

HP Connect-It

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Programmer's Reference

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Chapter 1

Programming Fundamentals

This chapter presents the fundamentals of programming using the Basic language available in Connect-It. If you already have experience in programming and have used other languages, most of the information presented in this chapter will be familiar to you. However, we do recommend reading throughout this chapter because certain classic functions have been voluntarily left out of or limited in the implementation of Basic in Connect-It.

Introduction to Variables

Variables are used to store data during the execution of a program. They are identified by:

- Their name, used to reference the value contained by the variable.
- Their type, which determines which data can be stored in the variable.

In general, a distinction is made between two types of variables:

- Arrays
- Scalar variables, which include all variables that are not arrays.

Declaring a Variable

Variables must be explicitly declared before being used. The syntax of the declaration is as follows:

```
Dim <Name of the variable> [As <Type of the variable>]
```

Note: The explicit declaration of variables in Connect-It Basic is the same as using the Option Explicit keyword in Microsoft Visual Basic.

Variable names must meet the following constraints:

- Start with an uppercase or lowercase letter,
- Must have no more than 40 characters,
- Can contain the letters A to Z and a to z, the numbers 0 to 9, and the underscore character ("_").

Note: Accented characters are authorized but are advised against.

- Reserved keywords may not be used. For example, names of Basic functions and clauses are reserved keywords.

The optional **As** clause enables you to define the type of the defined variable. The type specifies the type of information stored in the variable. The available data types include: **String**, **Integer**, **Variant**, ...

If the **As** clause is omitted, the variable is considered as a Variant type.

Single declaration

In the case of a single declaration, each declaration statement concerns a single variable, as shown in the following example:

```
Dim I As Integer  
Dim strName As String  
Dim dNumber As Double
```

Combined declaration

In the case of a combined declaration, each declaration statement may concern any number of variables, as shown in the following example:

```
Dim I As Integer, strName As String, dNumber As Double  
Dim A, B, C As Integer
```

Note: As already described, when the type of the variable is not specified, by default it is considered as a **Variant**. Thus, in the second line of the above example, the type of the variables **A** and **B** is Variant and **C** is an Integer.

Data Types

The following table summarizes the various types available for a function or a parameter:

Type	Description
Integer	Integer from -32,768 to +32,767.
Long	Integer from -2,147,483,647 to +2,147,483,646.
Single	4-byte floating-point number (single precision).
Double	8-byte floating-point number (double precision).
String	Text in which all characters are allowed.
Date	Date or Date+Time.
Variant	Generic type that can represent any type.

Numerical types

The Basic language available in Connect-It offers several numerical types: Integer, Long, Single and Double. Numerical data types usually use less memory than a **Variant**.

If you are sure a variable will systematically store integers (such as 123) and not fractions (such as 3.14), it is better to declare it as an **Integer** or a **Long**. Operations performed on these data types are faster and required less memory than other data types. These data types are particularly well

suited to counters used in loops. If a variable must contain a fractional number, declare it as a **Single** or **Double**.

Note: Floating point numbers (**Single** or **Double**) can be subject to rounding errors.

The String type

If you are sure a variable will only store a character string, declare it as `String`:

```
Dim MyString As String
```

You will then be able to store character strings in this variable and manipulate its contents using the dedicated character string processing functions:

```
MyString = "This is a string"
```

```
MyString = Right(MyString,6)
```

By default, a **String** type variable is of variable size. The allotted size used to store character strings changes according to the size of the data assigned to the variable. However, it is possible to declare a **String** type variable using the following syntax:

```
Dim <Name of the variable> As String * <Size of the stored string>
```

The following example declares a variable containing 20 characters:

```
Dim MyString As String * 20
```

If you use this variable to store a string of less than 20 characters, spaces will be added to the end of the string as padding up until the intended size. On the other hand, if you store a string over 20 characters, the string will be truncated from the 21st character.

The Variant type

The **Variant** type is a generic type that can substitute for all other types. You do not need to worry about conversion issues between the different data types and **Variant**. Conversion is performed automatically, as shown in the following example:

```
Dim MyVariant As Variant
```

```
MyVariant = "123"
```

```
MyVariant = MyVariant - 23
```

```
MyVariant = "Top " & MyVariant
```

Even though conversion is automatic, make sure you follow the following rules:

- If you perform arithmetic operations on a **Variant**, it must contain a number, even if it is represented by a character string.
- If a concatenation operation involves a **Variant**, use the `&` operator rather than the `+` operator.

A **Variant** can also contain two special values: The empty value and the `Null` value.

The empty value

Before a value is assigned for the first time to a **Variant**, it contains the empty value. This value is a particular value and is not the same as 0, an empty string or the **Null** value. To test whether a **Variant** contains the empty value, use the Basic function `IsEmpty()`, as shown in the following example:

```
Dim MyFirstVariant As Variant
```

```
Dim MySecondVariant As Variant
```

```
If IsEmpty(MyFirstVariant) Then MyFirstVariant = 0
```

```
MySecondVariant = 0  
If IsEmpty(MySecondVariant) Then MySecondVariant = 123
```

A **Variant** containing the empty value can be used in expressions. Depending on the situation, it will be processed as the value 0 or an empty string. To reassign the empty value to a **Variant**, use the keyword **Empty**, as shown in the following example:

```
Dim MyVariant As Variant  
MyVariant = 123  
MyVariant = Empty
```

The Null value

The **Null** value is often used in databases to specify missing or unknown values. This value has special qualities:

- Expression that include the **Null** value always return the Null value. The **Null** value is said to be propagated in the expressions. If part of the expression is **Null**, then all of the expression is **Null**.
- As a general rule, if a function parameter is set to **Null**, the function returns the **Null** value.

Data Arrays

An array enables you to store and reference a set of variables under a single name and use a number (an index) to uniquely identify them. All array items must have the same data type. You cannot create an array containing both **String** and **Double** values. The **Variant** type can be used to work around this limitation.

Declaring an array

An array is a set of variables. By convention, the following notions are presented as follows:

- Lower limit of the array: Index of the first item.
Note:By default, the lower limit of an array is 0.
- Upper limit of the array: Index of the last item.
Note:The upper limit of an array may not exceed the size of a **Long** (2 147 483 646 items).

Declaring an array is similar to declaring a variable:

```
Dim <Name of the array>(<Upper limit of the array>) [As <Data type of the  
variables contained in the array>]
```

Examples:

```
Dim MyFirstArray(30) As String ' 31 elements  
Dim MySecondArray(9) As Double ' 10 elements
```

You can also specify the lower limit of the array by using the following declaration:

```
Dim <Name of the array>(<Lower limit of the array> To <Upper limit of the  
array>) [As <Data type of the variables contained in the array>]
```

Examples:

```
Dim MyFirstArray(1 To 30) As String ' 30 elements  
Dim MySecondArray(5 To 9) As Double ' 5 elements
```

Limitations

The following limitations apply to arrays in Connect-It Basic:

- Variable size arrays are not supported. In particular, it is not possible to resize an array on the fly.
- Multi-dimensional arrays are not supported.

Control Structures

As their name suggests, control structures make it possible to control the execution of a program. There are two sorts of control structures:

- Decision structures: redirect and guide a program as a result of certain conditions,
- Loop structures: make it possible to repeat program sections depending on certain conditions.

Decision Structures

A decision structure conditionally executes instructions depending on the results of a test. The following decision structures are available:

- **If...Then**
- **If...Then...Else...End If**
- **Select Case**

If...Then

Use this structure to conditionally execute one or more instructions. The syntax of this structure allows for single line and multiple line statements. Single line statements may only execute one single instruction:

```
If <Condition> Then <Instruction>
```

```
If <Condition> Then  
<Instructions>  
End If
```

The condition is generally a comparison, however any expression that results in a numerical value can be used. This value is interpreted as **True** or **False** by the Basic code. **False** corresponds to 0; All other values are considered **True**.

If the condition is evaluated as True, the instruction or instructions following the keyword **Then** will be executed.

If...Then...Else...End If

Use this structure to define multiple conditional instruction blocks. Only the first of these blocks evaluated as **True** will be executed.


```
If <Condition1> Then
<Instructions1>
ElseIf <Condition2> Then
<Instructions2>
...
Else
<InstructionsN>
End If
```

The first condition is tested, if the result is evaluated as **False**, the second condition is tested and so on until one of them is evaluated as **True**. The instruction set after the keyword **Then** is executed.

The keyword **Else** is optional. It makes it possible to define an instruction set to be executed if all the conditions are evaluated as **False**.

Note: You can nest as many **Elseif** instructions as you like in the decision structure. However, if you systematically compare the same expression with a different value, the syntax of the decision structure can become unnecessarily complex and difficult to read. In this case, we advise you to use a **Select...Case** type decision structure.

Select...Case

This structure serves the same purpose as the previous decision structures, but in general, the resulting code is more readable. A **Select...Case** function performs a single test at the start of the structure and compares the test result with the values given by each **Case** in the structure. If there is a match, the instruction set associated with the **Case** is executed.

```
Select Case <Test>
[Case <value 1>
<Instructions1>]
[Case <value 2>
<Instructions2>]
...
[Case Else
<Instructionsn>]
End Select
```

The instruction set associated with the **Case Else** keyword is executed if no match is found for the **Case** keywords.

Important: Multiple selection is not supported when using the **Case** instruction.

The following script will execute correctly:

```
Dim i as integer
For i= 1 to 10
Select case i
Case 1 Print ("1")
Case 2 Print ("2")
Case 3 Print ("3")
Case Else Print ("Others")
End Select
Next i
```

The following script produces an error:

```
Dim i as integer
For i= 1 to 10
Select case i
Case 1,2,3 Print ("a lot")
Case 1 to 5 Print ("a lot too")
Case Else Print ("Others")
End Select
Next i
```

Loop Structures

A loop structure enables you to repeat the execution of a series of instructions. The following loop structures are available:

- **Do...Loop**
- **For...Next**

Do...Loop

Use this structure to execute a series of instructions an undefined number of times. The loop is exited when a condition is met or is not met. This condition is a value or an expression that is evaluated as **False** (0) or **True** (not 0).

It is possible to exit the loop by force by using the **Exit Do** keyword in the executed instructions. There are several variations on this structure, but the most common one is the following:

```
Do While <Condition>
<Instructions>
Loop
```

In this case, the condition is evaluated first. If it is **True**, the instructions are executed and the program returns to the **Do While** keyword, test the condition again and so on. The loop is exited when the condition is evaluated as **False**.

The following example tests the value of a counter, incremented at each iteration of the loop. The loop is executed when the counter reaches 20.

```
Dim iCounter As Integer
iCounter = 0
Do While iCounter < 20
iCounter = iCounter +1
Loop
```

The following example is based on the previous one but exits the loop by force using the **Exit Do** keyword if the counter contains the value 10.

```
Dim iCounter As Integer
iCounter = 0
Do While iCounter < 20
iCounter = iCounter +1
If iCounter = 10 Then Exit Do
Loop
```

In this type of **Do...Loop** structure, the condition is evaluated before executing the instructions. If you wish to execute the instruction and then test the condition, use the following **Do...Loop** structure:

```
Do
<Instructions>
Loop While <Condition>
```

Note: This type of structure guarantees that at least one of the instructions will be executed.

The two previous **Do...Loop** structures iterate for as long as the condition is **True**. If you wish to iterate while the condition is **False**, use one of the following structures:

```
Do Until <Condition>
<Instructions>
Loop
Do
<Instructions>
Loop Until <Condition>
```

Using this structure type, the previous example can be written:

```
Dim iCounter As Integer
iCounter = 0
Do Until iCounter = 20
iCounter = iCounter +1
Loop
```

For...Next

Use this structure to execute a series of instructions an undefined number of times. Unlike **Do...Loop**, a **For...Next** loop uses a variable called a counter whose value is incremented or decremented at each iteration.

Note: It is possible to exit the loop by force by using the **Exit For** keyword in the executed instructions.

```
For <Counter> = <Initial value> To <Final value> [Step <Increment>] <Instructions>
Next [<Counter>]
```

Important: The arguments Counter, Initial value, Final value and Increment are all represented by numerical values.

Note: Increment may be a positive or negative value. If it is positive, the **Initial** value must be less than or equal to the **Final** value in order for the instructions to be executed. If it is negative, the **Initial** value must be greater than or equal to the **Final** value in order for the instructions to be executed. If the **Increment** is not specified, by default it is set to 1.

When a **For...Next** loop is executed, the following operations are performed:

1. The counter initializes and stores the initial value,
2. The Basic codes tests whether the value of the counter is greater than the final value. If this is the case, the program exits the loop.

Note: *If the increment is negative, the Basic test whether the value of the counter is less than the final value.*

3. The instructions are executed.
4. The counter incremented by 1 or the specified value.
5. Operations 2 through 4 are repeated.

The following operation sums all even number up to 1000:

```
Dim iCounter As Integer, lSum As Long
For iCounter = 0 To 1000 Step 2
    lSum = lSum + iCounter
Next
```

The following example is based on the previous one but exits the loop by force using the **Exit For** keyword if the counter contains the value 500.

```
Dim iCounter As Integer, lSum As Long
For iCounter = 0 To 1000 Step 2
    lSum = lSum + iCounter
    If iCounter = 500 Then Exit For
Next
```

Operators

Operators are symbols than enable you to perform simple operations (addition, multiplication, etc.) on variables or compare them. There are several different types of counters:

- Assignment operators
- Arithmetic operators
- Relational operators (also called assignment operators)
- Logical operators

Assignment Operators

This type of operator enables you to assign a value to a variable. Connect-It Basic uses one single assignment operator, the "=" sign. The assignment syntax is as follows:

```
<Variable> = <Value>
```

Arithmetic Operators

Arithmetic operators enable you to modify the value of a variable arithmetically, or to perform simple arithmetic operations between two expressions.

The + operator

This operator enables you to sum two values. The syntax is as follows:

```
<Result> = <Expression 1> + <Expression 2>
```

Note: This operator is used both to sum two numbers and to concatenate strings. To avoid any ambiguity, we recommend you use this operator just for sum operations and to use the **&** operator to concatenate strings.

The - operator

This operator enables you to differentiate between two values or to negatively sign (monadic operator) a value. The operator has two syntaxes:

<Result> = <Expression 1> - <Expression 2> or - <Expression>

The * operator

This operator enables you to multiply two values. The syntax is the following:

<Result> = <Expression 1> * <Expression 2>

The / operator

This operator enables you to perform a division between two values. The syntax is as follows:

<Result> = <Expression 1> / <Expression 2>

The ^ operator

This operator enables you to raise a value to the power of an exponent. The syntax is as follows:

<Result> = <Expression 1> ^ <Expression 2>

Note: In this syntax, expression 1 cannot be negative if expression 2 (the exponent) is an integer. When an expression performs several exponential operations in a series, they are interpreted logically from left to right.

The Mod operator

This operator calculates the remainder of the eucliden division of two values. The syntax is as follows:

<Result> = <Expression 1> Mod <Expression 2>

Note: Floating-point numbers are automatically rounded to integers. The following example returns 4 (6.8 is rounded to the nearest integer, 7):

```
Dim iValue As Integer iValue = 25 Mod 6.8
```

Relational Operators

Relational operators enable you to compare two values. The following table summarizes the relational operators:

Operator	Denomination	Description	Syntax
=	Equality operator	Compares two values and verifies their equality	<Expression 1> = <Expression 2>
<	Less-than operator	Tests whether a value is strictly less than another	<Expression 1> < <Expression 2>
<=	Less-than or equal to operator	Test whether a value is less than or equal to another	<Expression 1> <= <Expression 2>

Operator	Denomination	Description	Syntax
>	Greater-than operator	Tests whether a value is strictly greater than another	<Expression 1> > <Expression 2>
>=	Greater-than or equal to operator	Tests whether a value is greater than or equal to another	<Expression 1> >= < Expression 2>
<>	Inequality operator	Tests whether a value is different from another	<Expression 1> <> < Expression 2>

Logical Operators

Logical operators enable you to evaluate several conditions.

