
    Delay (3);

    // Title 3: Arial, 60pt, Bold, Shadow, Blue.
    if (SetFont (FONT_TITLE, STYLE_BOLD | STYLE_SHADOW, "Arial") < 0) then
        MessageBox ("SetFont failed.", SEVERE);
    endif;

    SetTitle ("SetFont Example 3", 60, RGB(0, 0, 255));
    Delay (3);

end;
```

SetInstallationInfo

The **SetInstallationInfo** function sets the values of the system variables IFX_COMPANY_NAME, IFX_PRODUCT_NAME, IFX_PRODUCT_VERSION, and IFX_PRODUCT_KEY. SetInstallationInfo specifies this information for use by CreateInstallationInfo, which in an event-based script is called in the default OnShowUI event handler code to create an application information key and a per application paths key for the program you are installing.

SetInstallationInfo is a special registry-related function, designed to work with certain predefined registry keys. For more information on special registry-related functions, see Special Registry-Related Functions.

Syntax

```
SetInstallationInfo ( szCompany, szProduct, szVersion, szProductKey );
```

Parameters

Table 154 ▪ SetInstallationInfo Parameters

Parameter	Description
szCompany	Specifies the company name. CreateInstallationInfo uses szCompany to create a \<company> key under the HKEY_LOCAL_MACHINE\Software key in the registry.
szProduct	Specifies the name of the product to be installed. CreateInstallationInfo uses szProduct to create a \<product> key under the HKEY_LOCAL_MACHINE\Software\<company> key in the registry. The value in szProduct is also inserted into the first paragraph of message text in the Welcome dialog.
szVersion	Specifies the version number of the product. CreateInstallationInfo uses szVersion to create a \<version> key under the HKEY_LOCAL_MACHINE\Software\<company>\<product> key in the registry. Together, the \<company> key (szCompany), the \<product> key (szProduct), and the \<version> key (szVersion) are referred to as the application information key. The application information key is created immediately upon calling CreateInstallationInfo.
szProductKey	Specifies the name of the application's main executable file. If your product uses several executables, specify the executable that best represents the product. CreateInstallationInfo uses szProductKey to create a per application paths key under the key HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\App Paths. The per application paths key is not actually created in the registry until you call RegDBSetItem to create a value name and value pair under the key.

Return Values

This function always returns 0.

SetObjectPermissions

The **SetObjectPermissions** function is used to set permissions for a file, a folder, or a registry key. The file, folder, or registry key can be installed as part of your installation, or it can be already present on the target system.

Syntax

```
SetObjectPermissions (byval string szObject, byval number nType, byval string szDomain, byval string
    szUser, byval number nPermissions, byval number nOptions);
```

Parameters

Table 155 ▪ SetObjectPermissions Parameters

Parameter	Description
szObject	Specify the object (file, folder, or registry key) for which you want to set permissions. For files and folders, specify the full path. For registry keys, use one of the following in the path: ● **CLASSES_ROOT**—This indicates the HKEY_CLASSES_ROOT hive. ● **CURRENT_USER**—This indicates the HKEY_CURRENT_USER hive. ● **MACHINE**—This indicates the HKEY_LOCAL_MACHINE hive. ● **USERS**—This indicates the HKEY_USERS hive. The following example set permissions for a key in HKEY_LOCAL_MACHINE: `SetObjectPermissions("MACHINE\\Software\\MyProduct\\Example", IS_PERMISSIONS_TYPE_REGISTRY, "", "Users", KEY_CREATE_SUB_KEY, IS_PERMISSIONS_OPTION_DENY_ACCESS);`
nType	Indicate the type of object that is being passed through the szObject parameter. Valid options are: ● **IS_PERMISSIONS_TYPE_FILE**—szObject is a file. ● **IS_PERMISSIONS_TYPE_FOLDER**—szObject is a folder. ● **IS_PERMISSIONS_TYPE_REGISTRY**—szObject is a registry key.
szDomain	Specify the domain name of the user for which permissions are being set. To use the local machine as the domain, pass an empty string ("") for this parameter.

Table 155 ▪ SetObjectPermissions Parameters (cont.)

Parameter	Description
szUser	Specify the name of the user for which permissions are being set. Available options are: ● Administrators ● Authenticated Users ● Creator Owner ● Everyone ● Guests ● Interactive ● IUSR ● Local Service ● Local System ● Network Service ● Power Users ● Remote Desktop Users ● Users The user can be one that is being created during the installation, or one that already exists on the target system at run time.

Table 155 ▪ SetObjectPermissions Parameters (cont.)

Parameter	Description
nPermissions	To specify the permissions that are to be applied to the object for the specified user, pass one of the following predefined constants in this parameter. You can combine these constants by using the bitwise OR operator (|). Available options are: • DELETE • GENERIC_ALL • GENERIC_EXECUTE • GENERIC_WRITE • GENERIC_READ • READ_CONTROL • STANDARD_RIGHTS_ALL • STANDARD_RIGHTS_EXECUTE • STANDARD_RIGHTS_READ • STANDARD_RIGHTS_REQUIRED • STANDARD_RIGHTS_WRITE • SYNCHRONIZE • WRITE_DAC • WRITE_OWNER The following options are applicable to files and folders: • FILE_LIST_DIRECTORY (for folders) • FILE_READ_DATA (for files) • FILE_WRITE_DATA (for files) • FILE_ADD_FILE (for folders) • FILE_APPEND_DATA (for files) • FILE_ADD_SUBDIRECTORY (for folders) • FILE_READ_EA (for files and folders) • FILE_WRITE_EA (for files and folders) • FILE_EXECUTE (for files) • FILE_TRAVERSE (for folders) • FILE_DELETE_CHILD (for folders) • FILE_READ_ATTRIBUTES (for files and folders) • FILE_WRITE_ATTRIBUTES (for files and folders) • FILE_ALL_ACCESS

Table 155 ▪ SetObjectPermissions Parameters (cont.)

Parameter	Description
nPermissions (cont.)	The following options are applicable to registry keys: • KEY_QUERY_VALUE • KEY_SET_VALUE • KEY_CREATE_SUB_KEY • KEY_ENUMERATE_SUB_KEYS • KEY_NOTIFY • KEY_CREATE_LINK For information on each value, see "Registry Key Security and Access Rights," "File Security and Access Rights," and "Registry Key Security and Access Rights" in the MSDN Library.
nOptions	Pass one or more of the following predefined constants in this parameter. • **IS_PERMISSIONS_OPTION_64BIT_OBJECT**—The set of permissions that are specified in nPermissions should be set for a 64-bit key, regardless of whether the REGDB_OPTION_W0W64_64KEY option is enabled. Note that the IS_PERMISSIONS_OPTION_64BIT_OBJECT constant should not be passed on 32-bit target systems. In addition, this constant does not affect permissions for files or folders. • **IS_PERMISSIONS_OPTION_DENY_ACCESS**—The set of permissions that are specified in nPermissions should be denied. • **IS_PERMISSIONS_OPTION_NO_APPLYDOWN**—The permissions should be applied to only the specified object; they should not be propagated to any child objects. • **IS_PERMISSIONS_OPTION_ALLOW_ACCESS**—The set of permissions that are specified in nPermissions should allow access. You can combine more than one constant by using the bitwise OR operator (|). The IS_PERMISSIONS_OPTION_DENY_ACCESS and IS_PERMISSIONS_OPTION_ALLOW_ACCESS constants should not be combined because they are mutually exclusive; if you specify both of these options for nOptions, permissions are denied.

Return Values

Table 156 ▪ SetObjectPermissions Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully set the permissions.
!= ISERR_SUCCESS	The function could not set the permissions. The return value is a Win32 error. For documentation on Win32 errors, see the MSDN Library.

Additional Information

SetObjectPermissions attempts to set permissions on a 64-bit key if the REGDB_OPTION_WOW64_64KEY option is enabled.

To set permissions for files that are in the 64-bit System32 folder, file system redirection should be disabled before the **SetObjectPermissions** function is called. To disable file system redirection, use the WOW64FSREDIRECTION constant, as shown in the following code:

```
Disable (WOW64FSREDIRECTION);
```

Once the operation is done, disable file system redirection:

```
Enable(WOW64FSREDIRECTION);
```

SetObjectPermissions Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the SetObjectPermissions function.
//
//  This sample shows how to prevent the local administrator
//  from changing a file or any of its attributes.
//
//---------------------------------------------------------------------------

function OnFirstUIAfter()
    STRING szTitle, szMsg1, szMsg2, szOpt1, szOpt2;
    NUMBER bvOpt1, bvOpt2;
begin

    SetObjectPermissions (TARGETDIR+"MyFile.exe",IS_PERMISSIONS_TYPE_FILE, "", "administrator",
                          FILE_WRITE_DATA|FILE_APPEND_DATA|FILE_WRITE_EA|FILE_WRITE_ATTRIBUTES,
                          IS_PERMISSIONS_OPTION_DENY_ACCESS);

end;
```

SetShortcutProperty

The **SetShortcutProperty** function sets one or more shortcut properties that you want the Windows Shell to set at installation run time. For example, **SetShortcutProperty** has built-in support for enabling you to set Shell properties that control the following behavior:

- Specify whether a shortcut should be pinned to the Windows 8 Start screen.
- Specify whether end users should be able to pin a shortcut to the taskbar or Start menu on Windows 7 or later systems.
- Prevent a shortcut on the Start menu from being highlighted as newly installed on Windows 7 or later systems.

SetShortcutProperty also lets you set additional properties that the Windows Shell supports.

Note ▪ *The shortcut and its target must be present on the target system before* **SetShortcutProperty** *can be called.*

SetShortcutProperty *does not support the configuration of Internet shortcuts.*

Syntax

```
SetShortcutProperty (szShortcutFolder, szName, szPropertyKey, szValue);
```

Parameters

Table 157 ▪ SetShortcutProperty Parameters

Parameter	Description
szShortcutFolder	Specify the path of the shortcut whose properties you want to configure. To configure a shortcut that is in a specific folder, specify the fully qualified path—for example: `C:\\ProgramData\\Microsoft\\Windows\\Start Menu\\Programs` If the shortcut is on the Programs menu of the Start menu, you can pass a null string ("") in this parameter. You can pass one of the following InstallScript system variables in this parameter: ● **FOLDER_DESKTOP**—Adds the shortcut to the desktop. ● **FOLDER_STARTUP**—Adds the shortcut to the Startup menu. ● **FOLDER_STARTMENU**—Adds the shortcut to the Start menu. ● **FOLDER_PROGRAMS**—Adds the shortcut to the Start\Programs menu. You can also specify a path relative to a folder that is identified by an InstallScript system variable—for example: `FOLDER_PROGRAMS ^ "ACCESSORIES\\GAMES"`
szName	Specify the name of the shortcut that you are configuring.

Table 157 ▪ SetShortcutProperty Parameters (cont.)

Parameter	Description
szPropertyKey	Specify the property key name that you want to set. The properties that can be set are defined in propkey.h, which is part of the Windows SDK. You can pass any of the following constants for property keys that are predefined in InstallScript: ● **SSP_PROPERTY_PREVENT_PINNING**—Do not allow the shortcut to be pinned to the Start menu or taskbar on Windows 7 or later systems. This option hides the context menu commands that enable end users to pin the shortcut to the taskbar and to the Start menu. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. To enable this property, set szValue to 1. ● **SSP_PROPERTY_NO_NEW_INSTALL_HIGHLIGHT**—Do not highlight the shortcut as newly installed after end users install your product on Windows 7 or later systems. This has the same effect as clearing the Highlight newly installed programs check box in the Customize Start Menu dialog box for an individual item on a target system. You may want to use this option for shortcuts that are for tools and secondary products that are part of your installation. To enable this property, set szValue to 1. ● **SSP_PROPERTY_NO_STARTSCREEN_PIN**—Do not pin the shortcut to the Start screen by default on Windows 8 target systems. If you pass this constant, the installation sets a Windows Shell property that was introduced in Windows 8. You may want to prevent pinning for shortcuts that are for tools and secondary products that are part of your installation. To enable this property, set szValue to 1. For more information on SSP_PROPERTY_PREVENT_PINNING and SSP_PROPERTY_NO_STARTSCREEN_PIN, see the Additional Information section.
szValue	Specify the value (represented as a string) of the property that you are setting. For information on the value to use with a given property, see propkey.h, which is part of the Windows SDK. The InstallScript engine converts the string value into the appropriate data type that corresponds with the property that is specified in szPropertyKey.

Return Values

Table 158:

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully set the shortcut property.
< ISERR_SUCCESS	Indicates that the function was unable to set the shortcut property. You can obtain the error message text associated with a large negative return value—for example,-2147024891(0x80070005)—by calling FormatMessage.

Additional Information

Note the following details about two of the nFlag constants.

SSP_PROPERTY_PREVENT_PINNING

If you configure the shortcut to prevent pinning to the taskbar and the Start menu, the target of the shortcut is ineligible for inclusion in the most frequently used list on the Start menu.

Shortcuts that contain certain strings cannot be pinned to the taskbar or the Start menu, and they cannot be displayed in the most frequently used list. Examples are:

- Documentation
- Help
- Install
- Remove
- Setup
- Support

SSP_PROPERTY_NO_STARTSCREEN_PIN

Note that Windows 8 maintains information about shortcut pinning to the Start screen after a shortcut is removed by uninstalling the application. Therefore, the SSP_PROPERTY_NO_STARTSCREEN_PIN constant has no effect on the target system if the shortcut has already been installed on it. Thus, when you are testing this functionality, ensure that you test on a clean machine—one on which this shortcut and its target have never been installed.

SetShortcutProperty Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the SetShortcutProperty function.
 *
 * This example sets a Shell property for a shortcut. The
 * property hides the context menu commands that enable
 * end users to pin the shortcut to the taskbar and to the
 * Start menu.
 *
 * Note: In order for this script to run correctly, add an
 * executable file to your project, and in the Shortcuts view,
 * create a shortcut called My Shortcut. The target of the
 * shortcut should be the executable file that you added to
 * your project. The location of the shortcut should be the
 * desktop.
 *
\*------------------------------------------------------------*/

function OnFirstUIAfter()
    STRING szName, szValue;
begin

    // Set up parameters for the SetShortcutProperty call.
    szName  = "My Shortcut";
    szValue = "1";

    // Set the shortcut property that prevents pinning to the taskbar and the Start menu.
    if (SetShortcutProperty (FOLDER_DESKTOP, szName, SSP_PROPERTY_PREVENT_PINNING,
                             szValue) < 0) then
        MessageBox ("SetShortcutProperty failed", SEVERE);
    else
        SprintfBox (INFORMATION, "SetShortcutProperty", "%s configured successfully.",
                    szName);
    endif;

end;
```

SetStatus

Project ▪ *This information applies to InstallScript projects.*

The **SetStatus** function is called in an object script to set the object's Status.Number and Status.Description properties. To set the object's other status properties, call SetStatusEx.

Syntax

```
SetStatus ( nNumber, szDescription );
```

Parameters

Table 159 ▪ SetStatus Parameters

Parameter	Description
nNumber	Specifies the value of Status.Number.
szDescription	Specifies the value of Status.Description.

Return Values

Table 160 ▪ SetStatus Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully set the status properties.
< ISERR_SUCCESS	The function failed to set the status properties.

SetStatusEx

Project *▪ This information applies to InstallScript projects.*

The **SetStatusEx** function is called in an object script to set the object's status properties.

Syntax

```
SetStatusEx ( nNumber, szDescription, szSource, szScriptFile, nScriptLine, nScriptError );
```

Parameters

Table 161 ▪ SetStatusEx Parameters

Parameter	Description
nNumber	Specifies the value of Status.Number.
szDescription	Specifies the value of Status.Description.
szSource	Specifies the value of Status.szSource.
szScriptFile	Specifies the value of Status.szScriptFile. To specify the current script file (that is, the script file that contains the call to SetStatusEx), pass the reserved identifier __FILE__.
nScriptLine	Specifies the value of Status.nScriptLine. To specify the current line number (that is, the line number of the call to SetStatusEx), pass the reserved identifier __LINE__.
nScriptError	Specifies the value of Status.nScriptError.

Return Values

Table 162 ▪ SetStatusEx Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully set the status properties.
< ISERR_SUCCESS	The function failed to set the status properties.

SetStatusExStaticText

The **SetStatusExStaticText** function sets the static text displayed in the STATUSEX dialog above the status text. The events OnFirstUIBefore, OnMaintUIBefore, and OnUpdateUIBefore automatically call this function to set the status text appropriately.

Syntax

```
SetStatusExStaticText ( szString);
```

Parameters

Table 163 ▪ SetStatusExStaticText Parameters

Parameter	Description
szString	The text to be set as the static text. The following standard strings are available using the SdLoadString function: • **IDS_IFX_STATUSEX_STATICTEXT_FIRSTUI—**The InstallShield Wizard is installing %P. • **IDS_IFX_STATUSEX_STATICTEXT_MAINTUI_MODIFY—**The InstallShield Wizard is modifying %P. • **IDS_IFX_STATUSEX_STATICTEXT_MAINTUI_REPAIR—**The InstallShield Wizard is repairing %P. • **IDS_IFX_STATUSEX_STATICTEXT_MAINTUI_REMOVEALL—**The InstallShield Wizard is removing %P. • **IDS_IFX_STATUSEX_STATICTEXT_UPDATEUI—**The InstallShield Wizard is updated %VI of %P to version %VS.  ***Note ▪*** *The status dialog supports the text substitution, %P, but does not support any other text substitutions such as %VI or %VS. If you are setting the static text to a string with any other text substitution than %P, you must call the SdSubstituteProductInfo function to update these text substitutions to the correct value before calling SetStatusExStaticText.*

Return Values

Table 164 ▪ SetStatusExStaticText Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the function was successful.
< ISERR_SUCCESS	Indicates that the function was not successful.

SetStatusWindow

The **SetStatusWindow** function sets an initial or current value for the percentage complete indicator of the progress indicator (status bar) and specifies the current message to display on the top line of the progress indicator.

Setups that install files using the FeatureMoveData function must call SetStatusWindow before calling FeatureMoveData in order to set the percentage complete indicator to 0% and clear the top line of the indicator. No additional calls to SetStatusWindow are required. The 'Status Text' string for each feature is displayed on the top line of the status bar automatically while the files of the feature are being installed.

Before calling FeatureMoveData, your setup should also call the StatusUpdate function to enable automatic updating of the percentage complete indicator during file transfer. To enable the display of the name and path of the file being installed on the second line of the status bar, call Enable with the INDVFILESTATUS parameter before calling FeatureMoveData. After these calls, the percentage complete indicator is updated smoothly during file transfer and the names of individual files are displayed as they are transferred when the FeatureMoveData function is called.

Setups that install files using the CopyFile or XCopyFile functions may need to make multiple calls to SetStatusWindow in order to change the message on the top line of the indicator between successive calls to CopyFile or XCopyFile. StatusUpdate and Enable (with the parameter INDVFILESTATUS) work normally with CopyFile and XCopyFile. It is not necessary to call SetStatusWindow to change the percentage complete indicator between successive calls to CopyFile or XCopyFile if you have called StatusUpdate to enable automatic updating.

Syntax

```
SetStatusWindow ( nPercent, szString );
```

Parameters

Table 165 ▪ SetStatusWindow Parameters

Parameter	Description
nPercent	Specifies a value between 0 and 100 that represents the percentage to be displayed by the percentage complete indicator. To reset the indicator before calling FeatureMoveData, specify 0. To change the message displayed on the top line of the status bar without changing the percentage complete indicator, specify -1 in this parameter.
szString	Specifies a string to display on the top line of the status bar. Note that if a 'DisplayText' parameter has been specified for this feature (in the IDE), that string automatically overwrites any text specified in this parameter when FeatureMoveData is called.

Return Values

This function does not return a value.

SetStatusWindow Example

This function cannot be used in a Basic MSI installation.

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetStatusWindow function.
 *
 * SetStatusWindow is called to set the progress bar and
 * to display text in the progress indicator.
 *
 * Note: Before running this script, create the directories
 *       and file referenced by the preprocessor constants.
 *
\*---------------------------------------------------------------*/

#define  SOURCE_DIR  "C:\\Source"
#define  TARGET_DIR  "C:\\Target"
#define  TARGET_FILE "ISExampl.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

  export prototype ExFn_SetStatusWindow(HWND);

function ExFn_SetStatusWindow(hMSI)
begin

    // Enable progress indicator.
    Enable (STATUS);

    // Set the progress bar to 33% and display a message.
    SetStatusWindow (33, "Now copying file...");

    // Delay for two seconds to ensure the window is displayed correctly.
    Delay (2);

    // Copy the file in the source directory to the target directory
    CopyFile (SOURCE_DIR ^ TARGET_FILE, TARGET_DIR ^ TARGET_FILE);

    // Set the progress bar to 66% and display a message.
    SetStatusWindow (66, "Now deleting file...");
    Delay (2);

    // Delete copied file in the Target directory.
    DeleteFile (TARGET_FILE);

    // Set the percent indicator to 100% and display a message.
    SetStatusWindow (100, "SetStatusWindow example completed.");
    Delay (2);

end;
```

SetTitle

Project *▪ This information does not apply to Basic MSI projects.*

The **SetTitle** function displays a title either in the main window's title bar or inside the main window, depending on the value of nColor.

Tip *▪ To set the background color of your setup, call SetColor.*

To set the font and font style of the title displayed inside the background window, call SetFont.

Syntax

```
SetTitle ( szTitle, nPointSize, nColor );
```

Parameters

Table 166 ▪ SetTitle Parameters

Parameter	Description
szTitle	Specifies a title to appear either in the main window's title bar or inside the main window. If the title is to appear in the window's title bar, you must specify the predefined constant BACKGROUNDCAPTION in the third parameter. A title bar title that does not fit the available space will be displayed truncated on the right and terminated with ellipses. The default title bar title is “Setup”.  ***Note ▪*** *The BACKGROUNDCAPTION option is supported for backward compatibility only. The recommended method for setting the main window's title bar is to set the value of the system variable IFX_SETUP_TITLE.* *When a color value is passed in the third parameter, the title is displayed left aligned at the top of the main window. Titles that are too wide for the main window will be displayed truncated on the right. To create a title that occupies more than one line, embed newline characters where you want the line to break.*
nPointSize	Specifies the size, in points, of a title to be displayed in the main window. The suggested size is 24 points. Note that this parameter is ignored when the third parameter is BACKGROUNDCAPTION.

Table 166 ▪ SetTitle Parameters (cont.)

Parameter	Description
nColor	Specifies either a color or the predefined constant BACKGROUNDCAPTION.  ***Note ▪*** *Calling SetTitle with the nColor set to BACKGROUNDCAPTION has no effect on setups that do not run in window mode. To run your setup in a standard window, you must first call Enable with the parameter DEFWINDOWMODE or FULLWINDOWMODE and then display the window by calling Enable with the parameter BACKGROUND.* • To indicate that the value of szTitle should be displayed in the title bar of the main window, pass the predefined constant BACKGROUNDCAPTION in this parameter. When you specify BACKGROUNDCAPTION, nPointSize is ignored; the color and size of the title bar title are determined by the end user's system settings. Note that this option has no effect on setups that do not run in window mode. • To indicate that the value of szTitle should be displayed inside the setup window, specify a color for that title by passing one of the following constants (whose corresponding RGB values are given in parentheses) or calling the RGB function to indicate a particular custom color. **BLACK—**(0, 0, 0) **BLUE—**(0, 0, 255) **GREEN—**(0, 255, 0) **MAGENTA—**(255, 0, 127) **RED—**(255, 0, 0) **WHITE—**(255, 255, 255) **YELLOW—**(255, 255, 0)  ***Note ▪*** *Magenta is not part of the standard Windows 16-color palette.*

Return Values

Table 167 ▪ SetTitle Return Values

Return Value	Description
0	Indicates that the function successfully set the title of the setup.
< 0	Indicates that the function was unable to set the title of the setup.

SetTitle Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetTitle function.
 *
 * This script displays a title in yellow, 24-point type.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetTitle(HWND);

function ExFn_SetTitle(hMSI)
begin

    // Make the background window a standard maximized window.
    Enable (FULLWINDOWMODE);

    // Set the background color to blue.
    SetColor (BACKGROUND, BK_BLUE);

    // Display a title in the window.  The newline character
    // in the title string forces "Example" to the next line.
    SetTitle ("SetTitle\nExample", 24, YELLOW);

    // Display the background window
    Enable (BACKGROUND);

    // Leave the window open for 3 seconds.
    Delay (3);

end;
```

SetUpdateStatus

The **SetUpdateStatus** function is obsolete. If this function is called, it returns ISERR_NOT_IMPL.

Syntax

```
void SetUpdateStatus( BOOL );
```

SetUpdateStatusReboot

The **SetUpdateStatusReboot** function is obsolete. If this function is called, it returns ISERR_NOT_IMPL.

Syntax

```
void SetUpdateStatusReboot( BOOL );
```

SetupType

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SetupType** function displays a dialog that enables the end user to select one of the three standard setup types: Typical, Compact, or Custom. These setup options are displayed with standard description text. If you want to add other setup types or change the displayed setup type names or descriptions, call SdSetupTypeEx instead.

Caution *▪ If an end user returns to the Setup Type dialog after using a feature dialog to select and deselect features associated with the selected setup type, those choices are lost. This occurs because the SetupType function automatically resets the default feature selections for the selected setup type each time it is called.*

Syntax

```
SetupType ( szTitle, szMsg, szReserved, nType, nReserved );
```

Parameters

Table 168 ▪ SetupType Parameters

Parameter	Description
szTitle	Specifies the title of this dialog. To display the default title Setup Type, pass a null string ("") in this parameter.
szMsg	Specifies the message you want to display at the top of the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szReserved	Pass a null string ("") in this parameter—no other value is allowed.
nType	Specifies the default setup type when the dialog is opened. Pass one of the following predefined constants in this parameter: • **TYPICAL**—Defines the default setup type as Typical. • **COMPACT**—Defines the default setup type as Compact. • **CUSTOM**—Defines the default setup type as Custom.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 169 ▪ SetupType Return Values

Return Value	Description
TYPICAL (301)	Indicates that the end user selected the Typical setup type.
COMPACT (302)	Indicates that the end user selected the Compact setup type.
CUSTOM (303)	Indicates that the end user selected the Custom setup type.
BACK (12)	Indicates that the end user clicked the Back button.

Additional Information

- In an InstallScript project, if you do not display a setup type dialog, your script must do one of the following:
  - Select a setup type.
  - Call a feature selection dialog function such as SdFeatureTree.
  - Directly select features.
- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SetupType Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetupType function.
 *
 * Comments:  To run this example script, create a project (or
 *            insert into a project) with several features and
 *            subfeatures with components containing files.
 *            This example includes setup of uninstallation
 *            functionality.
 *
\*---------------------------------------------------------------*/

// Specify your feature name here.  These are the names you gave to your
// features in the IDE.  A NULL ("") string specifies base features.
#define ASKDESTTITLE       "Choose Destination Location"
#define ASKDESTMSG         "Choose a destination location for the application."
#define SETUPTYPETITLE     "Choose Setup Type"
#define SETUPTYPEMSG       "Select a setup type."
#define FEATURE            ""
#define SDFEATDLGTITLE     "Feature Selection"
#define SDFEATDLGMSG       "Select features to install and destination location."
#define APPBASE_PATH       "Your Company\\Word Processor"
#define COMPANY_NAME       "Your Company"
#define PRODUCT_NAME       "Word Processor"
#define PRODUCT_VERSION    "1.0"
#define PRODUCT_KEY        "Word Processor"
#define DEINSTALL_KEY      "Word Processor"
#define UNINSTALL_NAME     "Word Processor"

    prototype HandleFeatureError (NUMBER);


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetupType(HWND);

function ExFn_SetupType(hMSI)
    STRING svLogFile;
    NUMBER nvDisk, nResult;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);
```

```
    // Get the destination location.
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;
    AskDestPath (ASKDESTTITLE, ASKDESTMSG, INSTALLDIR , 0);

    // Get setup type and target location with SdSetupType.
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;
    nResult = SetupType (SETUPTYPETITLE, SETUPTYPEMSG, "", TYPICAL, 0);

    // If Custom setup type is selected, let user select features
    // and change location if desired.
    if (nResult = CUSTOM) then
        SdFeatureDialogAdv (SDFEATDLGTITLE, SDFEATDLGMSG,
                            INSTALLDIR, FEATURE);
    endif;

    // Set up uninstallation.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME,
                      PRODUCT_VERSION, PRODUCT_KEY);

    svLogFile = "Uninst.isu";
    DeinstallStart (INSTALLDIR, svLogFile, DEINSTALL_KEY, 0);
    RegDBSetItem (REGDB_UNINSTALL_NAME, UNINSTALL_NAME);

    // Transfer files based on feature selection. Handle errors.
    Enable (STATUSDLG);
    Enable (INDVFILESTATUS);
    StatusUpdate (ON, 100);
    nResult = FeatureMoveData (MEDIA, nvDisk, 0);
    HandleFeatureError (nResult);

    Disable (INDVFILESTATUS);
    Disable (STATUSDLG);

end;

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the setup.
 *
\*---------------------------------------------------------------------------*/
function HandleFeatureError (nResult)
  NUMBER  nvError;
  STRING  svFeatureSource, svFeature, svComponent, svFile;
begin
  if (nResult < 0) then
    ComponentError (svFeatureSource, svFeature, svComponent, svFile, nvError);
    SprintfBox (INFORMATION, "Data Transfer Error Information",
                "FeatureError returned the " +
                "following data transfer error.\n" +
                "Setup will now abort.\n\n" +
                "Media Name: %s\nFeature: %s\nComponent: %s\n" +
                "File: %s\nError Number: %ld",
```

```
                svFeatureSource, svFeature, svComponent, svFile, nvError);
    abort;
  endif;
end;
```

SetupType2

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SetupType2** function displays a dialog that enables the end user to select one of the two standard setup types: Complete or Custom. These setup options are displayed with standard description text. If you want to add other setup types or change the displayed setup type names or descriptions, call SdSetupTypeEx instead.

Caution *▪ If an end user returns to the Setup Type dialog after using a feature dialog to select and deselect features associated with the selected setup type, those choices are lost. This occurs because the SetupType2 function automatically resets the default feature selections for the selected setup type each time it is called.*

Syntax

```
SetupType2 ( szTitle, szMsg, szReserved, nType, nReserved );
```

Parameters

Table 170 ▪ SetupType2 Parameters

Parameter	Description
szTitle	Specifies the title of this dialog. To display the default title Setup Type2, pass a null string ("") in this parameter.
szMsg	Specifies the message you want to display at the top of the dialog. To display the default instructions for this dialog, pass a null string ("") in this parameter.
szReserved	Pass a null string ("") in this parameter. No other value is allowed.
nType	Specifies the default setup type when the dialog is opened. Pass one of the following predefined constants in this parameter: • **COMPLETE**—Defines the default setup type as Complete. • **CUSTOM**—Defines the default setup type as Custom.
nReserved	Pass zero in this parameter. No other value is allowed.

Return Values

Table 171 ▪ SetupType2 Return Values

Return Value	Description
COMPLETE (304)	Indicates that the Complete setup type was selected.
CUSTOM (303)	Indicates that the end user selected the Custom setup type.
BACK (12)	Indicates that the end user clicked the Back button.
< ISERR_SUCCESS	Indicates that the dialog could not be displayed.