The And operator

This operator performs a logical AND (both conditions must be true) on two expressions.

The syntax is as follows:

```
<Result> = <Expression 1> And <Expression 2>
```

If each expression (operand) is evaluated as **True**, the result is **True**. If either of the expressions is evaluated as **False**, the result is **False**.

The Or operator

This operator performs a logical OR (either of the conditions must be true) on two expressions.

The syntax is as follows:

```
<Result> = <Expression 1> Or <Expression 2>
```

If either expression is evaluated as **True**, the result is **True**.

The Xor operator

This operator performs an eXclusive OR (only one of the two conditions must be true) on two expressions.

The syntax is as follows:

```
<Result> = <Expression 1> Xor <Expression 2>
```

If only one of the expressions is evaluated as **True**, result is **True**.

The Not operator

This operator is used to perform the logical negation on an expression.

The syntax is as follows:

```
<Result> = Not <Expression 1>
```

If the expression is evaluated as **True**, the result is **False**. If the expression is evaluated as **False**, the result is **True**.

Operator Priority

When more than one operators are combined, the following order of priority is used when evaluating expressions. The operators are listed in decreasing order of priority:

1. ()
2. ^
3. -, +
4. /, *
5. Mod
6. =, >, <, <=, >=
7. Not
8. And
9. Or
10. Xor

File Management

Connect-It Basic enables simplified file management. The most common operations (read, write, etc.) are available as standard.

Reminder concerning files

A file is way in which a program sees and external object. It is a collection of logical records, that may or may not be structured, on which the program can execute a set of elementary operations (read, write, etc.). A logical record represents the minimum set of data that can be manipulated by a single elementary operation.

Connect-It can only handle so-called sequential files. In a sequential file, operations mainly concern reading the next record or appending a new record to the end of the file. It is not possible to simultaneously read and write records. When read, cursor is placed on the first logical record of the sequential file. Each read operation transfers a record to an internal zone (generally a variable) of the program and places the cursor on the next record of the file. An operation enables you to determine whether there are any remaining records to be read (**EOF** clause: End Of File).

When written to, the sequential file is either empty or the cursor is placed after the last record in the file. Each write operation transfers data stored in an internal zone (generally a variable) of the program, to a record in the file and then moves the cursor after this record.

Note: One of the main features of a sequential file is that the records are read in the order they are written.

Opening and Closing Files

The Open clause

This is the main clause used to manipulate files. It enables you to read, create and write to a files. The syntax is as follows:

```
Open <Path of the file> For <Mode> [Access <Access type>] As [#]<File number>
```

The parameters of this clause are detailed in the following table:

Parameter	Description
<Path of the file>	Character string specifying the file concerned by the operation. This string can contain the full path of the file.
<Mode>	Specifies the processing mode of the file. This parameter may contain one of the following values: <ul style="list-style-type: none"> • Input: The file is open in read mode. • Output: The file is open in write mode. If the file already exists and has existing content, this is overwritten. • Append: The file is open in write mode. If the file already exists and has existing content, the new content is appended to the end of the file.
<Access type>	Specifies the operations than can be performed on an open file. If the file is opened by another process and the specified access is not authorized, the file open command fails. This parameter can be set to any of the following values: <ul style="list-style-type: none"> • Read: The file is open for read-only access • Write: The file is open for write-only access • Read Write: The file is opened in readwrite mode. This type of access is only available for Append mode.
<File number>	Identifies the file using a unique number between 1 and 511. The FreeFile() function enables you to determine the next available file number.

Note: Bear the following points in mind:

- *Files must be opened using the **Open** clause before any read or write operations on the file.*
- *In **Append**, **Binary** or **Output** mode, if the referenced file does not exist, it is created.*
- *In **Binary** or **Input** mode, you can open a file using a different number without having to close the file first. In **Append** or **Output** mode, you must first close a file before opening it again with a different number.*

The Close clause

This clause enables you to close a file that was opened using a the Open. The syntax is as follows:
Close [<List of files>]

The optional **<List of files>** argument can contain one or more file numbers.

This syntax of this optional argument is as follows:

```
[[#]<File number>][,[#]<File number>]...
```

Note: If you omit this parameter from the clause, all active files opened by the **Open()** clause are closed.

Reading Data from Files

Two clauses are available for reading data from a file. Using one or the other clause will depend on the specified access mode for the file. The two clauses are the following:

- **Input**
- **Line Input**

Input clause

This clause is used to read a given number of characters from a file open in Binary or Input mode. The syntax of this clause is as follows:

```
Input (<Number characters to read>,[#]<File number>)
```

Line Input clause

This clause is used to read a line of data from a sequential file, and to store it in a **String** or **Variant** type variable. The syntax of this file is as follows:

```
Line Input #<File number>, <Name of the variable>
```

Note: The clause reads the characters one by one until a carriage return or carriage return - new line is reached.

Writing Data to a File

One single clause, **Print**, enables you to write data to a file. The syntax of this clause is as follows:

```
Print #<File number>, [<Data>]
```

Note:The **Print** clause writes data to the file on a single line until a linefeed character (ASCII code 10) is encountered.

For example:

```
Open "c:\test.txt" For Output As #1  
Print #1, "This is a test" & Chr(10)  
Print #1, "And now we can close the file..." & Chr(10)  
Close #1
```

Conventions

Notation

The following notation is used in the examples in this manual:

Symbol	Description
[]	Square brackets denote an optional parameter. Do not type these brackets in your command. Exception: In Basic scripts, when the square brackets denote the path to data in the database with the form: [Link.Link.Field]
<>	Angle brackets denote a parameter in plain language. Do not type these brackets. Substitute the text with the appropriate information.
{ }	Curly brackets surround the definition of a node or a multi-lined script block for a property.
	A pipe is used to separate a series of possible parameters contained within curly brackets.
Fixed width characters	DOS command, function parameter or data formatting.
Example	Example of code or command.
Object name	The names of fields, tabs, menus and files are shown in bold.
Note:	Important note.

"Date+Time" Format

Dates referenced in scripts are expressed in international format, independently of the display options specified by the user:

yyyy/mm/dd hh:mm:ss

For example:

```
RetVal="1998/07/12 13:05:00"
```

Note: The hyphen ("-") can also be used as a date separator.

Basic and Unix date

Dates are expressed differently in Basic and in Unix:

- In Basic, a date can be expressed in international format, or as a floating point number ("Double" type). In this case, the integer part of the number represents the number of days elapsed since 1899-12-30 at midnight, the decimal part represents the fraction of the current date. (The number of seconds elapsed since the start of the day divided by 86400.)

- In Unix, dates are expressed as a long integer ("Long" type) that represents the number of seconds elapsed since 01/01/1870 at midnight, independent of time zones (UTC time).

Duration Format

In scripts, durations are stored and expressed in seconds. For example, to set the default value for a "Duration" type field to 3 days, use the following script:

```
RetVal=259200
```

Likewise, functions that calculate durations return a number in seconds.

Note: In financial calculations, Connect-It takes into account the most common simplifications used. In this case alone, a year is considered as being 12 months and 1 month as 30 days (thus: 1 year = 360 days).

Definitions

Definition of a function

A function is a program that performs operations and returns a value to the user. This value is called the "return value" or "return code". The following is an example of the syntax used to call a function using the Connect-It internal Basic:

```
PifIgnoreDocumentMapping(strMsg As String) As Long
```

Definition of an error code

When a function fails, it returns an error code. The description of the last error and its code can be found using the **Err.Description** and **Err.Number**. You can trigger an error message intentionally using the **Err.Raise** function. Its syntax is as follows:

```
Err.Raise (<Error number>, <Error message>)
```

The following table lists the most frequent error codes:

Error code	Meaning
12001	Undefined error
12002	Bad parameter for a function
12003	Invalid handle or object deleted
12004	No more data available. This error typically occurs when executing queries. When the query does not return data, this error is raised.
12006	Invalid value (incorrect type for a parameter, etc.)
12009	Obsolete or non implemented function

Function Typing and Parameters

Type of a parameter

The parameters that can be used in functions also have a type that must be respected in order for the proper execution of the function. In the syntax of functions, parameters are prefixed according to their type. The following table resumes the various types and their associated prefixes:

Type	Description	Prefix used in the Basic syntax
Integer	Integer from -32,768 to +32,767.	"i"
Long	Integer from -2,147,483,647 to +2,147,483,646.	"l"
Single	4-byte floating-point number (single precision).	
Double	8-byte floating-point number (double precision).	"d"
String	Text in which all characters are allowed.	"str"
Date	Date or Date+Time.	"dt"
Variant	Generic type that can represent any type.	"v"

Type of a function

The type of a function corresponds to the type of the value returned by the function. We recommend paying close attention to this piece of information since it can be at the origin of compilation and runtime errors in your programs.

Examples of Scripts

This section presents sample scripts sorted according to the different elements that they use.

Basic Functions

If, Then, Else, Else If, End If

```
If <condition> Then
<Instructions>
Else If <condition> Then
<Instructions>
Else
<Instructions>
End If
```

Note: About logical fields (Boolean): Logical fields are represented as 8-bit integers. The value "true" in Basic is equal to -1. Certain scripts concerning logical fields can pose problems:

```
if [logicalfield] = true Then
```

If the value "true" defined for your database is 1 and the value "false" is 0, then, for this script, the value returned will be 1, and "false" as understood in Basic.

For example:

```
Dim strVal As String
(...)
If strVal = "" Then
RetVal = "Empty"
```

```
ElseIf strVal = "Default" Then
RetVal = "Default"
Else
RetVal = "Unknown"
End If
```

This script returns the value:

- **Empty** if the text field of a produced document doesn't contain any information.
- **Default** if the text field of a produced document contains the default information.
- **Unknown** if the text field of a produced document contains any other information.

For Loop

This function enables you to create a loop.

```
For <counter variable> = <start> to <end>
<Instructions>
Next
```

For example:

```
For i=0 To 10 Step 2
PifLogInfoMsg(i)
Next
```

This script returns the value i in the Document log. You will see the following in the Document log:

```
0
2
4
6
8
10
```

While Loop

This instruction enables you to create a loop.

```
While loop
While <conditions>
<instructions>
WEnd
```

For example:

```
Dim i As Integer
i = 0
While i < 10
i = i + 2
PifLogInfoMsg(i)
WEnd
```

This script returns the value i in the Document log if this value is less than 10.

You will see the following in the Document log:

```
0
2
4
6
8
10
```

Return

In the script, if the conditions defined before this function are not respected then the rest of the script is ignored.

```
<conditions>
Return
<conditions>
```

For example:

```
If [MacAddress] = "" And [IPAddress] = "" Then
PifIgnoreNodemapping
Return
End If
If [MacAddress] <> "" Then
RetVal = [MacAddress]
Else
RetVal = [IPAddress]
End If
```

This script tests whether the **MacAddress** and **IPAddress** fields of a produced document have not got an empty value. If this condition is fulfilled:

- the current node is ignored
- the end of the script is not executed

Select

This function enables you to execute a block of instructions according to the value of a variable.

```
Select Case <variable to test>
Case <variable 1>
Instruction block
Case <variable 2>
Instruction block
Case <variable 3>
Instruction block
...
Case <variable n>
Instruction block
Case Else
End Select
```

For example:

```
Select Case [seStatus]
```

```
Case 0  
RetVal = "Opened"  
Case 1  
RetVal = "Closed"  
Case Else  
RetVal = "Unknown status"  
End Select
```

In this example:

- The source document's **seStatus** field corresponds to the status of a ticket.
- The status of the ticket is:
 - 0 = open ticket
 - 1 = closed ticket

This script associates the character string describing the status of the ticket to the numeric value of the source field. If the status is unknown, the **Unknown Status** value is returned.

Pif Functions

The **Pif** functions have been specially developed for Connect-It mapping scripts.

PifIgnoreDocumentMapping

This function enables you to ignore the processing of a document.

```
<conditions>  
PifIgnoreDocumentMapping("<message>")  
</conditions>
```

("message") enables you to display an error message in the document log for the ignored element. The specification of a **retval** function implies that the **PifIgnore** function is executed on a field chosen as a reconciliation key.

For example:

```
If [MacAddress] = ""  
Then PifIgnoreDocumentMapping("Missing MacAddress")  
End If  
RetVal = [MacAddress]
```

We use the **MacAddress** field for a reconciliation key. If this field does not contain a value, the document is ignored. The message **Missing MacAddress** field is shown in the document log.

PifRejectDocumentMapping

This function enables you to reject a source document and to not send it to the destination connector. This applies to any element of the document:

- root node
- structure
- collection
- field

```
<instructions>  
PifRejectDocumentMapping("message")  
</instructions>
```

("message") enables you to display an error message in the document log for the ignored element. The specification of a **retval** function implies that the **PifIgnore** function is executed on a field chosen as a reconciliation key.

For example:

```
If [MacAdress] = "" Then  
PifRejectDocumentMapping("Missing MacAdress")  
End If  
RetVal = [MacAdress]
```

We use the **MacAdress** field for a reconciliation key. If this field does not contain a value, the document is ignored. The message **Missing MacAdress** field is shown in the document log.

PifIgnoreNodeMapping

This function enables you to ignore any element in a document type. This element can be:

- The root node of the document
- A structure
- A collection
- A field

The behavior of the **PifIgnoreNodeMapping** function is different depending on whether it concerns a collection or not. If this instruction concerns a collection, only the current member of the collection is ignored. If you want to ignore all members of the collection, use the **PifIgnoreCollectionMapping** instruction.

```
(...)  
PifIgnoreNodeMapping("Message")  
(...)
```

("message") enables you to display an error message in the document log for the ignored element. The specification of a **retval** function implies that the **PifIgnore** function is executed on a field chosen as a reconciliation key.

For example:

```
If [MacAdress] = "" Then  
PifIgnoreNodeMapping
```



```
End If  
RetVal = [MacAddress]
```

This script enables you to avoid updating with an empty string if the field or the structure containing the MAC address field is empty. If the field is populated then the update is performed.

```
If Left([Software.Name], 7) = "Windows" Then  
PifIgnoreNodeMapping  
ElseIf Left([Software.Name], 5) = "SunOS" Then  
PifIgnoreDocumentMapping  
End If
```

This script enables you to ignore the member of a collection if the **Software.Name** field of this member is set to Windows or SunOS.

PifIgnoreCollectionMapping

This function enables you to ignore a collection of a produced document-type during a collection to collection mapping.

```
<instructions>  
PifIgnoreCollectionMapping  
<instructions>
```

For example:

```
Dim i As Integer  
Dim iCount As Long  
Count = PifGetItemCount("Logs")  
For i=0 To iCount - 1  
If [Logs(i).LogType] = 1 Then  
Return  
End If  
Next  
PifIgnoreCollectionMapping
```

For a processing report, this script enables all the members of the logs collection to be ignored if there is no error message. If the document does not contain an error, it is not necessary to carry out such a script. The **ErrorNumber** field contains the number of errors associated to a document.

The previous script can be replaced by the following:

```
If [ErrorNumber] = 0 Then  
PifIgnoreCollectionMapping  
End If
```

Collections

Creating members in a collection from a list of values

This section presents a script example enabling you to create a member in a given collection from a list of values from a source document. In this example:

- This **Software** source field contains a list of values.
- The values are separated by a given separator.

The script:

- Extracts the software names one by one.
- Creates a member in the **SoftInstalled** destination collection.

Populates the **Name** element with the name of the extracted software.

```
Dim iCount As Integer Dim iIndex As Integer Dim strSoft As String Dim lDummy As Long
Dim strPath As String

' Count of number of values in the "Software" source field
' the software names are separated by the separator (' '), for example: "Excel,
Connect-It, ' Asset Manager" iCount = CountValues([Software], ",")
' Loops around all the elements in the list to extract them one by one. For
iIndex = 0 To iCount - 1
strSoft = GetListItem([Software], ",", iIndex+1)
' Deletion of spaces around the name of the software
strSoft = Trim(strSoft)
' Creation of the path of the destination collection from the root element
' For example, for the third source software, the path "SoftInstalled(3).Name"
is created
strPath = "SoftInstalled" (& iIndex & ").Name"
' Assigning of the current value of character string software to the path using
' the function PifSetStringVal.
' The function PifSetStringVal returns an error code if the path is not valid,
it is
' necessary to assign in a variable the return value of the function. The
function will not
' be applied in the opposite case.
lDummy = PifSetStringVal(strPath, strSoft)
Next iIndex
```

This mapping script can be applied on any destination-document type element. To better read the mapping, we recommend that you do the mapping on the collection to which the members must be added.

Warning:The element indicated by its path when calling on the Basic function **PifSetStringVal** must be present in the destination document-type. In the present example, the **Name** element of the **SoftInstalled** collection must be added by the user in the consumed document-type.

Concatenating members of a collection in a field

In this example:

- The source document contains a collection of values.
- This element's collections are mapped to a destination document-type field.

The source contains the collection of software installed on a computer. The different names of the software must be written in a field containing the list of software, separated by a comma (',').

```
Dim iCollectionCount As Long
iCollectionCount = PifGetItemCount("SoftInstalled")
Dim strList As String
Dim iItem As Integer
```

For each element in the collection, recover the name of the software (Element "Name" of the collection "SoftInstalled") and concatenate it with the current list.

```
For iItem = 0 to iCollectionCount - 1
' Add the name separator if the list is not empty
If strList = "" Then
strList = strList & ", "
' Add the name of the software to the current list.
' Note that it is possible to directly use a variable to indicate the number
' of a member in a collection. For example, if the variable of iItem is 3, the
path
' [SoftInstalled(3).Name] will automatically be created from the value of iItem.
strList = strList & ", " [SoftInstalled(iItem).Name]
Next iItem
' Assign the variable strList to the target element
```

Mapping several fields in a collection

In this example:

- The source document contains several distinct fields. Here, the **Address1** and **Address2** have the two possible addresses of a client.
- The value of these fields must be associated to a member of the destination collection. Here, the collection **Address**.

You must do the following:

- Create two members in the destination collection and associated them to the "Adress1" and "Address2" fields.
- Use the collection-duplication function:
 1. Add the **Address** collection to the destination document-type.
 2. Duplicate this collection. The **Address#1** collection appears in the destination document-type.
 3. The mapping scripts [Address1] and [Address2] must be applied to the fields **Address.Address** and **Address#1.Address**, respectively.

To ignore certain members in a collection, you must use the **PifIgnoreCollectionMapping** and **PifIgnoreNodeMapping** instructions.

Script Concerning a Connector not Included in a Mapping

The following example describes the integration in a scenario (which concerns the replication of data between a database and a ServiceCenter database) of an Asset Manager database. The script imports an employee. During the import, the script verifies whether the employee exists in the Asset Manager and changes the mapping accordingly.

1. Add an Asset Manager connector to your scenario. This connector is not required to be linked to a mapping box or another connector, just its title is important (**Connector name** field of the connector configuration wizard) because it will be used in the script. Here, the connector is called Asset Management.
2. Create a new document type produced by the Asset Manager connector. Select the Departments and Employees table (**amEmpIDept**) and call the produced document type (**Document type** field) **amEmpIDeptForMapping**. This name will be used in the script. Note: If you define WHERE or ORDER BY clauses, they are not taken into account in the sample script.

3. In the mapping box, populate the script field as follows:

```
dim hQuery as long dim iRc as long hQuery = pifNewQueryFromFmtName("Asset
Management", "amEmpIDeptForMapping", "Name like 'A%'") Dim strValue as
string while (iRc = 0)
iRc = pifQueryNext(hQuery)
if iRc = 0 then
strValue = pifQueryGetStringVal(hQuery, "Name")
piflogInfoMsg strValue
end if
wend
iRc = pifQueryClose(hQuery)
```

Syntax of the **pifNewQueryFromFmtName** function

This function creates a query on a document type first defined in the list of documents produced by a resource. Note that this function only applies to ServiceCenter/Service Manager, Asset Manager and Database connectors. The parameters of the function are as follows:

- **strCntrName**: This parameter contains the name of the resource (on which the query is performed).
- **strFmtName**: This parameter contains the name of the document type (that has been defined as the produced document type).
- **strLayer**: This parameter contains the production directives (for example, a WHERE clause).

The function returns a handle (here, the **hQuery** parameter). This handle must be passed as a parameter to the **PifQueryNext** in order to browse the list of returned records.

The data from the current document can then be recovered using one of the following functions (depending on the field type):

- `pifQueryGetStringVal()`
- `pifQueryGetDateVal()`
- `pifQueryGetDoubleVal()`
- `pifQueryGetLongVal()`
- `pifQueryGetIntVal()`

Each of these functions has two parameters:

- The handle (**hQuery**) of the query to use (32-bit long integer)
- Path of the element for which we want to recover a value. This path must not contain the name of the root element of the document type (**amEmplDept** in this example).

In this example, the function returns the name of the employee:

```
strValue = pifQueryGetStringVal(hQuery, "Name")
```

Production directives of the `pifNewQueryFromFmtName` function

The `pifNewQueryFromFmtName` function uses simple parameters. You can, however, define complex queries in XML format. The production directives can be given in XML, using the following syntax:

```
strLayer = "<Directives>"  
strLayer = strLayer + "<Where>Name = 'Taltek'</Where>"  
strLayer = strLayer + "<OrderBy>BarCode</OrderBy>"  
strLayer = strLayer + "<Where Path='ItemsUsed'>AssetTag like 'A%'</Where>"  
strLayer = strLayer + "</Directives>"  
hQuery = pifNewQueryFromFmtName("Asset Management", "amEmplDeptForMapping"  
, strLayer)
```

XML syntax

The `&`, `<` and `>` characters are not authorized. You must replace them with `&`, `<` and `>` respectively. The Basic function `GetXmlElementValue` handles the substitution of these characters.

For example:

```
strLayer = strLayer + "<Where Path='ItemsUsed'>" + GetXmlElementValue("AssetTag like 'A%'") + "</Where>"
```

Query on Fields Containing a Period or Comma

In the following commented example, a query involves the **elements** `mac.address` and `logical.name` of an HP Network Discovery - ServiceCenter scenario. The script validates the MAC

address provided by the IND connector before assigning it a reconciliation key. If the MAC address is validated, the information from the **logical.name** field is recovered instead of from the **mac.address** field.

```
dim hQuery as long
dim iRc as long
dim strQuery as String
strQuery = "mac.address = " & chr(34) & [MACAddress] & chr(34) "MAC address in
the PDI document
hQuery = pifNewQueryFromFmtName("ServiceCenter", "pc1",
strQuery) "pc1 is the document produced for the ServiceCenter Computers table
Dim strValue as String
strValue = [MACAddress] "
strValue by default

iRc = pifQueryNext(hQuery)
if iRc = 0 then "
"query finished because iRc=0
strValue = pifQueryGetStringVal(hQuery, "'logical.name'")
"Single quotes define the parameter logical.name as a field and not a path
pifLogWarningMsg("Matched Asset using query: " & strQuery)
"write to document log
pifLogWarningMsg("Updating Asset " & strValue)
"strValue is not written to the document log
else
pifLogWarningMsg("Could not locate existing asset using MAC address " & [M
acAddress])
end if

iRc = pifQueryClose(hQuery)
If strValue = "" then
"This code is executed when pifQueryNext returns 0.
pifLogWarningMsg("pifQueryGetStringVal returned no data. Logical.name will be "
& [MACAddress])
RetVal = [MACAddress]
Else
RetVal = strValue
End If
```

Chapter 2

Functions

This section explains the functions available through Connect-It.

Abs()

Syntax	Function Abs(dValue As Double) As Double
Description	Returns the absolute value of a number.
Input parameters	<ul style="list-style-type: none">• dValue: Number for which you want to know the absolute value.
Example	<pre>Dim iSeed as Integer iSeed = Int((10*Rnd)-5) RetVal = Abs(iSeed) If the random number is -1, the value returned will be 15.</pre>

AppendOperand()

Syntax	Function AppendOperand(strExpr As String, strOperator As String, strOperand As String) As String
Description	Concatenates a string according to the parameters passed to the function. The results are given as follows: <code>strExpr strOperator strOperand</code> Note: If one of the strExpr or strOperand parameters is omitted, strOperator is not used in the concatenation.
Input parameters	<ul style="list-style-type: none">• strExpr: Expression to be concatenated.• strOperator: Operator to concatenate.• strOperand: Operand to concatenate.
Example	<pre>Dim strExpr as string Dim strOperator as string Dim strOperand as string strExpr = "Connect" strOperator = "-" W strOperand = "It" ' RetVal = AppendOperand(strExpr, strOperator, strOperand) The value returned would be Connect-It.</pre>

ApplyNewVals()

Syntax	Function ApplyNewVals(strValues As String, strNewVals As String, strRows As String, strRowFormat As String) As String
Description	Assigns identical values to identical cells in a "ListBox" control.
Input parameters	<ul style="list-style-type: none">• strValues: Source string containing the values of a "ListBox" control to be processed.• strNewVals: New value to assign to the cells concerned.• strRows: Identifiers of lines to be processed. The identifiers are separated by commas.• strRowFormat: Formatting instructions for the sublist. Instructions are separated by the " " character. Each instruction represents the number of the column containing the strNewVals parameter.

Asc()

Syntax	Function Asc(strAsc As String) As Long
Description	Returns a numeric value that is the ASCII code for the first character in a string.
Input parameters	<ul style="list-style-type: none">• strAsc: Character sting on which the function operates.
Example	<pre>RetVal=Asc("ABC")</pre> <p>The value returned is 65, which is the decimal value of the character A.</p>

Atn()

Syntax	Function Atn(dValue As Double) As Double
Description	Returns the arc tangent of a number, expressed in radians.
Input parameters	<ul style="list-style-type: none">• dValue: Number for which you want to know the arc tangent.
Example	<pre>Dim dPi as Double Dim strString as String dPi=4*Atn(1) strString = Str(dPi) RetVal=strString</pre> <p>The value returned is pi (3.14....).</p>

BasicToLocalDate()

Syntax	Function BasicToLocalDate(strDateBasic As String) As String
Description	This function converts a Basic format date to a string format date (as displayed in Windows Control Panel).
Input parameters	<ul style="list-style-type: none"> • strDateBasic: Date in Basic format to convert.
Example	<pre>Dim strDateBasic as string strDateBasic = "02/01/2010" RetVal = BasicToLocalDate(strDateBasic)</pre> <p>If the local Windows system uses the dd/mm/yyyy format, the value returned would be the equivalent of January 2nd, 2010.</p>

BasicToLocalTime()

Syntax	Function BasicToLocalTime(strTimeBasic As String) As String
Description	This function converts a Basic format date to a string format date (as displayed in Windows Control Panel).
Input parameters	<ul style="list-style-type: none"> • strTimeBasic: Time in Basic format to convert.
Example	<pre>Dim strTimeBasic as string strTimeBasic = "18:25:35" RetVal = BasicToLocalTime(strTimeBasic)</pre> <p>If the local Windows system uses the hh:ss:mm format, the value returned would be the equivalent of 35 seconds after 6:25 PM.</p>

BasicToLocalTimeStamp()

Syntax	Function BasicToLocalTimeStamp(strTSBasic As String) As String
Description	This function converts a Date+Time in Basic format to a Date+Time in string format (as displayed in Windows Control Panel).
Input parameters	<ul style="list-style-type: none"> • strTSBasic: Date+Time in Basic format to convert.

Example	<pre>Dim strTimeStampBasic as string strTimeStampBasic = "02/01/2010 18:25:35" RetVal = BasicToLocalTimeStamp(strTimeStampBasic)</pre> <p>If the local Windows system uses the dd/mm/yyyy and hh:ss:mm format, the value returned would be the equivalent of 35 seconds after 6:25 PM on January 2nd, 2010.</p>
----------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Beep()

Syntax	Function Beep()
Description	Plays a beep on the machine.

CDbl()

Syntax	Function CDbl(dValue As Double) As Double
Description	Converts an expression to a "Double", which is an 8-byte floating-point number (double precision).
Input parameters	<ul style="list-style-type: none"> • dValue: Expression to convert.
Example	<pre>Dim dNumber As Double Dim iInteger as Integer iInteger = 2500000 dNumber=CDbl(iInteger) RetVal=dNumber</pre> <p>The value returned would be 2500000.</p>

ChDir()

Syntax	Function ChDir(strDirectory As String) as Long
Description	Changes the current directory.
Input parameters	<ul style="list-style-type: none"> • strDirectory: New current directory.
Output parameters	0: Normal execution. Other than zero: Error code.
Example	<pre>Dim strDirectory as string strDirectory = "C:/tmp/" ChDir(strDirectory)</pre> <p>This changes the directory to C:/tmp/.</p>

ChDrive()

Syntax	Function ChDrive(strDrive As String) as Long
Description	Changes the current drive.
Input parameters	<ul style="list-style-type: none"> • strDrive: New drivename.
Output parameters	<p>0: Normal execution. Other than zero: Error code.</p>
Example	<pre>Dim strDrive as string strDrive = "R:" ChDrive(strDrive)</pre> <p>This changes the drive to the R drive.</p>

Chr()

Syntax	Function Chr(iChr As Long) As String
Description	Returns a string corresponding to the ASCII passed by the iChr parameter.
Input parameters	<ul style="list-style-type: none"> • iChr: ASCII code of the character.
Example	<pre>Dim iCount as Integer Dim iIteration as Integer Dim strMessage as String Dim strLF as String strLF=Chr(10) For iIteration=1 To 2 For iCount=Asc("A") To Asc("Z") strMessage=strMessage+Chr(iCount) Next iCount strMessage=strMessage+strLF Next iIteration RetVal=strMessage</pre> <p>The value returned would be ABCDEFGHIJKLMNOPQRSTUVWXYZ.</p>

CInt()

Syntax	Function CInt(iValue As Long) As Long
Description	Converts any valid expression to an Integer.