Additional Information

- In an InstallScript project, if you do not display a setup type dialog, your script must do one of the following:
  - Select a setup type.
  - Call a feature selection dialog function such as SdFeatureTree.
  - Directly select features.
- To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

SetupType2 Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SetupType2 function.
 *
 * Comments:  To run this example script, create a project (or
 *            insert into a project) with several features and
 *            subfeatures with components containing files.
 *            This example includes setup of uninstallation
 *            functionality.
 *
\*---------------------------------------------------------------*/

// Specify your feature name here.  These are the names you gave to
// your features in InstallShield.  A NULL ("") string
// specifies base features.
#define ASKDESTTITLE       "Choose Destination Location"
#define ASKDESTMSG         "Choose a destination location for the application."
#define SETUPTYPETITLE     "Choose Setup Type"
#define SETUPTYPEMSG       "Select a setup type."
#define FEATURE            ""
#define SDFEATDLGTITLE     "Feature Selection"
#define SDFEATDLGMSG       "Select features to install and destination location."
#define APPBASE_PATH       "Your Company\\Word Processor"
#define COMPANY_NAME       "Your Company"
#define PRODUCT_NAME       "Word Processor"
#define PRODUCT_VERSION    "1.0"
#define PRODUCT_KEY        "Word Processor"
#define DEINSTALL_KEY      "Word Processor"
#define UNINSTALL_NAME     "Word Processor"

    prototype HandleFeatureError (NUMBER);


// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SetupType2(HWND);

function ExFn_SetupType2(hMSI)
    STRING svLogFile;
    NUMBER nvDisk, nResult;
begin

    // Disable the Back button in setup dialogs.
    Disable (BACKBUTTON);
```

```
    // Get the destination location.
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;
    AskDestPath (ASKDESTTITLE, ASKDESTMSG, INSTALLDIR , 0);

    // Get setup type and target location with SdSetupType2.
    INSTALLDIR = PROGRAMFILES ^ APPBASE_PATH;
    nResult = SetupType2 (SETUPTYPETITLE, SETUPTYPEMSG, "", COMPLETE, 0);

    // If Custom setup type is selected, let user select features
    // and change location if desired.
    if (nResult = CUSTOM) then
        SdFeatureDialogAdv (SDFEATDLGTITLE, SDFEATDLGMSG,
                            INSTALLDIR, FEATURE);
    endif;

    // Set up uninstallation.
    InstallationInfo (COMPANY_NAME, PRODUCT_NAME,
                      PRODUCT_VERSION, PRODUCT_KEY);

    svLogFile = "Uninst.isu";
    DeinstallStart (INSTALLDIR, svLogFile, DEINSTALL_KEY, 0);
    RegDBSetItem (REGDB_UNINSTALL_NAME, UNINSTALL_NAME);

    // Transfer files based on feature selection. Handle errors.
    Enable (STATUSDLG);
    Enable (INDVFILESTATUS);
    StatusUpdate (ON, 100);
    nResult = FeatureMoveData (MEDIA, nvDisk, 0);
    HandleFeatureError (nResult);

    Disable (INDVFILESTATUS);
    Disable (STATUSDLG);

end;

/*---------------------------------------------------------------------------*\
 *
 * Function:  HandleFeatureError
 *
 *  Purpose:  This function evaluates the value returned by a feature
 *            function and if the value is less than zero, displays the error
 *            number and aborts the installation.
 *
\*---------------------------------------------------------------------------*/
function HandleFeatureError (nResult)
  NUMBER  nvError;
  STRING  svFeatureSource, svFeature, svComponent, svFile;
begin
  if (nResult < 0) then
    ComponentError (svFeatureSource, svFeature, svComponent, svFile, nvError);
    SprintfBox (INFORMATION, "Data Transfer Error Information",
                "FeatureError returned the " +
                "following data transfer error.\n" +
                "Setup will now abort.\n\n" +
                "Media Name: %s\nFeature: %s\nComponent: %s\n" +
```

```
                "File: %s\nError Number: %ld",
                svFeatureSource, svFeature, svComponent, svFile, nvError);
    abort;
  endif;
end;
```

ShowObjWizardPages

Project ▪ *This information applies to InstallScript projects.*

The **ShowObjWizardPages** function is called in a project's UI event handler to execute each included object's corresponding UI event handler. For example, calling **ShowObjWizardPages** in a project's OnFirstUIBefore event handler executes each included object's OnFirstUIBefore code.

Syntax

```
ShowObjWizardPages ( nDirection );
```

Parameters

Table 172 ▪ ShowObjWizardPages Parameters

Parameter	Description
nDirection	Pass one of the following predefined constants to indicate the measurement unit: • **NEXT**—Specifies the following: The first UI event handler called is that of the object listed first in the project's Components pane, then that of the object listed second, and so on. The WizardDirection function, when called in an object's UI event handler, returns the value NEXT. • **BACK**—Specifies the following: The first UI event handler called is that of the object listed last in the project's Components pane, then that of the object listed next to last, and so on. The WizardDirection function, when called in an object's UI event handler, returns the value BACK.

Return Values

The value returned by the most recently executed object UI event handler.

Additional Information

The objects' dialogs are displayed in one of two possible orders, depending on the value of nDirection. For greater control over the order in which the objects' dialogs are displayed, call the objects' ShowxxxxxUIyyyyy methods. For more information on object UI event handlers, see Creating the Object's Run-Time User Interface.

ShowProgramFolder

The **ShowProgramFolder** function displays a program folder.

Syntax

```
ShowProgramFolder ( szFolder, nCommand );
```

Parameters

Table 173 ▪ ShowProgramFolder Parameters

Parameter	Description
szFolder	Specifies the name of the folder to display.
nCommand	Specifies the state of the folder. Pass one of the following predefined constants in this parameter: • **SW_SHOW—**Show folder in normal state. • **SW_MAXIMIZE—**Maximize the folder. • **SW_MINIMIZE—**Minimize the folder. • **SW_RESTORE—**Restore the folder to original size.

Return Values

This function does not return a value.

ShowProgramFolder Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the ShowProgramFolder function.
 *
 * ShowProgramFolder displays a folder, then changes the state
 * of the folder.
 *
```

```
 * Note: This script will not run properly if the program folder
 *       "Startup" does not exist.  Either create a program
 *       folder called "Startup" or set the constant FOLDER so
 *       that it references an existing program folder.  In
 *       addition, the specified folder should be closed or
 *       minimized when you run this script.
 *
\*---------------------------------------------------------------*/

#define  FOLDER  "Startup"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_ShowProgramFolder(HWND);

function ExFn_ShowProgramFolder(hMSI)
begin

    // Display the specified folder.
    ShowProgramFolder (FOLDER, SW_SHOW);
    Delay (3);

    // Maximize the folder.
    ShowProgramFolder (FOLDER, SW_MAXIMIZE);
    Delay (3);

    // Restore the folder to its previous state.
    ShowProgramFolder (FOLDER, SW_RESTORE);
    Delay (3);

    // Minimize the folder.
    ShowProgramFolder (FOLDER, SW_MINIMIZE);
    Delay (3);

    // Restore the folder to its previous state.
    ShowProgramFolder (FOLDER, SW_RESTORE);
    Delay (3);

end;
```

ShowWindow

The **ShowWindow** function sets the specified window's show state.

Syntax

```
BOOL ShowWindow(
      HWND hWnd, // handle to window
      int nCmdShow // show state
    );
```

Parameters

Table 174 ▪ ShowWindow Parameters

Parameter	Description
hWnd	Specifies the handle to the window.

Table 174 ▪ ShowWindow Parameters (cont.)

Parameter	Description
nCmdShow	Specifies the show state of the window. If the program that launched the application includes a STARTUPINFO structure, this parameter is ignored the first time the application calls ShowWindow. Otherwise, the first time ShowWindow is called, the value should be the value obtained by the WinMain function in its *nCmdShow* parameter. In subsequent calls, this parameter can be one of the following values. • **SW_FORCEMINIMIZE—**Minimizes a window, even if the thread that owns the window is not responding. This value should only be used when minimizing windows from a different thread. • **SW_HIDE—**Hides the window and activates another window. • **SW_MAXIMIZE—**Maximizes the specified window. • **SW_MINIMIZE—**Minimizes the specified window and activates the next top-level window in the Z order. The Z order is the position of a window in a stack of overlapping windows on the z axis, which indicates depth. • **SW_RESTORE—**Activates and displays the window. If the window is minimized or maximized, the system restores it to its original size and position. An application should specify this value when restoring a minimized window. • **SW_SHOW—**Activates the window and displays it in its current size and position. • **SW_SHOWDEFAULT—**Sets the show state based on the SW_ value specified in the STARTUPINFO structure passed to the CreateProcess function by the program that started the application. • **SW_SHOWMAXIMIZED—**Activates the window and displays it as a maximized window. • **SW_SHOWMINIMIZED—**Activates the window and displays it as a minimized window. • **SW_SHOWMINNOACTIVE—**Displays the window as a minimized window. The active window remains active. • **SW_SHOWNA—**Displays the window in its current size and position. The active window remains active. • **SW_SHOWNOACTIVATE—**Displays a window in its most recent size and position. The active window remains active. • **SW_SHOWNORMAL—**Activates and displays a window. If the window is minimized or maximized, it is restored it to its original size and position. An application should specify this value when displaying the window for the first time.

Return Values

Table 175 ▪ ShowWindow Return Values

Return Value	Description
Nonzero	The return value is nonzero if the window was visible.
0	The return value is 0 if the window was hidden.

Additional Information

This information was adapted from the MSDN topic ShowWindow Function.

SilentReadData

The **SilentReadData** function instructs InstallShield Silent on how to read the .iss file dialog data for a custom dialog when an installation runs in silent mode (when using the `-s` switch with `Setup.exe`). Note that you can create an .iss file by calling **SilentWriteData**.

To use **SilentReadData** in your script, construct the logic so that it first checks to make sure that the installation is running in silent mode. Place the **SilentReadData** function call inside an if-else statement, based on a test of the system variable MODE, as shown below:

```
if (MODE=SILENTMODE) then
    // Call SilentReadData here
else
    // Make a normal, non-silent function call here
endif;
```

Custom dialogs can be resources that you call and handle in your installation script using functions like **EzDefineDialog** and **WaitOnDialog**, or they can be completely external, executed as calls to functions in DLLs. In either case, you must use **SilentReadData** to retrieve from the .iss file the dialog button's return value (Next, Back, Cancel, and so on) and any values set or returned in variables.

Syntax

```
SilentReadData (szSection, szValName, nValType, svVal, nvVal);
```

Parameters

Table 176 ▪ SilentReadData Parameters

Parameter	Description
szSection	Specifies the name of the dialog data section in the .iss file. Do not include the square brackets ([ ]). The parameter szSection takes the form <functionname>-<number>, where <functionname> is the name of the dialog function as it is used in the script, and <number> is the number of the occurrence of that dialog in the script, beginning with 0 (zero). For example, the first occurrence of the MyDialog function dialog would have a value of "MyDialog-0" in szSection, the second occurrence "MyDialog-1," the third "MyDialog-2," and so on.
szValName	Specifies the value name that appears in the dialog data section of the .iss file. Every dialog has at least one value for szValName—"Result"—which identifies the value returned by the dialog button controls (BACK, NEXT, OK, or CANCEL). Other value names are used to identify values and data associated with the other dialog controls.
nValType	Identifies the data type of the value assigned to the value name in szValName. The value itself is stored in either svVal or nvVal, depending upon the value of nValType. Pass one of the following predefined constants in this parameter: • **DATA_STRING**—The value assigned to the value name in szValName is of type STRING. Its value will be stored in svVal. • **DATA_NUMBER**—The value assigned to the value name in szValName is of type NUMBER. Its value will be stored in nvVal. • **DATA_COMPONENT**—The value assigned to the value name in szValName is the name of a component It will be stored in svVal. • **DATA_LIST**—The value assigned to the value name in szValName is the list ID for an InstallScript list. It will be stored in nvVal.
svVal	Specifies the value assigned to the value name in szValName when nValType is DATA_STRING or DATA_COMPONENT.
nvVal	Specifies the value assigned to the value name in szValName when nValType is DATA_NUMBER or DATA_LIST.

Return Values

Table 177 ▪ SilentReadData Return Values

Return Value	Description
0	**SilentReadData** successfully instructed InstallShield Silent on how to read the dialog data for the custom dialog.

Table 177 ▪ SilentReadData Return Values (cont.)

Return Value	Description
< 0	**SilentReadData** was called in an installation that is not running silently.  ***Note ▪*** *If* `SilentReadData` *cannot read the custom dialog data in the response file, the installation is aborted.*

SilentReadData Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdMakeName, SilentReadData, and
 * SilentWriteData.
 *
 * This example script shows how to handle a custom dialog
 * in a silent installation.  The resource .dll for the example
 * custom dialog shown below should be stored in a compressed
 * form under the Support Files/Billboards view of InstallShield.
 *
 * The example dialog was built from the custom dialog
 * template provided with InstallShield.
 *
 * Dialog control IDs and other information are included in
 * the RESOURCE.H file (not shown).  This file, which is included
 * in the first line of the example, must be inserted in the
 * InstallScript view of InstallShield.
 *
 * The example creates a text file called Cominit.txt.  If the
 * installation runs in silent mode, SilentReadData is called
 * and the custom dialog control selections are read from
 * the .ISS file.  The selections are then saved in the file
 * Cominit.txt as a means of demonstrating that they were
 * successfully read from the .iss file.  If the installation
 * runs in normal mode, the custom dialog is displayed
 * and the selections are recorded in the .iss file and
 * displayed in message boxes.  The initial .ISS file text is
 * shown after the example script.
 *
\*---------------------------------------------------------------*/

#include "Resource.h"

// Include Ifx.h for built-in InstallScript function prototypes.
```

```
#include "Ifx.h"

   export prototype ExFn_SilentReadData(HWND);

function ExFn_SilentReadData(hMSI)
    BOOL bDone;
    STRING svSection, svComPort, svPulse, svTone, svDial9, svVal;
    NUMBER nvCommDialog, nCmdValue, nPulseState, nToneState;
    NUMBER nDial9State, nResult, nvHandle;
    LIST listID;
    HWND hwndDlg;
begin

    // Open the text file COMINIT.TXT so custom dialog selections
    // from the .ISS file can be stored in it.
    OpenFileMode (FILE_MODE_APPEND);
    OpenFile (nvHandle, "c:\\rul", "cominit.txt");

    // If operating in silent mode, then read from the .ISS file.
    if (MODE=SILENTMODE) then
        SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

        SilentReadData (svSection, "Result", DATA_NUMBER, svVal, nResult);

        if (nResult = 1) then
            // Read the data from the .ISS file. For purposes of
            // writing the results to a text file, read the
            // data as strings.
            SilentReadData (svSection, "nPulseState", DATA_STRING,
                            svPulse, nResult);

            SilentReadData (svSection, "nToneState", DATA_STRING,
                            svTone, nResult);

            SilentReadData (svSection, "nDial9State", DATA_STRING,
                            svDial9, nResult);

            // Store the custom dialog selections in
            // the text file COMINIT.TXT.
            svVal = "Pulse box is: " ^ svPulse;
            WriteLine(nvHandle, svVal);

            svVal = "Tone  box is: " ^ svTone;
            WriteLine(nvHandle, svVal);

            svVal = "Dial9 box is: " ^ svDial9;
            WriteLine(nvHandle, svVal);
        endif;

    // If not in silent mode, then call and handle the custom dialog
    // as you normally would.
    else
        listID = ListCreate (STRINGLIST);
        ListAddString (listID,  "COMM1:", AFTER);
        ListAddString (listID,  "COMM2:", AFTER);
        ListAddString (listID,  "COMM3:", AFTER);
```

```
ListAddString (listID,  "COMM4:", AFTER);

EzDefineDialog ("MYCOMDIALOG", SUPPORTDIR^"RESOURCE.DLL",
                "COMM_DIALOG",0);

bDone = FALSE;

while (bDone=FALSE)
    nCmdValue = WaitOnDialog ("MYCOMDIALOG");

    switch (nCmdValue)
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724
            // and 202.
            hwndDlg = CmdGetHwndDlg("MYCOMDIALOG");
            SdGeneralInit("MYCOMDIALOG", hwndDlg, 0, "");
            CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
            CtrlSetList ("MYCOMDIALOG", ID_COMPORT, listID);
            CtrlSetState ("MYCOMDIALOG", ID_DIAL9, BUTTON_CHECKED);
        case OK:
            CtrlGetCurSel ("MYCOMDIALOG", ID_COMPORT, svComPort);
            nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);
            nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);
            nDial9State = CtrlGetState ("MYCOMDIALOG", ID_DIAL9);
            nResult = NEXT;
            bDone = TRUE;
        case BACK:
            nResult = BACK;
            bDone = TRUE;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case DLG_CLOSE:
            // The user clicked the window's close button.
            Do (EXIT);
        case ID_PULSE:
            nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);

            if (nPulseState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
            else
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
            endif;
        case ID_TONE:
            nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);

            if (nToneState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
            else
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
```

```
                        CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
                    endif;
                case DLG_ERR:
                    MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                    abort;
            endswitch;

        endwhile;

        EndDialog ("MYCOMDIALOG");
        ReleaseDialog ("MYCOMDIALOG");

        SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

        SilentWriteData (svSection, "nPulseState", DATA_NUMBER,
                        svPulse, nPulseState);

        SilentWriteData (svSection, "nToneState", DATA_NUMBER,
                        svTone, nToneState);
        SilentWriteData (svSection, "nDial9State", DATA_NUMBER,
                        svDial9, nDial9State);

        if (nPulseState = BUTTON_CHECKED) then
            MessageBox ("The Pulse button was checked.", INFORMATION);
        else
            MessageBox ("The Pulse button was unchecked.", INFORMATION);
        endif;

        if (nToneState = BUTTON_CHECKED) then
            MessageBox ("The Tone button was checked.", INFORMATION);
        else
            MessageBox ("The Tone button was unchecked.", INFORMATION);
        endif;

        if (nDial9State = BUTTON_CHECKED) then
            MessageBox ("The Dial9 button was checked.", INFORMATION);
        else
            MessageBox ("The Dial9 button was unchecked.", INFORMATION);
        endif;

    endif;

    // Close the text file COMINIT.TXT
    CloseFile (nvHandle);

end;


/*The following is the initial .iss file text for the above example, where <PRODUCT_GUID> represents
your project's GUID, including the
surrounding braces. Note that -1001 is the numeric value of BUTTON_CHECKED and -1002 is the numeric value
of BUTTON_UNCHECKED.

[InstallShield Silent]
Version=v9.00
File=Response File
```

```
[Application]
Name=MyDialog
Version=4.0
Company=My Software Company
[<PRODUCT_GUID>-DlgOrder]
Dlg0=<PRODUCT_GUID>-COMM_DIALOG-0
Count=1
[<PRODUCT_GUID>-COMM_DIALOG-0]
nPulseState=-1001
nToneState=-1002
nDial9State=-1001
Result=1
*/
```

SilentWriteData

The **SilentWriteData** function records selections made in custom dialogs during the installation. This selection data is written to an .iss file for use by InstallShield Silent. To write to an .iss file during an installation, run the installation using the -r switch with Setup.exe.

Custom dialogs can be resources that you call and handle in your installation script using functions like EzDefineDialog and WaitOnDialog, or they can be completely external, executed as calls to functions in DLLs. In either case, you must use SilentWriteData to record the dialog's button return value (Next, Back, Cancel, and so on) and any values set or returned in variables.

Syntax

```
SilentWriteData ( szSection, szValName, nValType, szVal, nVal );
```

Parameters

Table 178 ▪ SilentWriteData Parameters

Parameter	Description
szSection	Specifies the name of the dialog data section in the .iss file. Do not include the square brackets ([ ]). The parameter szSection takes the form <functionname>-<number>, where <functionname> is the name of the dialog function as it is used in the script, and <number> is the number of the occurrence of that dialog in the script, beginning with 0 (zero). For example, the first occurrence of the MyDialog function dialog would have a value of "MyDialog-0" for szSection, the second occurrence "MyDialog-1," the third "MyDialog-2," and so on.
szValName	Specifies the value name that appears in the dialog data section of the .iss file. Every dialog has at least one value for szValName—"Result"—which identifies the value returned by the dialog button controls (BACK, NEXT, OK, or CANCEL). Other value names are used to identify values and data associated with the other dialog controls.
nValType	Identifies the data type of the value assigned to the value name in szValName. The value itself is stored in either szVal or nVal, depending upon the value of nValType. Pass one of the following predefined constants in this parameter: • **DATA_STRING—**The value assigned to the value name in szValName is of type STRING. Its value will be stored in szVal. • **DATA_NUMBER—**The value assigned to the value name in szValName is of type NUMBER. Its value will be stored in nVal. • **DATA_COMPONENT—**The value assigned to the value name in szValName is the name of a component. It will be stored in szVal. • **DATA_LIST—**The value assigned to the value name in szValName is the list ID for an InstallShield list. It is stored in nVal.
szVal	Specifies the value assigned to the value name in szValName when nValType is DATA_STRING or DATA_COMPONENT.
nVal	Specifies the value assigned to the value name in szValName when nValType is DATA_NUMBER or DATA_LIST.

Return Values

Table 179 ▪ SilentWriteData Return Values

Return Value	Description
0	SilentWriteData successfully wrote the dialog data for the custom dialog to Setup.iss.
< 0	SilentWriteData was unable to write the dialog data for the custom dialog to Setup.iss.

SilentWriteData Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the functions SdMakeName, SilentReadData, and
 * SilentWriteData.
 *
 * This example script shows how to handle a custom dialog
 * in a silent installation.  The resource .dll for the example
 * custom dialog shown below should be stored in a compressed
 * form under the Support Files/Billboards view of InstallShield.
 *
 * The example dialog was built from the custom dialog
 * template provided with InstallShield.
 *
 * Dialog control IDs and other information are included in
 * the RESOURCE.H file (not shown).  This file, which is included
 * in the first line of the example, must be inserted in the
 * InstallScript view of InstallShield.
 *
 * The example creates a text file called Cominit.txt.  If the
 * installation runs in silent mode, SilentReadData is called
 * and the custom dialog control selections are read from
 * the .ISS file.  The selections are then saved in the file
 * Cominit.txt as a means of demonstrating that they were
 * successfully read from the .iss file.  If the installation
 * runs in normal mode, the custom dialog is displayed
 * and the selections are recorded in the .iss file and
 * displayed in message boxes.  The initial .ISS file text is
 * shown after the example script.
 *
\*---------------------------------------------------------------*/

#include "Resource.h"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SilentWriteData(HWND);

function ExFn_SilentWriteData(hMSI)
    BOOL bDone;
    STRING svSection, svComPort, svPulse, svTone, svDial9, svVal;
    NUMBER nvCommDialog, nCmdValue, nPulseState, nToneState;
    NUMBER nDial9State, nResult, nvHandle;
    LIST listID;
    HWND hwndDlg;
begin

    // Open the text file COMINIT.TXT so custom dialog selections
    // from the .ISS file can be stored in it.
    OpenFileMode (FILE_MODE_APPEND);
    OpenFile (nvHandle, "c:\\rul", "cominit.txt");

    // If operating in silent mode, then read from the .ISS file.
    if (MODE=SILENTMODE) then
        SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

        SilentReadData (svSection, "Result", DATA_NUMBER, svVal, nResult);

        if (nResult = 1) then

            // Read the data from the .ISS file. For purposes of
            // writing the results to a text file, read the
            // data as strings.
            SilentReadData (svSection, "nPulseState", DATA_STRING,
                            svPulse, nResult);

            SilentReadData (svSection, "nToneState", DATA_STRING,
                            svTone, nResult);

            SilentReadData (svSection, "nDial9State", DATA_STRING,
                            svDial9, nResult);

            // Store the custom dialog selections in
            // the text file COMINIT.TXT.
            svVal = "Pulse box is: " ^ svPulse;
            WriteLine(nvHandle, svVal);

            svVal = "Tone  box is: " ^ svTone;
            WriteLine(nvHandle, svVal);

            svVal = "Dial9 box is: " ^ svDial9;
            WriteLine(nvHandle, svVal);
        endif;

    // If not in silent mode, then call and handle the custom dialog
    // as you normally would.
    else
        listID = ListCreate (STRINGLIST);
        ListAddString (listID,  "COMM1:", AFTER);
```

```
ListAddString (listID,  "COMM2:", AFTER);
ListAddString (listID,  "COMM3:", AFTER);
ListAddString (listID,  "COMM4:", AFTER);

EzDefineDialog ("MYCOMDIALOG", SUPPORTDIR^"RESOURCE.DLL",
                "COMM_DIALOG",0);

bDone = FALSE;

while (bDone=FALSE)
    nCmdValue = WaitOnDialog ("MYCOMDIALOG");

    switch (nCmdValue)
        case DLG_INIT:
            // Initialize the back, next, and cancel button enable/disable states
            // for this dialog and replace %P, %VS, %VI with
            // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
            // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724
            // and 202.
            hwndDlg = CmdGetHwndDlg("MYCOMDIALOG");
            SdGeneralInit("MYCOMDIALOG", hwndDlg, 0, "");
            CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
            CtrlSetList ("MYCOMDIALOG", ID_COMPORT, listID);
            CtrlSetState ("MYCOMDIALOG", ID_DIAL9, BUTTON_CHECKED);
        case OK:
            CtrlGetCurSel ("MYCOMDIALOG", ID_COMPORT, svComPort);
            nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);
            nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);
            nDial9State = CtrlGetState ("MYCOMDIALOG", ID_DIAL9);
            nResult = NEXT;
            bDone = TRUE;
        case BACK:
            nResult = BACK;
            bDone = TRUE;
        case RES_PBUT_CANCEL:
            // The user clicked the Cancel button.
            Do (EXIT);
        case DLG_CLOSE:
            // The user clicked the window's close button.
            Do (EXIT);
        case ID_PULSE:
            nPulseState = CtrlGetState ("MYCOMDIALOG", ID_PULSE);

            if (nPulseState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
            else
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
            endif;
        case ID_TONE:
            nToneState = CtrlGetState ("MYCOMDIALOG", ID_TONE);

            if (nToneState = BUTTON_CHECKED) then
                CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_CHECKED);
                CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_UNCHECKED);
```

```
                    else
                        CtrlSetState ("MYCOMDIALOG", ID_TONE, BUTTON_UNCHECKED);
                        CtrlSetState ("MYCOMDIALOG", ID_PULSE, BUTTON_CHECKED);
                    endif;
                case DLG_ERR:
                    MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                    abort;
            endswitch;

        endwhile;

        EndDialog ("MYCOMDIALOG");
        ReleaseDialog ("MYCOMDIALOG");

        SdMakeName (svSection, "COMM_DIALOG", "", nvCommDialog);

        SilentWriteData (svSection, "nPulseState", DATA_NUMBER,
                        svPulse, nPulseState);

        SilentWriteData (svSection, "nToneState", DATA_NUMBER,
                        svTone, nToneState);
        SilentWriteData (svSection, "nDial9State", DATA_NUMBER,
                        svDial9, nDial9State);

        if (nPulseState = BUTTON_CHECKED) then
            MessageBox ("The Pulse button was checked.", INFORMATION);
        else
            MessageBox ("The Pulse button was unchecked.", INFORMATION);
        endif;

        if (nToneState = BUTTON_CHECKED) then
            MessageBox ("The Tone button was checked.", INFORMATION);
        else
            MessageBox ("The Tone button was unchecked.", INFORMATION);
        endif;

        if (nDial9State = BUTTON_CHECKED) then
            MessageBox ("The Dial9 button was checked.", INFORMATION);
        else
            MessageBox ("The Dial9 button was unchecked.", INFORMATION);
        endif;

    endif;

    // Close the text file COMINIT.TXT
    CloseFile (nvHandle);

end;


/*The following is the initial .iss file text for the above example, where <PRODUCT_GUID> represents
your project's GUID, including the
surrounding braces. Note that -1001 is the numeric value of BUTTON_CHECKED and -1002 is the numeric value
of BUTTON_UNCHECKED.

[InstallShield Silent]
```

```
Version=v9.00
File=Response File
[Application]
Name=MyDialog
Version=4.0
Company=My Software Company
[<PRODUCT_GUID>-DlgOrder]
Dlg0=<PRODUCT_GUID>-COMM_DIALOG-0
Count=1
[<PRODUCT_GUID>-COMM_DIALOG-0]
nPulseState=-1001
nToneState=-1002
nDial9State=-1001
Result=1
*/
```

SizeOf

The **SizeOf** function retrieves the number of elements in an InstallScript array, or the size of a variable passed as an argument.

To determine the number of characters in the value of a string variable, use StrLength.

Syntax

```
SizeOf ( Item );
```

Parameters

Table 180 ▪ SizeOf Parameters

Parameter	Description
Item	Specifies the name of the variable.

Return Values

SizeOf returns the number of elements in an array, or the size of a variable passed as an argument.

SizeWindow

Use the **SizeWindow** function to change the size of a specific user interface element. Specify the new size in pixels.

The installation may run under many different screen resolutions. To account for this, you need to use the **GetExtents** function to determine the overall size of the screen; then use ratios in the parameters of your **SizeWindow** function call to specify the size of your user interface object.

Note ▪ *This function is recommended for advanced developers only.*

Syntax

```
SizeWindow (nObject, nDx, nDy);
```

Parameters

Table 181 ▪ SizeWindow Parameters

Parameter	Description
nObject	Specifies the object to resize. Pass one of the following predefined constants in this parameter: • **BACKGROUND**—Indicates the main background window. • **METAFILE**—Indicates a billboard used during the file transfer process. **SizeWindow** does not support bitmap (.bmp) files.  ***Note ▪*** *This parameter does not have any effect on metafiles that are displayed with SdBitmap function.* **SdBitmap** *automatically resizes metafiles when they are displayed.* *In addition, this parameter does not have any effect on the type of billboard that is displayed on a progress dialog when* `Enable(BBRD)` *is called.* • **MMEDIA_AVI**—Sets the window size for next AVI file to be played. All the AVI videos are displayed with a default size. Changing the size may change the resolution and crispness of the video. • **MMEDIA_SWF**—Sets the window size for the Adobe Flash application file (.swf) to be played.
nDx	Specifies the horizontal size of the object in pixels.
nDy	Specifies the vertical size of the object in pixels.

Return Values

Table 182 ▪ SizeWindow Return Values

Return Value	Description
0	The function successfully changed the size of the window.
< 0	The function was unable to change the size of the window.

Additional Information

Use the **PlayMMedia** function if you want your installation to play an Adobe Flash application file (.swf) or an AVI file.

SizeWindow Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SizeWindow function.
 *
 * GetExtents is called to retrieve the extents of the screen.
 * SizeWindow is then called to resize the background to half
 * the original size.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SizeWindow(HWND);

function ExFn_SizeWindow(hMSI)
    NUMBER  nDx, nDy, nObject;
begin

    // Enable the background.
    Enable (BACKGROUND);

    MessageBox ("Background at original size.", INFORMATION);

    // Get the extents of the screen.
    GetExtents (nDx, nDy);

    // Set the object to be resized.
    nObject = BACKGROUND;

    // Resize the background window to half of its original size.
    if (SizeWindow (nObject, (nDx / 2), (nDy / 2)) < 0) then
        MessageBox ("SizeWindow failed.", SEVERE);
    endif;

    MessageBox ("Background after call to SizeWindow.", INFORMATION);

end;
```

Sprintf

The **Sprintf** function creates a string from variable data using format specifier and matching variables. Sprintf works like the Microsoft Windows API wsprintf.

Syntax

```
Sprintf ( svResult, szFormat [,arg] [,...] );
```

Parameters

Table 183 ▪ Sprintf Parameters

Parameter	Description
svResult	Returns a string created from the arguments passed in the third and subsequent parameters and formatted according the specifications in the second parameter, szFormat.
szFormat	Specifies a string than can include literal text and must include one format specifier for each argument to be embedded in the string returned by svResult.
arg	You may specify up to nine arguments to be included in the message. You must have one argument for each format specifier in the message; the type of each argument must match the type of its respective format specifier. Sprintf generates a compiler error or fail at run time under the following conditions: ● More than nine format specifiers and arguments are specified. This results in a compiler error. ● The number of arguments does not match the number of format specifiers. When a specifier does not have a corresponding argument, the resulting string contains unpredictable characters in the specifier's position. When there are more arguments than specifiers, the excess arguments are not inserted into the resulting string. ● A variable does not match the type of its respective format specifier. The resulting string contains unpredictable characters in the specifier's position.

Return Values

If the Sprintf function is successful, the return value is the length—the number of characters—in the string stored in the variable svResult, not including the terminating null character.

Sprintf Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Sprintf function.
 *
 * This script gets the capacity of drive C: and then calls
 * Sprintf to create a formatted message.  That message
 * includes the drive letter and disk size, which are stored
 * in variables.  The message is then displayed.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Sprintf(HWND);

function ExFn_Sprintf(hMSI)
    STRING  svResult, svMssg;
    NUMBER  nvResult;
begin

    // Set up the string parameter for the call to GetSystemInfo.
    svResult = "C:";

    // Get the capacity of drive C.
    GetSystemInfo (DISK_TOTALSPACE, nvResult, svResult);

    // Build a message that incorporates the values
    // returned by GetSystemInfo.
    Sprintf (svMssg, "Total disk space on drive %s is %ld bytes.",
            svResult, nvResult);

    // Display the message.
    MessageBox (svMssg, INFORMATION);

end;
```

SprintfBox

Project *▪ This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

The **SprintfBox** function presents a message box containing one of three icons, a title, and a formatted message. The message can contain variables that are formatted according to commands that you enter.

SprintfBox is similar to **MessageBox**, but **SprintfBox** permits much more flexible control over displayed items.

Caution ▪ *Multiple null-delimited strings should not be used, except for passing to external functionality.*

The **SprintfBox** function uses the Microsoft Windows API **MessageBox** to create the message box. The operating environment, not InstallShield, determines the size and location of the message box. The operating environment also generates the text for the OK button in the local language (the language that the operating system is running under). You cannot change the text in this button. For more information regarding the use of Windows **MessageBox** types, consult the description of the **MessageBox** Windows API function in the appropriate Windows SDK.

Note the following when using Windows message box constants:

- Some Windows **MessageBox** type constants are predefined in the `ISRTWindows.h` file that is provided in the *`InstallShield Program Files Folder`*`\Script\Isrt\Include` folder. This file is automatically included in your installation when you include `Ifx.h` in your script. You do not need to redefine any constants that are defined in `ISRTWindows.h`; doing so will result in a compiler warning. To determine which constants are predefined, refer to the `ISRTWindows.h` file.
- To use constants that are not defined in `ISRTWindows.h`, you must define them (using #define) in the declaration block of your installation script. You cannot simply include the `Windows.h` file that is usually part of a C++ program. The values that you need to assign to the undefined constants can generally be found in an include file that is provided with the appropriate Windows SDK or development tool. (For Microsoft Visual C++, most constants can be found in the `Winuser.h` file, which is located in the *`InstallShield Program Files Folder`*`\Script\Resource` folder.)
- Windows and InstallShield message box constants cannot be used together in an installation. If an InstallShield message box constant is combined with a Windows message box constant using the OR operator (|), the Windows message box constant is ignored.
- Some Windows message box styles are not supported on some Windows platforms. To determine whether a particular style is supported on the operating systems targeted by the installation, consult the appropriate Windows SDK.

Syntax

```
SprintfBox ( nType, szTitle, szFormat [,arg] [,...] );
```

Parameters

Table 184 ▪ SprintfBox Parameters

Parameter	Description
nType	Specifies the type of icon to display in the message box. Pass one of the following predefined constants in this parameter: • INFORMATION • WARNING • SEVERE Advanced developers familiar with the Windows APIs can specify any style of message box by using the message box style constants in the parameter nType. See the description for the MessageBox or WinMessageBox API in the programming manual for your operating environment. If you are using any of the message box styles, the InstallShield SprintfBox function returns the return value from the Windows API. Therefore, you must use the Windows API return values in your script. For example, if you pass YES|NO|CANCEL as the first parameter, the SprintfBox message box has Yes, No, and Cancel buttons. The respective button return values, as defined by the Windows API MessageBox, are 6 (IDYES), 7 (IDNO), and 2 (IDCANCEL). You must use the appropriate constant values in your script, either as number literals, or as constants defined as the number literals in the declare block of your script.  ***Tip ▪*** *Advanced developers can use MB_STYLE directly as the first parameter of the SprintfBox function to replace the constants SEVERE, WARNING, or INFORMATION. The value of MB_STYLE is listed in the Windows.h file. You can either enter the value directly in the parameter nType, or you can use the #define preprocessor directive to define the constants associated with the value.*
szTitle	Specifies the title of the message box. To display the default title Error, pass a null string ("") in this parameter.
szFormat	Specifies a string that includes a format specifier for each argument to be included in the message.

Table 184 ▪ SprintfBox Parameters (cont.)

Parameter	Description
arg	Specifies up to 10 arguments to be included in the message. There must be one argument for each format specifier in the message; the type of each argument must match the type of its respective format specifier. SprintfBox generates a compiler error or fails at run time under the following conditions: • More than 10 format specifiers and arguments are specified: compiler error. • The number of arguments does not match the number of format specifiers. When a specifier does not have a corresponding argument, the resulting string contains unpredictable characters in the specifier's position. When there are more arguments than specifiers, the excess arguments are not inserted into the resulting string. • A variable does not match the type of its respective format specifier. • A character itself is passed, rather than its numeric ASCII value or the return from the STRTOCHAR function, with the format specifier %c.

Return Values

The return value is not significant unless you are using standard Microsoft Windows message box styles. If you are using these styles, the return value is the same as the return value from the MessageBox API functions.

Additional Information

The dialog that is displayed by the SprintfBox function cannot be displayed with a skin; it appears the same regardless of whether you have specified a skin.

SprintfBox Example

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript*
- *InstallScript MSI*

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the SprintfBox function.
 *
```

```
 * This script gets the capacity of drive C: and then calls
 * SprintfBox to create and display a formatted message.  That
 * message includes the drive letter and disk size, which are
 * stored in variables.
 *
\*------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_SprintfBox(HWND);

function ExFn_SprintfBox(hMSI)
    STRING  svResult;
    NUMBER  nvResult;
begin

    // Set up the string parameter for the call to GetSystemInfo.
    svResult = "C:";

    // Get the capacity of drive C.
    GetSystemInfo (DISK_TOTALSPACE, nvResult, svResult);

    // Build and display a message that incorporates
    // the values returned by GetSystemInfo.
    SprintfBox (INFORMATION, "System Information",
                "Total disk space on drive %s is %ld bytes.",
                svResult, nvResult);

end;
```

SprintfMsiLog

Project ▪ *This information applies to the following project types:*

- *Basic MSI*
- *InstallScript MSI*

The **SprintfMsiLog** function writes a message directly to the Windows Installer log file.

Syntax

```
SprintfMsiLog ( szFormat [,arg] [,...] );
```

Parameters

Table 185 ▪ SprintfMsiLog Parameters

Parameter	Description
szFormat	Specifies a string than can include literal text and must include one format specifier for each argument to be embedded in the string returned by svResult.
arg	You can specify up to nine arguments to be included in the message. You must have one argument for each format specifier in the message. The type of each argument must match the type of its respective format specifier. SprintfMsiLog generates a compiler error or fail at run time under the following conditions: ● More than nine format specifiers and arguments are specified. This results in a compiler error. ● The number of arguments does not match the number of format specifiers. When a specifier does not have a corresponding argument, the resulting string contains unpredictable characters in the specifier's position. When there are more arguments than specifiers, the excess arguments are not inserted into the resulting string. ● A variable does not match the type of its respective format specifier. The resulting string contains unpredictable characters in the specifier's position.

Return Values

There are no return values for this function. If the function is successful, the values are written to the Windows Installer log file. If the function fails, the values are not written to the Windows Installer log file.

SQLBrowse

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SQLBrowse2 function supersedes the **SQLBrowse** function.

The **SQLBrowse** function creates a dialog that lets an end user display a list of all SQL Servers that are available on the network.

This function is in the `SQLRT.obl` file for InstallScript projects, and in the `SQLCONV.obl` file for InstallScript MSI projects. If you are using the SQL Scripts view in InstallShield, the appropriate file is automatically added to your linker settings. However, if you are not using this view, add the appropriate file to your linker settings: On the Build menu, click Settings, and then add it to the Libraries (.obl) box.

Syntax

```
SQLBrowse( svServer );
```

Parameters

Table 186 ▪ SQLBrowse Parameters

Parameter	Description
svServer	When the function returns, this parameter contains the string with the server name that the end user selected. If an alias name was used to connect to a SQL Server database, this parameter contains the alias name.

Return Values

Table 187 ▪ SQLBrowse Return Values

Return Value	Description
NEXT	The end user clicked the OK button.
CANCEL	The end user clicked the Cancel button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLBrowse2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLBrowse2** function creates a dialog that lets an end user display a list of all database servers that are available on the network for the database technologies specified for a connection.

Syntax

```
SQLBrowse2( szConnection, svServer );
```

Parameters

Table 188 ▪ SQLBrowse2 Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
svServer	When the function returns, this parameter contains the string with the server name that the end user selected. If an alias name was used to connect to a SQL Server database, this parameter contains the alias name.

Return Values

Table 189 ▪ SQLBrowse2 Return Values

Return Value	Description
NEXT	The end user clicked the OK button.
CANCEL	The end user clicked the Cancel button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLDatabaseBrowse

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLDatabaseBrowse** function creates a dialog that lets the end user display a list of all database catalogs that are available on the specified database server. This function calls **SQLRTGetDatabases**, which uses `SQLRT.dll` for InstallScript projects and `ISSQLSRV.dll` for InstallScript MSI projects.

Note ▪ *The* **SQLDatabaseBrowse** *function uses settings from the SQL settings file; therefore, it can be called only after SQLRTInitialize2 has already been called.*

Syntax

```
SQLDatabaseBrowse( szConnection, szServer, bvWindowsLogin, szUser, szPassword, svDBCatalog );
```

Parameters

Table 190 ▪ SQLDatabaseBrowse Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
svServer	When the function returns, this parameter contains the string with the server name the end user selected.
bvWindowsLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
szUser	Specifies the default string to display in the Login ID edit box. Once the dialog function returns, this parameter contains the Login ID that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
szPassword	Specifies the default string to display in the Password edit field. Once the dialog function returns, this parameter contains the password that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
svDBCatalog	Specifies the name of the SQL database catalog.

Return Values

Table 191 ▪ SQLDatabaseBrowse Return Values

Return Value	Description
NEXT	The end user clicked the OK button.
CANCEL	The end user clicked the Cancel button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLRTComponentInstall

Project *▪ This information applies to InstallScript projects.*

The **SQLRTComponentInstall** function executes the SQL script that is associated with the specified component if the script is scheduled to run during installation.

Note *▪ If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTComponentInstall( szComponent );
```

Parameters

Table 192 ▪ SQLRTComponentInstall Parameters

Parameter	Description
szComponent	Specifies the name of the component that contains the SQL script.

Return Values

Table 193 ▪ SQLRTComponentInstall Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to execute the SQL script.
<ISERR_SUCCESS	This function failed to execute the SQL script.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTComponentUninstall

Project *▪ This information applies to InstallScript projects.*

The **SQLRTComponentUninstall** function executes the SQL script that is associated with the specified component if the script is scheduled to run during uninstallation.

Note *▪ If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTComponentUninstall( szComponent );
```

Parameters

Table 194 ▪ SQLRTComponentUninstall Parameters

Parameter	Description
szComponent	Specifies the name of the component that contains the SQL script.

Return Values

Table 195 ▪ SQLRTComponentUninstall Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to execute the SQL script.
<ISERR_SUCCESS	This function failed to execute the SQL script.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTConnect

Project *▪ This information applies to InstallScript projects.*

The SQLRTConnect2 function supersedes the **SQLRTConnect** function.

The **SQLRTConnect** function establishes a connection using the specified credential.

Note *▪ If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTConnect( szConnection, szServer, bTrust, szUserName, szPassword );
```

Parameters

Table 196 ▪ SQLRTConnect Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
szServer	Specifies the SQL Server.
bTrust	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
szUserName	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Table 197 ▪ SQLRTConnect Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTConnect2

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTConnect2** function establishes a connection. This function must be called before file transfer if the connection is to be used to run scripts during installation. **SQLRTConnect2** returns the database server name when it fails to establish the connection.

Note ▪ *The* **SQLRTConnect2** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTConnect2( szConnection, szServer, bWinLogin, szUser, szPassword, szDatabaseServer );
```

Parameters

Table 198 ▪ SQLRTConnect2 Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
szServer	Specifies the SQL Server.
bWinLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.
szDatabaseServer	Specifies the database server.

Return Values

Table 199 ▪ SQLRTConnect2 Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

Additional Information

If you want to be able to specify which catalog to connect to, replace the **SQLRTConnect2** function call in the OnSQLServerInitialize event with the **SQLRTConnectDB** function call. For more information, see SQLRTConnectDB.

SQLRTConnectDB

Project ▪ *This information applies to InstallScript projects.*

To establish a connection to a specific catalog, replace the **SQLRTConnect2** function call in the OnSQLServerInitialize event with the **SQLRTConnectDB** function call. Pass the catalog name as the szDB parameter for **SQLRTConnectDB**.

If you want end users to be able to specify the catalog at run time, pass an end user–defined variable as szDB.

Note ▪ *The* **SQLRTConnectDB** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTConnectDB( szConnection, szDB, szServer, bWinLogin, szUser, szPassword );
```

Parameters

Table 200 ▪ SQLRTConnectDB Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szDB	Specifies the catalog that you want to connect to. To specify multiple catalogs, separate each with a semicolon (;). If you want end users to be able to specify the catalog at run time, pass an end user–defined variable as szDB.
szServer	Specifies the SQL Server.
bWinLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Table 201 ▪ SQLRTConnectDB Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTDoRollbackAll

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTDoRollbackAll** function executes all of SQL scripts scheduled to run during rollback.

Note ▪ *The* **SQLRTDoRollbackAll** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTDoRollbackAll();
```

Parameters

SQLRTDoRollbackAll takes no parameters.

Return Values

Table 202 ▪ SQLRTDoRollbackAll Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to execute a script.
<ISERR_SUCCESS	This function failed to execute a script.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTGetBatchList

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTGetBatchList** function returns the list of components that are associated with SQL scripts that need to be run when batch mode is enabled.

Note ▪ *The* **SQLRTGetBatchList** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetBatchList( nOperation );
```

Parameters

Table 203 ▪ SQLRTGetBatchList Parameters

Parameter	Description
nOperation	Pass either of the following constants through this parameter: • **SQL_BATCH_INSTALL**—Obtains the list of SQL scripts scheduled to be run during installation. • **SQL_BATCH_UNINSTALL**—Obtains the list of SQL scripts scheduled to be run during uninstallation.

Return Values

Table 204 ▪ SQLRTGetBatchList Return Values

Return Value	Description
listConnections	Returns a list of component names.

Additional Information

For details about batch mode, see Specifying the Order for Running Multiple SQL Scripts That Are Associated with a Connection.

SQLRTGetBatchMode

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTGetBatchMode** function returns whether the batch mode is enabled or disabled.

Note ▪ *The* **SQLRTGetBatchMode** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetBatchMode();
```

Parameters

SQLRTGetBatchMode takes no parameters.

Return Values

Table 205 ▪ SQLRTGetBatchMode Return Values

Return Value	Description
TRUE	Batch mode is enabled.
FALSE	Batch mode is disabled.

Additional Information

For details about batch mode, see Specifying the Order for Running Multiple SQL Scripts That Are Associated with a Connection.

SQLRTGetBrowseOption

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTGetBrowseOption** function returns the current value of the browse option for the SQL Server browse combo box and list box controls, which can display local servers, remote servers, server aliases, or a combination of these types.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetBrowseOption( );
```

Parameters

SQLRTGetBrowseOption takes no parameters.

Return Values

Table 206 ▪ SQLRTGetBrowseOption Return Values

Return Value	Description
0	The SQL Server browse combo box and list box controls show all available SQL Servers (local servers, remote servers , and server aliases). This is the return value if **SQL_BROWSE_ALL** or zero (**0**) is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**, or if the **SQLRTSetBrowseOption** function is not called.
1	The SQL Server browse combo box and list box controls show all available local SQL Servers. This is the return value if **SQL_BROWSE_LOCAL** or **1** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.
2	The SQL Server browse combo box and list box controls show all available remote SQL Servers. This is the return value if **SQL_BROWSE_REMOTE** or **2** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.
3	The SQL Server browse combo box and list box controls show all available local SQL Servers and remove SQL Servers. This is the return value if **SQL_BROWSE_LOCAL | SQL_BROWSE_REMOTE** or **3** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.
4	The SQL Server browse combo box and list box controls show all available SQL Server aliases. This is the return value if **SQL_BROWSE_ALIAS** or **4** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.
5	The SQL Server browse combo box and list box controls show all available local SQL Servers and SQL Server aliases. This is the return value if **SQL_BROWSE_LOCAL | SQL_BROWSE_ALIAS** or **5** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.
6	The SQL Server browse combo box and list box controls show all available remote SQL Servers and SQL Server aliases. This is the return value if **SQL_BROWSE_REMOTE | SQL_BROWSE_ALIAS** or **6** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.

Table 206 ▪ SQLRTGetBrowseOption Return Values (cont.)

Return Value	Description
7	The SQL Server browse combo box and list box controls show all available SQL Servers (local servers, remote servers , and server aliases). This is the return value if **SQL_BROWSE_LOCAL** | **SQL_BROWSE_REMOTE** | **SQL_BROWSE_ALIAS** or **7** is passed for the nBrowseOption parameter of **SQLRTSetBrowseOption**.

SQLRTGetComponentScriptError

Project ▪ *This information applies to InstallScript projects.*

The SQLRTGetComponentScriptError2 function supersedes the **SQLRTGetComponentScriptError** function.

The **SQLRTGetComponentScriptError** function retrieves the last error while executing a SQL script that is associated with the component.

Note ▪ *The* **SQLRTGetComponentScriptError** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetComponentScriptError( szComponent, szMessage, nvErrorType, nvErrorLine );
```

Parameters

Table 207 ▪ SQLRTGetComponentScriptError Parameters

Parameter	Description
szComponent	Specifies the name of the component that is associated with the script.
szMessage	Specifies the error message that the database server returned.
nvErrorType	Specifies the type of error. Valid types are: • **SQL_ERROR_SCRIPT_UNABLE_OPEN_FILE**—Failed to open the script file. • **SQL_ERROR_SCRIPT_CONNECTION_NOT_OPEN**—The specified connection is not opened. • **SQL_ERROR_GET_SCHEMA_VERSION**—Error while attempting to get the schema version from the target database. • **SQL_ERROR_SET_SCHEMA_VERSION**—Error while attempting to set the schema version to the target database. • **SQL_ERROR_SCRIPT_COMMAND_ERROR**—Failed to execute a SQL batch.
nvErrorLine	Specifies the line number of the error.

Return Values

Table 208 ▪ SQLRTGetComponentScriptError Return Values

Return Value	Description
TRUE	One or more errors occurred.
FALSE	No errors occurred.

SQLRTGetComponentScriptError2

***Project ▪** This information applies to InstallScript projects.*

The **SQLRTGetComponentScriptError2** function retrieves the last error while executing a SQL script that is associated with the component. This function takes several parameters (szScriptName, szTechnology, szServer, and szDB) that the **SQLRTGetComponentScriptError** function does not.

Note ▪ *The* **SQLRTGetComponentScriptError** *function uses* `SQLRT.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetComponentScriptError2( szComponent, szMessage, nvErrorType, nvErrorLine, szScriptName,
    szTechnology, szServer, szDB );
```

Parameters

Table 209 ▪ SQLRTGetComponentScriptError2 Parameters

Parameter	Description
szComponent	Specifies the name of the component that is associated with the script.
szMessage	Specifies the error message that the database server returned.
nvErrorType	Specifies the type of error. Valid types are: • **SQL_ERROR_SCRIPT_UNABLE_OPEN_FILE**—Failed to open the script file. • **SQL_ERROR_SCRIPT_CONNECTION_NOT_OPEN**—The specified connection is not opened. • **SQL_ERROR_GET_SCHEMA_VERSION**—Error while attempting to get the schema version from the target database. • **SQL_ERROR_SET_SCHEMA_VERSION**—Error while attempting to set the schema version to the target database. • **SQL_ERROR_SCRIPT_COMMAND_ERROR**—Failed to execute a SQL batch.
nvErrorLine	Specifies the line number of the error.
szScriptName	Specifies the name of the script.
szTechnology	Specifies the name of the database server product: Microsoft SQL Server, Oracle, or MySQL.
szServer	Specifies the name of the target database server.
szDB	Specifies the name of the target database catalog.

Return Values

Table 210 ▪ SQLRTGetComponentScriptError Return Values

Return Value	Description
TRUE	One or more errors occurred.
FALSE	No errors occurred.

SQLRTGetConnectionAuthentication

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetConnectionAuthentication** function gets the default SQL Server connection authentication type.

Note *▪ If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetConnectionAuthentication( szConnection );
```

Parameters

Table 211 ▪ SQLRTGetConnectionAuthentication Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.

Return Values

Table 212 ▪ SQLRTGetConnectionAuthentication Return Values

Return Value	Description
TRUE	Perform Windows authentication.
FALSE	Perform SQL authentication.

SQLRTGetConnectionInfo

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetConnectionInfo** function retrieves strings containing the connection information (the default server, database, default user name, and default password).

Note ▪ *The* **SQLRTGetConnectionInfo** *function uses* `SQLRT.dll` *in InstallScript projects and* `ISSQLSRV.dll` *in InstallScript MSI projects; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetConnectionInfo( szConnection, szServer, szDB, szUser, szPassword );
```

Parameters

Table 213 ▪ SQLRTGetConnectionInfo Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection
szServer	Specifies the SQL Server.
szDB	Specifies the SQL Server database.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Table 214 ▪ SQLRTGetConnectionInfo Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTGetConnections

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetConnections** function retrieves a string list of connections that are present in the settings file.

Note ▪ *The* **SQLRTGetConnections** *function uses* `SQLRT.dll` *in InstallScript projects and* `ISSQLSRV.dll` *in InstallScript MSI projects; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetConnections( );
```

Parameters

SQLRTGetConnections takes no parameters.

Return Values

Table 215 ▪ SQLRTGetConnections Return Values

Return Value	Description
listConnections;	Returns a list of connection names.

SQLRTGetDatabases

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetDatabases** function returns a list of database catalogs that are available on the specified database server.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetDatabases( szConnection, szServer, bTrust, szUserName, szPassword );
```

Parameters

Table 216 ▪ SQLRTGetDatabases Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
szServer	Specifies the SQL Server.
bTrust	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
szUserName	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Returns a list of the database catalogs that are available on the target database server.

SQLRTGetErrorMessage

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTGetErrorMessage** function returns the descriptive message of the last error encountered by the SQL run time when a connection is being opened.

***Note ▪* SQLRTGetErrorMessage** *calls SQLRTGetLastError2, which uses* `SQLRT.dll` *and settings from the SQL settings file; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetErrorMessage( svMessage );
```

Parameters

Table 217 ▪ SQLRTGetErrorMessage Parameters

Parameter	Description
svMessage	Specifies the SQL error message.

Return Values

Table 218 ▪ SQLRTGetErrorMessage Return Values

Return Value	Description
ISERR_SUCCESS	The function was successfully executed.
SQL_ERROR_NOT_INITIALIZED	`SQLRT.dll` is not loaded.

SQLRTGetLastError

Project ▪ *This information applies to InstallScript projects.*

The SQLRTGetLastError2 function supersedes the **SQLRTGetLastError** function.

The **SQLRTGetLastError** function returns the text of the last error encountered by the SQL run time. **SQLRTGetLastError** also loads the proper SQL error message.

Note ▪ *The* **SQLRTGetLastError** *function uses* `SQLRT.dll` *and settings from the SQL settings file; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetLastError( szError );
```

Parameters

Table 219 ▪ SQLRTGetLastError Parameters

Parameter	Description
szError	Specifies the SQL error.

Return Values

None

SQLRTGetLastError2

Project *▪ This information applies to InstallScript projects.*

The **SQLRTGetLastError2** function returns detailed information about the last error encountered by the SQL run time. **SQLRTGetLastError2** also loads the proper SQL error message.

Note *▪ The* **SQLRTGetLastError2** *function uses* `SQLRT.dll` *and settings from the SQL settings file; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetLastError2( nvErrorCode, svMessage, svTechnology, svConnection, svServer, svDBCatalog );
```

Parameters

Table 220 ▪ SQLRTGetLastError2 Parameters

Parameter	Description
nvErrorCode	Specifies the SQL error code.
svMessage	Specifies the SQL error message.
svTechnology	Specifies the type of server (such as Microsoft SQL Server or Oracle) that was used.
svConnection	Specifies the SQL error code.
svServer	Specifies the name of the SQL database server.
svDBCatalog	Specifies the name of the SQL database catalog.

Return Values

None

SQLRTGetScriptErrorMessage

Project *▪ This information applies to InstallScript projects.*

The **SQLRTGetScriptErrorMessage** function returns the descriptive message of the last error encountered by the SQL run time when a SQL script is executing.

Note ▪ SQLRTGetScriptErrorMessage *calls SQLRTGetComponentScriptError2, which uses* `SQLRT.dll` *and settings from the SQL settings file; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetScriptErrorMessage( svMessage );
```

Parameters

Table 221 ▪ SQLRTGetScriptErrorMessage Parameters

Parameter	Description
svMessage	Specifies the SQL error message.

Return Values

Table 222 ▪ SQLRTGetScriptErrorMessage Return Values

Return Value	Description
ISERR_SUCCESS	The function was successfully executed.
SQL_ERROR_NOT_INITIALIZED	`SQLRT.dll` is not loaded.

SQLRTGetServers

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetServers** function returns a list of database servers on the network for all database technologies included in the installation. When bFilter is TRUE, it returns only local database servers.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetServers( bFilter );
```

Parameters

Table 223 ▪ SQLRTGetServers Parameters

Parameter	Description
bFilter	Specifies whether the list of database servers that is returned includes only local database servers: • **TRUE**—Return only local database servers. • **FALSE**—Return all database servers.

Return Values

Returns a list of the database servers available on the network for all database technologies included in the installation.

SQLRTGetServers2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTGetServers2** function returns a list of database servers for the database technologies that are specified for a connection. When szConnection is empty, this function behaves as SQLRTGetServers.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTGetServers2( szConnection, bFilter );
```

Parameters

Table 224 ▪ SQLRTGetServers2 Parameters

Parameter	Description
szConnection	Specifies a connection. If this parameter is empty, the function returns a list of database servers on the network for all database technologies included in the installation.
bFilter	Specifies whether the list of database servers that is returned includes only local database servers: • **TRUE**—Return only local database servers. • **FALSE**—Return all database servers.

Return Values

Returns a list of the database servers available on the network for database technologies specified for a connection.

SQLRTInitialize

Project ▪ *This information applies to InstallScript projects.*

The SQLRTInitialize2 function supersedes the **SQLRTInitialize** function.

If the **SQLRTInitialize** function is used, it must be the first function called in SQLRT. **SQLRTInitialize** loads the `SQLRT.dll` and initializes it using the settings file.

Syntax

```
SQLRTInitialize( szSettingsFile );
```

Parameters

Table 225 ▪ SQLRTInitialize Parameters

Parameter	Description
szSettingsFile	Specifies the path to the `SQLRT.ini` file. The following path should be specified for this parameter: **`SUPPORTDIR ^ "SQLRT.ini"`** The `SQLRT.ini` file should not be modified; otherwise, unexpected behavior may occur at run time. InstallShield creates this file based on SQL settings that are entered in the SQL Scripts view.

Return Values

None

SQLRTInitialize2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTInitialize2** must be the first function called in the SQL run time. **SQLRTInitialize2** loads the `SQLRT.dll` file for InstallScript projects and the `ISSQLSRV.dll` file for InstallScript MSI projects, and it uses the settings file to initialize the .dll file.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTInitialize2 ();
```

Parameters

SQLRTInitialize2 takes no parameters.

Return Values

None

SQLRTPutConnectionAuthentication

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTPutConnectionAuthentication** function sets the default SQL Server connection authentication type.

Note *▪ If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTPutConnectionAuthentication( szConnection, bWinLogin );
```

Parameters

Table 226 ▪ SQLRTPutConnectionAuthentication Parameters

Parameter	Description
szConnection	Specifies the name of the connection that you created in the SQL Scripts view.
bWinLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.

Return Values

None

SQLRTPutConnectionInfo

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SQLRTPutConnectionInfo2 function supersedes the **SQLRTPutConnectionInfo** function.

The **SQLRTPutConnectionInfo** function sets the connection information (the default server, default user name, and default password). This is useful in situations when you need to recall what an end user previously entered, like use of the Back button.

Note ▪ *The* **SQLRTPutConnectionInfo** *function uses* `SQLRT.dll` *in InstallScript projects and* `ISSQLSRV.dll` *in InstallScript MSI projects; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTPutConnectionInfo( szConnection, szServer, szUser, szPassword );
```

Parameters

Table 227 ▪ SQLRTPutConnectionInfo Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szServer	Specifies the SQL Server.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Table 228 ▪ SQLRTPutConnectionInfo Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTPutConnectionInfo2

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLRTPutConnectionInfo2** function sets the connection information (the default server, default database catalog, default user name, and default password). This is useful in situations when you need to recall what an end user previously entered, like use of the Back button.

Note ▪ *The* **SQLRTPutConnectionInfo2** *function uses* `SQLRT.dll` *for InstallScript projects and* `ISSQLSRV.dll` *for InstallScript MSI projects; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTPutConnectionInfo2( szConnection, szServer, svDBCatalog, szUser, szPassword );
```

Parameters

Table 229 ▪ SQLRTPutConnectionInfo2 Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szServer	Specifies the SQL Server.
svDBCatalog	Specifies the name of the SQL database catalog.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.

Return Values

Table 230 ▪ SQLRTPutConnectionInfo2 Return Values

Return Value	Description
>=ISERR_SUCCESS	This function was able to establish a connection.
<ISERR_SUCCESS	This function failed to establish a connection.
SQL_ERROR_NOT_INITIALIZED (-10)	`SQLRT.dll` is not loaded.

SQLRTServerValidate

Project ▪ *This information applies to InstallScript MSI projects.*

The **SQLRTServerValidate** function tests connections specified in the installation.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTServerValidate\( hInstall );
```

Parameters

Table 231 ▪ SQLRTServerValidate Parameters

Parameter	Description
hInstall	Specifies the handle to the installation. When `IS_SQLSERVER_CONNECTIONS_TO_VALIDATE` is specified, only the connections that are specified as the value of that Windows Installer property are tested.

Return Values

Table 232 ▪ SQLRTServerValidate Return Values

Return Value	Description
=ISERR_SUCCESS	This function was able to establish a connection.
SQL_ERROR_NOT_INITIALIZED	`ISSQLSRV.dll` is not loaded.

Additional Information

The result is used to set the value of the `IS_SQLSERVER_STATUS` property. Possible values are listed in the following table.

Table 233 ▪ IS_SQLSERVER_STATUS Property Values

Return Value	Description
0	The function was able to establish one or more connections.
1	The function failed to establish a connection.
2	The function was able to establish a connection, but it failed to retrieve the product version from the target database server.

Table 233 ▪ IS_SQLSERVER_STATUS Property Values (cont.)

Return Value	Description
3	The function was able to establish a connection, but the version requirement was not met.
4	The function was able to establish a connection, but MSDE or the Express version was not allowed.
5	The function was able to establish a connection, but it failed to retrieve the schema version from the target database catalog.
6	The function was able to establish a connection, but it failed to set the schema version to the target database catalog.
7	The function could not find the specified ODBC driver.
8	The function was able to establish a connection to the default database catalog, but it failed to create the target database catalog (when **Create Catalog If Absent** check box in the SQL Scripts view is selected).
9	The function was able to establish a connection to the default database catalog, but it failed to connect to the target database catalog.
10	The function could not find a valid record in `ISSQLDBMetaData` table.

SQLRTSetBrowseOption

Project ▪ *This information applies to InstallScript projects.*

The **SQLRTSetBrowseOption** function lets you specify whether the SQL Server browse combo box and list box controls show local servers, remote servers, server aliases, or a combination of these types.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTSetBrowseOption( nBrowseOption );
```

Parameters

Table 234 ▪ SQLRTSetBrowseOption Parameters

Parameter	Description
nBrowseOption	Pass one or more of the following predefined constants in this parameter: • **SQL_BROWSE_ALL (0)**—Show all of the available SQL Servers. Specifying this constant has the same effect as selecting the SQL_BROWSE_LOCAL, SQL_BROWSE_REMOTE, and SQL_BROWSE_ALIAS constants. • **SQL_BROWSE_LOCAL (1)**—Show local SQL Servers. • **SQL_BROWSE_REMOTE (2)**—Show remote SQL Servers. • **SQL_BROWSE_ALIAS (4)**—Show SQL Server aliases. You can specify multiple browse options by combining constants with the bitwise OR operator (|).

Return Values

None

SQLRTTestConnection

Project ▪ *This information applies to InstallScript MSI projects.*

The SQLRTTestConnection2 function supersedes the **SQLRTTestConnection** function.

The **SQLRTTestConnection** function tests all of the connections specified in the installation using the specified credential.