Input parameters	<ul style="list-style-type: none"> • iValue: Expression to convert.
Example	<pre>Dim iNumber As Integer Dim dDouble as Double dDouble = 25 iNumber=CInt(dDouble) RetVal=iNumber</pre> <p>The value returned would be 25.</p>

CLng()

Syntax	Function CLng(IValue As Long) As Long
Description	Converts any valid expression to a Long.
Input parameters	<ul style="list-style-type: none"> • IValue: Expression to convert.
Example	<pre>Dim lNumber As Long Dim iInteger as Integer iInteger=25 lNumber=CLng(iInteger) RetVal=lNumber</pre> <p>The value returned would be 25.</p>

Cos()

Syntax	Function Cos(dValue As Double) As Double
Description	Returns the cosine of a number, expressed in radians.
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose cosine you want to know.
Example	<pre>Dim dCalc as Double dCalc=Cos(2.79) RetVal=dCalc</pre> <p>The value returned would be -0.938825404.</p>

Note: The conversion formula for degrees to radians is the following:
 $\text{angle in radians} = (\text{angle in degrees}) * \pi / 180$

CountOccurrences()

Syntax	Function CountOccurrences(strSearched As String, strPattern As String, strEscChar As String) As Long
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Description	Counts the number of occurrences of a string inside another string.
Input parameters	<ul style="list-style-type: none"> ▪ strSearched: Character string in which to perform the search. ▪ strPattern: Character string to find inside the strSearched parameter. ▪ strEscChar: Escape character. This character invokes an alternative interpretation on subsequent characters in a character sequence.
Example	<pre>Dim MyStr MyStr=CountOccurrences("you me you,me,you", "you", " ")</pre> <p>The returned value would be 2.</p> <pre>Dim MyStr MyStr=CountOccurrences("you me you,me you", "you", " ")</pre> <p>The returned value would be 1.</p> <pre>Dim MyStr MyStr=CountOccurrences("you me you,me you", "you", ",")</pre> <p>The returned value would be 3. In this case, the escape character has no effect on the count.</p>

CountValues()

Syntax	Function CountValues(strSearched As String, strSeparator As String, strEscChar As String, emptyStrCount As Long) As Long
Description	Counts the number of elements in a string, taking into account a separator and an escape character.
Input parameters	<ul style="list-style-type: none"> • strSearched: Character string to process. • strSeparator: Separator used to delimit the elements. • strEscChar: Escape character. If this character prefixes a separator, it will be ignored. • emptyStrCount: This parameter specifies whether the empty string is counted or not <ul style="list-style-type: none"> ▪ 0: empty string is not counted (default) ▪ 1: empty string is counted

Example	<pre>Dim MyStr MyStr=CountValues("you me you\ me you", " ", "\")</pre> <p>This would return the value 4.</p> <pre>MyStr=CountValues("you me you\ me you", " ", "")</pre> <p>This would return the value 5.</p> <pre>MyStr=CountValues("MAIN MENUE,,HOME", ",", "\",1)</pre> <p>This would return the value 3.</p>
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CSng()

Syntax	Function CSng(fValue As Single) As Single
Description	Converts any valid expression to a floating point number ("Float").
Input parameters	<ul style="list-style-type: none"> • fValue: Expression to convert.
Example	<pre>Dim dNumber As Double Dim iInteger as Integer iInteger = 25 dNumber=CSng(iInteger) RetVal=dNumber</pre> <p>The returned value would be 25.</p>

CStr()

Syntax	Function CStr(strValue As String) As String
Description	Converts any valid expression to a String.
Input parameters	<ul style="list-style-type: none"> • strValue: Expression to convert.
Example	<pre>Dim dNumber As Double Dim strMessage as String dNumber = 2452873 strMessage=CStr(dNumber) RetVal=strMessage</pre> <p>The returned value would be 2452873, but would be used only as text, not as a number that could be calculated.</p>

CurDir()

Syntax	Function CurDir() As String
Description	Returns the current path.

CVar()

Syntax	Function CVar(vValue As Variant) As Variant
Description	Converts any valid expression to a Variant.
Input parameters	<ul style="list-style-type: none"> • vValue: Expression to convert.
Example	<pre>Dim vValue as Variant vValue = CVar(2.3 + 3) RetVal = vValue</pre> <p>The value returned would be 5.3.</p>

Date()

Syntax	Function Date() As Date
Description	Returns the current system date.
Example	<pre>Dim dCurDate as date dCurDate = Date() RetVal = LocalToBasicDate(dCurDate)</pre> <p>This would obtain the date, and then by using the LocalToBasicDate function, put the date in the format specified by the local Windows system.</p>

DateAdd()

Syntax	Function DateAdd(tmStart As Date, tsDuration As Long) As Date
Description	This function calculates a new date according to a start date to which a real duration is added.
Input parameters	<ul style="list-style-type: none"> • tmStart: This parameter contains the date to which the duration is added. • tsDuration: This parameter contains the duration (expressed in seconds) to be added to the date tmStart.

Example	<pre>Dim tmStart as date Dim tsDuration as long ' Could be like "1999-01-15 0:00:00" tmStart = "1999-01-15 0:00:00" tsDuration = 1000000 ' The return value could be "1999-5-10 17:46:40" RetVal = DateAdd(tmStart, tsDuration)</pre>
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DateAddLogical()

Syntax	Function DateAddLogical(tmStart As Date, tsDuration As Long) As Date
Description	This function calculates a new date according to a start date to which a logical duration is added (1 month contains 30 days).
Input parameters	<ul style="list-style-type: none"> • tmStart: This parameter contains the date to which the duration is added. • tsDuration: This parameter contains the duration, expressed in seconds, to be added to the date tmStart.
Example	<pre>Dim tmStart as date Dim tsDuration as long ' Could be like "1999-01-15 0:00:00" tmStart = "1999-01-15 0:00:00" tsDuration = 1000000 ' The return value could be "1999-5-10 17:46:40" RetVal = DateAddLogical(tmStart, tsDuration)</pre>

DateDiff()

Syntax	Function DateDiff(tmEnd As Date, tmStart As Date) As Date
Description	This function calculates in the seconds the duration (or timespan) between two dates.
Input parameters	<ul style="list-style-type: none"> • tmEnd: This parameter contains the end date of the period for which the calculation is carried out. • tmStart: This parameter contains the start date of the period for which the calculation is carried out.
Example	<pre>DateDiff("1998/01/01 00:00:00", "1999/01/01 00:00:00")</pre> <p>The example calculates the time elapsed between 01/01/98 and 01/01/99, which is 31536000 seconds.</p>

DateSerial()

Syntax	Function DateSerial(iYear As Long, iMonth As Long, iDay As Long) As Date
Description	This function returns a date formatted according to the iYear, iMonth and iDay parameters.
Input parameters	<ul style="list-style-type: none"> • iYear: Year. If the value is between 0 and 99, this parameter describes the years from 1900 to 1999. For all other years, you must specify the four digits (e.g. 1800). • iMonth: Month. • iDay: Day.
Example	<p>Each of these parameters can be set to a numeric expression representing a number of days, months or years. For example: DateSerial(1999-10, 3-2, 15-8)</p> <p>Returns the value: 1989/1/7</p> <p>When the value of a parameter is out of the expected range (i.e. 1-31 for days, 1-12 for months, etc.), the function returns an empty date.</p>

DateValue()

Syntax	Function DateValue(tmDate As Date) As Date
Description	This function returns the date portions of a "Date+Time" value.
Input parameters	<ul style="list-style-type: none"> • tmDate: "Date+Time" format date.
Example	<p>The following example: DateValue ("1999/09/24 15:00:00")</p> <p>Returns the value: 1999/09/24</p>

Day()

Syntax	Function Day(tmDate As Date) As String
Description	Returns the day contained in the tmDate parameter.
Input parameters	<ul style="list-style-type: none"> • tmDate: Parameter in Date+Time format to be processed.

Example	<pre>Dim strDay As StringDim dCurDate as date dCurDate= Date() strDay = Day(dCurDate) RetVal=strDay</pre> <p>This value returned would be 2 if it were the 2nd day of the month.</p>
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EscapeSeparators()

Syntax	Function EscapeSeparators(strSource As String, strSeparators As String, strEscChar As String) As String
Description	Prefixes one or more separator characters with an escape character.
Input parameters	<ul style="list-style-type: none"> • strSource: Character string to process. • strSeparators: List of separators to be prefixed. If you want to declare several separators, you must separate them with the escape character (indicated in the strEscChar parameter). • strEscChar: Escape character. It will be used to prefix all separators in strSeparators.
Example	<pre>Dim MyStr MyStr=EscapeSeparators("you me you,me you", " \",", "\")</pre> <p>This would return the value you\ me\ you\,me\ you</p>

ExeDir()

Syntax	Function ExeDir() As String
Description	This function returns the full path of the executable.
Example	<pre>Dim strPath as string strPath=ExeDir()</pre>

Exp()

Syntax	Function Exp(dValue As Double) As Double
Description	Returns the exponent of a number.
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose exponent you want to know.

Example	<pre>Dim iSeed as Integer iSeed = Int((10*Rnd)-5) RetVal = Exp(iSeed)</pre> <p>If the random number were 100, this would return the value 1.81123908 × 10⁴¹.</p>
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ExtractValue()

Syntax	Function ExtractValue(pstrData As String, strSeparator As String, strEscChar As String) As String
Description	Extracts from a string the values delimited by a separator. The recovered value is deleted from the source string. This operation takes into account a possible escape character. If the separator is not found in the source string, the whole string is returned and the source string is deleted in full.
Input parameters	<ul style="list-style-type: none"> • pstrData: Source string to be processed. • strSeparator: Character used as separator in the source string. • strEscChar: Escape character. If this character prefixes the separator, it will be ignored.
Example	<pre>Dim MyStr MyStr=ExtractValue("you,me", ",", "\") Returns "you" and leaves "me" in the source string . MyStr=ExtractValue(",you,me", ",", "\") Returns "" and leaves "you,me" in the source string . MyStr=ExtractValue("you", ",", "\") Returns "you" and leaves "" in the source string. MyStr=ExtractValue("you\,me", ",", "\") Returns "you\,me" and leaves "" in the source string . MyStr=ExtractValue("you\,me", ",", "") Returns "you\" and leaves "me" in the source string . RetVal=""</pre>

FileCopy()

Syntax	Function FileCopy(strSource As String, strDest As String) As Long
Description	Copies a file or a folder.

Input parameters	<ul style="list-style-type: none"> • strSource: Full path of the file or directory to copy. • strDest: Full path of the target file or directory.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>If FileExists("c:\tmp\myfile.log") Then strFileName = "c:\archive\" + FormatDate(Date, "dddd d mmm yyyy") + ".log" FileCopy("c:\tmp\myfile.log", strFileName) End if</pre> <p>This would copy the file <code>myfile.log</code> to the location <code>c:\archive\</code> and given the new name that reflects the date.</p>

FileDateTime()

Syntax	Function FileDateTime(strFileName As String) As Date
Description	Returns the time and date of a file as a Long.
Input parameters	<ul style="list-style-type: none"> • strFileName: Full path name of the file concerned by the operation.
Example	<code>RetVal = FileDateTime("c:/temp/a.txt")</code>

FileExists()

Syntax	Function FileExists(strFileName As String) As Long
Description	<p>This function tests for the existence of a file. The function returns the following values:</p> <ul style="list-style-type: none"> • 0: File not found. • 1: File found.
Input parameters	<code>strFileName</code> : This parameter contains the full path of the file you want to test for.
Example	<pre>If FileExists("c:\tmp\myfile.log") Then strFileName = "c:\archive\" + FormatDate(Date, "dddd d mmm yyyy") + ".log" FileCopy("c:\tmp\myfile.log", strFileName) End if</pre> <p>This would copy a new file to <code>c:\archive\</code> if the file <code>myfile.log</code> does not exist.</p>

FileLen()

Syntax	Function FileLen(strFileName As String) As Long
Description	Returns the size of a file.
Input parameters	<ul style="list-style-type: none"> • strFileName: Full path name of the file concerned by the operation.
Example	RetVal = FileLen("c:/temp/a.txt")

Fix()

Syntax	Function Fix(dValue As Double) As Long
Description	Returns the integer portion of a number (first greatest integer in the case of a negative number).
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose integer portion you want to know.
Example	<pre>Dim dSeed as Double dSeed = (10*Rnd)-5 RetVal = Fix(dSeed)</pre> <p>The value returned would be 2.05547511577606.</p>

FormatDate()

Syntax	Function FormatDate(tmFormat As Date, strFormat As String) As String
Description	Formats a date according to the expression contained in the strFormat parameter.
Input parameters	<ul style="list-style-type: none"> • tmFormat: Date to be formatted. • strFormat: Expression containing the formatting instructions.
Example	<pre>Dim MyDate MyDate="2000/03/14" RetVal=FormatDate(MyDate, "dddd d mmmm yyyy")</pre> <p>The value returned would be Tuesday 14 March 2000.</p>

FormatResString()

Syntax	Function FormatResString(strResString As String, strParamOne As String, strParamTwo As String, strParamThree As String, strParamFour As String, strParamFive As String) As String
Description	This function processes a source string, replacing the variable \$1, \$2, \$3, \$4, and \$5 with the strings passed in the strParamOne , strParamTwo , strParamThree , strParamFour , and strParamFive parameters.
Input parameters	<ul style="list-style-type: none">• strResString: Source string to be processed.• strParamOne: Replacement string of variable \$1.• strParamTwo: Replacement string of variable \$2.• strParamThree: Replacement string of variable \$3.• strParamFour: Replacement string of variable \$4.• strParamFive: Replacement string of variable \$5.
Example	<pre>FormatResString("I\$1he\$2you\$3", "you", "we", "they")</pre> <p>The value returned would be Iyouheweyouthey.</p>

FV()

Syntax	Function FV(dbIRate As Double, iNper As Long, dbIPmt As Double, dbIPV As Double, iType As Long) As Double
Description	This function returns the future amount of an annuity based on constant and periodic payments, with a set interest rate.

<p>Input parameters</p>	<ul style="list-style-type: none"> • dblRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be: $0.06/12=0.005$ or 0.5% • iNper: This parameter contains the total number of dates of payment for the financial operation. • dblPmt: This parameter indicates the amount of the payment to be made at each date of payment. The payment generally includes both principal and interest. • dblPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future. • iType: This parameter indicates the payment deadline. It can have one of the following values: <ul style="list-style-type: none"> ■ 0 if the payments are due in arrears (i.e. at the end of the period) ■ 1 if the payments are due in advance (i.e. at the start of the period) <p>The Rate and Nper parameters must be calculated using payments expressed in the same units.</p> <p>Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>
<p>Example</p>	<pre>' The interest rate per date of payment Dim dblRate as double ' The total number of dates of payment for the financial operation. Dim iNper as long ' The amount of the payment to be made at each date of payment. The payment generally includes both principal and interest. Dim dblPmt as double ' The actual value (or overall sum) for a series of payments to be made in the future. Dim dblPV as double ' The payment deadline Dim iType as long dblRate = 0.005 iNper = 365 dblPmt = -100 dblPV = 100 iType = 0 RetVal = FV(dblRate, iNper, dblPmt, dblPV, iType) The value returned would be 102875.590390277.</pre>

GetEnvVar()

Syntax	Function GetEnvVar(strVar As String, bExpand As Long) As String
Description	This function returns the value of an environment variable. An empty value is returned if the environment variable does not exist.
Input parameters	<ul style="list-style-type: none">• strVar: This parameter contains the name of the environment variable.• bExpand: This Boolean parameter is useful when the environment variable references one or more environment variable. In this case, when this parameter is set to 1 (default value), each referenced variable is replaced by its value. Otherwise, it is left alone.
Example	<pre>RetVal = getEnvVar("PROMPT")</pre>

GetListItem()

Syntax	Function GetListItem(strFrom As String, strSep As String, INb As Long, strEscChar As String) As String
Description	Returns the INbth portion of a string delimited by separators.
Input parameters	<ul style="list-style-type: none">• strFrom: Source string to be processed.• strSep: Character used as separator in the source string.• INb: Position of the string to recover.• strEscChar: Escape character. If this character prefixes a separator, it will be ignored.
Example	<pre>GetListItem("this_is_a_test", "_", 2, "%")</pre> <p>This would return is.</p> <pre>GetListItem("this%_is_a_test", "_", 2, "%")</pre> <p>This would return a.</p>

GetXmlAttributeValue()

Syntax	Function GetXmlAttributeValue(strVal As String) As String
Description	This function escapes the invalid characters for a given XML element value.