Note ▪ *If you want to call any built-in SQL-related function before the OnSQLServerInitialize event handler is called in an InstallScript project or the OnSQLLogin event handler is called in an InstallScript MSI project, call the SQLRTInitialize2 function first. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTTestConnection( szServer, szDB, szUserName, szPassword, bTrust );
```

Parameters

Table 235 ▪ SQLRTTestConnection Parameters

Parameter	Description
szServer	Specifies the SQL Server.
szDB	Specifies the catalog.
szUserName	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.
bTrust	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.

Return Values

Table 236 ▪ SQLRTTestConnection Return Values

Return Value	Description
=ISERR_SUCCESS	This function was able to establish a connection.
SQL_ERROR_NOT_INITIALIZED	`ISSQLSRV.dll` is not loaded.

Additional Information

The result is used to set the value of the `IS_SQLSERVER_STATUS` property. Possible values are listed in the following table.

Table 237 ▪ IS_SQLSERVER_STATUS Property Values

Return Value	Description
0	The function was able to establish one or more connections.
1	The function failed to establish a connection.
2	The function was able to establish a connection, but it failed to retrieve the product version from the target database server.
3	The function was able to establish a connection, but the version requirement was not met.

Table 237 ▪ IS_SQLSERVER_STATUS Property Values (cont.)

Return Value	Description
4	The function was able to establish a connection, but MSDE or the Express version was not allowed.
5	The function was able to establish a connection, but it failed to retrieve the schema version from the target database catalog.
6	The function was able to establish a connection, but it failed to set the schema version to the target database catalog.
7	The function could not find the specified ODBC driver.
8	The function was able to establish a connection to the default database catalog, but it failed to create the target database catalog (when **Create Catalog If Absent** check box in the SQL Scripts view is selected).
9	The function was able to establish a connection to the default database catalog, but it failed to connect to the target database catalog.
10	The function could not find a valid record in `ISSQLDBMetaData` table.

SQLRTTestConnection2

Project ▪ *This information applies to InstallScript MSI projects.*

The **SQLRTTestConnection2** function establishes a connection.

Note ▪ *The* **SQLRTTestConnection2** *function uses* `ISSQLSRV.dll`*; therefore, it can be called only after SQLRTInitialize2 has already been called. To learn more, see Using the SQL Run-Time Functions in InstallScript and InstallScript MSI Projects.*

Syntax

```
SQLRTTestConnection2( szConnection, szServer, szDB, szUserName, szPassword, bTrust );
```

Parameters

Table 238 ▪ SQLRTTestConnection2 Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szServer	Specifies the SQL Server.
svDB	Specifies the catalog.
szUser	Specifies the SQL Server login information.
szPassword	Specifies the password associated with a user account.
bTrust	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.

Return Values

Table 239 ▪ SQLRTTestConnection2 Return Values

Return Value	Description
=ISERR_SUCCESS	This function was able to establish a connection.
SQL_ERROR_NOT_INITIALIZED	`ISSQLSRV.dll` is not loaded.

Additional Information

The result is used to set the value of the `IS_SQLSERVER_STATUS` property. Possible values are listed in the following table.

Table 240 ▪ IS_SQLSERVER_STATUS Property Values

Return Value	Description
0	The function was able to establish one or more connections.
1	The function failed to establish a connection.
2	The function was able to establish a connection, but it failed to retrieve the product version from the target database server.

Table 240 ▪ IS_SQLSERVER_STATUS Property Values (cont.)

Return Value	Description
3	The function was able to establish a connection, but the version requirement was not met.
4	The function was able to establish a connection, but MSDE or the Express version was not allowed.
5	The function was able to establish a connection, but it failed to retrieve the schema version from the target database catalog.
6	The function was able to establish a connection, but it failed to set the schema version to the target database catalog.
7	The function could not find the specified ODBC driver.
8	The function was able to establish a connection to the default database catalog, but it failed to create the target database catalog (when **Create Catalog If Absent** check box in the SQL Scripts view is selected).
9	The function was able to establish a connection to the default database catalog, but it failed to connect to the target database catalog.
10	The function could not find a valid record in `ISSQLDBMetaData` table.

SQLServerLogin

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLServerLogin** function creates a dialog that is used by the script to specify SQL login credentials. These credentials include the login ID and password.

This function is in the `SQLRT.obl` file for InstallScript projects, and in the `SQLCONV.obl` file for InstallScript MSI projects. If you are using the SQL Scripts view in InstallShield, the appropriate file is automatically added to your linker settings. However, if you are not using this view, add the appropriate file to your linker settings: On the Build menu, click Settings, and then add it to the Libraries (.obl) box.

Syntax

```
SQLServerLogin( szMsg, svUser, svPassword );
```

Parameters

Table 241 ▪ SQLServerLogin Parameters

Parameter	Description
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
svUser	Specifies the default string to display in the Login ID edit box. Once the dialog function returns, this parameter contains the Login ID that the end user entered in the edit box. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
svPassword	Specifies the default string to display in the Password edit field. Once the dialog function returns, this parameter contains the password that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.

Return Vaues

Table 242 ▪ SQLServerLogin Return Values

Return Value	Description
NEXT	The end user selected the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLServerSelect

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The **SQLServerSelect** function creates a dialog that lets the end user select a database server.

This function is in the `SQLRT.obl` file for InstallScript projects, and in the `SQLCONV.obl` file for InstallScript MSI projects. If you are using the SQL Scripts view in InstallShield, the appropriate file is automatically added to your linker settings. However, if you are not using this view, add the appropriate file to your linker settings: On the Build menu, click Settings, and then add it to the Libraries (.obl) box.

Syntax

```
SQLServerSelect( szMsg, svServer );
```

Parameters

Table 243 ▪ SQLServerSelect Parameters

Parameter	Description
szMsg	Specifies the message to display in the dialog. To display the default instructions for this dialog, pass a null string (“”) in this parameter.
szServer	Specifies the default server to initially display in the Server combo box. Once the dialog function returns, this parameter contains the server name that the end user selected or entered in the Server combo box.

Return Vaues

Table 244 ▪ SQLServerSelect Return Values

Return Value	Description
NEXT	The end user selected the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLServerSelectLogin

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SQLServerSelectLogin2 function supersedes the **SQLServerSelectLogin** function.

The **SQLServerSelectLogin** function creates a dialog that is used by the default script. It allows the targeted end user to specify which SQL Server is to be used for the current connection, along with which login credential should be used. When the dialog is displayed, a combo box shows a list of SQL Servers accessed through DSNs. A Browse button is available to bring up a list of all SQL Servers available on the network or the end user can type a server name into the combo box. Also, the end user has the option to use Windows login credentials or enter a SQL Server login ID and password.

This function is in the `SQLRT.obl` file for InstallScript projects, and in the `SQLCONV.obl` file for InstallScript MSI projects. If you are using the SQL Scripts view in InstallShield, the appropriate file is automatically added to your linker settings. However, if you are not using this view, add the appropriate file to your linker settings: On the Build menu, click Settings, and then add it to the Libraries (.obl) box.

Syntax

```
SQLServerSelectLogin (byref string svServer, byref string svUser, byref string svPassword, byref BOOL
    bvWindowsLogin );
```

Parameters

Table 245 ▪ SQLServerSelectLogin Parameters

Parameter	Description
szServer	Specifies the default server to initially display in the Server combo box. Once the dialog function returns, this parameter contains the server name the end user selected or entered in the Server combo box. This parameter supports alias names for SQL Server database connections.
svUser	Specifies the default string to display in the Login ID edit box. Once the dialog function returns, this parameter contains the Login ID that the end user entered in the edit box. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
svPassword	Specifies the default string to display in the Password edit field. Once the dialog function returns, this parameter contains the Password that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
bvWindowsLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.

Return Values

Table 246 ▪ SQLServerSelectLogin Return Values

Return Value	Description
NEXT	The end user selected the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLServerSelectLogin2

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

The **SQLServerSelectLogin2** function creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. The end user has the option to use Windows login credentials or enter a SQL Server login ID and password.

When bShowCxnName is set to TRUE, the dialog shows the connection name that is associated with the connection information. In addition, when bShowDBCatalog is set to TRUE, the dialog allows the end user to specify which database catalog should be used for the current connection. The end user can type a catalog name in the edit box or click the Browse button next to the name of database catalog edit box. Clicking the Browse button displays a list of all database catalogs that are available on the specified database server.

Syntax

```
SQLServerSelectLogin2( szConnection, svServer, svUser, svPassword, bvWindowsLogin, svCatalog,
    bShowCxnName, bShowDBCatalog );
```

Parameters

Table 247 ▪ SQLServerSelectLogin2 Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szServer	Specifies the default server to initially display in the Server combo box. Once the dialog function returns, this parameter contains the server name the end user selected or entered in the Server combo box. This parameter supports alias names for SQL Server database connections.
svUser	Specifies the default string to display in the Login ID edit box. Once the dialog function returns, this parameter contains the Login ID that the end user entered in the edit box. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
svPassword	Specifies the default string to display in the Password edit field. Once the dialog function returns, this parameter contains the Password that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
bvWindowsLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.
svCatalog	Specifies the name of the database catalog.
bShowCxnName	Specifies whether the dialog should show the name of the connection that is associated with the connection information. Pass one of the following predefined constants in this parameter: • **TRUE**—Show the name of the connection. • **FALSE**—Do not show the name of the connection.

Table 247 ▪ SQLServerSelectLogin2 Parameters (cont.)

Parameter	Description
bShowDBCatalog	Specifies whether the end user can select which database catalog should to be used for the current connection. Pass one of the following predefined constants in this parameter: • **TRUE**—Allow the end user to select which database catalog should to be used for the current connection. The end user can type a catalog name in the edit box or click the Browse button next to the name of database catalog edit box. Clicking this Browse button displays a list of all database catalogs that are available on the specified database server. • **FALSE**—Do not allow the end user to select which database catalog should to be used for the current connection.

Return Values

Table 248 ▪ SQLServerSelectLogin2 Return Values

Return Value	Description
NEXT	The end user selected the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

SQLServerSelectLoginEx

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

The SQLServerSelectLogin2 function supersedes the **SQLServerSelectLoginEx** function.

The **SQLServerSelectLoginEx** function creates a login dialog that is used by the default script. It lets the targeted end user specify which SQL Server should be used for the current connection, as well as which login credential should be used. The dialog also shows the connection name that is associated with the connection information.

The dialog displays a combo box that contains a list of SQL Servers accessed through DSNs. The end user can type a server name in the combo box or click the Browse button next to the Server Name combo box; clicking this button displays a list of all SQL Servers that are available on the network. The end user has the option to use Windows login credentials or enter a SQL Server login ID and password.

Syntax

```
SQLServerSelectLoginEx (byval string szConnection, byref string svServer, byref string svUser,
    byref string svPassword, byref BOOL bvWindowsLogin)
```

Parameters

Table 249 ▪ SQLServerSelectLoginEx Parameters

Parameter	Description
szConnection	Specifies the SQL Server connection.
szServer	Specifies the default server to initially display in the Server combo box. Once the dialog function returns, this parameter contains the server name the end user selected or entered in the Server combo box. This parameter supports alias names for SQL Server database connections.
svUser	Specifies the default string to display in the Login ID edit box. Once the dialog function returns, this parameter contains the Login ID that the end user entered in the edit box. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
svPassword	Specifies the default string to display in the Password edit field. Once the dialog function returns, this parameter contains the Password that the end user entered in the edit field. This information is only pertinent if the end user selected to use SQL Login instead of Windows credentials.
bvWindowsLogin	Specifies the initial state of the radio buttons specifying login using Windows credentials vs. SQL Server credentials. When this is TRUE, the password and login ID fields are disabled. When it is FALSE, indicating that SQL Server credentials are to be used, the password and login fields are enabled. Once the function returns, this parameter contains TRUE if the Windows credentials radio button was specified by the end user and FALSE if the SQL Server credentials radio was selected instead.

Return Values

Table 250 ▪ SQLServerSelectLoginEx Return Values

Return Value	Description
NEXT	The end user selected the Next button.
BACK	The end user selected the Back button.
< ISERR_SUCCESS	The dialog could not be displayed.

StatusUpdate

The **StatusUpdate** function enables or disables the link between file transfer operations and the progress indicator of the status bar. When bLink is ON, the link is enabled and nFinalPercent specifies a final percentage to be displayed at the end of the next file transfer. During that file transfer, the status bar is updated smoothly from

its current value to the value specified by nFinalPercent. When bLink is OFF, the link is disabled and the progress indicator of the status bar is not updated automatically during subsequent file transfers.

This function works by computing the total number of bytes to be transferred by any of the file transfer functions. It then computes how often it will increment the progress bar starting from its current location to the maximum value in nFinalPercent.

The StatusUpdate function does not work with the functions VerUpdateFile and VerSearchAndUpdateFile. When calling those functions, you should disable the status bar or update it manually.

To set the status bar to an initial percentage, call SetStatusWindow before calling StatusUpdate.

***Tip** ▪ If the status bar is enabled during file transfer, call StatusUpdate before each call to CopyFile or XCopyFile). Before calling FeatureMoveData to transfer files, call StatusUpdate with the parameters ON and 100. This sets the status bar to update smoothly to 100% during the file transfer stage of the setup.*

Syntax

```
StatusUpdate ( bLink, nFinalPercent );
```

Parameters

Table 251 ▪ StatusUpdate Parameters

Parameter	Description
bLink	Specifies whether to enable or disable the link between file transfer operations and the progress indicator of the status bar. Pass one of the following predefined constants in this parameter: • **ON**—Specifies that the progress indicator of the status bar should be linked to file transfer operations. • **OFF**—Specifies that link between file transfer operations and the progress indicator of the status bar should be disabled. The link remains disabled until it is reestablished by a subsequent call to StatusUpdate with bLink set to ON.  ***Note ▪*** *The status bar can be updated manually by calling SetStatusWindow.*
nFinalPercent	Specifies the final percentage value that the progress indicator of the status bar should reach at the end of the next file transfer operation if bLink is ON. If the value passed in nFinalPercent is less than the current value in the progress indicator of the status bar, the progress indicator will not change. When bLink is OFF, this parameter is ignored.

Return Values

Table 252 ▪ StatusUpdate Return Values

Return Value	Description
0	Indicates that the function was successful.
< 0	Indicates that the function was not successful.

StatusUpdate Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the StatusUpdate function.
 *
 * This script copies all files from a source directory to a
 * target directory.  StatusUpdate is called to set the limit
 * of the progress bar and to regulate the progress indicator
 * as the files are copied.
 *
 * Note: Before running this script, create the directories
 *       referenced by SOURCE_DIR and TARGET_DIR and create two
 *       or more files in SOURCE_DIR.
 *
\*---------------------------------------------------------------*/

#define SOURCE_DIR "C:\\ISExampl\\Source"
#define TARGET_DIR "C:\\ISExampl\\Target";

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StatusUpdate(HWND);

function ExFn_StatusUpdate(hMSI)
begin

    // Enable the progress bar.
    Enable(STATUS);

    // Set the limit of the progress bar to 99% completion.
    StatusUpdate (ON, 99);

    // Copy the files.
    if (XCopyFile (SOURCE_DIR ^ "*.*", TARGET_DIR ^ "*.*", COMP_NORMAL) < 0 ) then
        MessageBox ("An error occurred while copying files.",SEVERE);
    endif;

    // Display a message; do not change the progress bar.
    SetStatusWindow (-1, "File Copying completed at 99%.");
    Delay (3);

    // Set the progress bar to 100% and displays a message.
    SetStatusWindow (100, "StatusUpdate example completed, now exiting...");
    Delay (3);

end;
```

StrAddLastSlash

The **StrAddLastSlash** function adds a trailing backslash to a path specification if it does not already have one.

Syntax

```
StrAddLastSlash ( svPath );
```

Parameters

Table 253 ▪ StrAddLastSlash Parameters

Parameter	Description
svPath	Specifies a string whose value must be a path specification; it returns the path with a trailing backslash. Note that if the path includes a trailing backslash, it is returned unchanged.

Return Values

Table 254 ▪ StrAddLastSlash Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully added the trailing backslash or that the path contains a trailing backslash.

StrCompare

The **StrCompare** function compares two strings. The comparison is not case-sensitive.

Syntax

```
StrCompare ( szStringA, szStringB );
```

Parameters

Table 255 ▪ StrCompare Parameters

Parameter	Description
szStringA	Specifies the first string to compare.
szStringB	Specifies the second string to compare.

Return Values

Table 256 ▪ StrCompare Return Values

Return Value	Description
< 0	Indicates that the string in szStringA has a lower value than the string in szStringB.
0	Indicates that the two strings are equal.
> 0	Indicates that the string in szStringA has a greater value than the string in szStringB.

Additional Information

The **StrCompare** function compares the strings by checking the first character in each string, the second character in each string, and so on—until it finds an inequality or reaches the ends of the strings.

The language driver for the language that you select determines which string is greater or if the strings are the same. If you do not use a language driver, Windows uses an internal function. With a double-byte character set (DBCS) version of Windows, this function can compare two DBCS strings.

StrCompare Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrCompare function.
 *
 * StrCompare is called to compare two strings.  The result of
 * the comparison is displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "StrCompare Example"
```

```
#define MSG_TEXT   "Please enter two strings to compare:"
#define FIELD_A    "String A:"
#define FIELD_B    "String B:"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrCompare(HWND);

function ExFn_StrCompare(hMSI)
    STRING svStringA, svStringB;
    NUMBER nResult;
begin

    // Get two strings from the user.
    SdShowDlgEdit2 (TITLE_TEXT, MSG_TEXT, FIELD_A, FIELD_B, svStringA, svStringB);

    // Compare the strings.
    nResult = StrCompare (svStringA, svStringB);

    // Display the result.
    if (nResult = 0) then
        MessageBox (svStringA + " and " +  svStringB + " are equal.", INFORMATION);
    elseif (nResult < 0) then
        MessageBox (svStringB + " is greater than " + svStringA, INFORMATION);
    else
        MessageBox (svStringA + " is greater value than " + svStringB, INFORMATION);
    endif;

end;
```

StrConvertSizeUnit

The **StrConvertSizeUnit** function returns the appropriate display string for the InstallScript size unit constant that is specified.

Syntax

```
StrConvertSizeUnit (byval string nUnit);
```

Parameters

Table 257 ▪ StrConvertSizeUnit Parameters

Parameter	Description
nUnit	Specify the unit constant that you want to be converted to a UI string. The following constants are supported: • BYTES • KBYTES • MBYTES • GBYTES • TBYTES

Return Values

Table 258 ▪ StrConvertSizeUnit Return Values

Return Value	Description
bytes	The function converted the BYTES constant.
KB	The function converted the KBYTES constant.
MB	The function converted the MBYTES constant.
GB	The function converted the GBYTES constant.
TB	The function converted the TBYTES constant.
Null ("")	The function failed to convert nUnit.

StreamFileFromBinary

The **StreamFileFromBinary** function streams a binary key with a file.

Syntax

```
StreamFileFromBinary ( hInstall(HWND), svObjectBinaryKey, szFileName );
```

Parameters

Table 259 ▪ StreamFileFromBinary Parameters

Parameter	Description
hInstall (HWND)	Provides a handle to the currently running application.
svObjectBinaryKey	Indicates the key to be streamed out of the binary table.
szFileName	Indicates the full path to the extracted file.

Return Values

Table 260 ▪ StreamFileFromBinary Return Values

Return Value	Description
0	The function successfully streamed the binary key with the file.
-1	The function failed to stream the binary key with the file.

StrFind

The **StrFind** function determines whether the string passed in the parameter szFindMe is found within the string passed in the parameter szString. If szFindMe is found in szString, **StrFind** returns the position within szString of the first character of szFindMe. (Note that the position of the first character in szString is zero.) This function is not case-sensitive and can be used only to find the first occurrence of szFindMe in szString.

StrFind calls the following:

```
StrFindEx(szString, szFindMe, 0);
```

For more information about parameters and return values for **StrFind**, see StrFindEx.

StrFind Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrFind function.
```

```
 *
 * StrFind is called to search for a substring within a string.
 * If successful, StrFind returns the location of the substring.
 *
\*------------------------------------------------------------------*/

#define TITLE_TEXT "StrFind Example";

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrFind(HWND);

function ExFn_StrFind(hMSI)
    STRING szString, szFindMe, szTitle, szMsg;
    NUMBER nLocation;
begin

    // Set up parameters for call to StrFind.
    szString = "This is a sample string to be searched.";
    szFindMe = "Sample String";

    // Find the substring specified by szFindMe.
    nLocation = StrFind (szString, szFindMe);

    // Display the location of the text if it was found.
    if (nLocation < 0) then
        MessageBox (szFindMe + " not found in " + szString + ".", WARNING);
    else
        szMsg    = "'%s' starts at byte %d of\n'%s'";
        SprintfBox (INFORMATION, szTitle, szMsg, szFindMe, nLocation, szString);
    endif;

end;
```

StrFindEx

The **StrFindEx** function determines whether the string passed in the parameter szFindMe is found within the string passed in the parameter szString; the function begins its search at the location specified by nStart. If szFindMe is found, StrFind returns the position within szString of the first character of szFindMe. This function is not case-sensitive and can be used only to find the first occurrence of szFindMe in szString.

Syntax

```
StrFindEx ( szString, szFindMe, nStart );
```

Parameters

Table 261 ▪ StrFindEx Parameters

Parameter	Description
szString	Specifies the string to search.
szFindMe	Specifies the string to find in szString.
nStart	Specifies an offset into szString that identifies the character at which to begin the search for szFindMe. Note that the position of the first character in szString is 0 (zero).

Return Values

Table 262 ▪ StrFindEx Return Values

Return Value	Description
X	If szString contains szFindMe, X is the numeric position of the first character in szFindMe. The first character in szString is in position 0 (zero).
< 0	Indicates szString does not contain szFindMe.

Additional Information

In the example below, StrFind will return the value 19.

```
nStartPos = StrFind("Scripting means having fun","ing",7);
```

If you need only a TRUE or FALSE return value indicating whether one string contains another string, (that is, if the location if the substring is unimportant), use the string find operator (%) as shown below:

```
   if (szString % szFindMe) then ...
```

You can use the string find operator (%) only in Boolean expressions that are resolved in if statements. You cannot use it in repeat statements or while statements.

StrGetTokens

The **StrGetTokens** function extracts substrings (tokens) from the string specified by szString and places them into the list specified by listID. The substrings in szString must be delimited—separated from one another—by one or more of the characters specified by szDelimiterSet.

For example, if you call StrGetTokens with the string "One;Two;Three;Four;Five" as the second parameter and ";" as the third parameter, listID will be returned with five strings: "One", "Two", "Three", "Four", and "Five". Use the list functions, such as ListGetFirstString and ListGetNextString to access each token in the list.

Note ▪ *If the first (or last) character of szString matches a character in szDelimiterSet, a null string ("") is not inserted in the list as the first (or last) element. Instead, the characters between the first and second (or last and next to last) delimiters are inserted in the list as the first (or last) element.*

Syntax

```
StrGetTokens ( listID, szString, szDelimiterSet );
```

Parameters

Table 263 ▪ StrGetTokens Parameters

Parameter	Description
listID	Returns a list of tokens. The string list identified by listID must already have been initialized by a call to ListCreate.
szString	Specifies the string to be parsed.
szDelimiterSet	Specifies a set of one or more delimiters. Each delimiter is one character (1 byte). If you pass a null string ("") in this parameter, the function searches for null characters as the delimiters. This is useful if you are using the GetProfString function.  ***Note ▪*** *When a space is specified as the delimiter, StrGetTokens treats consecutive spaces as a single delimiter.*

Return Values

Table 264 ▪ StrGetTokens Return Values

Return Value	Description
0	Indicates that the function successfully separated the string and inserted the tokens into the specified list.
< 0	Indicates that the function was unable to separate the string and insert the tokens into the list.

StrGetTokens Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrGetTokens function.
 *
 * First, the value of a key is retrieved from an initialization
 * file.  The value returned is a search path.  Then
 * StrGetTokens is called to build a list of the paths found in
 * the search path.  Finally, the paths are displayed.
 *
 * In order for this script to run correctly, you must create
 * an initialization (text) file and add the following lines to
 * it:
 *
 *    [Test Section]
 *    searchpath=C:\Windows;C:\Windows\System;C:\Windows\Command
 *
 * Then set the constant EXAMPLE_INI to the fully qualified name
 * of that file.
 *
\*---------------------------------------------------------------*/

#define FILE_NAME    "C:\\ISExampl.ini"
#define SECTION_NAME "Test Section"
#define KEY_NAME     "searchpath"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrGetTokens(HWND);

function ExFn_StrGetTokens(hMSI)
    LIST   listID;
    STRING svSearchPath;
    STRING szTitle, szMsg;
begin

    // Get the value of the specified key from the specified section
    // of the initialization file.
    if GetProfString (FILE_NAME, SECTION_NAME, KEY_NAME, svSearchPath) < 0 then
      // Report the error.
      MessageBox ("Unable to retrieve key value from "+ FILE_NAME + ".", INFORMATION);
    else
        // Create a list to hold the paths that make up the search path
        // that was returned by GetProfString.
        listID = ListCreate (STRINGLIST);

        // Get each path from the search path into the list.
        if (StrGetTokens (listID, svSearchPath, ";") < 0) then
            // Report the error.
            MessageBox ("StrGetTokens failed.", SEVERE);
        else
            // Display the individual paths from the list.
            Sprintf (szMsg, "Paths found in %s %s", SECTION_NAME,KEY_NAME);
            SdShowInfoList ("Search Path", szMsg, listID);
```

```
        endif;
    endif;

    // Remove the list from memory.
    ListDestroy (listID);

end;
```

StrLength

The **StrLength** function returns the number of characters in a given string variable (that is, the number of code units in the UTF-16-encoded string) up to the first null character.

StrLength and StrLengthChars return the same results.

To obtain the number of characters in a string with embedded nulls, use SizeOf.

Syntax

```
StrLength ( szString );
```

Parameters

Table 265 ▪ StrLength Parameters

Parameter	Description
szString	Specifies the string whose size is to be determined.

Return Values

Table 266 ▪ StrLength Return Values

Return Value	Description
X	Where X is the number of characters in the string.
< 0	Indicates that the function was unable to determine the number of characters in the string.

StrLength Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the StrLength function.
 *
 * StrLength is called to retrieve the number of characters in a
 * string that an end user enters. The number of characters is
 * displayed in a message box.
 *
\*------------------------------------------------------------------*/

#define TITLE_TEXT "StrLength Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

export prototype ExFn_StrLength(HWND);

function ExFn_StrLength(hMSI)
    STRING svString, szTitle, szMsg;
    NUMBER nLength;
begin

    // Get a line of text from the end user.
    AskText ("Enter a line of text. ", "", svString);

    // Get the number of characters in the string.
    nLength = StrLength (svString);

    if (nLength < 0) then
        MessageBox ("StrLength failed.", SEVERE);
    else
        // Display the string length.
        szMsg    = "String '%s' is %d characters long.";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svString, nLength);
    endif;

end;
```

StrLengthChars

The **StrLengthChars** function returns the number of characters in a given string variable (that is, the number of code units in the UTF-16-encoded string) up to the first null character.

StrLengthChars and StrLength return the same results.

To obtain the number of characters in a string with embedded nulls, use SizeOf.

Syntax

```
StrLengthChars ( szString );
```

Parameters

Table 267 ▪ StrLengthChars Parameters

Parameter	Description
szString	Specifies the string whose size is to be determined.

Return Values

Table 268 ▪ StrLengthChars Return Values

Return Value	Description
X	Where X is the number of characters in the string.
< 0	Indicates that the function was unable to determine the number of characters in the string.

StrLengthChars Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrLengthChars function.
 *
 * StrLengthChars is called to retrieve the number of characters
 * in a string that an end user enters. The number of characters is
 * displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "StrLengthChars Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrLengthChars(HWND);

function ExFn_StrLengthChars(hMSI)
    STRING svString, szTitle, szMsg;
    NUMBER nLength;
begin

    // Get a line of text from the end user.
    AskText ("Enter a line of text. ", "", svString);

    // Get the number of characters in the string.
    nLength = StrLengthChars (svString);

    if (nLength < 0) then
```

```
        MessageBox ("StrLengthChars failed.", SEVERE);
    else
        // Display the number of code units in the string.
        szMsg   = "String '%s' is %d code units long.";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svString, nLength);
    endif;

end;
```

StrPutTokens

The **StrPutTokens** function extracts list items from the string list specified by listID and places them into the string specified by svString. The substrings placed into svString from listID are separated by szSeparator in the resulting string. Note that instances of szSeparator are *not* placed at the beginning and end of the string, only between list elements added to the string.

For example, if you call StrPutTokens with the list containing the items "One", "Two", "Three", "Four", and "Five" as the first parameter and ";" as the third parameter, svString will contain "One;Two;Three;Four;Five" after the function is called.

The value of bNull determines whether null characters are used to separate the substrings in the resulting string.

Syntax

```
StrPutTokens( listID, svString, szSeparator, bNull );
```

Parameters

Table 269 ▪ StrPutTokens Parameters

Parameter	Description
listID	Specifies the string list to be processed. The string list identified by listID must already have been initialized by a call to ListCreate. Note that this function does not work with number lists.
svString	Specifies the resulting string.
szSeparator	Specifies a string to be used to separate each list item in the resulting string. Note that unlike the StrGetTokens function, passing a null string in this parameter will *not* result in a null separated string; it will result in the substrings being placed one after the other with no separators. Set bNULL to TRUE to create a null separated string.
bNull	If bNull is set to TRUE, null characters will be used to separate the substrings in the resulting string, and szSeparator will be ignored. Note that the resulting string will be double null terminated in this case. If bNull is set to FALSE, the substrings in the resulting string will be separated by szSeparator.

Return Values

Table 270 ▪ StrPutTokens Return Values

Return Value	Description
0	Indicates that the function successfully created the string from the specified string list.
< 0	Indicates that the function was unable to create the specified string from the specified string list.

StrRemoveLastSlash

The **StrRemoveLastSlash** function removes the trailing backslash from a path specification. Because its purpose is to produce a valid path, StrRemoveLastSlash does not remove the backslash from a root directory specification, such as “A:\” or “C:\”.

Syntax

```
StrRemoveLastSlash ( svPath );
```

Parameters

Table 271 ▪ StrRemoveLastSlash Parameters

Parameter	Description
svPath	Specifies a string whose value must be a path specification; returns the path without the trailing backslash. Note that if the path does not include a trailing backslash, it is returned unchanged.

Return Values

Table 272 ▪ StrRemoveLastSlash Return Values

Return Value	Description
0	Indicates that the function successfully removed the trailing backslash or that the path does not contain a trailing backslash.
< 0	Indicates that the function was unable to remove the trailing backslash.

Additional Information

StrRemoveLastSlash provides a convenient way to remove the trailing backslash from a path returned by AskPath or ParsePath. Because its purpose is to produce a valid path, StrRemoveLastSlash does not remove the backslash from a root directory specification, such as “A:\” or “C:\”; doing so would turn a valid path into a drive specification. If you need to remove the trailing backslash from a path in all cases, use the following script segment as a guide.

```
AskPath("", "", svPath);

if (StrLength(svPath) = 3)
    && (svPath[1] = ":")
    && (svPath[2] = "\\") then

    svTempString = svPath;
    StrSub(svPath,svTempString,0,2);
else
   StrRemoveLastSlash(svPath);
endif;
```

StrRemoveLastSlash Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
```

```
 * Demonstrates the StrRemoveLastSlash function.
 *
 * The AskPath dialog is displayed, prompting the user to
 * specify a path.  StrRemoveLastSlash is then called to remove
 * the trailing backslash from the path returned by AskPath.
 *
\*---------------------------------------------------------------*/

#define  TITLE_TEXT "StrRemoveLastSlash Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrRemoveLastSlash(HWND);

function ExFn_StrRemoveLastSlash(hMSI)
    STRING szDefaultPath, svString, szMsg, szTitle;
begin

    // Get a path from the user.  AskPath returns the
    // path with a trailing backslash.
    AskPath ("Specify a path:", INSTALLDIR, svString);

    // Remove the last slash from the path.
    if (StrRemoveLastSlash (svString) < 0) then
        // Report an error.
        MessageBox ("StrRemoveLastSlash failed.", SEVERE);
    else
        // Display the folder name after the last backslash
        // has been removed.
        MessageBox ("Specified path: " + svString, INFORMATION);
    endif;

end;
```

StrReplace

The **StrReplace** function searches svResult, beginning at the location specified by nStart, and replaces all found instances of szFind with szReplace.

Syntax

```
StrReplace ( svResult, szFind, szReplace, nStart );
```

Parameters

Table 273 ▪ StrReplace Parameters

Parameter	Description
svResult	Specifies the string to search. Returns the modified string.
szFind	Specifies the string to find in svResult.
szReplace	Specifies the string with which to replace found instances of szFind.
nStart	Specifies an offset into svResult that identifies the character at which to begin the search for szFind. Note that the position of the first character in szString is 0 (zero). If you want to replace all instances of szFind in svResult, specify 0 for nStart.

Return Values

Table 274 ▪ StrReplace Return Values

Return Value	Description
X	The total number of replacements of szFind by szReplace.
< ISERR_SUCCESS	Indicates that the function failed. A value less than ISERR_SUCCESS is returned if szFind is a null string ("") or if nStart is greater than the length of svResult.

StrSub

The **StrSub** function copies part of the string specified by szString, beginning at the location specified by nStart. The parameter nLength specifies the number of characters to copy.

Syntax

```
StrSub ( svSubStr, szString, nStart, nLength );
```

Parameters

Table 275 ▪ StrSub Parameters

Parameter	Description
svSubStr	Returns the substring copied from szString.
szString	Specifies the string from which the substring is to be copied.
nStart	Specifies an offset into szString that identifies the first character to be copied. Note that the position of the first character in szString is 0 (zero). If the value passed in nStart is equal to or greater than the length of szString, a null string (“”) is returned in svSubStr.
nLength	Specifies the number of characters to copy from szString. If this value specifies more characters than exist between nStart and the end of szString, all characters from nStart to the end of the string are returned in svSubStr.

Return Values

Table 276 ▪ StrSub Return Values

Return Value	Description
X	Where X equals the number of characters in svSubStr.

StrSub Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrSub function.
 *
 * This script gets a date from the user and then calls StrSub
 * to extract the four-digit year.  Finally, the year is
 * displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "StrSub Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
    export prototype ExFn_StrSub(HWND);

function ExFn_StrSub(hMSI)
    STRING svYear, svDate, szQuestion, szTitle, szMsg;
    NUMBER nYear;
    BOOL bDateOk;
begin

    // Set up message parameter for call to AskText.
    szQuestion = "Please enter the date in this form MM/DD/YYYY:";

    repeat
        // Get a date from the user.
        AskText (szQuestion, "09/28/1998", svDate);

        // Check the format of the date entered by the user.
        bDateOk = (StrLength(svDate) = 10) &&
                  (svDate[2] = "/") &&
                  (svDate[5] = "/");

        // If the date format is incorrect, report an error.
        if !bDateOk then
            MessageBox(svDate + " is not a date in the specified format.", WARNING);
        endif;
    until bDateOk ;

    // Retrieve the four-digit year, which starts at byte six.
    if (StrSub (svYear, svDate, 6, 4) < 0) then
        MessageBox ("StrSub failed.", SEVERE);
    endif;

    // Validate the year field.
    if StrToNum(nYear, svYear) = 0 then
        // Display the edited string.
        szMsg = "You specified the year %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg, svYear);
    else
        MessageBox(svDate + " is not a date in the specified format.", WARNING);
    endif;

end;
```

STRTOCHAR

The **STRTOCHAR** function returns the first character of szString as data of type CHAR.

Syntax

```
STRTOCHAR ( szString );
```

Parameters

Table 277 ▪ STRTOCHAR Parameters

Parameter	Description
szString	Specifies the string whose first character will be returned as data of type CHAR.

Return Values

Table 278 ▪ STRTOCHAR Return Values

Return Value	Description
char	The first character of szString expressed as data of type CHAR.

Additional Information

The STRTOCHAR function is useful when passing string literals to functions. Since InstallScript interprets double and single quotes as string delimiters, attempting to pass a literal character, for example, 'a', to a function that expects a character will cause a compiler error. To avoid this problem, pass the character literal to STRTOCHAR and pass the result of calling this function as the argument; for example:

```
Sprintf( szString, "%c", STRTOCHAR('a') );
```

StrToLower

The **StrToLower** function converts all the letters in a string to lowercase. This function does not affect non-alphabetic characters.

Syntax

```
StrToLower ( svTarget, szSource );
```

Parameters

Table 279 ▪ StrToLower Parameters

Parameter	Description
svTarget	Returns the string in szSource with all characters converted to lowercase.
szSource	Specifies the string to convert to all lowercase characters.

Return Values

Table 280 ▪ StrToLower Return Values

Return Value	Description
0	Indicates that the function successfully changed the case of the string.
< 0	Indicates that the function was unable to change the case of the string.

StrToLower Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrToUpper and StrToLower functions.
 *
 * StrToUpper is called to convert the characters in szSource
 * from lowercase to uppercase.
 *
 * StrToLower is then called to convert the uppercase
 * characters to lowercase.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "StrToUpper & StrToLower"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_StrToLower(HWND);
```

```
function ExFn_StrToLower(hMSI)
    STRING szSource, svTarget, szTitle, szMsg;
    NUMBER nReturn;
begin

    // Set up parameter for call to StrToUpper.
    szSource = "aBcDeF";

    // Convert all characters to upper case.
    nReturn = StrToUpper (svTarget, szSource);

    if (nReturn < 0) then
        MessageBox ("StrToUpper failed.", SEVERE);
    endif;

    szMsg = "Original: %s\n\nModified: %s";

    // Display the modified string.
    SprintfBox (INFORMATION, szTitle, szMsg, szSource, svTarget);

    // Set up parameter for call to StrToLower.
    szSource = "ABC123*&?d";

    // Convert all characters to lower case.
    nReturn = StrToLower (svTarget, szSource);

    if (nReturn < 0) then
        MessageBox ("StrToLower failed.", SEVERE);
    endif;

    // Display the modified string.
    szMsg = "Original:  %s\n\nModified:  %s\n(Note--Non-alphabetic chars " +
            "are not changed)";
    SprintfBox (INFORMATION, TITLE_TEXT, szMsg, szSource, svTarget);

end;
```

StrToNum

The **StrToNum** function converts a string to a number, much like the C function atol(). It inspects svString, starting with the character at position 0 and continuing through the string until it reaches the end of the string or encounters a character that is not in the range "0"..."9". (The first character in the string can be a plus or minus sign.)

Then one of the following processes occurs:

- If all of the characters in the string are in the range "0".."9", the number represented by the string is assigned to nvVar.
- If the string begins with one or more characters in the range "0".."9" but also contains one or more non-numeric characters, a number based on the characters to the left of the first non-numeric character is assigned to nvVar. For example, if szString is "-123ABC456", nvResult will be -123.
- If the first character in the string is not in the range "0".."9" and is not a plus or minus sign, the function fails.

- If the first character in the string is a plus or minus sign and the second character is not in the range "0".."9", the function fails.

Syntax

```
StrToNum ( nvVar, szString );
```

Parameters

Table 281 ▪ StrToNum Parameters

Parameter	Description
nvVar	Returns the number created from the string in szString.
szString	Specifies the string to convert to a number. If the string corresponds to a number that is outside the range of allowed values for a number variable, this function gives unexpected results.

Return Values

Table 282 ▪ StrToNum Return Values

Return Value	Description
0	Indicates that the function successfully converted the string into a numeric value.
< 0	Indicates that the function was unable to convert the string into a numeric value.

StrToNum Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrToNum function.
 *
 * StrToNum is called to convert "1222240" to 1222240 and
 * "1222ABC40" to 1222.
 *
\*---------------------------------------------------------------*/
```

```
#define TITLE_TEXT "StrToNum Example"
#define MSG_TEXT   "String:  %s\n\nNumber:  %d"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_StrToNum(HWND);

function ExFn_StrToNum(hMSI)
    STRING szString, szMsg;
    NUMBER nVar;
begin

    // Convert a string with numeric characters to a number.
    szString = "1222240";

    if (StrToNum (nVar, szString) < 0) then
        MessageBox ("StrToNum failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, MSG_TEXT, szString, nVar);
    endif;

    // Convert string with non-numeric characters to a number.
    szString = "1222ABC40";

    if (StrToNum (nVar, szString) < 0) then
        MessageBox ("StrToNum failed.", SEVERE);
    else
        SprintfBox (INFORMATION, TITLE_TEXT, MSG_TEXT, szString, nVar);
    endif;

end;
```

StrToNumHex

The **StrToNumHex** function converts a string to a number. It inspects szString, starting with the character at position 0 and continuing through the string until it reaches the end of the string or encounters a character that is not in the range "0"..."9", "a"..."f", "A"..."F". (The first two characters in the string may be "0x" or "0X".) Then one of the following processes occurs:

- If all of the characters in the string are in the range "0"..."9", the hexadecimal number represented by the string is assigned to nvVar.
- If the string begins with one or more characters in the hexadecimal range but also contains one or more non-hexadecimal characters, a number based on the characters to the left of the first non-hexadecimal character is assigned to nvVar. For example, if szString is "0x1A2GHI456", nvResult will be 418 (0x1A2).
- If the first character in the string is not in the hexadecimal range, the function fails.
- If the first two characters in the string are "0x" or "0X" and the third character is not in the hexadecimal range, the function fails.

Syntax

```
StrToNumHex ( nvVar, szString );
```

Parameters

Table 283 ▪ StrToNumHex Parameters

Parameter	Description
nvVar	Returns the number created from the string in szString.
szString	Specifies the string to convert to a number.

Return Values

Table 284 ▪ StrToNumHex Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully converted the string into a numeric value.
< ISERR_SUCCESS	Indicates that the function was unable to convert the string into a numeric value.

StrToUpper

The **StrToUpper** function converts all the letters in a string to uppercase. This function does not affect non-alphabetic characters.

Syntax

```
StrToUpper ( svTarget, szSource );
```

Parameters

Table 285 ▪ StrToUpper Parameters

Parameter	Description
svTarget	Returns the string in szSource with all characters converted to uppercase.
szSource	Specifies the string to convert to all uppercase characters.

Return Values

Table 286 ▪ StrToUpper Return Values

Return Value	Description
0	Indicates that the function successfully changed the case of the string.
< 0	Indicates that the function was unable to change the case of the string.

StrToUpper Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the StrToUpper and StrToLower functions.
 *
 * StrToUpper is called to convert the characters in szSource
 * from lowercase to uppercase.
 *
 * StrToLower is then called to convert the uppercase
 * characters to lowercase.
 *
\*---------------------------------------------------------------*/

#define TITLE_TEXT "StrToUpper & StrToLower"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

    export prototype ExFn_StrToUpper(HWND);
```

```
function ExFn_StrToUpper(hMSI)
    STRING szSource, svTarget, szTitle, szMsg;
    NUMBER nReturn;
begin

    // Set up parameter for call to StrToUpper.
    szSource = "aBcDeF";

    // Convert all characters to upper case.
    nReturn = StrToUpper (svTarget, szSource);

    if (nReturn < 0) then
        MessageBox ("StrToUpper failed.", SEVERE);
    endif;

    szMsg = "Original: %s\n\nModified: %s";

    // Display the modified string.
    SprintfBox (INFORMATION, szTitle, szMsg, szSource, svTarget);

    // Set up parameter for call to StrToLower.
    szSource = "ABC123*&?d";

    // Convert all characters to lower case.
    nReturn = StrToLower (svTarget, szSource);

    if (nReturn < 0) then
        MessageBox ("StrToLower failed.", SEVERE);
    endif;

    // Display the modified string.
    szMsg = "Original:  %s\n\nModified:  %s\n(Note--Non-alphabetic chars " +
            "are not changed)";
    SprintfBox (INFORMATION, TITLE_TEXT, szMsg, szSource, svTarget);

end;
```

StrTrim

The **StrTrim** function removes the leading and trailing spaces and tabs from a string.

Syntax

```
StrTrim (byref string svString);
```

Parameters

Table 287 ▪ StrTrim Parameters

Parameter	Description
svString	Specify the string to be trimmed.

Return Values

Table 288 ▪ StrTrim Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully trimmed the string.
< ISERR_SUCESS	The function failed to trim the string.

SuiteFormatString

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note ▪ *This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function is also available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteFormatString** function resolves formatted expressions that contain property names, environment variable references, and other special strings. At run time, the Advanced UI or Suite/Advanced UI installation expands the values of these expressions. The function stores the resulting string in a string variable.

Syntax

```
SuiteFormatString (string szValue, string svFormattedValue);
```

Parameters

Table 289 ▪ SuiteFormatString Parameters

Parameter	Description
szValue	Specify a string that includes one or more formatted expressions that contain property names, environment variable references, or other special strings. To learn about the syntax that is available for these expressions, see Using Formatted Expressions that Advanced UI and Suite/Advanced UI Installations Resolve at Run Time.
svFormattedValue	Specify the string variable that you want to contain the formatted string or expression. At run time, the installation expands the values of valid formatted expressions. Invalid expressions resolve to empty strings ("").

Return Values

Table 290 ▪ SuiteFormatString Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully resolved the formatted expression.
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation, or from an InstallScript action in a Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.

SuiteFormatString Example

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the following functions:
//    *SuiteSetProperty
//    *SuiteGetProperty
//    *SuiteResolveString
//    *SuiteFormatString
//    *SuiteLogInfo
//
//  This sample can be called in an InstallScript package that is launched
//  from an Advanced UI or Suite/Advanced UI installation. This code logs
//  the following line in the Advanced UI or Suite/Advanced UI debug log:
//  SetGet: MyPropertyValue; Resolved: English (United States); Formatted: fmt MyPropertyValue;
//
//---------------------------------------------------------------------------
```

```
function OnBegin()

STRING szValue;
STRING szResolved;
STRING szFormatted;

begin

    if SUITE_HOSTED then
        SuiteSetProperty ("MyPropertyName", "MyPropertyValue");
        SuiteGetProperty ("MyPropertyName", szValue);
        SuiteResolveString ("IDS_LANGUAGE_1033", szResolved);
        SuiteFormatString ("fmt [MyPropertyName]", szFormatted);
        SuiteLogInfo ("SetGet: %s; Resolved: %s; Formatted: %s;",
            szValue, szResolved, szFormatted);
    endif;

end;
```

SuiteGetProperty

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note *▪ This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function is also available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteGetProperty** function retrieves the value of an Advanced UI or Suite/Advanced UI property from the Advanced UI or Suite/Advanced UI installation that is running the InstallScript package, or from the Suite/Advanced UI installation that is running the InstallScript action. The function stores the property value in a string variable.

Syntax

```
SuiteGetProperty (string szName, string svValue);
```

Parameters

Table 291 ▪ SuiteGetProperty Parameters

Parameter	Description
szName	Specify the name of the Advanced UI or Suite/Advanced UI property whose value you want to retrieve. It supports feature properties also like `FEATURE[name].actionState`.
svValue	Specify the string variable that you want to contain the value of the Advanced UI or Suite/Advanced UI property.

Return Values

Table 292 ▪ SuiteGetProperty Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully retrieved the property value.
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation, or from an InstallScript action in a Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.

SuiteGetProperty Example

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the following functions:
//    *SuiteSetProperty
//    *SuiteGetProperty
//    *SuiteResolveString
//    *SuiteFormatString
//    *SuiteLogInfo
//
//  This sample can be called in an InstallScript package that is launched
//  from an Advanced UI or Suite/Advanced UI installation. This code logs
//  the following line in the Advanced UI or Suite/Advanced UI debug log:
//  SetGet: MyPropertyValue; Resolved: English (United States); Formatted: fmt MyPropertyValue;
//
//---------------------------------------------------------------------------
```

```
function OnBegin()

STRING szValue;
STRING szResolved;
STRING szFormatted;

begin

    if SUITE_HOSTED then
        SuiteSetProperty ("MyPropertyName", "MyPropertyValue");
        SuiteGetProperty ("MyPropertyName", szValue);
        SuiteResolveString ("IDS_LANGUAGE_1033", szResolved);
        SuiteFormatString ("fmt [MyPropertyName]", szFormatted);
        SuiteLogInfo ("SetGet: %s; Resolved: %s; Formatted: %s;",
            szValue, szResolved, szFormatted);
    endif;

end;
```

SuiteLogInfo

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note *▪ This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function is also available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteLogInfo** function logs information about the InstallScript package that is running in an Advanced UI or Suite/Advanced UI installation to the Advanced UI or Suite/Advanced UI debug log. It also logs information about the InstallScript action that is running in a Suite/Advanced UI installation to the Suite/Advanced UI debug log.

For information about generating an Advanced UI or Suite/Advanced UI debug log, see Troubleshooting Issues with an Advanced UI or Suite/Advanced UI Installation.

Syntax

```
SuiteLogInfo (string szFormat, arglist);
```

Parameters

Table 293 ▪ SuiteLogInfo Parameters

Parameter	Description
szFormat	Specify a standard printf-style format string to be rendered and written to the Advanced UI or Suite/Advanced UI installation's debug log.
arglist	Specify one or more arguments that correspond with the same number of format specifiers in szFormat.

Return Values

Table 294 ▪ SuiteLogInfo Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully logged information.
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation, or from an InstallScript action in a Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.

SuiteLogInfo Example

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the following functions:
//    *SuiteSetProperty
//    *SuiteGetProperty
//    *SuiteResolveString
//    *SuiteFormatString
//    *SuiteLogInfo
//
//  This sample can be called in an InstallScript package that is launched
//  from an Advanced UI or Suite/Advanced UI installation. This code logs
//  the following line in the Advanced UI or Suite/Advanced UI debug log:
//  SetGet: MyPropertyValue; Resolved: English (United States); Formatted: fmt MyPropertyValue;
//
//---------------------------------------------------------------------------

function OnBegin()

STRING szValue;
STRING szResolved;
```

```
STRING szFormatted;

begin

    if SUITE_HOSTED then
        SuiteSetProperty ("MyPropertyName", "MyPropertyValue");
        SuiteGetProperty ("MyPropertyName", szValue);
        SuiteResolveString ("IDS_LANGUAGE_1033", szResolved);
        SuiteFormatString ("fmt [MyPropertyName]", szFormatted);
        SuiteLogInfo ("SetGet: %s; Resolved: %s; Formatted: %s;",
            szValue, szResolved, szFormatted);
    endif;

end;
```

SuiteReportError

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note *▪ This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteReportError** function displays a message box in the Advanced UI or Suite/Advanced UI user interface to report an error that occurred as the Advanced UI or Suite/Advanced UI installation ran the InstallScript package.

Syntax

```
SuiteReportError (string szMessage, nFlags);
```

Parameters

Table 295 ▪ SuiteReportError Parameters

Parameter	Description
szMessage	Specify the error message that you want to display for end users.
nFlags	Specify any valid MessageBox flags. For valid flags, see MessageBox Function on MSDN.

Return Values

Table 296 ▪ SuiteReportError Return Values

Return Value	Description
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.
MessageBox Return Values	For possible return values, see MessageBox Function on MSDN.

SuiteResolveString

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note ▪ *This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function is also available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteResolveString** function replaces an Advanced UI or Suite/Advanced UI string identifier with its corresponding string value in the InstallScript package that is running in an Advanced UI or Suite/Advanced UI installation, or in the InstallScript action that is running in a Suite/Advanced UI installation.

Syntax

```
SuiteResolveString (string szStringID, string svResolvedString);
```

Parameters

Table 297 ▪ SuiteResolveString Parameters

Parameter	Description
szStringID	Specify the Advanced UI or Suite/Advanced UI string identifier that you want to be replaced.
svResolvedString	Specify the string variable that you want to store the value of the Advanced UI or Suite/Advanced UI string identifier; the value is based on the Advanced UI or Suite/Advanced UI installation's selected language. An unknown string identifier returns an empty string ("").

Return Values

Table 298 ▪ SuiteResolveString Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully replaced the string identifier with the corresponding string value.
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation, or from an InstallScript action in a Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.

SuiteResolveString Example

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the following functions:
//    *SuiteSetProperty
//    *SuiteGetProperty
//    *SuiteResolveString
//    *SuiteFormatString
//    *SuiteLogInfo
```

```
//
//  This sample can be called in an InstallScript package that is launched
//  from an Advanced UI or Suite/Advanced UI installation. This code logs
//  the following line in the Advanced UI or Suite/Advanced UI debug log:
//  SetGet: MyPropertyValue; Resolved: English (United States); Formatted: fmt MyPropertyValue;
//
//---------------------------------------------------------------------------

function OnBegin()

STRING szValue;
STRING szResolved;
STRING szFormatted;

begin

    if SUITE_HOSTED then
        SuiteSetProperty ("MyPropertyName", "MyPropertyValue");
        SuiteGetProperty ("MyPropertyName", szValue);
        SuiteResolveString ("IDS_LANGUAGE_1033", szResolved);
        SuiteFormatString ("fmt [MyPropertyName]", szFormatted);
        SuiteLogInfo ("SetGet: %s; Resolved: %s; Formatted: %s;",
            szValue, szResolved, szFormatted);
    endif;

end;
```

SuiteSetProperty

Project *▪ This information applies to the following project types:*

- *InstallScript*
- *Suite/Advanced UI*

Note *▪ This function is available for InstallScript installations that may be included as InstallScript packages in an Advanced UI or Suite/Advanced UI installation. For more information, see Adding an InstallScript Package to an Advanced UI or Suite/Advanced UI Project.*

This function is also available for InstallScript actions that are included in Suite/Advanced UI installations. For more information, see Working with an Action that Runs InstallScript Code in a Suite/Advanced UI Installation.

This function returns an error in the following scenarios:

- *The function is called in an InstallScript installation that is launched directly (that is, not from an Advanced UI or Suite/Advanced UI installation).*
- *The function is called in an InstallScript installation that is included in an Advanced UI or Suite/Advanced UI installation as an executable package.*

The **SuiteSetProperty** function sets the value of an Advanced UI or Suite/Advanced UI property in the Advanced UI or Suite/Advanced UI installation that launched the running InstallScript package, or the value of a Suite/Advanced UI property in the Suite/Advanced UI installation that launched the running InstallScript action.

Syntax

```
SuiteSetProperty (string szName, string szValue);
```

Parameters

Table 299 ▪ SuiteSetProperty Parameters

Parameter	Description
szName	Specify the name of the Advanced UI or Suite/Advanced UI property whose value you want to set. It supports feature properties also like `FEATURE[name].actionState`.
szValue	Specify the value of the Advanced UI or Suite/Advanced UI property that you want to set.

Return Values

Table 300 ▪ SuiteSetProperty Return Values

Return Value	Description
ISERR_SUCCESS	The function successfully set the property value.
ISERR_ISERVICE_NOT_ENABLED	The function was not called in an InstallScript package that was launched from an Advanced UI or Suite/Advanced UI installation, or from an InstallScript action in a Suite/Advanced UI installation. It was called in an InstallScript installation that was launched directly, or from an InstallScript installation that was included as an executable package in an Advanced UI or Suite/Advanced UI installation.

SuiteSetProperty Example

```
//---------------------------------------------------------------------------
//
//  InstallScript Example Script
//
//  Demonstrates the following functions:
//    *SuiteSetProperty
//    *SuiteGetProperty
//    *SuiteResolveString
//    *SuiteFormatString
//    *SuiteLogInfo
//
//  This sample can be called in an InstallScript package that is launched
//  from an Advanced UI or Suite/Advanced UI installation. This code logs
//  the following line in the Advanced UI or Suite/Advanced UI debug log:
//  SetGet: MyPropertyValue; Resolved: English (United States); Formatted: fmt MyPropertyValue;
```

```
//
//---------------------------------------------------------------------------

function OnBegin()

STRING szValue;
STRING szResolved;
STRING szFormatted;

begin

    if SUITE_HOSTED then
        SuiteSetProperty ("MyPropertyName", "MyPropertyValue");
        SuiteGetProperty ("MyPropertyName", szValue);
        SuiteResolveString ("IDS_LANGUAGE_1033", szResolved);
        SuiteFormatString ("fmt [MyPropertyName]", szFormatted);
        SuiteLogInfo ("SetGet: %s; Resolved: %s; Formatted: %s;",
            szValue, szResolved, szFormatted);
    endif;

end;
```

System

The **System** function is documented for backward compatibility with InstallShield Professional. With newer versions of InstallShield, RebootDialog and SdFinishReboot are better functions to use to restart Windows or reboot the system. Of these two, SdFinishReboot provides the most functionality. Refer to the individual function descriptions to see which one best meets your needs.

Use the System function to restart Windows or reboot the system after an installation has completed. System does not perform an aborted setup—that is, it does not remove installed files. However, InstallShield does remove any temporary directories and temporary files it placed on the system to carry out the setup. To reboot the system immediately after calling the System function, use the exit keyword immediately after calling the System function.

Some systems may not restart or may hang when this function is called. Many setup routines (including installation for system software such as MS-DOS) display a warning message to the user before they restart the system. This warning message indicates what is happening and instructs the user to reboot the system manually if the command fails.

Note ▪ *This function calls the Windows API ExitWindows. Due to the wide variety of BIOS types, this function is highly dependent on the BIOS interaction with the system.*

Syntax

```
System ( nOp );
```

Parameters

Table 301 ▪ System Parameters

Parameter	Description
nOp	Specifies which action to perform after terminating the setup. Pass the following predefined constant in this parameter: • **SYS_BOOTMACHINE—**Reboots the system.

System Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the System function.
 *
 * This script reboots the computer.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_System(HWND);

function ExFn_System(hMSI)
begin

    System (SYS_BOOTMACHINE);

end;
```

TextSubGetValue

The **TextSubGetValue** function retrieves in svValue the text substitution string that is associated with szTextSub. The bGlobalOnly parameter specifies whether the function searches for local text substitutions.

Syntax

```
TextSubGetValue ( szTextSub, svValue, bGlobalOnly, bResolveEmbedded );
```

Parameters

Table 302 ▪ TextSubGetValue Parameters

Parameter	Description
szTextSub	Specifies the string that is replaced by svValue when text substitution is performed. You can optionally enclose the string value in angle brackets, for example, "<MYTEXTSUB>". If you enclose the string value in angle brackets, you can include additional text in the string outside the angle brackets (for example, "additional<MYTEXTSUB>text") that is automatically removed before text substitution is performed.
svValue	Returns the string that replaces occurrences of szTextSub when text substitution is performed. This string value can itself contain embedded text substitutions. For more information, see Text Substitutions.
bGlobalOnly	Specifies whether TextSubGetValue searches among only global text substitutions (TRUE) or both global and local text substitutions (FALSE). For more information, see Text Substitutions.
bResolveEmbedded	Specifies whether to perform any embedded text substitutions. For more information, see Text Substitutions. See the following example code and comment lines: `TextSubSetValue ( "<MYTEXTSUB1>", "First Text Sub", FALSE );` `TextSubSetValue ( "<MYTEXTSUB2>", "Second Text Sub <MYTEXTSUB1>", FALSE );` `TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, TRUE );` `// svValue is "Second Text Sub First Text Sub"` `TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, FALSE );` `// svValue is "Second Text Sub <MYTEXTSUB1>"`

Return Values

Table 303 ▪ TextSubGetValue Return Values

Return Value	Description
ISERR_SUCCESS	TextSubGetValue successfully retrieved the associated string.
< ISERR_SUCCESS	TextSubGetValue failed to retrieve the associated string.

TextSubGetValue Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the TextSub* functions: TextSubSetValue,
 * TextSubSubstitute, TextSubGetValue, and TextSubParseTextSub.
 *
\*---------------------------------------------------------------*/

function OnBegin( )
    string svString, svValue;
begin
    TextSubSetValue ( "<MYTEXTSUB1>", "First Text Sub", FALSE );
    svString = "Text <MYTEXTSUB1> String";
    TextSubSubstitute ( svString, FALSE );
    MessageBox( svString, INFORMATION );
    // svString is "Text First Text Sub String"

    TextSubSetValue ( "<MYTEXTSUB2>", "Second Text Sub <MYTEXTSUB1>", FALSE );
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, TRUE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub First Text Sub"
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, FALSE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub <MYTEXTSUB1>"

    svString = "Text <MYTEXTSUB1> String";
    TextSubParseTextSub ( svString );
    MessageBox( svString, INFORMATION );
    // svString is "MYTEXTSUB1"
end;
```

TextSubParseTextSub

The **TextSubParseTextSub** function searches svTextSub for a substring that is enclosed in angle brackets (which is a standard way of denoting a text substitution string). If TextSubParseTextSub finds such a substring, it returns the first such substring, without the enclosing angle brackets, in svTextSub; otherwise, TextSubParseTextSub does not change svTextSub.

Syntax

```
TextSubParseTextSub ( svTextSub );
```

Parameters

Table 304 ▪ TextSubParseTextSub Parameters

Parameter	Description
svTextSub	Specifies the string that is to be searched.

Return Values

Table 305 ▪ TextSubParseTextSub Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

TextSubParseTextSub Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the TextSub* functions: TextSubSetValue,
 * TextSubSubstitute, TextSubGetValue, and TextSubParseTextSub.
 *
\*---------------------------------------------------------------*/

function OnBegin( )
    string svString, svValue;
begin
    TextSubSetValue ( "<MYTEXTSUB1>", "First Text Sub", FALSE );
    svString = "Text <MYTEXTSUB1> String";
    TextSubSubstitute ( svString, FALSE );
    MessageBox( svString, INFORMATION );
    // svString is "Text First Text Sub String"

    TextSubSetValue ( "<MYTEXTSUB2>", "Second Text Sub <MYTEXTSUB1>", FALSE );
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, TRUE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub First Text Sub"
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, FALSE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub <MYTEXTSUB1>"

    svString = "Text <MYTEXTSUB1> String";
    TextSubParseTextSub ( svString );
    MessageBox( svString, INFORMATION );
    // svString is "MYTEXTSUB1"
end;
```

TextSubSetValue

The **TextSubSetValue** function creates a text substitution association between szTextSub and szValue. The bGlobal parameter specifies whether the association is global or local.

Syntax

```
TextSubSetValue ( szTextSub, szValue, bGlobal );
```

Parameters

Table 306 ▪ TextSubSetValue Parameters

Parameter	Description
szTextSub	Specifies the string that is replaced by szValue when text substitution is performed. You can optionally enclose the string value in angle brackets, for example, "<MYTEXTSUB>". If you enclose the string value in angle brackets, you can include additional text in the string outside the angle brackets (for example, "additional<MYTEXTSUB>text") that is automatically removed before text substitution is performed.  ***Note ▪*** *In order to avoid conflicts with existing text substitutions that are created internally or by objects used by the installation, it is recommended that any values of szTextSub that you specify in TextSubSetValue use a prefix that is specific to the installation.*
szValue	Specifies the string that replaces occurrences of szTextSub when text substitution is performed. This string value can itself contain embedded text substitutions. For more information, see Text Substitutions.
bGlobal	Specifies whether the association between szTextSub and szValue is global or local; for more information, see Text Substitutions.

Return Values

Table 307 ▪ TextSubSetValue Return Values

Return Value	Description
ISERR_SUCCESS	TextSubSetValue successfully associated the specified strings.
< ISERR_SUCCESS	TextSubSetValue failed to associate the specified strings.

TextSubSetValue Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the TextSub* functions: TextSubSetValue,
 * TextSubSubstitute, TextSubGetValue, and TextSubParseTextSub.
```

```
 *
\*------------------------------------------------------------*/

function OnBegin( )
    string svString, svValue;
begin
    TextSubSetValue ( "<MYTEXTSUB1>", "First Text Sub", FALSE );
    svString = "Text <MYTEXTSUB1> String";
    TextSubSubstitute ( svString, FALSE );
    MessageBox( svString, INFORMATION );
    // svString is "Text First Text Sub String"

    TextSubSetValue ( "<MYTEXTSUB2>", "Second Text Sub <MYTEXTSUB1>", FALSE );
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, TRUE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub First Text Sub"
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, FALSE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub <MYTEXTSUB1>"

    svString = "Text <MYTEXTSUB1> String";
    TextSubParseTextSub ( svString );
    MessageBox( svString, INFORMATION );
    // svString is "MYTEXTSUB1"
end;
```

TextSubSubstitute

The **TextSubSubstitute** function performs text substitution on svString. The bGlobalOnly parameter specifies whether the function performs local text substitutions.

Syntax

```
TextSubSubstitute ( svString, bGlobalOnly );
```

Parameters

Table 308 ▪ TextSubSubstitute Parameters

Parameter	Description
svString	Specifies the string on which text substitution is performed.
bGlobalOnly	Specifies whether TextSubSubstitute performs only global text substitutions (TRUE) or both global and local text substitutions (FALSE); for more information, see Text Substitutions.

Return Values

Table 309 ▪ TextSubSubstitute Return Values

Return Value	Description
ISERR_SUCCESS	TextSubSubstitute successfully performed text substitution.
< ISERR_SUCCESS	TextSubSubstitute failed to perform text substitution.