Input parameters	<ul style="list-style-type: none"> This parameter contains the character to be escaped.
Example	<p>For example, the following function transforms the single quote character into a valid character:</p> <pre>GetXmlAttributeValue("doesn't")</pre> <p>It has the following result:</p> <pre>"doesn&quote;t"</pre>

GetXmlElementValue()

Syntax	Function GetXmlElementValue(strElemContent As String) As String
Description	This function escapes the invalid characters for a given XLM attribute value.
Input parameters	This parameter contains the character to be escaped.
Example	<p>You can use this function in a WHERE clause as described below:</p> <pre>strLayer = strLayer + "<Where Path='ItemsUsed'>" + GetXmlElementValue("AssetTag like 'A%'") + "</Where>"</pre>

Hex()

Syntax	Function Hex(dValue As Double) As String
Description	Returns the hexadecimal value of a decimal parameter.
Input parameters	<ul style="list-style-type: none"> dValue: Decimal number whose hexadecimal value you want to know.
Example	<pre>RetVal = Hex(10000)</pre> <p>The value returned would be 2710.</p>

Hour()

Syntax	Function Hour(tmTime As Date) As Long
Description	Returns the hour value contained in the tmTime parameter.
Input parameters	<ul style="list-style-type: none"> tmTime: Parameter in Date+Time format to be processed.
Example	<pre>Dim strHour as String strHour=Hour(Date()) RetVal=strHour</pre> <p>The value returned would be hour value of the current system time.</p>

InStr()

Syntax	Function InStr(IPosition As Long, strSource As String, strPattern As String, bCaseSensitive As Long) As Long
Description	Returns the character position of the first occurrence of a string within a string.
Input parameters	<ul style="list-style-type: none">• IPosition: Starting point of the search. This parameter is not optional and must be a valid positive integer no greater than 65,535.• strSource: String in which the search is performed.• strPattern: String to search.• bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0). <p>Note: The position of the first occurrence is always 1. The function returns 0 if the character string searched is not found.</p>
Example	<pre>Dim strSource as String Dim strToSearch as String Dim iPosition strSource = "Good Bye" strToSearch = "Bye" iPosition = Instr(2, strSource, strToSearch) RetVal=iPosition</pre> <p>This value returned would be 6.</p>

Int()

Syntax	Function Int(dValue As Double) As Long
Description	Returns the integer portion of a number (first lesser than integer in the case of a negative number).
Input parameters	<ul style="list-style-type: none">• dValue: Number whose integer portion you want to know.
Example	<pre>Dim iSeed as Integer iSeed = Int((10*Rnd)-5) RetVal = Abs(iSeed)</pre> <p>The value returned would be 2.</p>

IPMT()

Syntax	Function IPMT(dbIRate As Double, iPer As Long, iNper As Long, dbIPV As Double, dbIFV As Double, iType As Long) As Double
Description	This function returns the amount of interest for an given date of payment of an annuity.
Input parameters	<ul style="list-style-type: none"> • dbIRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be: $0.06/12=0.005$ or 0.5% • iPer: This parameter indicates the period for the calculation, between 1 and the value of the Nper parameter. n iNper: This parameter contains the total number of dates of payment for the financial operation. • dbIPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future. • dbIFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil. • iType: This parameter indicates the payment deadline. It can have one of the following values: <ul style="list-style-type: none"> ▪ 0 if the payments are due in arrears (i.e. at the end of the period) ▪ 1 if the payments are due in advance (i.e. at the start of the period) <p>Note: The Rate and Nper parameters must be calculated using payments expressed in the same units. Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>

IsNumeric()

Syntax	Function IsNumeric(strString As String) As Long
Description	This function enables you to determine whether a string is a numeric value or not. A numeric value must use the format [+/-]Dig[.Dig][e/E[+/-]Dig]. Otherwise, this function handles the value as non-numeric data. Note that a value with currency notation or any separator between numbers is not regarded as numeric.

Input parameters	<ul style="list-style-type: none">• strString: This parameter contains the character string to evaluate.
Output parameters	<ul style="list-style-type: none">• -1: Numeric value• 0: Non-numeric value
Examples	<p>The returned values are -1 for the following examples:</p> <pre>Dim strValue as string Dim lRc as long strValue = "15.32" lRc = IsNumeric(strValue) strValue = "-15.32e7" lRc = IsNumeric(strValue) strValue = "001" lRc = IsNumeric(strValue) strValue = "15E001" lRc = IsNumeric(strValue)</pre> <p>The returned values are 0 for the following examples:</p> <pre>strValue = "15.32as" lRc = IsNumeric(strValue) strValue = "15.32Ee" lRc = IsNumeric(strValue) strValue = "\$15,320.32" lRc = IsNumeric(strValue)</pre>

Functions (Kill to ParseYMDDate)

Kill()

Syntax	Function Kill(strKilledFile As String) As Long
Description	Deletes a file.
Input parameters	<ul style="list-style-type: none"> • strKilledFile: Full path of the file concerned by the operation.
Output parameters	0: Normal execution. Other than zero: Error code.
Example	RetVal = Kill("c:/temp/a.txt")

LCase()

Syntax	Function LCase(strString As String) As String
Description	Returns a string in which all letters of the string parameter have been converted to lower case.
Input parameters	<ul style="list-style-type: none"> • strString: Character string to convert to lowercase.
Example	<p>This example uses the LTrim and RTrim functions to strip leading ' and trailing spaces, respectively, from a string variable. It uses the Trim function alone to strip both types of spaces. LCase and UCase are also shown in this example as well as the use ' of nested function calls .</p> <pre>Dim strString as String Dim strTrimString as String strString = " <-Trim-> " :' Initialize string. strTrimString = LTrim(strString) :' strTrimString = "<-Trim-> ". strTrimString = LCase(RTrim(strString)) :' strTrimString = " <-trim->". strTrimString = LTrim(RTrim(strString)) :' strTrimString = "<-Trim->".</pre> <p>Using the Trim function alone achieves the same result.</p> <pre>strTrimString = UCase(Trim(strString)) :' strTrimString = "<-TRIM->". RetVal= " " & strTrimString & " "</pre>

Left()

Syntax	Function Left(strString As String, INumber As Long) As String
Description	Returns the left most iNumber characters of a string parameter.
Input parameters	<ul style="list-style-type: none"> • strString: Character string to process. • INumber: Number of characters to return.
Example	<pre>Dim lWord, strMsg, rWord, iPos strMsg = "Left() Test." iPos = InStr(1, strMsg, " ") lWord = Left(strMsg, iPos - 1) rWord = Right(strMsg, Len(strMsg) - iPos) strMsg=rWord+lWord RetVal=strMsg The returned value would be Test.Left().</pre>

LeftPart()

Syntax	Function LeftPart(strFrom As String, strSep As String, bCaseSensitive As Long) As String
Description	Extracts the portion of a string to the left of the separator specified in the strSep parameter. The search for the separator is performed from left to right. The search can be made case sensitive using the bCaseSensitive parameter.
Input parameters	<ul style="list-style-type: none"> • strFrom: Source string to be processed. • strSep: Character used as separator in the source string. • bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0).
Example	<p>These examples illustrate use of the LeftPart, LeftPartFromRight, RightPart, and RightPartFromLeft functions on the same string: "This_is_a_test":</p> <pre>LeftPart("This_is_a_test", "_",0) Returns This</pre> <pre>LeftPartFromRight("This_is_a_test", "_",0) Returns This_is_a</pre> <pre>RightPart("This_is_a_test", "_",0) Returns test</pre> <pre>RightPartFromLeft("This_is_a_test", "_",0) Returns is_a_test</pre>

LeftPartFromRight()

Syntax	Function LeftPartFromRight(strFrom As String, strSep As String, bCaseSensitive As Long) As String
Description	Extracts the portion of a string to the left of the separator specified in the strSep parameter. The search for the separator is performed from right to left. The search can be made case sensitive using the bCaseSensitive parameter.
Input parameters	<ul style="list-style-type: none"> • strFrom: Source string to be processed. • strSep: Character used as separator in the source string. • bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0).
Example	<p>These examples illustrate use of the LeftPart, LeftPartFromRight, RightPart, and RightPartFromLeft functions on the same string: "This_is_a_test":</p> <p>LeftPart("This_is_a_test","_",0) Returns This</p> <p>LeftPartFromRight("This_is_a_test","_",0) Returns This_is_a</p> <p>RightPart("This_is_a_test","_",0) Returns test</p> <p>RightPartFromLeft("This_is_a_test","_",0) Returns is_a_test</p>

Len()

Syntax	Function Len(vValue As Variant) As Long
Description	Returns the number of characters in a string or a variant.
Input parameters	<ul style="list-style-type: none"> • vValue: Variant concerned by the operation.
Example	<pre>Dim strTest as String Dim iLength as Integer strTest = "Connect-It" iLength = Len(strTest) RetVal=iLength The value returned would be 10.</pre>

LocalToBasicDate()

Syntax	Function LocalToBasicDate(strDateLocal As String) As String
Description	This function converts a string format date (as displayed in Windows Control Panel) to a Basic format date.
Input parameters	<ul style="list-style-type: none">• strDateLocal: Date as string to convert.
Example	<pre>Dim strDateLocal as string strDateLocal = "1999-01-15" RetVal = LocalToBasicDate(strDateLocal) If the local system date format is yyyy/mm/dd, the returned value will be 1999/01/15.</pre>

LocalToBasicTime()

Syntax	Function LocalToBasicTime(strTimeLocal As String) As String
Description	This function converts a string format time (as displayed in Windows Control Panel) to a Basic format time.
Input parameters	<ul style="list-style-type: none">• strTimeLocal: Time in string format to convert.
Example	<pre>Dim strTimeLocal as string ' Change this value based on local setting strTimeLocal = "18:25:35" ' The return value will be "18:25:35" RetVal = LocalToBasicTime(strTimeLocal)"</pre>

LocalToBasicTimeStamp()

Syntax	Function LocalToBasicTimeStamp(strTSLocal As String) As String
Description	This function converts a Date+Time in string format (as displayed in Windows Control Panel) to a Date+Time in Basic format.
Input parameters	<ul style="list-style-type: none">• strTSLocal: Date+Time in string format to convert.
Example	<pre>Dim strTimeStampLocal as string strTimeStampLocal = "1999-01-15 18:25:35" ' The return value will be "1999/01/15 18:25:35" RetVal = LocalToBasicTimeStamp(strTimeStampLocal)</pre>

LocalToUTCDate()

Syntax	Function LocalToUTCDate(tmLocal As Date) As Date
Description	This function converts a date in "Date+Time" format to a UTC format date (time-zone independent).
Input parameters	<ul style="list-style-type: none"> • tmLocal: "Date+Time" format date.
Example	<pre>Dim strDateLocal as string strDateLocal = "1999-01-15 18:25:35" ' The return value could be "'1999/01/15 10:25:35'" RetVal = LocalToUTCDate(strDateLocal)</pre>

Log()

Syntax	Function Log(dValue As Double) As Double
Description	Returns the natural log of a number.
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose logarithm you want to know.
Example	<pre>Dim dSeed as Double dSeed = Int((10*Rnd)-5) RetVal = Log(dSeed) The value returned would be 2.</pre>

LTrim()

Syntax	Function LTrim(strString As String) As String
Description	Removes all leading spaces in a string.
Input parameters	<ul style="list-style-type: none"> • strString: Character string to process.
Example	<p>This example uses the LTrim and RTrim functions to strip leading ' and trailing spaces, respectively, from a string variable. It uses the Trim function alone to strip both types of spaces. See RTrim.</p>

MakeInvertBool()

Syntax	Function MakeInvertBool(IValue As Long) As Long
Description	This function returns an inverse Boolean; (0 becomes 1, all other numbers become 0).
Input parameters	<ul style="list-style-type: none">• IValue: Number concerned by the operation.
Example	<pre>Dim MyValue MyValue=MakeInvertBool(0) Returns 0. MyValue=MakeInvertBool(1) Returns 1. MyValue=MakeInvertBool(254) Returns 0.</pre>

Mid()

Syntax	Function Mid(strString As String, IStart As Long, ILen As Long) As String
Description	Returns a substring within a string.
Input parameters	<ul style="list-style-type: none">▪ strString: String concerned by the operation.▪ IStart: Start position of the string to extract from within strString.▪ ILen: Length of the string to extract.
Example	<pre>Dim strTest as String strTest="One Two Three" :' Defines the test string strTest=Mid(strTest,5,3) :' strTest="Two" RetVal=strTest This would return the value Two.</pre>

Minute()

Syntax	Function Minute(tmTime As Date) As Long
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Description	Returns the number of minutes contained in the time expressed in the tmTime parameter.
Input parameters	<ul style="list-style-type: none"> • tmTime: Parameter in Date+Time format to be processed.
Example	<pre>Dim strMinute strMinute=Minute(Date()) RetVal=strMinute : 'Returns the number of minutes elapsed in the current hour, for example "45" if the time is 15:45:30</pre>

MkDir()

Syntax	Function MkDir(strMkDirectory As String) As Long
Description	Creates a new directory.
Input parameters	<ul style="list-style-type: none"> • strMkDirectory: Full path of the directory to create.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim lErr as Long lErr = MkDir("c:\tmp")</pre>

Month()

Syntax	Function Month(tmDate As Date) As Long
Description	Returns the month contained in the date expressed in the tmDate parameter.
Input parameters	<ul style="list-style-type: none"> • tmDate: Parameter in Date+Time format to be processed.
Example	<pre>Dim lMonth as Long lMonth=Month(Date()) RetVal=lMonth</pre>

Now()

Syntax	Function Now() As Date
Description	Returns the current date and time.
Example	<pre>RetVal = Now()</pre>

NPER()

Syntax	Function NPER(dbIRate As Double, dbIPmt As Double, dbIPV As Double, dbIFV As Double, iType As Long) As Double
Description	This function returns the number of payments of an annuity based on constant and periodic payments, and at a constant interest rate.
Input parameters	<ul style="list-style-type: none">■ dbIRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be: $0.06/12=0.005$ or 0.5%■ dbIPmt: This parameter indicates the amount of the payment to be made at each date of payment. The payment generally includes both principal and interest.■ dbIPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future.■ dbIFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil.■ iType: This parameter indicates the payment deadline. It can have one of the following values:<ul style="list-style-type: none">○ 0 if the payments are due in arrears (i.e. at the end of the period)○ 1 if the payments are due in advance (i.e. at the start of the period) <p>Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>

Example	<pre>' The interest rate per date of payment Dim dblRate as double ' The total number of dates of payment for the financial operation. Dim dblPmt as double ' The actual value (or overall sum) for a series of payments to be made in the future. Dim dblPV as double ' The future value or the balance that you want to obtain after having paid the final date of payment. Dim dblFV as double ' The payment deadline Dim iType as long dblRate = 0.005 dblPmt = -100 dblPV = 1000 dblFV = 0 iType = 0 RetVal = NPER(dblRate, dblPmt, dblPV, dblFV, iType) The value returned would be 10.2842842057599.</pre>
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Oct()

Syntax	Function Oct(dValue As Double) As String
Description	Returns the octal value of the decimal parameter.
Input parameters	<ul style="list-style-type: none"> dValue: Number whose octal value you want to know.
Example	<pre>Dim dSeed as Double dSeed = Int((10*Rnd)-5) RetVal = Oct(dSeed) The value returned would be 2.</pre>

ParseDate()

Syntax	Function ParseDate(strDate As String, strFormat As String, strStep As String) As Date
Description	This function converts a date expressed as a character string to a Basic date object.

Input parameters	<ul style="list-style-type: none"> ■ strDate: Date in string format. ■ strFormat: This parameter contains the format of the date contained in the character string. The possible values are the following: <ul style="list-style-type: none"> ○ DD/MM/YY ○ DD/MM/YYYY ○ MM/DD/YY ○ MM/DD/YYYY ○ YYYY/MM/DD ■ Date: date expressed according to the settings of the client computer. ■ DateInter: date expressed in the international format ■ strStep: This optional parameter contains the date separator used in the character string. The authorized separators are "\" and "-".
Example	<pre>Dim dDate as date dDate=ParseDate("2001/05/01", "YYYY/MM/DD")</pre>

ParseDMYDate()

Syntax	Function ParseDMYDate(strDate As String) As Date
Description	This function returns a Date object (as understood in Basic) from a date formatted as follows: dd/mm/yyyy
Input parameters	<ul style="list-style-type: none"> ● strDate: Date stored as a string.
Example	<pre>Dim dDate as Date dDate = ParseDMYDate("31/02/2003")</pre>

ParseMDYDate()

Syntax	Function ParseMDYDate(strDate As String) As Date
Description	This function returns a Date object (as understood in Basic) from a date formatted as follows: mm/dd/yyyy

Input parameters	<ul style="list-style-type: none">• strDate: Date stored as a string.
Example	<pre>Dim dDate as Date dDate = ParseMDYDate("02/31/2003")</pre>

ParseYMDDate()

Syntax	Function ParseYMDDate(strDate As String) As Date
Description	This function returns a Date object (as understood in Basic) in yyyy/mm/dd format.
Input parameters	<ul style="list-style-type: none">• strDate: Date stored as a string.
Example	<pre>Dim dDate as Date dDate = ParseYMDDate("2003/02/31")</pre>

Functions (Piff)

PifCloseODBCDatabase()

Syntax	Function PifCloseODBCDatabase(strDSN As String) As Long
Description	This function terminates an ODBC connection.
Input parameters	<ul style="list-style-type: none"> • strDSN: Name of the data source for the ODBC connection.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim iRet As Integer iRet = PifOpenOdbcDatabase(PifStrVal("DSN"), PifStrVal("LOGIN"), PifStrVal("PWD")) If iRet = 0 Then Dim strQuery As String strQuery = "SELECT a.AssetName, a.FullName FROM Asset a" iRet = PifCreateDynaMappable (PifStrVal("DSN"), "Assets", strQuery, FALSE) End If Dim strRes as String if iRet = 0 Then strRes = PifMapValue ([FullName], "Assets", 1, "", 1) End If If iRet = 0 and strRes = "" Then strQuery = "SELECT a.AssetName FROM Asset a Where a.Name=" & FullName] strRes= PifExecODBCSql(PifStrVal("DSN"), strQuery) End If iRet = PifCloseODBCDatabase(PifStrVal("DSN"))</pre>

PifConstant()

Syntax	Function PifConstant(strConstant As String)
Description	This function identifies a constant that is replaced when the Basic script is processed. Note that PifConstant cannot be used as a nested function.
Input parameter	<ul style="list-style-type: none"> • strConstant: The name of the constant defined in the script constant file (.scp file).
Example	[Device_Status] = PifConstant(NATURE_MONITOR_DDMI76)

PifCreateDynaMaptable()

Syntax	Function PifCreateDynaMapTable(strDSN As String, strMaptable As String, strQuery As String, bCaseSensitive As Long) As Long
Description	This function creates a dynamic maptable for ODBC query result.
Input parameters	<ul style="list-style-type: none"> • strDSN: Name of the ODBC data source for the connection. • strMaptable: Name of the maptable being searched. <ul style="list-style-type: none"> ▪ 0: Case insensitive. ▪ 1: Case sensitive. • strQuery: SQL query on the ODBC database. • bCreateOnce: <ul style="list-style-type: none"> ▪ 0: The maptable is created each time the function is called. ▪ 1: The maptable is created for the entire session.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim iRet As Integer iRet = PifOpenOdbcDatabase(PifStrVal("DSN"), PifStrVal("LOGIN"), PifStrVal("PWD")) If iRet = 0 Then Dim strQuery As String strQuery = "SELECT a.AssetName, a.FullName FROM Asset a" iRet = PifCreateDynaMaptable (PifStrVal("DSN"), "Assets", strQuery, FALSE) End If Dim strRes as String if iRet = 0 Then strRes = PifMapValue ([FullName], "Assets", 1, "", 1) End If If iRet = 0 and strRes = "" Then strQuery = "SELECT a.AssetName FROM Asset a Where a.Name=" & FullName] strRes= PifExecODBCSql(PifStrVal("DSN"), strQuery) End If iRet = PifCloseODBCDatabase(PifStrVal("DSN"))</pre>

PifCreateDynaMaptableFromFmtName()

Syntax	Function PifCreateDynaMaptableFromFmtName(strCntrName As String, strFmtName As String, strLayer As String, strMaptableName As String, strKeyName As String, bCreateOnce As Long) As Long
Description	This function is used to create a dynamic maptable when a session is started.

<p>Input parameters</p>	<ul style="list-style-type: none"> • strCntrName: Connector name. • strFmtName: Document type to produce that will define the contents of the mactable. • strLayer: Where clause used for the document type. • strMactableName: Name of the mactable to create. • strKeyName: Column name that is used as key for the mactable to create. If no column name is specified as key, the first attribute of the query used to create the mactable is used. For example, to use the identifier of a portfolio item, the syntax will be as follows: Portfolio.AssetTag You do not need to specify the name of the document type in this syntax as the mactable is used for the current document type. • bCreateOnce: <ul style="list-style-type: none"> ■ 0: The mactable is created each time the function is called. ■ 1: The mactable is created for the entire session.
<p>Output parameters</p>	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
<p>Example</p>	<pre> '----- ----- ' Function that will be executed when the session is opened ' Do not modify its name '----- ----- Sub OpenSession() ' Initialize any global variables here Dim lErr As Long lErr = PifCreateDynaMactableFromFmtName("Asset Management", "amProdClassCode", "lModelId <> 0", "UNSPSC_Model", "UnspscKey", 1) lErr = PifCreateDynaMactableFromFmtName("Asset Management", "amEmplDept", "lEmplDeptId <> 0 AND bDepartment = 0 AND UserName <> ''", "AC_ EMPL", "UserName", 1) End Sub 'At this point, you can create dynamic mactable while the session is opened.</pre>

PifDateToTimezone()

Syntax	Function PifDateToTimezone(tmSrc As Date, strTmznSrc As String, bWithDayLightSavingSrc As Long, strTmznDst As String, bDayLightSavingDst As Long) As Date
Description	This function converts a date (as in date and time) expressed in a given time zone to another time zone taking into account, if necessary, daylight saving settings. An error message is returned if the specified time zone does not exist. Note: The 'UTC' time zone (Universal Time Coordinated) can be used to specify a GMT 0 date without daylight savings.
Input parameters	<ul style="list-style-type: none"> • tmSrc: This parameter contains the date to be converted. • strTmznSrc: This parameter contains the name of the source time zone for the conversion. • bWithDayLightSavingSrc: Depending on the value of this parameter, the function will take into account (=1) or not (=0) daylight savings settings for the source time zone. • strTmznDst: This parameter contains the name of the target time zone for the conversion. • bDayLightSavingDst: Depending on the value of this parameter, the function will take into account (=1) or not (=0) daylight savings settings for the target time zone.
Example	<pre>PifDateToTimezone("2002-08-29 12:00:00", "Romance Standard Time", 1, "UTC", 0) returns: 2002-08-29 10:00:00 PifDateToTimezone("2002-08-29 12:00:00", "Romance Standard Time", 0, "UTC", 0) returns: 2002-08-29 11:00:00 PifDateToTimezone("2002-12-25 12:00:00", "Romance Standard Time", 1, "UTC", 0) returns: 2002-12-25 11:00:00</pre>

List and description of time zones:

Time zones

Name	Description
Dateline Standard Time	(GMT-12:00) Eniwetok, Kwajalein
Samoa Standard Time	(GMT-11:00) Midway Island, Samoa

Name	Description
Hawaiian Standard Time	(GMT-10:00) Hawaii
Alaskan Standard Time	(GMT-09:00) Alaska
Pacific Standard Time	(GMT-08:00) Pacific Time (US & Canada); Tijuana
US Mountain Standard Time	(GMT-07:00) Arizona
Mountain Standard Time	(GMT-07:00) Mountain Time (US & Canada)
Central America Standard Time	(GMT-06:00) Central America
Central Standard Time	(GMT-06:00) Central Time (US & Canada)
Mexico Standard Time	(GMT-06:00) Mexico City
Canada Central Standard Time	(GMT-06:00) Saskatchewan
SA Pacific Standard Time	(GMT-05:00) Bogota, Lima, Quito
Eastern Standard Time	(GMT-05:00) Eastern Time (US & Canada)
US Eastern Standard Time	(GMT-05:00) Indiana (East)
Atlantic Standard Time	(GMT-04:00) Atlantic Time (Canada)
SA Western Standard Time	(GMT-04:00) Caracas, La Paz
Pacific SA Standard Time	(GMT-04:00) Santiago
SA Eastern Standard Time	(GMT-04:00) Georgetown
Newfoundland Standard Time	(GMT-03:30) Newfoundland
E. South America Standard Time	(GMT-03:00) Brasilia
Argentina Standard Time	(GMT-03:00) Buenos Aires
Greenland Standard Time	(GMT-03:00) Greenland
Mid-Atlantic Standard Time	(GMT-02:00) Mid-Atlantic
Azores Standard Time	(GMT-01:00) Azores
Cape Verde Standard Time	(GMT-01:00) Cape Verde Is.
Greenwich Standard Time	(GMT) Casablanca, Monrovia
GMT Standard Time	(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
UTC	(GMT) Universal Coordinated Time

Name	Description
W. Europe Standard Time	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
Central Europe Standard Time	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
Romance Standard Time	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris
Central European Standard Time	(GMT+01:00) Sarajevo, Skopje, Sofija, Vilnius, Warsaw, Zagreb
W. Central Africa Standard Time	(GMT+01:00) West Central Africa
GTB Standard Time	(GMT+02:00) Athens, Istanbul, Minsk
E. Europe Standard Time	(GMT+02:00) Bucharest
Egypt Standard Time	(GMT+02:00) Cairo
South Africa Standard Time	(GMT-02:00) Mid-Atlantic
South Africa Standard Time	(GMT+02:00) Harare, Pretoria
FLE Standard Time	(GMT+02:00) Helsinki, Riga, Tallinn
Jerusalem Standard Time	(GMT+02:00) Jerusalem
Arabic Standard Time	(GMT+03:00) Baghdad
Arab Standard Time	(GMT+03:00) Kuwait, Riyadh
Russian Standard Time	(GMT+03:00) Moscow, St. Petersburg, Volgograd
E. Africa Standard Time	(GMT+03:00) Nairobi
Iran Standard Time	(GMT+03:30) Tehran
Arabian Standard Time	(GMT+04:00) Abu Dhabi, Muscat
Caucasus Standard Time	(GMT+04:00) Baku, Tbilisi, Yerevan
Afghanistan Standard Time	(GMT+04:30) Kabul
Ekaterinburg Standard Time	(GMT+05:00) Ekaterinburg
West Asia Standard Time	(GMT+05:00) Islamabad, Karachi, Tashkent
India Standard Time	(GMT+05:30) Calcutta, Chennai, Mumbai, New Delhi
Nepal Standard Time	(GMT+05:45) Kathmandu
N. Central Asia Standard Time	(GMT+06:00) Almaty, Novosibirsk

Name	Description
Central Asia Standard Time	(GMT+06:00) Astana, Dhaka
Sri Lanka Standard Time	(GMT+06:00) Sri Jayawardenepura
Myanmar Standard Time	(GMT+06:30) Rangoon
SE Asia Standard Time	(GMT+07:00) Bangkok, Hanoi, Jakarta
North Asia Standard Time	(GMT+07:00) Krasnoyarsk
China Standard Time	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi
North Asia East Standard Time	(GMT+08:00) Irkutsk, Ulaan Bataar
Malay Peninsula Standard Time	(GMT+08:00) Kuala Lumpur, Singapore,
W. Australia Standard Time	(GMT+08:00) Perth
Taipei Standard Time	(GMT+08:00) Taipei
Tokyo Standard Time	(GMT+09:00) Osaka, Sapporo, Tokyo
Korea Standard Time	(GMT+09:00) Seoul
Yakutsk Standard Time	(GMT+09:00) Yakutsk
Cen. Australia Standard Time	(GMT+09:30) Adelaide
AUS Central Standard Time	(GMT+09:30) Darwin
E. Australia Standard Time	(GMT+10:00) Brisbane
AUS Eastern Standard Time	(GMT+10:00) Canberra, Melbourne, Sydney
West Pacific Standard Time	(GMT+10:00) Guam, Port Moresby
Tasmania Standard Time	(GMT+10:00) Hobart
Vladivostok Standard Time	(GMT+10:00) Vladivostok
Central Pacific Standard Time	(GMT+11:00) Magadan, Solomon Is., New Caledonia
New Zealand Standard Time	(GMT+12:00) Auckland, Wellington
Fiji Standard Time	(GMT+12:00) Fiji, Kamchatka, Marshall Is.
Tonga Standard Time	(GMT+13:00) Nuku'alofa

PifExecODBCSql()

Syntax	Function PifExecODBCSql(strDSN As String, strSqlQuery As String) As Variant
Description	This function executes an SQL query on an ODBC database.
Input parameters	<ul style="list-style-type: none"> • strDSN: Name of the ODBC data source for the connection. • strSqlQuery: SQL query to execute on the ODBC database.
Example	<pre>Dim iRet As Integer iRet = PifOpenOdbcDatabase(PifStrVal("DSN"), PifStrVal("LOGIN"), PifStrVal("PWD")) If iRet = 0 Then Dim strSqlQuery As String strSqlQuery = "SELECT a.AssetName, a.FullName FROM Asset a" iRet = PifCreateDynaMatable (PifStrVal("DSN"), "Assets", strSqlQuery, FALSE) End If Dim strRes as String if iRet = 0 Then strRes = PifMapValue ([FullName], "Assets", 1, "", 1) End If If iRet = 0 and strRes = "" Then strSqlQuery = "SELECT a.AssetName FROM Asset a Where a.Name=" & FullName] strRes= PifExecODBCSql(PifStrVal("DSN"), strSqlQuery) End If iRet = PifCloseODBCDatabase(PifStrVal("DSN"))</pre>

PifFirstInCol()

Syntax	Function PifFirstInCol(strPathCol As String, strChildCond As String, iStartCount As Long) As Long
Description	This function returns the number of the first item in a collection according to the condition specified in strChildCond .