TextSubSubstitute Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the TextSub* functions: TextSubSetValue,
 * TextSubSubstitute, TextSubGetValue, and TextSubParseTextSub.
 *
\*---------------------------------------------------------------*/

function OnBegin( )
    string svString, svValue;
begin
    TextSubSetValue ( "<MYTEXTSUB1>", "First Text Sub", FALSE );
    svString = "Text <MYTEXTSUB1> String";
    TextSubSubstitute ( svString, FALSE );
    MessageBox( svString, INFORMATION );
    // svString is "Text First Text Sub String"

    TextSubSetValue ( "<MYTEXTSUB2>", "Second Text Sub <MYTEXTSUB1>", FALSE );
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, TRUE );
    MessageBox( svValue, INFORMATION );
    // svValue is "Second Text Sub First Text Sub"
    TextSubGetValue ( "<MYTEXTSUB2>", svValue, FALSE, FALSE );
    MessageBox( svValue, INFORMATION );
```

```
    // svValue is "Second Text Sub <MYTEXTSUB1>"

    svString = "Text <MYTEXTSUB1> String";
    TextSubParseTextSub ( svString );
    MessageBox( svString, INFORMATION );
    // svString is "MYTEXTSUB1"
end;
```

Built-In Functions (U-Z)

For a list of functions by category, see Built-In Functions by Category.

UninstallApplication

Project ▪ *This information applies to InstallScript projects.*

The **UninstallApplication** function launches the uninstallation that is specified by szUninstallKey.

Syntax

```
UninstallApplication ( szUninstallKey, szAdditionalCmdLine, nOptions );
```

Parameters

Table 1 ▪ UninstallApplication Parameters

Parameter	Description
szUninstallKey	Specifies the name of a subkey under the target registry's <root key>\Software\Microsoft\Windows\CurrentVersion\Uninstall key; the function first checks for the subkey under the root key HKEY_CURRENT_USER, and if it does not find the subkey there, it checks under HKEY_LOCAL_MACHINE. For setups created with InstallShield Professional 5.53 or earlier, this is typically the name of the application; for setups created with InstallShield Professional 6.0 or later, this is the application's product GUID including the surrounding braces ({}). Do not enter the product GUID of the current setup.
szAdditionalCmdLine	Specifies any additional command line arguments that you want to pass to the uninstallation. You do not need to specify command line arguments that are already specified in szUninstallKey's UninstallString value's data.
nOptions	Specifies additional options. You can specify any option that is supported by LaunchApplication.

Return Values

Table 2 ▪ UninstallApplication Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function successfully launched the uninstallation.
< ISERR_SUCCESS	Indicates that the function was unable to launch the uninstallation. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

UnUseDLL

The **UnUseDLL** function unloads a .dll file from memory. **UnUseDLL** decrements the lock count of the .dll file by one. When the lock count equals zero, the InstallScript engine unloads the .dll file. Every call to **UseDLL** should have a matching call to **UnUseDLL** so that .dll files are not left in memory after they are no longer needed, using system resources. After you unload a .dll file, you cannot call the functions in that .dll file.

If the script exits or terminates before properly unloading the .dll file with **UnUseDLL**, the .dll file is locked in memory. If you attempt to access the .dll file again, your script might fail. You must remove the .dll file from memory by restarting Windows.

Caution ▪ *Microsoft Windows system .dll files, such as* `User32.dll`, `Gdi32.dll`, *and* `Kernel32.dll`, *are loaded and unloaded automatically by Windows. Do not call* **UseDLL** *and* **UnUseDLL** *to load and unload these .dll files.*

Syntax

```
UnUseDLL ( szDLLName );
```

Parameters

Table 3 ▪ UnUseDLL Parameters

Parameter	Description
szDLLName	Specifies the file name of the .dll file. Do not include the path in this parameter.

Return Values

Table 4 ▪ UnUseDLL Return Values

Return Value	Description
0	Indicates that the function successfully unlocked and possibly unloaded the .dll file from memory.
< 0	Indicates that the function was unable to unlock or unload the .dll file.

UnUseDLL Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
```

```
 *
 * Demonstrates the UseDLL and the UnUseDLL functions.
 *
 * UseDLL is called to load an example .dll file into memory. A
 * function in this .dll file is then called to demonstrate how
 * .dll functions can be used in an installation. Finally,
 * UnUseDLL is called to unload the example .dll file from memory.
 *
 * Note: This script requires that the constant DLL_FILE be set
 *       to the fully qualified name of a .dll file that contains
 *       a function called TheExportedFunction. The format of that
 *       function must match the prototype declaration below.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

#define DLL_FILE SUPPORTDIR ^ "TheDLL.dll"

// Prototype TheExportedFunction in TheDLL.dll.
prototype TheDLL.TheExportedFunction (INT, WPOINTER);

export prototype ExFn_UnUseDLL(HWND);

function ExFn_UnUseDLL(hMSI)
    STRING   svString;
    INT      nValue;
    WPOINTER psvString;
    NUMBER   nResult;
    BOOL     bDone;
begin

    // Load the .dll file into memory.
    nResult = UseDLL (DLL_FILE);

    if (nResult = 0) then
        MessageBox ("UseDLL successful \n\n.dll file loaded.", INFORMATION);
    else
        MessageBox ("UseDLL failed.\n\nCouldn't load .dll file.", INFORMATION);
        abort;
    endif;

    // bDone controls the following while loop.
    bDone = FALSE;

    // Loop while bDone is FALSE.
    while (bDone = FALSE)
        // Disable the Back button in installation dialogs.
        Disable (BACKBUTTON);

        // Get a string from the user.
        AskText ("Enter an example string.", "Example string.", svString);

        // Get a pointer to the string to pass to TheExportedFunction.
        psvString = &svString;
```

```
        // Get the string length to pass to TheExportedFunction.
        nValue = StrLength (svString);

        // Call TheExportedFunction.
        TheExportedFunction (nValue, psvString);

        // Display the string to observe how it was altered by TheExportedFunction.
        SprintfBox (INFORMATION, "UseDLL", "TheExportedFunction() changed the string " +
                    "to: %s", svString);

        // Give the user a chance to do another example.
        if (AskYesNo ("Do another example?", YES) = NO) then
            bDone = TRUE;
        endif;
    endwhile;

    // Remove the .dll file from memory.
    if (UnUseDLL (DLL_FILE) < 0) then
        MessageBox ("UnUseDLL failed.\n\n.dll file still in memory.", SEVERE);
    else
        MessageBox ("UnUseDLL successful.\n\n.dll file removed from memory.",
                    INFORMATION);
    endif;

end;
```

UpdateServiceCheckForUpdates

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceCheckForUpdates ( szProductCode, bWait );
```

UpdateServiceCreateShortcut

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceCreateShortcut ( szProductCode, szFolder, szItemName );
```

UpdateServiceEnableUpdateManagerInstall

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceEnableUpdateManagerInstall (BOOL bEnable);
```

UpdateServiceGetAgentTarget

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns a null string ("").

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceGetAgentTarget ( );
```

UpdateServiceOnEnabledStateChange

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceOnEnabledStateChange ( );
```

UpdateServiceRegisterProduct

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceRegisterProduct ( szProductCode, szProductVersion, bRegister, nInterval );
```

UpdateServiceRegisterProductEx

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceRegisterProductEx (BOOL bRegister);
```

UpdateServiceSetHost

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceSetHost ( szProductCode, szHostURL );
```

UpdateServiceSetLanguage

Project ▪ *This information applies to InstallScript projects.*

This function is obsolete. If this function is called, it returns ISERR_NOT_IMPLEMENTED.

For information on adding FlexNet Connect support to an InstallScript project, consult the Knowledge Base.

Syntax

```
UpdateServiceSetLanguage ( szProductCode, nLanguageID );
```

UseDLL

Important ▪ *For important information regarding the use of* ***UseDLL*** *function and the current directory, see Current Directory Removed from DLL Search Path to Safeguard Against DLL Preloading Attacks.*

The **UseDLL** function loads a .dll file into memory. After the .dll file has been loaded into memory, your installation script can call a function from that .dll file. Note that if the .dll file that is specified by szDLLName requires other .dll files, those other .dll files must reside in the folder from which the .dll file attempts to load them. Normally this will be the current folder. To ensure that those .dll files can be located, call **ChangeDirectory** to change the current folder to the location of those .dll files before calling **UseDLL**. Failure to do so may prevent the .dll file from loading properly.

Each time that you load a .dll file into memory, the .dll file's lock count is incremented. The lock count identifies the number of applications that are using the .dll file. You should call **UnUseDLL** to unload a .dll file as soon as you are done using it. If you do not unload a .dll file when you are done with it, the .dll file will remain in memory when no applications need it, thereby wasting system resources. Every call to **UseDLL** should have a matching call to **UnUseDLL** in the script.

Caution ▪ *Microsoft Windows system .dll files, such as* `User32.dll`*,* `Gdi32.dll`*, and* `Kernel32.dll`*, are loaded and unloaded automatically by Windows. Do not call* **UseDLL** *and* **UnUseDLL** *to load and unload these .dll files.*

Syntax

```
UseDLL ( szDLLName );
```

Parameters

Table 5 ▪ UseDLL Parameters

Parameter	Description
szDLLName	Specifies the name of the .dll file to be loaded. If you do not specify an extension, the InstallScript engine assumes that the file has the extension .dll or .exe. Including a path in this parameter is recommended but optional. If the path for the .dll file is not specified in this parameter, the InstallScript engine searches for the .dll file using the same search order that the Windows API function **LoadLibrary** uses. For more information regarding the search order, see the description of this Windows API function on MSDN. To include the .dll file in your installation, add it to the appropriate subfolder of the Language Independent folder in the Support Files view. When the installation is running on a target system, the .dll file is available in the temporary directory that is specified by SUPPORTDIR. You can then append the .dll file name to SUPPORTDIR as follows in order to reference the .dll file: `szDLLName = SUPPORTDIR ^ "TheDLL.dll";  UseDLL (szDLLName);` If you do not place your .dll file into your installation (by inserting it into the appropriate folder in the Support Files view), you can instead distribute the file along with the files of your application and then load it from the target system. However, if you do so, you must specify the location to which you install the .dll file so that your installation can reference it. You must also ensure that your installation does not attempt to load the .dll file before it has been transferred to the target system.  ***Note ▪*** *The szDLLName parameter does not support uniform resource locators (URLs).*

Return Values

Table 6 ▪ UseDLL Return Values

Return Value	Description
0	Indicates that the function successfully loaded the .dll file into memory.
< 0	Indicates that the function was unable to load the .dll file into memory. If **UseDLL** fails, the most likely cause is that the .dll file was not found. If this happens, make sure that the correct path is specified in the parameter szDLLName. Another common cause of failure that is associated with using .dll files is related to .dll file dependencies—.dll files that are accessed by the .dll file that you load. If the .dll files that your .dll file must access are not loaded or found, your .dll file call may fail. If this occurs, make sure that the other .dll files are on the system and that they are accessible. If the script exits or terminates before properly unloading the .dll file with **UnUseDLL**, the .dll file will be locked in memory. If you attempt to access the .dll file again, your script may fail. You must remove the .dll file from memory by restarting Windows.

Current Directory Removed from DLL Search Path to Safeguard Against DLL Preloading Attacks

Starting in InstallShield 2018, to safeguard installations against DLL preloading attacks, InstallShield has removed the current directory from the standard DLL search path by calling the `SetDllDirectory` Windows API with an empty string (`""`).

If a DLL links implicitly to the other DLLs, or loads them dynamically using `LoadLibrary()` without specifying a fully qualified path name, the `UseDLL()` InstallScript function cannot load the dependencies from the current working directory.

You can work around this issue by prototyping `SetDllDirectoryW` (prototype number `kernel32.SetDllDirectoryW(wstring); `) and call it with `SUPPORTDIR` to get the support folder to be in the DLL load search path.

In InstallShield 2018, the following changes have been made:

- The `DLL_DIRECTORY_SUPPORTDIR` constant was added to the **Enable** function so that customers can explicitly opt-in to using `SUPPORTDIR` as a DLL directory.
- The `DLL_DIRECTORY_SUPPORTDIR` constant was added to the **Disable** function so that customers can explicitly opt-out to using `SUPPORTDIR` as a DLL directory.
- The `SetDllDirectory (szPathName)` wrapper function was added so that customers can explicitly opt-in to using any directory as a DLL directory. If the parameter is an empty string (`""`), the call removes the current directory from the default DLL search order.

UseDLL Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the UseDLL and the UnUseDLL functions.
 *
 * UseDLL is called to load an example .dll file into memory. A
 * function in this .dll file is then called to demonstrate how
 * .dll functions can be used in an installation. Finally,
 * UnUseDLL is called to unload the example .dll file from memory.
 *
 * Note: This script requires that the constant DLL_FILE be set
 *       to the fully qualified name of a .dll file that contains
 *       a function called TheExportedFunction. The format of that
 *       function must match the prototype declaration below.
 *
\*---------------------------------------------------------------*/

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"
```

```
#define DLL_FILE SUPPORTDIR ^ "TheDLL.dll"

// Prototype TheExportedFunction in TheDLL.dll.
prototype TheDLL.TheExportedFunction (INT, WPOINTER);

export prototype ExFn_UseDLL(HWND);

function ExFn_UseDLL(hMSI)
    STRING   svString;
    INT      nValue;
    WPOINTER psvString;
    NUMBER   nResult;
    BOOL     bDone;
begin

    // Load the .dll file into memory.
    nResult = UseDLL (DLL_FILE);

    if (nResult = 0) then
        MessageBox ("UseDLL successful \n\n.dll file loaded.", INFORMATION);
    else
        MessageBox ("UseDLL failed.\n\nCouldn't load .dll file.", INFORMATION);
        abort;
    endif;

    // bDone controls the following while loop.
    bDone = FALSE;

    // Loop while bDone is FALSE.
    while (bDone = FALSE)
        // Disable the Back button in installation dialogs.
        Disable (BACKBUTTON);

        // Get a string from the user.
        AskText ("Enter an example string.", "Example string.", svString);

        // Get a pointer to the string to pass to TheExportedFunction.
        psvString = &svString;

        // Get the string length to pass to TheExportedFunction.
        nValue = StrLength (svString);

        // Call TheExportedFunction.
        TheExportedFunction (nValue, psvString);

        // Display the string to observe how it was altered by TheExportedFunction.
        SprintfBox (INFORMATION, "UseDLL", "TheExportedFunction() changed the string " +
                    "to: %s", svString);

        // Give the user a chance to do another example.
        if (AskYesNo ("Do another example?", YES) = NO) then
            bDone = TRUE;
        endif;
    endwhile;

    // Remove the .dll file from memory.
```

```
    if (UnUseDLL (DLL_FILE) < 0) then
        MessageBox ("UnUseDLL failed.\n\n.dll file still in memory.", SEVERE);
    else
        MessageBox ("UnUseDLL successful.\n\n.dll file removed from memory.",
                    INFORMATION);
    endif;

end;
```

VarInit

The **VarInit** function initializes or reinitializes internal lists used by the VarSave and VarRestore functions. Calling this function effectively clears any information stored by previous **VarSave** calls and not yet used by subsequent **VarRestore** functions.

Syntax

```
VarInit (nType);
```

Parameters

Table 7 ▪ VarInit Parameters

Parameter	Description
nType	Specifies which information to reset. Pass one of the following predefined constants in this parameter.  ***Project ▪*** *These constants apply to InstallScript projects:* ● **VAR_LOGGING**—Resets any stored uninstall logging entries. ● **VAR_CURRENTDIR**—Resets any stored current directory entries. ● **VAR_ALLSUPPORTED**—Resets all stored entries. ● **VAR_HKEYCURRENTROOTKEY**—Resets any stored current root key entries. ● **CURRENTROOTKEY**—This constant is obsolete. Use VAR_HKEYCURRENTROOTKEY instead.  ***Project ▪*** *This constant applies to Basic MSI, InstallScript, and InstallScript MSI projects:* ● **VAR_SRCTARGETDIR**—Resets any stored current entries for TARGETDIR (in InstallScript installations), and INSTALLDIR (in Basic MSI and InstallScript MSI installations), and SRCDIR.  ***Project ▪*** *This constant applies to Basic MSI and InstallScript MSI projects:* ● **SRCINSTALLDIR**—This constant is obsolete. Use VAR_SRCTARGETDIR instead.

Return Values

Table 8 ▪ VarInit Return Values

Return Value	Description
ISERR_SUCCESS	Indicates that the current values of the system variables were reset.

VarRestore

The **VarRestore** function reassigns the values that were saved by an earlier call to the **VarSave** function to the system variables TARGETDIR (in InstallScript installations), INSTALLDIR (in Basic MSI and InstallScript MSI installations), SRCDIR, or HKEYCURRENTROOTKEY. Call **VarSave** whenever you need to change the value of these system variables temporarily, for example, to set source and target directories before a call to **XCopyFile**.

Afterwards, set those variables back to their previous values by calling **VarRestore**.

Syntax

```
VarRestore ( nType );
```

Parameters

Table 9 ▪ VarRestore Parameters

Parameter	Description
nType	Specifies which system variables to restore. Pass one or more of the following predefined constants in this parameter. Note that you can pass multiple constants separated by the OR operator (||).  ***Project ▪*** *These constants apply to InstallScript projects:* ● **VAR_LOGGING**—Resets any stored uninstallation logging entries. ● **VAR_CURRENTDIR**—Resets any stored current directory entries. ● **VAR_ALLSUPPORTED**—Resets all stored entries. ● **VAR_HKEYCURRENTROOTKEY**—Resets any stored current root key entries. ● **VAR_REGOPTIONS**—Resets any stored current registry options. ● **CURRENTROOTKEY**—This constant is obsolete. Use VAR_HKEYCURRENTROOTKEY instead.  ***Project ▪*** *This constant applies to Basic MSI, InstallScript, and InstallScript MSI projects:* ● **VAR_SRCTARGETDIR or SRCTARGETDIR**—Resets any stored current TARGETDIR (in InstallScript installations), INSTALLDIR (in Basic MSI and InstallScript MSI installations), and SRCDIR entries.  ***Project ▪*** *This constant applies to Basic MSI and InstallScript MSI projects:* ● **SRCINSTALLDIR**—This constant is obsolete. Use VAR_SRCTARGETDIR instead.

Return Values

Table 10 ▪ VarRestore Return Values

Return Value	Description
0	Indicates that the previously saved values of the system variables were restored.
< 0	Indicates that there are no values in storage to be restored. This error occurs if you call VarRestore without calling VarSave first, or if you call VarRestore more times than you call VarSave.

Additional Information

Each time you call **VarSave**, the InstallScript engine pushes the current values of the system variables onto an internal stack, which operates as a last in, first out storage area. This method allows you to stack a series of values in memory. You can then make calls to **VarRestore** to retrieve those values from the stack in the opposite order that you stored them.

For example, if you call **VarSave** three times with SRCTARGETDIR as its argument (without calling **VarRestore** in between those calls), there will be three sets of SRCDIR and TARGETDIR values on the stack. The first call to **VarRestore** with SRCTARGETDIR as its argument restores the values from the third call to **VarSave**. The next call to **VarRestore** restores the values from the second call to **VarSave**. The third call to **VarRestore** restores the values from the first call to **VarSave**. At that point, the stack is empty. To see a script fragment that illustrates this process, refer to VarSave Stack Example.

VarRestore Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VarSave and VarRestore functions.
 *
 * This script starts by displaying the starting values of the
 * system variables SRCDIR and INSTALLDIR.  It then calls VarSave
 * to save those values.  Next, it assigns new values to SRCDIR
 * and INSTALLDIR, and it displays those values.  Finally, it
 * calls VarRestore to restore the original values, which are
 * then displayed.
 *
\*---------------------------------------------------------------*/

#define  NEW_SOURCE_DIR "C:\\Source"
#define  NEW_INSTALL_DIR "C:\\Target"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VarRestore(HWND);

function ExFn_VarRestore(hMSI)
begin

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "Starting Source and Target Folders",
               "Source:\n\n%s\n\n Target:\n\n%s ",
               SRCDIR, INSTALLDIR);

    // Save the current values of SRCDIR and INSTALLDIR.
    VarSave (SRCTARGETDIR);
```

```
    // Assign new values to SRCDIR and INSTALLDIR.
    SRCDIR    = NEW_SOURCE_DIR;
    INSTALLDIR = NEW_INSTALL_DIR;

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "New Source and Target Folders",
                "New Source:\n\n%s\n\n New Target:\n\n%s",
                SRCDIR, INSTALLDIR);

    // Restore the old values.
    VarRestore (SRCTARGETDIR);

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "Restored Source and Target Folders",
                "Source:\n\n%s\n\n Target:\n\n%s ",
                SRCDIR, INSTALLDIR);

end;
```

VarSave

The **VarSave** function saves the current values of the system variables TARGETDIR (in InstallScript installations), INSTALLDIR (in Basic MSI and InstallScript MSI installations), SRCDIR, or HKEYCURRENTROOTKEY, which are used by many other InstallScript functions. Call **VarSave** whenever you need to change the value of these system variables temporarily, for example, to set source and target directories before a call to **XCopyFile**. Afterwards, set those variables back to their previous values by calling **VarRestore**.

Syntax

```
VarSave (nType);
```

Parameters

Table 11 ▪ VarSave Parameters

Parameter	Description
nType	Specifies which system variables to save. Pass one or more of the following predefined constants in this parameter. Note that you can pass multiple constants separated by the OR operator (||).  ***Project ▪*** *This information applies to InstallScript projects:* ● **VAR_LOGGING**—Resets any stored uninstallation logging entries. ● **VAR_CURRENTDIR**—Resets any stored current directory entries. ● **VAR_ALLSUPPORTED**—Resets all stored entries. ● **VAR_HKEYCURRENTROOTKEY**—Resets any stored current root key entries. ● **VAR_REGOPTIONS—**Resets any stored current registry options. ● **CURRENTROOTKEY**—This constant is obsolete. Use VAR_HKEYCURRENTROOTKEY instead.  ***Project ▪*** *This constant applies to Basic MSI, InstallScript, and InstallScript MSI projects:* ● **VAR_SRCTARGETDIR or SRCTARGETDIR**—Resets any stored current TARGETDIR (in InstallScript installations), INSTALLDIR (in Basic MSI and InstallScript MSI installations), and SRCDIR entries.  ***Project ▪*** *This constant applies to Basic MSI and InstallScript MSI projects:* ● **SRCINSTALLDIR**—This constant is obsolete. Use VAR_SRCTARGETDIR instead.

Return Values

Table 12 ▪ VarSave Return Values

Return Value	Description
0	Indicates that the current values of the system variables were saved.
< 0	Indicates that the values were not saved due to an internal error. This error should occur only if the system is low on available memory.

Additional Information

Each time you call **VarSave**, the InstallScript engine pushes the current values of the system variables onto an internal stack, which operates as a last in, first out storage area. This method allows you to stack a series of values in memory. You can then make calls to **VarRestore** to retrieve those values from the stack in the opposite order that you stored them.

For example, if you call **VarSave** three times with SRCTARGETDIR as its argument (without calling **VarRestore** in between those calls), there will be three sets of SRCDIR and TARGETDIR values on the stack. The first call to **VarRestore** with SRCTARGETDIR as its argument restores the values from the third call to **VarSave**. The next call to **VarRestore** restores the values from the second call to **VarSave**. The third call to **VarRestore** restores the values from the first call to **VarSave**. At that point, the stack is empty. To see a script fragment that illustrates this process, refer to VarSave Stack Example.

VarSave Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VarSave and VarRestore functions.
 *
 * This script starts by displaying the starting values of the
 * system variables SRCDIR and INSTALLDIR.  It then calls VarSave
 * to save those values.  Next, it assigns new values to SRCDIR
 * and INSTALLDIR, and it displays those values.  Finally, it
 * calls VarRestore to restore the original values, which are
 * then displayed.
 *
\*---------------------------------------------------------------*/

#define  NEW_SOURCE_DIR "C:\\Source"
#define  NEW_INSTALL_DIR "C:\\Target"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VarSave(HWND);

function ExFn_VarSave(hMSI)
begin

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "Starting Source and Target Folders",
                "Source:\n\n%s\n\n Target:\n\n%s ",
                SRCDIR, INSTALLDIR);

    // Save the current values of SRCDIR and INSTALLDIR.
    VarSave (SRCTARGETDIR);

    // Assign new values to SRCDIR and INSTALLDIR.
```

```
    SRCDIR    = NEW_SOURCE_DIR;
    INSTALLDIR = NEW_INSTALL_DIR;

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "New Source and Target Folders",
                "New Source:\n\n%s\n\n New Target:\n\n%s",
                SRCDIR, INSTALLDIR);

    // Restore the old values.
    VarRestore (SRCTARGETDIR);

    // Display the values of SRCDIR and INSTALLDIR.
    SprintfBox (INFORMATION, "Restored Source and Target Folders",
                "Source:\n\n%s\n\n Target:\n\n%s ",
                SRCDIR, INSTALLDIR);

end;
```

VarSave Stack Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
// This script fragment illustrates how VarSave
// and VarRestore work with an internal stack
// to save and retrieve the values assigned to
// SRCDIR and INSTALLDIR

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VarSave Stack(HWND);

function ExFn_VarSave Stack(hMSI)
begin

    // Store the starting values of SRCDIR and INSTALLDIR
    VarSave(SRCTARGETDIR);

    // Assign new values to SRCDIR and INSTALLDIR
    SRCDIR    = "E:\\";
    INSTALLDIR = "C:\\Program Files";

    // . . .

    // Store those values ("E:\\" and "C:\\Program Files")
    VarSave(SRCTARGETDIR);

    // Assign new values to SRCDIR and INSTALLDIR
    SRCDIR    = "A:\\";
    INSTALLDIR = "C:\\Windows";

    // . . .
```

```
    // Store those new values ("A:\\" and "C:\\Windows")
    VarSave(SRCTARGETDIR);

    // . . .

    // Restore the values from the third call to VarSave
    VarRestore(SRCTARGETDIR);

    // SRCDIR is now "A:\\
    // INSTALLDIR is now "C:\\Windows"

    // . . .

    // Restore the values from the second call to VarSave
    VarRestore(SRCTARGETDIR);

    // SRCDIR is now "E:\\"
    // INSTALLDIR is now "C:\\Program Files"

    // . . .

    // Restore the values from the first call to VarSave
    VarRestore(SRCTARGETDIR);

    // SRCDIR and INSTALLDIR now have their starting values.

end;
```

VerCompare

The **VerCompare** function compares two strings that contain version information and returns whether the first one is less than, greater than, or equal to the second one.

Important ▪ *The format of the versions that you pass through the szVersionInfo1 and szVersionInfo2 parameters must be in the format* **w.x.y.z***, where* **w**, **x**, **y**, *and* **z** *represent numbers. All four fields must be present; otherwise,* **VerCompare** *cannot successfully compare the two version strings.*

For example, the following entries are valid szVersionInfo1 and szVersionInfo2 parameters:

- *"1.0.0.0"*
- *"10.10.20.10"*
- *"3.21.01.2"*

The following entries are not valid parameters:

- *"1.20"*
- *"1.12.3"*
- *"2"*

If one of the version strings has fewer than four fields, consider using the concatenate string operator (+) to add a decimal point and the number 0 as needed.

Syntax

```
VerCompare ( szVersionInfo1, szVersionInfo2, nCompareFlag );
```

Parameters

Table 13 ▪ VerCompare Parameters

Parameter	Description
szVersionInfo1	Specify the first version string in the format **w.x.y.z**, where **w**, **x**, **y**, and **z** represent numbers.
szVersionInfo2	Specify the second version string in the format **w.x.y.z**, where **w**, **x**, **y**, and **z** represent numbers.
nCompareFlag	Specify the predefined constant VERSION to indicate that you are comparing version numbers. No other values are allowed in this parameter.

Return Values

Table 14 ▪ VerCompare Return Values

Return Value	Description
EQUALS (2)	Indicates that the two strings are of equal value.
LESS_THAN (1)	Indicates that the first string contains a value less than the second.
GREATER_THAN (0)	Indicates that the first string contains a value greater than the second.
ISERR_GEN_FAILURE (-1)	Indicates that the function could not compare the two strings.

VerCompare Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerFindFileVersion and VerCompare functions.
 *
 * This script calls VerFindFileVersion to find the target file
 * and retrieve its version information.  If the specified
 * target file is not found, the source file is copied to
 * INSTALLDIR.  If found, VerCompare is called to compare the
 * version number of the EXAMPLE file found on the target
```

```
 * system (the target file) to the version number of the file
 * in SRCDIR (the source file).  If the source file version
 * number is newer than the target file, the target file is
 * overwritten with the source file.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE    "Stirinfc.dll"
#define SOURCE_VER "2.0.1.0"
#define TITLE      "VerCompare and VerFindFileVersion"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VerFindFileVersion(HWND);

function ExFn_VerFindFileVersion(hMSI)
    STRING szFileName, svPath, svVersionNumber, szExistingVersion, szUpdateVersion;
    STRING szTitle, szMsg;
    NUMBER nResult, nCompareFlag;
begin

    // Set the file to be updated.
    szFileName = EXAMPLE;

    // Find szFileName on the target system and retrieve its version number.
    nResult = VerFindFileVersion(szFileName, svPath, svVersionNumber);

    if (nResult = FILE_NOT_FOUND) then
        // If szFileName not found, copy source file to INSTALLDIR.
        szMsg = "Unable to locate %s.  Copying %s to %s.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, szFileName,
                    INSTALLDIR);

        CopyFile (szFileName, szFileName);
        abort;
    elseif (nResult = FILE_NO_VERSION) then

        // If no version number found, copy source file to svPath and exit.
        szMsg = "%s version number not found.  Copying %s to %s.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, szFileName,
                    INSTALLDIR);

        CopyFile (szFileName, szFileName);
        abort;
    elseif (nResult < 0) then
        MessageBox ("VerFindFileVersion failed.", SEVERE);
        abort;
    endif;

    // Compare the versions of the two files.  It is assumed
    // that the source version number is known.
    szExistingVersion = svVersionNumber;
    MessageBox (szExistingVersion, INFORMATION);

    szUpdateVersion = SOURCE_VER;
```

```
    MessageBox (szUpdateVersion, INFORMATION);

    nCompareFlag = VERSION;

    nResult = VerCompare (szUpdateVersion, szExistingVersion, nCompareFlag);

    // If the source file is a more current version, install it.
    if (nResult = GREATER_THAN) then
        szMsg      = "%s updated into the %s directory.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, INSTALLDIR);

        CopyFile (szFileName, szFileName);

    // If the target file is a more current version, do not install.
    elseif (nResult = LESS_THAN) then
        szMsg = "No need for an upgrade, the most current version of %s is " +
                "installed.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName);

    // If both the target and source versions are the same, do not install.
    elseif (nResult = EQUALS) then
        MessageBox ("Versions are equal. No update needed.", INFORMATION);
    endif;

end;
```

VerFindFileVersion

The **VerFindFileVersion** function searches for a specified file and retrieves the file version and location.

VerFindFileVersion uses the following search algorithm to find the file (searches the folders in the following order):

1. Windows folder
2. Windows system folder
3. The folder specified by the TARGETDIR system variable (in InstallScript installations) or the INSTALLDIR system variable (in Basic MSI and InstallScript MSI installations)
4. The folder from which `Setup.exe` is running

For information about the Windows system folder, see the documentation for the InstallScript system variable WINSYSDIR.

Note ▪ *When using* **VerFindFileVersion**, *you might need to set a value for TARGETDIR (in InstallScript installations) or INSTALLDIR (in Basic MSI and InstallScript installations) other than the value that is automatically set by the InstallScript engine. Since the function looks for the file in the TARGETDIR or INSTALLDIR folder, you might need to reset the value of the system variable temporarily to ensure that* **VerFindFileVersion** *finds the file. If you need to do this, use* **VarSave** *to save the value of TARGETDIR or INSTALLDIR before temporarily setting it to another folder. After the* **VerFindFileVersion** *function call, reset TARGETDIR or INSTALLDIR using* **VarRestore**.

Syntax

```
VerFindFileVersion ( szFileName, svPath, svVersionNumber );
```

Parameters

Table 15 ▪ VerFindFileVersion Parameters

Parameter	Description
szFileName	Specifies the unqualified name of the file whose version is to be obtained. Do not specify a drive designation or path in this parameter.
svPath	Returns the complete path (including the drive designation) to the folder in which the file resides.
svVersionNumber	Returns the version number of the file in the following format: `<major version>.<minor version>` For example, if svVersionNumber returns 2.1.2.0, the major version number is 2.1 and the minor version number is 2.0.

Return Values

Table 16 ▪ VerFindFileVersion Return Values

Return Value	Description
0	Indicates that the function successfully returned the version information.
FILE_NO_VERSION (-8)	Indicates that the file was found but did not contain version information.
FILE_NOT_FOUND (-2)	Indicates that the file was not found.

VerFindFileVersion Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerFindFileVersion and VerCompare functions.
 *
 * This script calls VerFindFileVersion to find the target file
 * and retrieve its version information.  If the specified
 * target file is not found, the source file is copied to
 * INSTALLDIR.  If found, VerCompare is called to compare the
```

```
 * version number of the EXAMPLE file found on the target
 * system (the target file) to the version number of the file
 * in SRCDIR (the source file).  If the source file version
 * number is newer than the target file, the target file is
 * overwritten with the source file.
 *
\*------------------------------------------------------------------*/

#define EXAMPLE    "Stirinfc.dll"
#define SOURCE_VER "2.0.1.0"
#define TITLE      "VerCompare and VerFindFileVersion"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VerFindFileVersion(HWND);

function ExFn_VerFindFileVersion(hMSI)
    STRING szFileName, svPath, svVersionNumber, szExistingVersion, szUpdateVersion;
    STRING szTitle, szMsg;
    NUMBER nResult, nCompareFlag;
begin

    // Set the file to be updated.
    szFileName = EXAMPLE;

    // Find szFileName on the target system and retrieve its version number.
    nResult = VerFindFileVersion(szFileName, svPath, svVersionNumber);

    if (nResult = FILE_NOT_FOUND) then
        // If szFileName not found, copy source file to INSTALLDIR.
        szMsg = "Unable to locate %s.  Copying %s to %s.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, szFileName,
                    INSTALLDIR);

        CopyFile (szFileName, szFileName);
        abort;
    elseif (nResult = FILE_NO_VERSION) then

        // If no version number found, copy source file to svPath and exit.
        szMsg = "%s version number not found.  Copying %s to %s.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, szFileName,
                    INSTALLDIR);

        CopyFile (szFileName, szFileName);
        abort;
    elseif (nResult < 0) then
        MessageBox ("VerFindFileVersion failed.", SEVERE);
        abort;
    endif;

    // Compare the versions of the two files.  It is assumed
    // that the source version number is known.
    szExistingVersion = svVersionNumber;
    MessageBox (szExistingVersion, INFORMATION);
```

```
    szUpdateVersion = SOURCE_VER;
    MessageBox (szUpdateVersion, INFORMATION);

    nCompareFlag = VERSION;

    nResult = VerCompare (szUpdateVersion, szExistingVersion, nCompareFlag);

    // If the source file is a more current version, install it.
    if (nResult = GREATER_THAN) then
        szMsg      = "%s updated into the %s directory.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName, INSTALLDIR);

        CopyFile (szFileName, szFileName);

    // If the target file is a more current version, do not install.
    elseif (nResult = LESS_THAN) then
        szMsg = "No need for an upgrade, the most current version of %s is " +
                "installed.";
        SprintfBox (INFORMATION, TITLE, szMsg, szFileName);

    // If both the target and source versions are the same, do not install.
    elseif (nResult = EQUALS) then
        MessageBox ("Versions are equal. No update needed.", INFORMATION);
    endif;

end;
```

VerGetFileLanguages

The **VerGetFileLanguages** function retrieves the list of languages supported by the file that is specified by szFile.

Syntax

```
VerGetFileLanguages ( szFileName, listLanguages );
```

Parameters

Table 17 ▪ VerGetFileLanguages Parameters

Parameter	Description
szFileName	Specifies the fully qualified name of the file whose list of supported languages is to be retrieved.
listLanguages	Returns the list of numeric language codes and code page IDs of the supported languages. Each list element is a 32-bit integer whose low-order word contains the supported language code and whose high-order word contains the corresponding code page ID, which can be extracted with the functions LOWORD and HIWORD. The number list identified by listLanguages must already have been initialized by a call to ListCreate(NUMBERLIST).

Return Values

Table 18 ▪ VerGetFileLanguages Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully retrieved the list of supported languages.
< ISERR_SUCCESS	The function failed to retrieve the list of supported languages.

VerGetFileLanguages Example

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerGetFileLanguages function.
 *
\*---------------------------------------------------------------*/

function OnBegin()
    number nListGetItem, nvLanguageInfo, nLanguageCode, nCodePage;
    string szFileName;
    LIST listLanguages, listLanguageCodes, listCodePages;
begin
    // Get file language information.
```

```
    szFileName = "C:\\Program Files\\Internet Explorer\\Iexplore.exe";
    listLanguages = ListCreate( NUMBERLIST );
    VerGetFileLanguages( szFileName, listLanguages );

    // Extract language codes and code page IDs
    // from list items and add to new lists.
    listLanguageCodes = ListCreate( NUMBERLIST );
    listCodePages = ListCreate( NUMBERLIST );
    nListGetItem = ListGetFirstItem( listLanguages ,nvLanguageInfo);
    while nListGetItem=0
        nLanguageCode = LOWORD( nvLanguageInfo );
        ListAddItem( listLanguageCodes, nLanguageCode, AFTER );
        nCodePage = HIWORD( nvLanguageInfo );
        ListAddItem( listCodePages, nCodePage, AFTER );
        nListGetItem = ListGetNextItem( listLanguages ,nvLanguageInfo);
    endwhile;
end;
```

VerGetFileVersion

The **VerGetFileVersion** function retrieves the numeric version information of the specified file.

Note ▪ *Although InstallScript's file version functions take version information in string format, the version information they reference in a file is the numeric version information. A file's string version information is not inspected or returned by InstallScript functions. Further, when Windows Explorer displays a file's properties, it shows the string version information, which might not be equivalent to the file's numeric version information. For that reason, the value returned in svVersionNumber by VerGetFileVersion might not match the version information displayed by Windows Explorer.*

For more about file version information, consult the Windows documentation.

Syntax

```
VerGetFileVersion ( szFileName, svVersionNumber );
```

Parameters

Table 19 ▪ VerGetFileVersion Parameters

Parameter	Description
szFileName	Specifies the fully qualified name of the file whose numeric version information is to be retrieved.
svVersionNumber	Returns the numeric version information as a string in the following format: `<major version>.<minor version>` For example, if svVersionNumber returns 2.1.2.0, the major version number is 2.1 and the minor version number is 2.0.

Return Values

Table 20 ▪ VerGetFileVersion Return Values

Return Value	Description
0	Indicates that the function successfully returned the version information.
FILE_NOT_FOUND (-2)	Indicates that the specified file was not found.
FILE_NO_VERSION (-8)	Indicates that the file was found but did not contain version information.

VerGetFileVersion Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerGetFileVersion function.
 *
 * The script below calls VerGetFileVersion to retrieve the
 * version number of the Windows Notepad.  The information is
 * displayed in a message box.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_FILE WINDIR ^ "NotePad.exe"
#define TITLE_TEXT "VerGetFileVersion Example"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VerGetFileVersion(HWND);

function ExFn_VerGetFileVersion(hMSI)
    NUMBER nResult;
    STRING szFile, szPath, szMsg, svVersionNumber;
begin

    // Get the version number of the specified file.
    nResult = VerGetFileVersion(EXAMPLE_FILE, svVersionNumber);

    // Report the results of VerGetFileVersion.
    if (nResult = FILE_NO_VERSION) then
        szMsg = EXAMPLE_FILE + " does not contain version information.";
        MessageBox (szMsg, INFORMATION);
    elseif (nResult = FILE_NOT_FOUND) then
        szMsg = EXAMPLE_FILE + " could not be found.";
        MessageBox (szMsg, INFORMATION);
    else
        szMsg    = "The version number of %s is %s";
        SprintfBox (INFORMATION, TITLE_TEXT, szMsg,
                    EXAMPLE_FILE, svVersionNumber);
    endif;

end;
```

VerProductCompareVersions

Project ▪ *This information applies to InstallScript projects.*

The **VerProductCompareVersions** function compares version information and returns a value indicating the result of the comparison.

Syntax

```
VerProductCompareVersions ( );
```

Parameters

None.

Return Values

Table 21 ▪ VerProductCompareVersions Return Values

Return Value	Description
VERSION_COMPARE_RESULT_NOT_INSTALLED	No version of the product is installed or the installed version was not found (IFX_INSTALLED_VERSION is a null string).
VERSION_COMPARE_RESULT_SAME	The update setup's version is the same as the version currently installed on the target system.
VERSION_COMPARE_RESULT_OLDER	The update setup's version is older than the version currently installed on the target system.
VERSION_COMPARE_RESULT_NEWER_NOT_SUPPORTED	The update setup's version is newer than the version currently installed on the target system, but the currently installed version is not supported by the update setup.
VERSION_COMPARE_RESULT_NEWER	The update setup's version is newer than the version currently installed on the target system, and the currently installed version is supported by the update setup.
< ISERR_SUCCESS	The function failed.

Comments

The function compares the values of the system variables IFX_INSTALLED_VERSION and IFX_PRODUCT_VERSION to determine if the version currently installed on the target system is older than the update setup's version; if so, the function compares the values of the system variables IFX_INSTALLED_VERSION and IFX_SUPPORTED_VERSIONS to determine if the update setup applies to the currently installed version.

VerProductCompareVersions is called by the default code for the OnSetUpdateMode and OnUpdateUIBefore event handler functions.

VerProductGetInstalledVersion

Project ▪ *This information applies to InstallScript projects.*

The **VerProductGetInstalledVersion** function returns in svVersionInstalled the string equivalent of the data in the Version value of the application uninstallation registry key if that data is a packed DWORD.

Syntax

```
VerProductGetInstalledVersion ( svVersionInstalled );
```

Parameters

Table 22 ▪ VerProductGetInstalledVersion Parameters

Parameter	Description
svVersionInstalled	Returns the string equivalent of the data in the application uninstallation registry key's Version value. If the function fails, the value of svVersionInstalled is not changed.

Return Values

Table 23 ▪ VerProductGetInstalledVersion Return Values

Return Value	Description
>= ISERR_SUCCESS	The function successfully retrieved the installed version information.
< ISERR_SUCCESS	The function failed to retrieve the installed version information; the registry key or value does not exist or the data is not a packed DWORD.

VerProductIsVersionSupported

Project *▪ This information applies to InstallScript projects.*

The **VerProductIsVersionSupported** function checks whether the version string in szVersionCheck is one of the versions in szVersionSupported.

Syntax

```
VerProductIsVersionSupported ( szVersionCheck, szVersionSupported );
```

Parameters

Table 24 ▪ VerProductIsVersionSupported Parameters

Parameter	Description
szVersionCheck	Specifies a version string in packed DWORD format (for example, the initial value of the system variable IFX_PRODUCT_VERSION.
szVersionSupported	Specifies a pipe(|)-delimited list of version strings in packed DWORD format (for example, the initial value of the system variable IFX_SUPPORTED_VERSIONS).

Return Values

Table 25 ▪ VerProductIsVersionSupported Return Values

Return Value	Description
TRUE	szVersionCheck is one of the versions in szVersionSupported, or szVersionSupported is a null string ("").
FALSE	szVersionCheck is not one of the versions in szVersionSupported.

VerProductNumToStr

Project *▪ This information applies to InstallScript projects.*

The **VerProductNumToStr** function returns in svVersion the version string corresponding to the packed DWORD specified in nVersion.

Syntax

```
VerProductNumToStr ( svVersion, nVersion );
```

Parameters

Table 26 ▪ VerProductNumToStr Parameters

Parameter	Description
svVersion	Returns the string equivalent, in packed DWORD format, of nVersion.
nVersion	Specifies version information as a four-byte value, that is, a number in the range 0 to 4294967295.

Return Values

Table 27 ▪ VerProductNumToStr Return Values

Return Value	Description
>= ISERR_SUCCESS	The function succeeded.
< ISERR_SUCCESS	The function failed.

VerProductStrToNum

Project ▪ *This information applies to InstallScript projects.*

The **VerProductStrToNum** function returns in nvVersionResult the packed DWORD version information corresponding to the string specified in svVersion.

Syntax

```
VerProductStrToNum ( nvVersionResult, szVersion );
```

Parameters

Table 28 ▪ VerProductStrToNum Parameters

Parameter	Description
nvVersionResult	Returns the packed DWORD version information.
szVersion	Specifies version information in string form. The function fails unless szVersion meets all of the following conditions: • szVersion is in the format major.minor.build or major.minor.build.release (release is ignored when determining nvVersionResult). • major and minor are the string equivalents of numbers in the range 0 to 255. • build is the string equivalent of a number in the range 0 to 65535.

Return Values

Table 29 ▪ VerProductStrToNum Return Values

Return Value	Description
>= ISERR_SUCCESS	The function succeeded.
< ISERR_SUCCESS	The function failed.

VerProductVerFromVerParts

Project ▪ *This information applies to InstallScript projects.*

The **VerProductVerFromVerParts** function retrieves the packed DWORD that corresponds to the version parts specified by nVersionMajor, nVersionMinor, and nVersionBuild.

Syntax

```
VerProductVerFromVerParts ( nvVersion, nVersionMajor, nVersionMinor, nVersionBuild );
```

Parameters

Table 30 ▪ VerProductVerFromVerParts Parameters

Parameter	Description
nvVersion	Returns the four-byte value that corresponds to the version parts specified by nVersionMajor, nVersionMinor, and nVersionBuild.
nVersionMajor	Specifies the first byte of version information. VerProductVerFromVerParts fails if this value is less than zero (0) or greater than 255.
nVersionMinor	Specifies the second byte of version information. VerProductVerFromVerParts fails if this value is less than zero (0) or greater than 255.
nVersionBuild	Specifies the last two bytes of version information. VerProductVerFromVerParts fails if this value is less than zero (0) or greater than 65535.

Return Values

Table 31 ▪ VerProductVerFromVerParts Return Values

Return Value	Description
>= ISERR_SUCCESS	Indicates that the function succeeded.
< ISERR_SUCCESS	Indicates that the function failed.

VerProductVerPartsFromVer

Project ▪ *This information applies to InstallScript projects.*

The **VerProductVerPartsFromVer** function retrieves as separate numeric values the version parts of the packed DWORD specified by nVersion.

Syntax

```
VerProductVerPartsFromVer ( nVersion, nvVersionMajor, nvVersionMinor, nvVersionBuild );
```

Parameters

Table 32 ▪ VerProductVerPartsFromVer Parameters

Parameter	Description
nVersion	Specifies version information as a four-byte value, that is, a number in the range 0 to 4294967295.
nvVersionMajor	Returns the first byte of nVersion.
nvVersionMinor	Returns the second byte of nVersion.
nvVersionBuild	Returns the last two bytes of nVersion.

Return Values

Table 33 ▪ VerProductVerPartsFromVer Return Values

Return Value	Description
ISERR_SUCCESS	This function always returns ISERR_SUCCESS.

VerSearchAndUpdateFile

The **VerSearchAndUpdateFile** function searches for the specified file and installs a newer version of the file if necessary. If the function finds the file, it compares the version number of the existing file to the version number of the new file. If the existing file is older, it is replaced with the new file. The new file must be in the directory specified by the system variable SRCDIR. If the function does not find an existing file, it copies the new file to the target system. Windows decides where the file is installed depending on the type of the file. For example, DLLs and system drivers are installed in the Windows system folder. For information about the Windows system folder, see the documentation for the InstallScript system variable WINSYSDIR.

VerFindFileVersion uses the following search algorithm to find the file (searches the folders in the following order):

1. Windows folder
2. Windows system folder
3. The folder specified by the TARGETDIR system variable (in InstallScript installations) or the INSTALLDIR system variable (in Basic MSI or InstallScript MSI installations)
4. The folders specified by the PATH environment variable
5. The folder from which `Setup.exe` is running

Note ▪ *For file transfer, an alternative to* **VerSearchAndUpdateFile** *is* **XCopyFile***—which can do check version, mark locked .dll and .exe files for update after system reboot, and increment registry reference counters for shared .dll and .exe files.*

Syntax

```
VerSearchAndUpdateFile ( szFileName, nUpdateFlag, svInstalledFile );
```

Parameters

Table 34 ▪ VerSearchAndUpdateFile Parameters

Parameter	Description
szFileName	Specifies the unqualified name of the file to install. Do not specify a drive designation or path in this parameter.
nUpdateFlag	Specifies whether the file should be updated unconditionally or only if the version of the file found on the target system is older than the version of the file that you have shipped. Pass one of the following predefined constants in this parameter: • **VER_UPDATE_COND**—Updates the existing file only if it is an older version. • **VER_UPDATE_ALWAYS**—Updates the existing file even if it is a newer version.
svInstalledFile	Returns the fully qualified name of the file installed by the function. If the file you want to replace is in use, the file is installed to the same directory with a slightly different name. The file is renamed with a tilde (~) character in the first character of the extension. For example, if you are installing the file Shell.dll and the file is locked, the file is copied as Shell.~ll. The name is returned in this variable.

Return Values

Table 35 ▪ VerSearchAndUpdateFile Return Values

Return Value	Description
FILE_INSTALLED (0)	Function was successful in installing the file.
FILE_IS_LOCKED (-4)	Indicates that the file is in use by Windows and cannot be replaced. The new file is copied to the same directory with a new name.
FILE_NO_VERSION (-8)	Indicates that the file was found, but it did not contain version information. File update is not performed.
FILE_RD_ONLY (-5)	Indicates that the existing file is write protected. The script should reset the read-only flag of the destination file before proceeding with the setup and then attempt to install the file again.
FILE_SRC_OLD (-7)	Indicates that the file to install has the same date or is older than the preexisting file.
OUT_OF_DISK_SPACE (-6)	Indicates that the function cannot create the file due to insufficient disk space on the destination drive. File update is not performed.
VER_DLL_NOT_FOUND (-3)	Indicates Ver.dll was not found. File update is not performed.

Table 35 ▪ VerSearchAndUpdateFile Return Values (cont.)

Return Value	Description
OTHER_FAILURE (-1)	Indicates an unspecified error occurred. File update is not performed.

VerSearchAndUpdateFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerSearchAndUpdateFile function.
 *
 * The first call to VerSearchAndUpdateFile replaces the file
 * specified by the constant UPDATE_FILE1 regardless of the
 * version on the target system.
 *
 * The second call to VerSearchAndUpdateFile replaces the file
 * specified by the constant UPDATE_FILE2 only if the version
 * in the source directory is newer than the version in the
 * target directory.
 *
\*---------------------------------------------------------------*/

#define UPDATE_FILE1  "Example.txt"
#define UPDATE_FILE2  "Readme.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VerSearchAndUpdateFile(HWND);

function ExFn_VerSearchAndUpdateFile(hMSI)
    STRING szFileName, svInstalledFile, szTitle, szMsg;
    NUMBER nUpdateFlag, nResult;
    BOOL   bDone;
begin

    // Set up title and message parameters for call
    // to VerSearchAndUpdateFile.
    szTitle = "VerSearchAndUpdateFile Example";
    szMsg   = " was successfully updated.";

    // Update UPDATE_FILE1 regardless of version number.
    if (VerSearchAndUpdateFile (UPDATE_FILE1, VER_UPDATE_ALWAYS,
                                svInstalledFile) = 0) then
        SprintfBox (INFORMATION, szTitle, UPDATE_FILE1 + szMsg);
    endif;
```

```
// Set indicator to control loop exit.
bDone = FALSE;

// Begin the while loop.
while (bDone = FALSE)
    // Update UPDATE_FILE2 only if existing file is older.
    nResult = VerSearchAndUpdateFile (UPDATE_FILE2, VER_UPDATE_COND,
                                      svInstalledFile);
    switch (nResult)
        case 0:
            // VerSearchAndUpdate successful.
            SprintfBox (INFORMATION, szTitle, UPDATE_FILE2 + szMsg);
            bDone = TRUE;
        // The target file does not have a version number.
        case FILE_NO_VERSION:
            // Ask the user if the file should be updated regardless.
            if (AskYesNo ("Version number was not found.\nDo you still wish " +
                          "to update " + UPDATE_FILE2 + "?", YES) = YES) then
                // Update the file UPDATE_FILE2 regardless of version number.
                VerSearchAndUpdateFile (UPDATE_FILE2, VER_UPDATE_ALWAYS,
                                        svInstalledFile);
                bDone = TRUE;
            else
                bDone = TRUE;
            endif;

        // The target file is locked.
        case FILE_IS_LOCKED:
            MessageBox ("The target file is locked.\n\nPlease close all " +
                        "programs and run Setup again.", INFORMATION);
            bDone = TRUE;
        // The target file is read-only.
        case FILE_RD_ONLY:
            // Ask the user if Setup should remove the read-only attribute.
            if (AskYesNo ("File is read-only.\nShould Setup remove the " +
                          "write-protection of " + UPDATE_FILE2 + "?", YES) = YES) then
                // Change the attribute of the target file to normal.
                SetFileInfo (svInstalledFile, FILE_ATTRIBUTE, FILE_ATTR_NORMAL, "");
                bDone = FALSE;
            else
                bDone = TRUE;
            endif;
        // The target disk does not have enough space.
        case OUT_OF_DISK_SPACE:
            MessageBox ("You need more free space for this update.", SEVERE);
            bDone = TRUE;
        // The required VER.DLL file was not found.
        case VER_DLL_NOT_FOUND:
            MessageBox ("VER.DLL was not found.", SEVERE);
            bDone = TRUE;
        // Some other error occurred.
        case OTHER_FAILURE:
            MessageBox ("Update has failed.", SEVERE);
            bDone = TRUE;
        default:
```

```
                bDone = TRUE;
            endswitch;

        endwhile;

end;
```

VerUpdateFile

The **VerUpdateFile** function uses the version information of a specified file to determine whether or not to install the file on the target directory. VerUpdateFile gets the file name specified in szFileName.

VerFindFileVersion uses the following search algorithm to find the file (searches the folders in the following order):

1. Windows folder
2. Windows system folder
3. The folder specified by the TARGETDIR system variable (in InstallScript installations) or the INSTALLDIR system variable (in Basic MSI or InstallScript MSI installations)
4. The folders specified by the PATH environment variable
5. The folder from which `Setup.exe` is running

VerUpdateFile then compares the version of the file with the same name in SRCDIR (the source file), if it exists, with the version of the target file. If the source file has a more recent version number than the target file, the target file is replaced by the source file. If the target file does not exist, InstallShield copies the source file to the target location.

When the SHAREDFILE or LOCKEDFILE option is used in the parameter nUpdateFlag and .dll or .exe files to be updated are in use by the system, renamed copies of the source files are transferred to the target system and the system variable BATCH_INSTALL is set to TRUE. Then, when **RebootDialog** or **SdFinishReboot** is called at the end of the setup and the system is restarted, the locked files are updated. For more information on updating locked files, see RebootDialog and SdFinishReboot. The system variable BATCH_INSTALL can be tested to determine if locked .dll or .exe files were encountered. You cannot use the SHAREDFILE and LOCKEDFILE options simultaneously-you must use one or the other.

For file transfer, preferable alternatives to VerUpdateFile may be XCopyFile, which can perform version checking, mark locked .dll and .exe files for update after system reboot, and increment registry reference counters for shared .dll and .exe files.

Syntax

```
VerUpdateFile ( szFileName, nUpdateFlag, svInstalledFilePath );
```

Parameters

Table 36 ▪ VerUpdateFile Parameters

Parameter	Description
szFileName	Specifies the qualified or unqualified name of the file to update. If the name is unqualified (that is, if it does not include a drive designation or path), InstallShield searches the Windows or Win95 directory, the System directory, the directories specified by the PATH environment variable, and then the path of the InstallShield executable file for a matching file. VerUpdateFile takes the file name portion of szFileName and uses it to identify the file in SRCDIR that is used as the source file.
nUpdateFlag	Specifies whether the file is updated unconditionally or updated only if the version of the target file found is older than the version of the source file. Pass one of the following predefined constants in this parameter. You can combine the constant SHAREDFILE with one of the other constants using the bitwise OR operator (|). However, you cannot combine SHAREDFILE and LOCKEDFILE. • **LOCKEDFILE**—Causes VerUpdateFile to record locked .dll and .exe files for update when Windows or the system is rebooted. A locked file is a file that is in use by an application or the system when InstallShield attempts to access or update the file. The LOCKEDFILE option works like SHAREDFILE except that LOCKEDFILE does not create registry entries or modify the registry reference counter. You cannot use the LOCKEDFILE option when using the SHAREDFILE option. There are some unshared files (such as shell extensions) for which the script writer does not want a registry entry and reference counter. These files should never be uninstalled, except by the application itself. LOCKEDFILE allows VerUpdateFile to handle locked files that are not shared. • **SHAREDFILE**—Combines shared and locked file handling by causing VerUpdateFile to treat all files as shared, and to record locked .dll and .exe files for update when Windows or the system restarts. See RebootDialog and SdFinishReboot. The SHAREDFILE option causes VerUpdateFile to treat all files as shared files and increment the registry reference counter by one when the file exists in the target directory and it has a reference count greater than 0. If the shared file does not exist in the target directory and it has no reference counter, InstallShield creates the counter and sets it to 1. If the shared file already exists in the target directory but has no reference counter, InstallShield creates the counter and initializes it to 2 as a precaution against accidental removal during uninstallation.

Table 36 ▪ VerUpdateFile Parameters (cont.)

Parameter	Description
nUpdateFlag (continued)	• **SELFREGISTER**—Carries out the self-registration process immediately, when using the “non-batch method” of installing self-registering files. If you have called Enable(SELFREGISTERBATCH), this option queues up self-registering files for registration. The files are registered once Do(SELFREGISTRATIONPROCESS) is called, when using the “batch method” of installing self-registering files. Always use SELFREGISTER together with the constant SHAREDFILE, using the bitwise OR operator (|). • **VER_UPDATE_ALWAYS**—Updates the file regardless of the version numbers. • **VER_UPDATE_COND**—Updates the file only if the file being replaced is an older version.
svInstalledFilePath	Returns the fully qualified name of the file that was installed. If the file you want to replace is in use, the file is installed to the same directory with a modified name. InstallShield uses a tilde (~) character to replace the first character of the file's extension. For example, if you are updating the file Shell.dll and the target file is locked, the source file is copied to the target directory as Shell.~ll. This name is returned in the parameter svInstalledFilePath. If the SHAREDFILE option is used in the parameter nUpdateFlag and locked files are properly committed for update when Windows or the system restarts, the ~ modified name versions of the files are deleted when the update takes place.

Return Values

Table 37 ▪ VerUpdateFile Return Values

Return Value	Description
FILE_INSTALLED (0)	Indicates that the function successfully installed the file. This constant is equal to 0 (zero). All other return values are less than zero (< 0).
FILE_IS_LOCKED (-4)	Indicates that the existing file is in use by Windows and cannot be replaced. The new file is copied to the same directory with a new name, as described above.
FILE_NO_VERSION (-8)	Indicates that the file was found, but it did not contain version information in it. File update is not performed.
FILE_RD_ONLY (-5)	Indicates that the existing file is write-protected. You must reset the read-only bit in the destination file before proceeding with the setup, and then attempt to install the file again.
FILE_SRC_EQUAL (-9)	Indicates that the file you want to install has the same version as the existing file. File update is not performed if the VER_UPDATE_COND flag is set.
FILE_SRC_OLD (-7)	Indicates that the file you want to install is older than the existing file. File update is not performed if the VER_UPDATE_COND flag is set.
OUT_OF_DISK_SPACE (-6)	Indicates that the function cannot create the file due to insufficient disk space on the destination drive. File update is not performed.
-51	A self-registering file did not register successfully.
OTHER_FAILURE (-1)	Indicates an unspecified error occurred. File update is not performed.

VerUpdateFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the VerUpdateFile function.
 *
 * This script calls VerUpdateFile twice to update a Windows
 * accessory.
 *
\*---------------------------------------------------------------*/
```

```
#define APPFILE "Notepad.exe"
#define TITLE   "VerUpdateFile Example"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_VerUpdateFile(HWND);

function ExFn_VerUpdateFile(hMSI)
    STRING svInstalledFilePath, szTitle, szMsg;
    NUMBER nResult;
    BOOL   bDone;
begin

    //  Update the file regardless of file version.
    nResult = VerUpdateFile (APPFILE, VER_UPDATE_ALWAYS, svInstalledFilePath);

    if (nResult < 0) then
        MessageBox ("First call to VerUpdateFile failed.", SEVERE);
    else
        szMsg = "%s successfully updated.";
        SprintfBox (INFORMATION, TITLE, szMsg, APPFILE);
    endif;

    // Update the files only if the target files are more recent.
    nResult = VerUpdateFile (APPFILE, VER_UPDATE_COND, svInstalledFilePath);

    if (nResult < 0) then
        MessageBox ("Second call to VerUpdateFile failed.", SEVERE);
    endif;

end;
```

WaitForApplication

The **WaitForApplication** function waits for a running application to terminate before returning.

If the function fails to wait for the application to terminate before returning, verify that the application does not terminate until other sub-applications launched by the application terminate. The **WaitForApplication** function monitors the process handle of the specified application; if the application passes control to a secondary application or process and then terminates, the function returns immediately.

Syntax

```
WaitForApplication( byval number hProcess, byval number dwProcessId, byval number nTimeOut, byval number
    nOptions );
```

Parameters

Table 38 ▪ WaitForApplication Parameters

Parameter	Description
hProcess	Specifies the process handle of the running process for which to wait. (If the application was launched with **LaunchAppAndWait** or **LaunchApp**, this handle is returned in the LAAW_PROCESS_INFORMATION.hProcess member.)
dwProcessId	Specifies the process ID of the running process for which to wait. You need to specify a non-zero value for this parameter only if you specify LAAW_OPTION_WAIT_INCL_CHILD in nOptions. If the application was launched with **LaunchAppAndWait** or **LaunchApp** and the process ID can be determined (as described for the description of LAAW_OPTION_WAIT_INCL_CHILD), this handle is returned in the LAAW_PROCESS_INFORMATION.dwProcessId member.
nTimeOut	Specifies the maximum amount of time (in milliseconds) to wait for the application to complete before returning. If this amount of time passes before the application terminates, the function ends the wait and returns failure. You can specify INFINITE to indicate that the function should wait indefinitely. (You can also pass the LAAW_PARAMTERS.nTimeOut value to mimic the behavior of the **LaunchAppAndWait** function.)

Table 38 ▪ WaitForApplication Parameters (cont.)

Parameter	Description
nOptions	Pass one of the following predefined constants in this parameter. You can combine these constants by using the bitwise OR operator (|), with the following exceptions: you cannot combine LAAW_OPTION_NOWAIT with LAAW_OPTION_WAIT. • **LAAW_OPTION_WAIT**—Specifies that the function should wait until the specified application has terminated.  ***Note ▪*** *If the specified applications fails to terminate and nOptions is set to LAAW_OPTION_WAIT (and nTimeOut is set to INFINITE), the installation will wait indefinitely for the launched application to complete.* • **LAAW_OPTION_NOWAIT**—Specifies that the function should return immediately. • **LAAW_OPTION_USE_CALLBACK**—Causes the function to call the OnLaunchAppAndWaitCallback event every second, or whatever interval you set for the LAAW_PARAMETERS.nCallbackInterval member, while waiting for the application to terminate. • **LAAW_OPTION_WAIT_INCL_CHILD**—Indicates that the function should wait for the launched application and any of its direct child processes. When LAAW_OPTION_WAIT_INCL_CHILD is used, the function detects and waits for only direct child processes of the launched process—not for any additional child processes that are launched by child processes of the initially launched process. Note that to detect and wait for child processes with LAAW_OPTION_WAIT_INCL_CHILD, the function must receive or be able to determine the process ID of the launched process. Therefore, in order for this option to work, if dwProcessId is not specified, the Windows API **GetProcessId** must be available on the system so that the function can determine the process ID. According to the Windows API documentation, **GetProcessId** is available on Windows XP SP1 and later and Windows Server 2003 and later. If this API is not available, LAAW_OPTION_WAIT_INCL_CHILD behaves as LAAW_OPTION_WAIT. You can specify any LaunchApplication option; however, only the aforementioned options will have any effect.

Return Values

Table 39 ▪ WaitForApplication Return Values

Return Value	Description
>= ISERR_SUCCESS	The application terminated and the function returned as a result.
< ISERR_SUCCESS	The function returned as a result of something other than the application terminating. You can check the value of LAAW_PARAMETERS.nWaitResult to determine additional information: • **WAIT_OBJECT_0**—Indicates that the application terminated. • **WAIT_OBJECT_0 + 1**—Indicates that the installation received a message to terminate. • **WAIT_TIMEOUT**—Indicates that the timeout interval was reached or the callback function returned LAAW_CALLBACK_RETURN_END_WAIT. Check the value of LAAW_PARAMETERS.bCallbackEndedWait to determine which ended the wait.

WaitOnDialog

The **WaitOnDialog** function displays a custom dialog. You can write your script to handle different responses from the user based on the return value from this function.

Syntax

```
WaitOnDialog ( szDlgName );
```

Parameters

Table 40 ▪ WaitOnDialog Parameters

Parameter	Description
szDlgName	Specifies the ID of the dialog to display.

Return Values

Table 41 ▪ WaitOnDialog Return Values

Return Value	Description
dialog control ID	The ID of the dialog control that received the WM_COMMAND message.
IDCANCEL (2)	This message is received as a signal that the dialog is about to close.
DLG_ERR (-1)	This message is received if any errors occurred.
DLG_INIT (-100)	This message is received immediately before the dialog is displayed.

Additional Information

To enable end users to cancel the installation by clicking the close button in the upper-right corner of the InstallScript dialog, the dialog must have a button control whose Control Identifier property is set to 2. For more information, see Using InstallScript to Implement Custom Dialogs.