<p>Input parameters</p>	<ul style="list-style-type: none"> ■ strPathCol: Path of the collection being searched. ■ strChildCond: Search condition on the element. The condition is in the following form: <Path> = <Value> where: <ul style="list-style-type: none"> ○ <Path> is the path to an element in the collection ○ <Value> is the value given as a character string in the same locale as Connect-It ■ iStartCount: Search start index. <p>Note: If n is the number of elements in the collection, iStartCount must be between 0 and n-1.</p>
<p>Output parameters</p>	<ul style="list-style-type: none"> ● 0: Normal execution. ● Other than zero: Error code.
<p>Example</p>	<pre>Dim iToTal As Integer Dim iIndex As Integer iToTal = 0 iIndex = 0 Do iIndex = PiffFirstInCol("Software", "Brand=Peregrine", 0) If iIndex <> 0 Then iToTal = iToTal + 1 End If Loop Until iIndex = 0</pre>

PiffGetBlobSize()

<p>Syntax</p>	<p>Function PiffGetBlobSize(strPath As String) As Long</p>
<p>Description</p>	<p>This function returns the size of a blob object.</p>
<p>Input parameters</p>	<ul style="list-style-type: none"> ● strPath: This parameter contains the full path of the blob object in the collection.
<p>Example</p>	<pre>Dim iSize a Integer iSize = PiffGetBlobSize("Description")</pre>

PifGetDateVal()

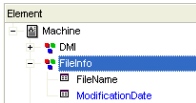
Syntax	Function PifGetDateVal(strPath As String, bCkeckNodeExists As Long) As Date
Description	This function retrieves the value defined by the strPath parameter and stores it in a date type basic variable.
Input parameters	<ul style="list-style-type: none"> • strPath: Designates a date type node type document. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Example	<pre>Dim DateVal As Date DateVal = PifGetDateVal("field containing a date") RetVal = DateVal</pre>

PifGetDoubleVal()

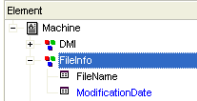
Syntax	Function PifGetDoubleVal(strPath As String, bCkeckNodeExists As Long) As Double
Description	This function retrieves the value defined by the strPath parameter and converts it to a double.
Input parameters	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Example	<pre>RetVal = PifGetDoubleVal("field containing a double type number")</pre>

PifGetElementChildName()

Syntax	Function PifGetElementChildName(strPath As String, iltem As Long) As String
Description	This function returns the name of the nth sub-element of an identified node of a source document type.
Input parameters	<ul style="list-style-type: none"> ■ strPath: This parameter contains the full path of the node concerned by the operation. ■ iltem: This parameter contains the number of the sub-element whose name you want to recover.

<p>Output parameters</p>	<p>This function returns the name of the element.</p> <p>An error is logged in the tracking lines and an empty string is returned by the function if the parameter <code>iltem</code> is either negative or greater than the number of sub-elements of the node.</p>
<p>Example</p>	<pre> pifGetElementChildName("FileInfo",0) returns "FileName" pifGetElementChildName("FileInfo",1) returns "ModificationDate" pifGetElementChildName("FileInfo",2) returns an empty string and logs an error in the tracking lines. </pre> 

PifGetElementCount()

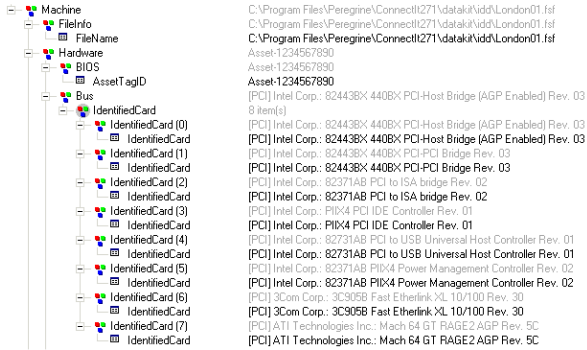
<p>Syntax</p>	<p>Function PifGetElementCount(strPath As String) As Long</p>
<p>Description</p>	<p>This function returns the number of sub-elements of an identified node of a source document type.</p>
<p>Input parameters</p>	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation.
<p>Output parameters</p>	<p>The function returns the number of sub-items of the node whose path is specified by <code>strPath</code>.</p>
<p>Example</p>	<pre> Dim iChildCount as Integer iChildCount = PifGetElementCount("FileInfo") returns 2. The FileInfo element has 2 sub-elements: FileName and ModificationDate. </pre> 

PifGetHexStringFromBlob()

Syntax	Function PifGetHexStringFromBlob(strPath As String, bCkeckNodeExists As Long) As Long
Description	This function enables you to store a binary long object (blob) of the source document inside an hexadecimal string. Each bit of the binary object is stored in its hexadecimal form (two characters) inside the string. For example, the hexadecimal representation of the decimal value "27" is "1B".
Input parameters	<ul style="list-style-type: none"> ■ strPath: This parameter contains the full path of the binary element (blob) in the source document. ■ bCkeckNodeExists: Depending on this parameter, an error is logged (=TRUE) or not (=FALSE) if the binary element cannot be found in the source document. FALSE is the default value for this parameter.
Output parameters	The function returns the hexadecimal representation of the binary element.
Example	<p>On some LDAP servers, an entry is uniquely defined by the binary element "ObjectGUID". The script below imports this binary value inside a string of the destination connector and uses it as a reconciliation key.</p> <pre>RetVal = PifGetHexStringFromBlob("ObjectGUID", TRUE)</pre>

PifGetInstance()

Syntax	Function PifGetInstance() As String
Description	In a collection to collection mapping, this function returns the number of the element currently being processed in the collection. The first element processed is number "0".
Output parameters	The number of the element being processed is returned as a character string.

<p>Example</p>	<p>With the following collection mapping (on Hardware.Bus.IdentificationCard):</p>  <pre> Dim strMyElement as String strMyElement= "Item #" & PifGetInstance returns the following values: Item #0, Item #1, Item #2, etc. </pre>
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PifGetIntlStringVariantVal()

<p>Syntax</p>	<p>Function PifGetIntlStringVariantVal(strPath As String, bCkeckNodeExists As Long) As String</p>
<p>Description</p>	<p>This function retrieves the value defined by the strPath parameter and converts it to an international string.</p>
<p>Input parameters</p>	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
<p>Output parameters</p>	<p>The function returns the value that is converted into the international string format.</p>
<p>Example</p>	<pre> Dim strTest As String strTest = PifGetIntlStringVariantVal("int64") PifLogInfoMsg(CStr([int64])) RetVal = strTest </pre> <p>This function takes the 64-bit integer, converts it to string format and stores the result in strTest. The value displayed in the log is 281478209994880 which corresponds to 2.8147820999488e+014 processed as a double precision number by a Basic function (CStr).</p>

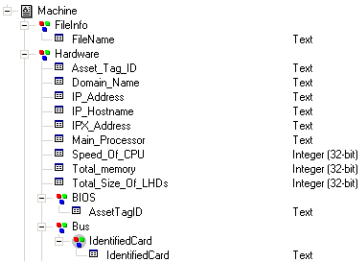
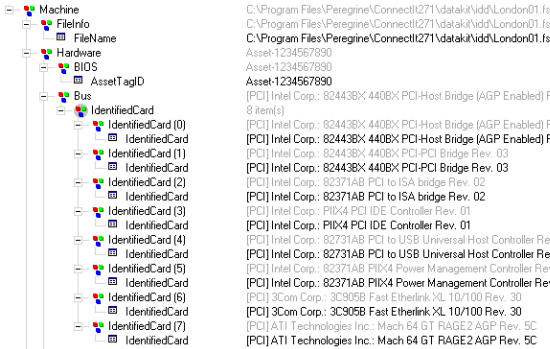
Note: This function is used to work around a known issue with the Basic engine that does not support 64-bit integers.

PifGetIntVal()

Syntax	Function PifGetIntVal(strPath As String, bCkeckNodeExists As Long) As Long
Description	This function retrieves the value defined by the strPath parameter and converts it to an integer.
Input parameters	<ul style="list-style-type: none">• strPath: Path for the data node to convert.• bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Example	<pre>Dim IValue As Int IValue = PifGetIntVal("field containing an integer") RetVal = IValue</pre>

PifGetItemCount()

Syntax	Function PifGetItemCount(strPath As String) As Long
Description	This function returns the number of elements in a fully identified collection.
Input parameters	<ul style="list-style-type: none">• strPath: Full path of the collection.
Output parameters	The function returns the number of elements in the collection. If the collection does not exist the function will return "0".

<p>Example</p>	<p>With the following document type:</p>  <p>Dim iCount As Long iCount = PifGetItemCount("Hardware.Bus.IdentifiedCard") returns the number of sub-elements of the Hardware.Bus.IdentifiedCard collection.</p> <p>For example, on the document below, the script returns "8".</p> 
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PifGetLastOpenSessionTime()

Syntax	Function PifGetLastOpenSessionTime() As Date
Description	This function returns the date and time of the start of the last scheduled session. This function and the PifGetOpenSessionTime() are usually used in pairs to fetch delta data.
Output parameters	Returns a date variable.
Example	<pre>Dim last as String Dim curr as String Dim query as String last=FormatDate(PifGetLastOpenSessionTime(),"mm/dd/yy hh:nn:ss") curr=FormatDate(PifGetOpenSessionTime(),"mm/dd/yy hh:nn:ss") query = "sysmodtime>"&last&" and sysmodtime<="&curr&" RetVal = query</pre>

PifGetLongVal()

Syntax	Function PifGetLongVal(strPath As String, bCkeckNodeExists As Long) As Long
Description	This function retrieves the value defined by the strPath parameter and converts it to a long integer.
Input parameters	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Output parameters	The function returns the value converted into an integer.
Example	<pre>Dim IValue As Long IValue = PifGetLongVal("field containing a long integer") RetVal = IValue</pre>

PifGetOpenSessionTime()

Syntax	Function PifGetOpenSessionTime() As Date
Description	This function returns the date and time of the start of the session. This function and the PifGetLastOpenSessionTime() are usually used in pairs to fetch delta data.
Example	<pre>PifLogInfoMsg("Session start time is: '" & PifGetOpenSessionTime & "'")</pre>

PifGetParamValue()

Syntax	Function PifGetParamValue(strParamName As String, strDefaultValue As String, strPath As String) As String
Description	<p>This function is available for the AssetManagement, Database and ServiceCenter / Service Management connectors, only when the connector is in consumption mode.</p> <p>This function retrieves the value stored in the 'Value' attribute associated with the 'Name' attribute whose value is equal to 'strParamName' of the collection identified by the 'strPath' relative path.</p>

Input parameters	<ul style="list-style-type: none"> • strParamName: Value stored in the 'Name' attribute of the PifParameters collection. • strDefaultValue: Default value stored in the 'Value' attribute of the • PifParameters collection. If no value is populated, the default value is an empty string. • strPath: Relative path for the data node. <p>Use the "." syntax to navigate within the mapping tree structure.</p>
Example	<p>The amAbsence structure contains the PifParameters collection. The values of the amAbsence structure's child items are as follows:</p> <ul style="list-style-type: none"> • Field1: Field1 • Nature: Nature • Employee.Name: Doe • PifParameters.Name: param1 • PifParameters.Value: test <p>The reconciliation script (in update mode) that calls this function is carried by the Field1 field.</p> <pre>PifGetParamValue("param2", "notest")</pre>

PifGetStringFromBlob()

Syntax	Function PifGetStringFromBlob(strPath As String, bCkeckNodeExists As Long) As String
Description	This function retrieves the value from a blob defined by the strPath parameter and converts it to a string.
Input parameters	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • Use the "." syntax to navigate within the mapping tree structure • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Example	<pre>Dim StrValue As String StrValue = PifGetStringFromBlob("field containing a blob") RetVal = StrValue</pre>

PifGetStringVal()

Syntax	Function PifGetStringVal(strPath As String, bCkeckNodeExists As Long) As String
Description	This function retrieves the value defined by the strPath parameter and converts it to a string.
Input parameters	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Example	<pre>Dim StrValue As String StrValue = PifGetStringVal("amComputer.LogicalDrives(3).Name") RetVal = StrValue</pre> <p>The syntax to use to retrieve the value of a field for a collection item is as follows: PifGetStringVal(a.b(index).c) Where c is field, b is collection, and index is the number to target. For example, for the Name field of the amComputer.LogicalDrives collection: PifGetStringVal(amComputer.LogicalDrives(3).Name) This syntax retrieves the value for the Name of the third logical disk drive (LogicalDrive(3)) in the collection.</p>

PifGetVariantVal()

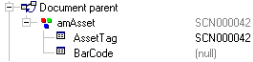

Syntax	Function PifGetVariantVal(strPath As String, bCkeckNodeExists As Long) As Variant
Description	This function retrieves the value defined by the strPath parameter and converts it to a variant.
Input parameters	<ul style="list-style-type: none"> • strPath: Path for the data node to convert. • bCkeckNodeExists: This function is used to check that the data node exists in the data that is returned.
Output parameters	This function returns the value converted into a variant.
Example	<pre>Dim strTestAs String strTest = PifGetVariantVal("field containing a variant") RetVal = strTest</pre>

PifIgnoreCollectionMapping()

Syntax	Function PifIgnoreCollectionMapping(strMsg As String) As Long
Description	<p>This function enables you to ignore a collection, only in a collection-to-collection mapping.</p> <p>As a reminder, the PifIgnoreNodeMapping() function simply enables you to ignore the current element of a collection. An information message, contained in the strMsg parameter can be sent to the log file.</p>
Input parameters	<ul style="list-style-type: none">• strMsg: Optional parameter. Character string sent to the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.
Example	<p>In the following example, all the elements of the collection are ignored if one of the elements has a quantity node whose value is set to '0':</p> <pre>if [root.item(pifGetInstance).quantity] = 0 then pifIgnoreCollectionMapping end if</pre> <p>For comparison with the PifIgnoreNodeMapping() function, in the following example, only those elements of the collection with a quantity node whose value is set to '0' are ignored:</p> <pre>if [root.item(pifGetInstance).quantity] = 0 then pifIgnoreNodeMapping end if</pre>

PifIgnoreDocumentMapping()

Syntax	Function PifIgnoreDocumentMapping(strMsg As String) As Long
Description	<p>This function enables you to ignore a document. An information message, contained in the strMsg parameter, can be sent to the log. The produced document is logged in the document log but is not transmitted to the next connector.</p>
Input parameters	<ul style="list-style-type: none">• strMsg: Optional parameter. Character string sent to the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.

Example	<p>For example, if you want to ignore documents for which the BarCode field is empty, but still want to log the value of the AssetTag field in the tracking lines, the following script can be used on the BarCode node:</p> <pre>If [BarCode] = "" Then PifIgnoreDocumentMapping([AssetTag]) Else RetVal = [BarCode] End If</pre> <p>If this script is used on the document below:</p>  <p>the following document appears in the document log (it is not transmitted to the next connector):</p>  <p>An information message is also logged in the tracking lines.</p>
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PifIgnoreDocumentReconc()

Syntax	Function PifIgnoreDocumentReconc(strMsg As String) As Long
Description	<p>This function is used to ignore a document during a reconciliation operation. No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.</p> <p>Note: This function can only be used in non-parallelized mode.</p>
Input parameters	<ul style="list-style-type: none"> • strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>If [BarCode] = "" Then PifIgnoreDocumentReconc([AssetTag]) Else RetVal = [BarCode] End If</pre>

This function is only available in the reconciliation scripts.

PifIgnoreNodeMapping()

Syntax	Function PifIgnoreNodeMapping(strMsg As String) As Long
Description	<p>This function enables you to skip a node in a document. An information message, contained in the strMsg parameter, can be sent to the log.</p> <p>Caution: This function cannot be used on the root node of a document. To ignore a full document, use the PifIgnoreDocumentMapping() function.</p>
Input parameters	<ul style="list-style-type: none">• strMsg: Optional parameter. Character string sent to the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.