WaitOnDialog Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the DefineDialog, WaitOnDialog, EndDialog, and
 * ReleaseDialog functions.
 *
 * This script opens a simple custom dialog that displays
 * a bitmap.  The dialog can be closed with any of three
 * buttons: Back, Next, or Cancel.
 *
 * The "custom" dialog used in this script is actually the
 * InstallShield Sd dialog that is displayed by the built-in
 * function SdBitmap.  Because this dialog is stored in
 * the file _isres.dll, which is already compressed in
 * the installation, it can be used in a script as a custom
 * dialog.
```

```
 *
 * In order to use this dialog as a custom dialog, the
 * script first defines it by calling DefineDialog.  It then
 * displays the dialog by calling WaitOnDialog.  When an event
 * ends dialog processing, EndDialog is called to close the
 * dialog.  Then the dialog is released from memory by
 * a call to ReleaseDialog.
 *
\*-----------------------------------------------------------------*/

// Dialog and control IDs.
#define RES_DIALOG_ID     12027   // ID of dialog itself
#define RES_PBUT_NEXT         1   // ID of Next button
#define RES_PBUT_CANCEL       9   // ID of Cancel button
#define RES_PBUT_BACK        12   // ID of Back button

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_WaitOnDialog(HWND);

function ExFn_WaitOnDialog(hMSI)
    STRING  szDialogName, szDLLName, szDialog;
    NUMBER  nDialog, nResult, nCmdValue;
    BOOL    bDone;
    HWND    hInstance, hwndParent, hwndDlg;
begin

    // Define the name of a dialog to pass as first
    // parameter to DefineDialog.
    szDialogName = "ExampleDialog";

    // DefineDialog's second parameter will be 0 because the
    // dll is in _isres.dll.
    hInstance = 0;

    // DefineDialog's third parameter will be null; installation
    // will search for the dialog in _isuser.dll and _isres.dll.
    szDLLName = "";

    // DefineDialog's fifth parameter will be null because the
    // dialog is identified by its ID in the fourth parameter.
    szDialog = "";

    // This value is reserved and must be 0.
    hwndParent = 0;

    // Define the dialog. The installation's main window will own
    // the dialog (indicated by HWND_INSTALL in parameter 7).
    nResult  = DefineDialog (szDialogName, hInstance, szDLLName,
                             RES_DIALOG_ID, szDialog, hwndParent,
                             HWND_INSTALL, DLG_MSG_STANDARD|DLG_CENTERED);

    // Check for an error.
    if (nResult < 0) then
        MessageBox ("An error occurred while defining the dialog.", SEVERE);
```

```
        bDone = TRUE;
        abort;
    endif;

    // Initialize the indicator used to control the while loop.
    bDone = FALSE;

    // Loop until done.
    repeat

        // Display the dialog and return the next dialog event.
        nCmdValue = WaitOnDialog(szDialogName);

        // Respond to the event.
        switch (nCmdValue)
            case DLG_CLOSE:
                // The user clicked the window's Close button.
                Do (EXIT);
            case DLG_ERR:
                MessageBox ("Unable to display dialog. Setup canceled.", SEVERE);
                abort;
            case DLG_INIT:
                // Initialize the back, next, and cancel button enable/disable states
                // for this dialog and replace %P, %VS, %VI with
                // IFX_PRODUCT_DISPLAY_NAME, IFX_PRODUCT_DISPLAY_VERSION, and
                // IFX_INSTALLED_DISPLAY_VERSION, respectively, on control IDs 700-724
                // and 202.
                hwndDlg = CmdGetHwndDlg(szDialogName);
                SdGeneralInit(szDialogName, hwndDlg, 0, "");
            case RES_PBUT_CANCEL:
                // The user clicked the Cancel button.
                Do (EXIT);
            case RES_PBUT_NEXT:
                bDone = TRUE;
            case RES_PBUT_BACK:
                bDone = TRUE;
        endswitch;

    until bDone;

    // Close the dialog.
    EndDialog (szDialogName);

    // Free the dialog from memory.
    ReleaseDialog (szDialogName);

end;
```

Welcome

Project ▪ *This information applies to the following project types:*

- *InstallScript*

- *InstallScript MSI*

The **Welcome** function displays a dialog that welcomes the end user.

In a procedural script, you must call SdProductName before calling Welcome so that InstallShield can insert the product name into the first paragraph of message text in the Welcome dialog. In an event-based script, SdProductName is called automatically, with the PRODUCT_NAME string entry as its argument, before the Begin event. If you do not pass a product name using SdProductName, InstallShield cannot insert the product name but inserts extra spaces instead.

Syntax

```
Welcome ( szTitle, nReserved );
```

Parameters

Table 42 ▪ Welcome Parameters

Parameter	Description
szTitle	Specifies the title of this dialog. To display the default title Welcome, pass a null string ("") in this parameter.
nReserved	Pass 0 in this parameter.

Return Values

Table 43 ▪ Welcome Return Values

Return Value	Description
NEXT (1)	Indicates that the end user clicked the NEXT button.
BACK (12)	Indicates that the end user clicked the BACK button.
< 0	Indicates that Welcome failed to display the dialog.

Additional Information

To view an example of this or other dialogs for your installation, use the Dialog Sampler. In InstallShield, on the Tools menu, point to InstallScript, then click Standard Dialog Sampler or Skinned Dialog Sampler.

Welcome Example

Project ▪ *This information applies to the following project types:*

- *InstallScript*
- *InstallScript MSI*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the Welcome function.
 *
 * This script displays the installation Welcome dialog.
 *
\*---------------------------------------------------------------*/

#define PRODUCT "ExampleProduct"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_Welcome(HWND);

function ExFn_Welcome(hMSI)
    STRING svLogFile;
begin

    SdProductName ( PRODUCT );

    // Display the Welcome dialog.
    if (Welcome ("Welcome Dialog Example", 0) < 0) then
      MessageBox ("Welcome dialog failed.", SEVERE);
   endif;

end;
```

WizardDirection

Project ▪ *This information applies to InstallScript projects.*

The **WizardDirection** function is called in an object script to report the argument that was passed to the most recent call in the main setup's (or parent object's) script to the ShowObjWizardPages function or one of the object's ShowxxxxxUIyyyyy methods.

Syntax

```
WizardDirection ( );
```

Parameters

None.

Return Values

Table 44 ▪ WizardDirection Return Values

Return Value	Description
NEXT	Indicates that NEXT was passed as the argument in the most recent call in the main setup's (or parent object's) script to the ShowObjWizardPages function or one of the object's Show*xxxxx*UI*yyyyy* methods.
BACK	Indicates that BACK was passed as the argument in the most recent call in the main setup's (or parent object's) script to the ShowObjWizardPages function or one of the object's Show*xxxxx*UI*yyyyy* methods.

Additional Information

The purpose of WizardDirection is to report the direction in which the end user was moving through the dialog sequence at the most recent transition to the object's dialog sequence from the main setup's (or parent object's) dialog sequence. For more information, see Creating the Object's Run-Time User Interface.

WriteArrayProperty

Project ▪ *This information applies to InstallScript projects.*

The **WriteArrayProperty** function is called in an object script to enter a value for a specified property whose value is an array.

Syntax

```
WriteArrayProperty ( nPropertyBag, szPropertyName, ArrayPointer );
```

Parameters

Table 45 ▪ WriteArrayProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored.
szPropertyName	Specifies the name of the property whose value you want to enter.
ArrayPointer	Specifies a pointer to the array property.

Return Values

Table 46 ▪ WriteArrayProperty Return Values

Return Value	Description
0	This function always returns zero (0).

WriteBoolProperty

Project ▪ *This information applies to InstallScript projects.*

The **WriteBoolProperty** function is called in an object script to enter a value for a specified property whose value is a Boolean.

Syntax

```
WriteBoolProperty ( nPropertyBag, szPropertyName, bPropertyValue );
```

Parameters

Table 47 ▪ WriteBoolProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored.
szPropertyName	Specifies the name of the property whose value you want to enter.
bPropertyValue	Specifies the value of the property.

Return Values

Table 48 ▪ WriteBoolProperty Return Values

Return Value	Description
0	This function always returns zero (0).

WriteBytes

The **WriteBytes** function writes a specific number of bytes to a file opened in the binary mode. This function starts writing bytes at the current file pointer location.

Note ▪ *Before calling WriteBytes, you must open the file by calling OpenFileMode(FILE_MODE_BINARY) and then calling OpenFile.*

The parameter nIndex is an index into svString; nBytes specifies how many bytes beyond the value of nIndex you want to write to the file. If nIndex plus nBytes exceeds the length of svString, InstallShield writes only the number of bytes from the index into the string to the end of the string. For example, if svString is 100 bytes long, nIndex is 50 and nBytes is 75, only the bytes between 51 and 100 (50 bytes instead of 75 bytes) are written to the file.

Syntax

```
WriteBytes (nFile, svString, nIndex, nBytes);
```

Parameters

Table 49 ▪ WriteBytes Parameters

Parameter	Description
nFile	Specifies the file handle of a file that has been opened in binary mode.
svString	Specifies the string variable that contains the bytes to write to the output file.
nIndex	Specifies an index into svString. The bytes starting at this location are written to the output file. Note that the first byte is at index location 0.
nBytes	Specifies the number of bytes you want to write to the output file.

Return Values

Table 50 ▪ WriteBytes Return Values

Return Value	Description
X	Where X is the number of bytes actually written.
< 0	Indicates that the function was unable to write the bytes.

WriteBytes Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the WriteBytes function.
 *
 * WriteBytes is called to write a company name to a binary file.
 *
 * Note: Before running this script, set the preprocessor
 *       constants so that they reference an existing directory
 *       and file on the target system.  Because the script will
 *       write to this file -- overwriting any existing data --
 *       you should create a file or make a copy of an existing
 *       file for use with this example.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR "C:\\"
#define EXAMPLE_FILE "ISExampl.bin"
```

```
// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_WriteBytes(HWND);

function ExFn_WriteBytes(hMSI)
    STRING  szQuestion, svCompany[28];
    NUMBER  nFileHandle, nOffset, nIndex, nBytes;
begin

    // Set the file open mode.
    OpenFileMode (FILE_MODE_BINARY);

    // Open the file and get the file handle.
    if (OpenFile (nFileHandle, EXAMPLE_DIR, EXAMPLE_FILE) < 0) then
        MessageBox ("Unable to open the file.", SEVERE);
        abort;
    endif;

    // Ask user for his or her company name.
    szQuestion = "Please enter your company name. You may enter up to " +
                 "twenty-seven characters.";
    AskText (szQuestion, "My Software Company", svCompany);

    // Move the file pointer 15 bytes from the start of the file.
    nOffset = 15;
    SeekBytes (nFileHandle, nOffset, FILE_BIN_START);

    // Write the company name to the file.
    nIndex = 0;
    nBytes = 27;
    if (WriteBytes (nFileHandle, svCompany, nIndex, nBytes) < 0) then
        MessageBox ("WriteBytes failed.", SEVERE);
    else
        MessageBox ("Bytes successfully written to file.", INFORMATION);
    endif;

    // Close the file.
    CloseFile (nFileHandle);

end;
```

WriteLine

The **WriteLine** function writes a line of text to a text file opened in append mode. You must first set the file mode to append mode with **OpenFileMode**, and then either create the file with **CreateFile**, or open the file with **OpenFile**, before calling **WriteLine**. This function places the line at the end of the file.

WriteLine produces lines that have a carriage return and line feed character at the end of the line. To write to a binary file, use **WriteBytes**.

Caution ▪ *This function does not work with files opened in read-only mode.*

Syntax

```
WriteLine ( nvFileHandle, szLine );
```

Parameters

Table 51 ▪ WriteLine Parameters

Parameter	Description
nvFileHandle	Specifies the file handle of an open file. The handle is obtained from **OpenFile** or **CreateFile**.
szLine	Specifies a string that contains the text to write to the file.  ***Note ▪*** *You can embed double quotation marks inside a string by delimiting the string with single quotation marks. For example, if you want to write the string "This string contains a double "quotation mark."", you can use the following code:* `WriteLine(nvFileHandle, 'This string contains a double "quotation mark."');`  ***Caution ▪*** *Do not attempt to write multiple lines by embedding newline characters in the string you pass in szLine. The following code writes the string as one line, with an unprintable character between "one" and "This":* `szString = "This is line one\nThis is two";  WriteLine(nvFileHandle, szString);` To write two lines with one call to **WriteLine**, you must embed a return and a newline (in that order): `szString = "This is line one\r\nThis is two";`

Return Values

Table 52 ▪ WriteLine Return Values

Return Value	Description
0	Indicates that the function successfully wrote the line to the file.
< 0	Indicates that the function was unable to write the line to the file.

WriteLine Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
```

```
 * InstallShield Example Script
 *
 * Demonstrates the CreateFile and WriteLine functions.
 *
 * Createfile is called to create a file to store a string.  The
 * string is written into the file by the WriteLine function.
 *
 * Note: Before running this script, set the preprocessor
 *       constant EXAMPLE_DIR so that it references an existing
 *       directory on the target system.  Note that if the file
 *       specified by EXAMPLE_FILE already exists, it will be
 *       overwritten.
 *
\*---------------------------------------------------------------*/

#define EXAMPLE_DIR  "C:\\"
#define EXAMPLE_FILE "ISExampl.txt"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_WriteLine(HWND);

function ExFn_WriteLine(hMSI)
    STRING  szTitle, szMsg;
    NUMBER  nvFileHandle;
begin

    // Set the file mode to append.
    OpenFileMode (FILE_MODE_APPEND);

    // Create a new file and leave it open.
    if (CreateFile (nvFileHandle, EXAMPLE_DIR, EXAMPLE_FILE) < 0) then
        // Report the error.
        MessageBox ("CreateFile failed.", SEVERE);
        abort;
    else
        // Set the message to write to the file.
        szMsg = "This line was appended by an example InstallShield script.";

        // Append the message to the file.
        if (WriteLine(nvFileHandle, szMsg) < 0) then
            // Report the error.
            MessageBox ("WriteLine failed.", SEVERE);
        else
            // Report success.
            szTitle = "CreateFile & WriteLine";
            szMsg   = "Successfully created and wrote to %s.";
            SprintfBox (INFORMATION, szTitle, szMsg, EXAMPLE_FILE);
        endif;

    endif;

    // Close the file.
    CloseFile (nvFileHandle);
```

```
end;
```

WriteNumberProperty

Project ▪ *This information applies to InstallScript projects.*

The **WriteNumberProperty** function is called in an object script to enter a value for a specified property whose value is a number.

Syntax

```
WriteNumberProperty ( nPropertyBag, szPropertyName, nPropertyValue );
```

Parameters

Table 53 ▪ WriteNumberProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored.
szPropertyName	Specifies the name of the property whose value you want to enter.
nPropertyValue	Specifies the value of the property.

Return Values

Table 54 ▪ WriteNumberProperty Return Values

Return Value	Description
0	This function always returns zero (0).

WriteProfInt

Tip ▪ *All INI file changes should be created in the INI Files view of the IDE. Handling all of your INI file changes in this way allows for a clean uninstallation through the Windows Installer service.*

The **WriteProfInt** function modifies an .ini file by inserting or updating a profile string that assigns an integer value to a key. Note the following important points:

- Because of the way in which Windows caches file changes, you should flush the cache buffer after calls to **WriteProfString**.

- Changes made to .ini files can be logged for uninstallation.
- To write a string value to an .ini file, call **WriteProfString** instead.
- Use the **AddProfString** and **ReplaceProfString** functions when you want to modify the `System.ini` file.

Syntax

```
WriteProfInt ( szFileName, szSectionName, szKeyName, iValue );
```

Parameters

Table 55 ▪ WriteProfInt Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file. If the file name is unqualified (that is, if a drive designation and path are *not* included), InstallShield searches for the file in the Windows folder. If the file does not exist, it is created in the specified folder; if a path is not included in file name, the file is created in the Windows folder. Note that if the file name is qualified with a path that does not exist, WriteProfInt will fail.
szSectionName	Specifies the name of the .ini file section in which szKeyName will be inserted or modified. The section name should *not* be enclosed within delimiting brackets ([ ]). The search for this name is *not* case sensitive.
szKeyName	Specifies the unique key to be updated. If a key that is to be updated does not exist in the specified section, it is created.  ***Note ▪*** *To delete an entire section from an .ini file, pass a null string ("") in szKeyName. To delete one or more keys from a section in an .ini file, use* **WriteProfString**.
iValue	Specifies an integer value to assign to the unique key identified by szKeyName.

Return Values

Table 56 ▪ WriteProfInt Return Values

Return Value	Description
0	Indicates that the function successfully updated the specified .ini file.
< 0	Indicates that the function was unable to update the specified .ini file.

Additional Information

- The WriteProfInt function uses the Windows API WritePrivateProfileString to access the .ini file. Therefore, its functionality is limited by the functionality provided by the Windows API. Consult Microsoft documentation for more information on .ini files.
- Windows 95 and later cache .ini files, which can cause a delay in writing changes to the specified files. This in turn can interfere with subsequent file operations, such as calls to CopyFile and XCopyFile. Therefore, you

should flush the cache buffer after using WriteProfInt if you are using file operations shortly afterward. Simply call WriteProfInt with null parameters to force Windows 95 or later to write the data to the .ini file immediately, as shown below:

```
WriteProfInt ("c:\\Test.ini", "Windows", "KeyboardDelay", 100);    WriteProfInt ("", "", "", 0); // null
string in first three parameters    //CopyFile should now have access to updated file.    CopyFile
("c:\\test.ini", "d:\\test.ini");
```

WriteProfInt Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the WriteProfInt function.
 *
 * This script updates an integer value in an initialization file
 * in the Windows directory.  If the file does not exist, it is
 * created.
 *
\*---------------------------------------------------------------*/

// Define the initialization file name.
#define EXAMPLE_INI WINDIR^"ISExampl.ini"

// Define the initialization item and its new value.
#define    SECTION  "Windows"
#define    KEYNAME  "OurAppVal"
#define    KEYVAL   0

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_WriteProfInt(HWND);

function ExFn_WriteProfInt(hMSI)
begin

    // Update a field in the initialization file.
    if (WriteProfInt (EXAMPLE_INI, SECTION, KEYNAME, KEYVAL)  < 0 ) then
        // Report the error.
        SprintfBox (SEVERE, "WriteProfString",
                    "%s could not be updated", EXAMPLE_INI);
    else
        // Report success.
        SprintfBox (INFORMATION, "WriteProfString",
                    "%s was modified.", EXAMPLE_INI);
    endif;

end;
```

WriteProfString

The **WriteProfString** function writes a profile string to an .ini file. Depending on the values passed to WriteProfString, it can create a section, delete an entire section, create a unique KEY=VALUE entry, delete a KEY=VALUE entry, or update a key's value.

Note the following important points:

- To write an integer value to an .ini file, call WriteProfInt instead.
- Use the AddProfString and ReplaceProfString functions when you want to modify the System.ini file.
- Changes made to .ini files can be logged for uninstallation. However, there are some important restrictions to be aware of. For more information, see Uninstalling Initialization (.ini) File Entries.
- WriteProfString uses the Windows API WritePrivateProfileString to access the .ini file. Therefore, its functionality is limited by the functionality provided by the Windows API. Consult Windows programming documentation for more information on .ini files.
- Windows caches .ini files, which can cause a delay in writing changes to the specified files. This in turn can interfere with subsequent file operations, such as calls to CopyFile and XCopyFile. Therefore, you should flush the cache buffer after using WriteProfString if you are using file operations shortly afterward. Simply call WriteProfString with null parameters to force Windows to write the data to the .ini file immediately:

```
WriteProfString ("C:\\Test.ini", "Windows", "KeyboardDelay", "100");
WriteProfString ("", "", "", ""); // null string for all four parameters
// CopyFile should now have access to updated file. CopyFile ("C:\\Test.ini", "C:\\Temp\\Test.ini");
```

Syntax

```
WriteProfString ( szFileName, szSectionName, szKeyName, szValue );
```

Parameters

Table 57 ▪ WriteProfString Parameters

Parameter	Description
szFileName	Specifies the name of the .ini file. If the file name is unqualified (that is, if a drive designation and path are *not* included), InstallShield searches for the file in the Windows folder. If the file does not exist, it is created in the specified folder; if a path is not included in file name, the file is created in the Windows folder. Note that if the file name is qualified with a path that does not exist, WriteProfString will fail.
szSectionName	Specifies the name of the .ini file section to search for szKeyName. The section name should *not* be enclosed within delimiting brackets ([ ]). The search for this name is *not* case sensitive.
szKeyName	Specifies the unique key to be updated or deleted. If a key that is to be updated does not exist, it is created. To delete the key specified here, pass a null string ("") in szValue. To delete the entire section specified by szSectionName, including all entries within that, pass a null string ("") in this parameter.
szValue	Specifies the value to assign to the unique key identified by szKeyName. To delete the key, pass a null string ("") in this parameter. To delete the value of the key but retain the key itself, pass a blank space in this parameter.

Return Values

Table 58 ▪ WriteProfString Return Values

Return Value	Description
0	Indicates that the function successfully wrote the string to the specified .ini file.
< 0	Indicates that the function was unable to write the string to the specified .ini file.

WriteProfString Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the WriteProfString function.
 *
 * This script updates a field in an initialization file in the
 * Windows directory.  If the file does not exist, it is created.
 *
\*---------------------------------------------------------------*/

// Define the initialization file name.
#define EXAMPLE_INI WINDIR ^ "ISExampl.ini"

// Define the initialization item and its new value.
#define    SECTION  "Windows"
#define    KEYNAME  "Keyboard"
#define    KEYVALUE "English"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_WriteProfString(HWND);

function ExFn_WriteProfString(hMSI)
begin

    // Update a field in the initialization file.
    if (WriteProfString (EXAMPLE_INI, SECTION, KEYNAME, KEYVALUE) < 0) then
        // Report the error.
        SprintfBox (SEVERE, "WriteProfString",
                    "%s could not be updated", EXAMPLE_INI);
    else
        // Report success.
        SprintfBox (INFORMATION, "WriteProfString", "%s was modified.", EXAMPLE_INI);
    endif;

end;
```

WriteStringProperty

Project ▪ *This information applies to InstallScript projects.*

The **WriteStringProperty** function is called in an object script to enter a value for a specified property whose value is a string.

Syntax

```
WriteStringProperty ( nPropertyBag, szPropertyName, szPropertyValue );
```

Parameters

Table 59 ▪ WriteStringProperty Parameters

Parameter	Description
nPropertyBag	Specifies a reference to the object's property bag object, in which property values are stored.
szPropertyName	Specifies the name of the property whose value you want to enter.
szPropertyValue	Specifies the value of the property.

Return Values

Table 60 ▪ WriteStringProperty Return Values

Return Value	Description
0	This function always returns zero (0).

XCopyFile

The **XCopyFile** function copies one or more files from a source directory to a target directory. The function creates and logs the target directory if necessary. This function can copy subdirectories as well as files. **XCopyFile** creates subdirectories on the target directory if necessary when the constant INCLUDE_SUBDIR is passed in the parameter nOp.

If you use this function to transfer files to WINSYSDIR64, you must first disable file system redirection using WOW64FSREDIRECTION. Otherwise, files being transferred to WINSYSDIR64 are incorrectly redirected to the 32-bit SysWOW64 folder. Since some Windows functionality that could be used by the installation requires that redirection be enabled to work, Windows documentation recommends that you disable redirection only for as long as necessary. It is recommended that you then enable file system redirection as soon as you have completed transferring the necessary files to WINSYSDIR64. To learn more, see Targeting 64-Bit Operating Systems with InstallScript Installations.

You cannot rename files using **XCopyFile**. To rename a file during a file copy operation, use the **CopyFile** function.

Tip ▪ *It is strongly recommended that you disable the Cancel button using the* **Disable** *function before calling the* **XCopyFile** *function if the status dialog is displayed during the copy. If you do not disable the Cancel button and the end user cancels during the copy file operation, the OnCancelling event handler is not called. Instead, the copy file operation returns a failure error code, which your script must handle by calling the appropriate event and then relaunching the copy file operation. You can enable and disable the Cancel button using the Enable and Disable functions.*

Note ▪ *If you use unqualified file names and set values for SRCDIR and TARGETDIR when using* **XCopyFile**, *save the current values using VarSave before calling* **XCopyFile** *and then restore them using VarRestore.*

Syntax

```
XCopyFile ( szSrcFile, szTargetPath, nOp );
```

Parameters

Table 61 ▪ XCopyFile Parameters

Parameter	Description
szSrcFile	Specify which files to copy. If the file specified is qualified—that is, if it includes a path—**XCopyFile** copies the file from the specified location. If szSrcFile contains an unqualified file name—without path information—**XCopyFile** copies from the folder that is identified by the system variable SRCDIR. To copy multiple files, use wildcard characters in this parameter. You can specify a valid URL in this parameter. If you pass a CGI or ASP request (for example, "http://www.mydomain.net/login.asp?name=Me&pwd=wow"), the response is sent to the file that is specified in the szTargetPath parameter. When passing a URL, do not include wildcard characters. To check the validity of a URL, call the following: `Is (VALID_PATH, szURL);`
szTargetPath	Specify the directory to which the files that are specified by szSrcFile should be copied. If this parameter contains a null string (""), the files are copied to the directory that is specified by the system variable TARGETDIR (in InstallScript installations) or INSTALLDIR (in Basic MSI and InstallScript MSI installations). You cannot specify a URL in this parameter. If you do, the function fails and returns ISERR_INVALID_ARG.

Table 61 ▪ XCopyFile Parameters (cont.)

Parameter	Description
nOp	Specify the type of copy operation to perform. Pass one of the following predefined constants in this parameter. To specify more than one option, combine constants with the OR (|) operator. • **COMP_NORMAL**—Copies files to the target system, updating existing same-named files regardless of date, time, or version information. • **COMP_UPDATE_SAME**—Update the files even if the date, time, or version of the source file is identical to the target file. You must also specify either COMP_UPDATE_DATE or COMP_UPDATE_VERSION with this constant. Otherwise, this constant is ignored. • **COMP_UPDATE_DATE**—Updates the files based on the file date and time. This constant updates the file if the source file is newer than the target file. • **COMP_UPDATE_VERSION**—Updates the files based on the file version. This constant updates the file if the source file is newer than the target file. If the file version does not exist in both the source and the target files, date and time are used for comparison. If the file version does not exist for only one file, InstallShield treats the file containing version information as the newer file. • **SELFREGISTER**—Carries out the self-registration process immediately, when using the "non-batch method" of installing self-registering files. If you have called Enable(SELFREGISTERBATCH), this option queues up self-registering files for registration. The files are registered once Do(SELFREGISTRATIONPROCESS) is called, when using the "batch method" of installing self-registering files. Always use SELFREGISTER together with the SHAREDFILE option, combining them with the bitwise OR operator (|). • **SHAREDFILE**—Combines shared and locked file handling by causing **XCopyFile** to treat all files as shared, and to record locked .dll and .exe files for update when Windows or the system restarts. For more information, see RebootDialog and SdFinishReboot. The SHAREDFILE option causes **XCopyFile** to treat all files as shared files and increment the registry reference counter by one when the file exists in the target directory and it has a reference count greater than 0. If the shared file does not exist in the target directory and it has no reference counter, the installation creates the counter and sets it to 1. If the shared file already exists in the target directory but has no reference counter, the installation creates the counter and initializes it to 2 as a precaution against accidental removal during uninstallation.

Table 61 ▪ XCopyFile Parameters (cont.)

Parameter	Description
	• **LOCKEDFILE**—Causes **XCopyFile** to record locked .dll and .exe files for update when Windows or the system is rebooted. A locked file is a file that is in use by an application or the system when the installation attempts to access or update the file. The LOCKEDFILE option works like SHAREDFILE except that LOCKEDFILE does not create registry entries or modify the registry reference counter. You cannot use the LOCKEDFILE option when using the SHAREDFILE option. There are some unshared files (such as shell extensions) for which the script writer does not want a registry entry and reference counter. These files should never be uninstalled, except by the application itself. LOCKEDFILE allows **XCopyFile** to handle locked files that are not shared. • **EXCLUDE_SUBDIR**—Specifies to exclude subdirectories contained in the source path. Note that empty subdirectories are not copied. • **INCLUDE_SUBDIR**—Specifies that subdirectories below the source path must also be copied. • **CLEAR_FILE_ATTR**—Specifies to clear the attributes of the copied file. When you use this parameter, the file in the target folder does not have any file attributes set by default. If you do not use this parameter, **XCopyFile** uses the attributes of the original file for the copied file.

Return Values

Table 62 ▪ XCopyFile Return Values

Return Value	Description
0	Indicates that the function successfully copied the files.
ISERR_INVALID_ARG	Indicates that an invalid argument was passed to the function.
All other negative values	Indicates that the function was unable to copy the files. You can obtain the error message text associated with a large negative return value—for example, -2147024891 (0x80070005)—by calling FormatMessage.

Additional Information

After you modify .ini files with **WriteProfString**, you must flush the cache buffer before using **XCopyFile**. All .ini files are cached; this behavior can cause a delay in writing changes to the specified files. This in turn can interfere with subsequent file operations. To avoid this problem, simply call **WriteProfString** with null parameters to force Windows to write the data to the .ini file immediately, as show below:

```
WriteProfString ("C:\\Test.ini", "Windows", "KeyboardDelay", "100");
// null string ("") for all four parameters
WriteProfString ("", "", "", "");
// XCopyFile should now have access to updated file.
```

```
XCopyFile ("C:\\Test.ini", "C:\\Temp", EXCLUDE_SUBDIR);
```

XCopyFile Example

Note ▪ *To call this function in a Basic MSI setup, you must first create a custom action for the entry-point function, execute the custom action in a sequence or as the result of a dialog's control event, and then build the release.*

```
/*---------------------------------------------------------------*\
 *
 * InstallShield Example Script
 *
 * Demonstrates the XCopyFile function.
 *
 * The first call to XCopyFile copies all text files,
 * regardless of date, time, or version.
 *
 * The second call copies program files and creates the
 * subdirectories that these files need to be located in.
 *
 * The third call copies template files based upon the date,
 * writing over target files that have the same or earlier date
 * as the source files.
 *
 * The fourth call copies sample files based upon the version
 * number, writing over target files that have an older version
 * number.
 *
 * Note: In order for this script to run correctly, you must
 *       set the preprocessor constants to a valid file name
 *       and path on the target system.
 *
\*---------------------------------------------------------------*/

#define SDIR          "C:\\ISExampl\\Source\\"
#define SDIR_PROGRAM  "C:\\ISExampl\\Source\\Program\\"
#define SDIR_TEMPLATE "C:\\ISExampl\\Source\\Template\\"
#define SDIR_SAMPLES  "C:\\ISExampl\\Source\\Samples\\"
#define TDIR          "C:\\ISExampl\\Target\\"

// Include Ifx.h for built-in InstallScript function prototypes.
#include "Ifx.h"

   export prototype ExFn_XCopyFile(HWND);

function ExFn_XCopyFile(hMSI)
    STRING szSrcFile;
    NUMBER nResult;
begin

    // Set variable to filespec for source files.
    szSrcFile = "*.txt";

    // Copy all text files in the source directory
```

```
    // into the target directory.
    if (XCopyFile (SDIR ^ szSrcFile, TDIR ^ "*.*", COMP_NORMAL) < 0) then
        MessageBox ("XCopyFile failed", SEVERE);
    else
        MessageBox ("Text files successfully copied.", INFORMATION);
    endif;

    // Set new variables.
    szSrcFile = "*.*";

    // Copy all program files in a source subdirectory to
    // a subdirectory of the target directory.

    if (XCopyFile (SDIR_PROGRAM ^ szSrcFile, TDIR ^ "PROGRAM" ^ "*.*",
        INCLUDE_SUBDIR) < 0) then
        MessageBox ("XCopyFile failed", SEVERE);
    else
        MessageBox ("Program files successfully copied.", INFORMATION);
    endif;

    // Copy all template files in a source subdirectory
    // to a subdirectory of the target directory.
    if (XCopyFile (SDIR_TEMPLATE ^ szSrcFile, TDIR ^ "TEMPLATE" ^ "*.*",
        COMP_UPDATE_SAME | COMP_UPDATE_DATE) < 0) then
        MessageBox ("XCopyFile failed", SEVERE);
    else
        MessageBox ("Template files successfully copied.", INFORMATION);
    endif;

    // Copy all sample files within a source subdirectory
    // to a subdirectory of the target directory.
    if (XCopyFile (SDIR_SAMPLES ^ szSrcFile, TDIR ^ "SAMPLES" ^ "*.*",
        COMP_UPDATE_VERSION) < 0) then
        MessageBox ("XCopyFile failed", SEVERE);
    else
        MessageBox ("Sample files successfully copied.", INFORMATION);
    endif;

end;
```

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