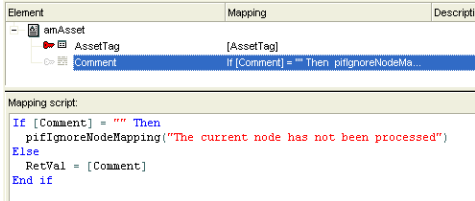
Example

The following script ignores the current node and logs a message if the **[Comment]** field is empty.


```

If [Comment] = "" Then
PiffIgnoreNodeMapping("The current node was not processed")
Else
RetVal = [Comment]
End If

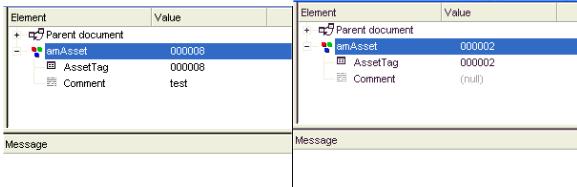
```



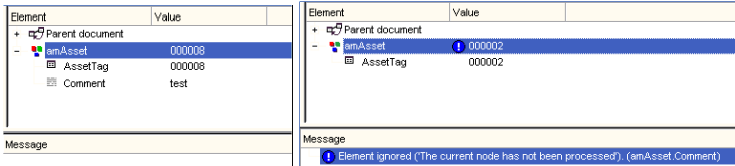
For example, if the mapping source document is the following:



If the **PiffIgnoreNodeMapping()** function is not used, the following documents can be produced:



If the **PiffIgnoreNodeMapping()** is used, the following documents will be produced instead:



Note: Since the node is not processed, the message sent to the log is written to the parent of the node that is skipped.

PiffIgnoreNodeReconc()

Syntax	Function PiffIgnoreNodeReconc(strMsg As String) As Long
Description	This function is used to ignore the current node (sub-document, collection, structure, etc.) during a reconciliation operation. No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.

Input parameters	<ul style="list-style-type: none"> • strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>If [Comment] = "" Then PifIgnoreNodeReconc("The current node was not processed") Else RetVal = [Comment] End If</pre>

Note: This function is only available in Connect-It reconciliation scripts.

PifIgnoreSubDocumentReconc()

Syntax	Function PifIgnoreSubDocumentReconc(strMsg As String) As Long
Description	This function applies when a field type element is selected. It is used in a reconciliation operation to ignore all elements on the same level as the field for which the function is applied as well as all sub-elements (links, structures, collections). No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.
Input parameters	<ul style="list-style-type: none"> • strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>If vNewVal = "" Then RetVal = PifIgnoreSubDocumentReconc Else RetVal = vNewVal End If</pre>

This function is only available in the Connect-It reconciliation scripts when a field is selected (does not apply for a link, structure or collection type element). For a given document type whose format is:

```
Struct1
-Field1
-Field1b
-Struct2
C-Field2
```

Field 1b, structure 2 and field 2 are ignored.

PifIsInMap()

Syntax	Function PifIsInMap(strKey As String, strMappable As String, bCaseSensitive As Long) As Long
Description	This function tests if a keyword is in a mappable. The search can be made case sensitive.
Input parameters	<ul style="list-style-type: none"> • strKey: Keyword. • strMappable: Name of the mappable being searched. <ul style="list-style-type: none"> ▪ 0:Case insensitive. ▪ 1:Case sensitive. • bCaseSensitive: This parameter specifies whether the search is casesensitive.
Output parameters	<ul style="list-style-type: none"> • 0: Keyword not found. • 1: Keyword found.
Example	<pre>If PifIsInMap("CAT_PC", "MainAsset") Then RetVal = 1 Else RetVal = 0 End If</pre>

PifLogInfoMsg()

Syntax	Function PifLogInfoMsg(strMsg As String) As Long
Description	Sends an information message, contained in the strMsg parameter, to the log.
Input parameters	<ul style="list-style-type: none"> • strMsg: Character string containing the message to be sent to the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim strBrand As String strBrand = [DeviceBrand] If strBrand = "" Then PifLogInfoMsg(PifStrVal("BRAND_UNREGISTERED")) RetVal = PifStrVal("BRAND_UNKNOWN") Else RetVal = strBrand End If</pre>

PifLogWarningMsg()

Syntax	Function PifLogWarningMsg(strMsg As String) As Long
Description	Sends an information message, contained in the strMsg parameter, to the log.
Input parameters	<ul style="list-style-type: none">• strMsg: Character string containing the message to be sent to the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.
Example	<pre>If [Brand] = "" Then PifLogWarningMsg("Unknown brand") Else RetVal = [Brand] End if</pre>

PifMapValue()

Syntax	Function PifMapValue(strKey As String, strMappable As String, iPos As Long, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String
Description	Returns the value of an element in a mappable. The element is uniquely identified using the strKey , strMapTable , and iPos parameters. The search can be made case sensitive.

<p>Input parameters</p>	<ul style="list-style-type: none"> • strKey: Keyword identifying the line in the mactable containing the element. • strMactable: Name of the mactable being searched. • iPos: Number of the column containing the element whose value you want to recover. This parameter can be any positive number; 0 represents the first column. • strDefault: Default value returned if the element is not found. • bCaseSensitive: This parameter specifies whether the search is case sensitive or not. <ul style="list-style-type: none"> ■ 0: Case insensitive. ■ 1: Case sensitive (default value). • bLogErrIfOutOfRange: Depending on this parameter, an error is logged (=TRUE) or not (=FALSE) in the event log when the column number (iPos parameter) is either negative or greater than the number of columns in the mactable. By default, this parameter is set to TRUE. • bLogNewEntries: This parameter creates the mactable for keys found and not previously declared in a mactable in a new file adjoining the scenario. This file has the same name as the scenario but is prefixed by <code>_NewMapKeys.mpt</code>. Maptables concerning the scenario are not updated automatically. To update maptables, edit the file that was just created and copy/paste the new information in the mactable file. <ul style="list-style-type: none"> ■ 0 (default value): The automatic creation of mactable files is disabled. ■ 1: The automatic creation of mactable files is enabled.
<p>Output parameters</p>	<p>The function returns the string found or the default string (which is contained in the strDefault parameter) if the element is not found.</p>

Example	<p>For example, consider the following mappable:</p> <div data-bbox="440 285 1357 705" style="border: 1px solid black; padding: 5px;"><p style="text-align: center; background-color: #d3d3d3; margin: 0;">Detail</p><p>File name: C:\Program Files\Peregrine\ConnectIt310\config\idd\mpt\idd.mpt</p><pre>#----- # List of Asset type and category association #----- { Mappable TypeCategory PRINTER CAT_PRINTER MODEM CAT_MODEM MONITOR CAT_MONITOR }</pre></div> <p>The following script: <code>pifMapValue("PRINTER", "TypeCategory", 1, "")</code> returns CAT_PRINTER.</p> <p>The following script: <code>pifMapValue("Printer", "TypeCategory", 1, "")</code> returns the default value. The search being case-sensitive, the searched element is not found.</p> <p>The following script: <code>pifMapValueContaining("Print", "TypeCategory", 1, 1, 1 "")</code> returns the default value, saves an error to the event log, and creates a mappable file.</p> <p>This function correctly handles the following wildcard characters:</p> <ul style="list-style-type: none">• ?: replaces any character.• *: replaces any number of characters.
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PifMapValueContaining()

Syntax	Function PifMapValueContaining(strKey As String, strMappable As String, iPos As Long, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String
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Description	<p>This function returns the value of an element in a mappable. The element is uniquely identified using the strKey, strMapTable, and iPos parameters. The search can be made case sensitive.</p> <p>The difference with the PifMapValue() function is that the keyword being searched can be a subset of the strKey parameter. For example, if strKey contains "Cat_Monitor", the element with keyword "Monitor" will be found.</p>
Input parameters	See PifMapValue
Output parameters	The function returns the string found or the default string (which is contained in the strDefault parameter) if the element is not found.
Example	See PifMapValue

This function correctly handles the following wildcard characters:

- ?: replaces any character.
- *: replaces any number of characters.

PifMapValueContainingEx()

Syntax	Function PifMapValueContainingEx(strKey As String, strMappable As String, strColName As String, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String
Description	<p>This function returns the value of an element in a mappable. The element is uniquely identified by these parameters: strKey, strMapTable, strColName. The search for the element can be made case sensitive.</p> <p>As opposed to the PifMapContaining() function, the strColName() parameter defines the column name instead of its position.</p> <p>This function is useful when:</p> <ul style="list-style-type: none"> • The mappable was created from a format (the column names correspond to the element names of the format) • The column names were defined manually in the mappables using the mappable editor.
Input parameters	<p>In addition to the parameters in PifMapValue,</p> <ul style="list-style-type: none"> • strColName: Name of the column containing the element whose value you want to retrieve.
Output parameters	The function returns the string found or the default string (which is contained in the strDefault parameter) if the element is not found.
Example	See PifMapValueContaining .

This function correctly handles the following wildcard characters:

- ?: replaces any character.
- *: replaces any number of characters.

If no mappable is created from a format or manually using the mappable editor, use the [PifMapValueContaining](#) or [PifMapValue](#) functions.

PifMapValueEx()

Syntax	Function PifMapValueEx(strKey As String, strMaptable As String, strColName As String, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String
Description	<p>This function returns the value of an element in a mappable. The element is uniquely identified by these parameters: strKey, strMapTable, strColName. The difference of this function as compared to the PIFMAPVALUE() function is that the strColName parameter specifies the column name instead of its number.</p> <p>The search for the element can be made case sensitive. This function is useful when:</p> <ul style="list-style-type: none">• The mappable was created from a format (the column names correspond to the element names of the format),• The column names were defined manually in the mappables using the mappable editor.
Input parameters	<p>In addition to the parameters in PifMapValue,</p> <ul style="list-style-type: none">• strColName: Name of the column containing the element whose value you want to retrieve.
Output parameters	The function returns the string found or the default string (which is contained in the strDefault parameter) if the element is not found.
Example	See PifMapValue .

This function correctly handles the following wildcard characters:

- ?: replaces any character.
- *: replaces any number of characters.

If no mappable is created from a format or manually using the mappable editor, use the [PifMapValueContaining](#) or [PifMapValue](#) functions.

PifNewQueryFromFmtName()

Syntax	Function PifNewQueryFromFmtName(strCntrName As String, strFmtName As String, strLayer As String) As Long
Description	This function creates a query on the document type defined beforehand in the list of documents produced by a resource. Note that this function only applies to ServiceCenter/Service Manager, Asset Manager and Database connectors.
Input parameters	<ul style="list-style-type: none"> • strCntrName: This parameter contains the name of the resource (on which the query is performed). • strFmtName: This parameter contains the identifier of the document type (defined beforehand as a produced document type). • strLayer: This parameter is used to define a production directive for a produced document type. The production directive can be: <ul style="list-style-type: none"> ▪ A WHERE clause that uses the correct syntax for the connector ▪ An XML description that defines production directives that are applied for the connector (for example, an Order By clause). The XML syntax of the production directives is described in the PifNewQueryFromXML() documentation. <p>If the document type strFmtName already contains production directives, they will be merged with those provided in the strLayer parameter. In the event that the two parameters provide a different value for the same directive, the value defined in strLayer will prevail.</p> <p>For better performance, create a dedicated connector (strCntrName) only for queries, along with a produced document type (strFmtName) containing the query fields.</p>
Example	<p>The following example shows a simple Where clause for the strLayer parameter:</p> <pre> dim hQuery as long dim iRc as long hQuery = pifNewQueryFromFmtName("Asset Management", "amEmp1Dept", >Name like 'A%') Dim strValue as string while (iRc = 0) iRc = pifQueryNext(hQuery) if iRc = 0 then strValue = pifQueryGetStringVal(hQuery, "Name") piflogInfoMsg strValue end if wend iRc = pifQueryClose(hQuery) </pre>

PifNewQueryFromXml()

Syntax	Function PifNewQueryFromXml(strCntrName As String, strQuery As String, strLayer As String) As Long
Description	This function creates a query for a resource. The document type must be fully defined in XML by the strQuery parameter. >The processing (AQL query clause) is defined in XML by the strLayer parameter.
Input parameters	<ul style="list-style-type: none">• strCntrName: This parameter contains the name of the resource (on which the query is performed).• strQuery: This parameter contains an XML document that defines the document type (attributes, structures, collections) on which the query is performed.• strLayer: This parameter contains an XML document that defines the production directives (Where clause, Order By clause, ...) for the query.

<p>Example</p>	<pre> strLayer = "<Directives>" strLayer = strLayer + "<Where>Name = '" + GetXmlElementValue ([Name]) + " ' </Where>" strLayer = strLayer + "<OrderBy>BarCode</OrderBy>" strLayer = strLayer + "<Where Path='ItemsUsed'>AssetTag like 'A%'</Where>" strLayer = strLayer + "</Directives>" </pre> <p>In this example, we build an XML document that specifies both the document to produce and the clauses of the query executed. As for all XML documents, it must be valid. Reserved characters (for example <, &...) must be escaped using GetXmlElementValue().</p> <p>Note: When strLayer contains a simple AQL Where clause, it is not necessary to use GetXmlElementValue().</p> <p>The preceding description assumes that you know the type of document to be produced and that the query contains a simple WHERE clause. The example below shows how to use the function without knowing the type of document to produce. It also shows how to use other AQL clauses.</p> <pre> dim hQuery as long dim strQuery as string dim strLayer as string dim iRc as long strQuery = "<STRUCTURE Name='amEmp1Dept'>" strQuery = strQuery + "<ATTRIBUTE Name='Name' />" strQuery = strQuery + "<ATTRIBUTE Name='BarCode' />" strQuery = strQuery + "<COLLECTION Name='ItemsUsed'>" strQuery = strQuery + "<ATTRIBUTE Name='AssetTag' />" strQuery = strQuery + "</COLLECTION>" strQuery = strQuery + "</STRUCTURE>" strLayer = "<Directives>" strLayer = strLayer + "<Where>Name = 'Taltek'</Where>" strLayer = strLayer + "<OrderBy>BarCode</OrderBy>" strLayer = strLayer + "<Where Path='ItemsUsed'>AssetTag like 'A%'</Where>" strLayer = strLayer + "</Directives>" hQuery = pifNewQueryFromXml("Asset Management", strQuery, strLayer) Dim strValue as string while (iRc = 0) iRc = pifQueryNext(hQuery) if iRc = 0 then strValue = pifQueryGetStringVal(hQuery, "Name") piflogInfoMsg strValue end if wend iRc = pifQueryClose(hQuery) </pre> <p>In this example, we build an XML document that specifies both the document to</p>
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	<p>produce and the clauses of the query executed. As for all XML documents, it must be valid. Reserved characters (for example <,&...) must be replaced with the corresponding entities (&lt;,&amp;...).</p> <p>For better performance, create a dedicated connector (strCntrName) only for queries, along with a query string (strQuery).</p>
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PifNodeExists()

Syntax	Function PifNodeExists(strPath As String) As Long
Description	Tests whether a node, identified by its full access path, exists in a produced document.
Input parameters	<ul style="list-style-type: none"> • strPath: Full path of the node concerned by the operation.
Output parameters	<p>Returns either of the following values:</p> <ul style="list-style-type: none"> • 0: If the node does not exist. • 1: If the node exists
Example	<pre>If PifNodeExists("Hardware.Peripherals.Printer") = 0 Then PifIgnoreNodeMapping End If</pre>

PifOpenODBCDatabase()

Syntax	Function PifOpenODBCDatabase(strDSN As String, strLogin As String, strPwd As String) As Long
Description	This function opens an ODBC connection.
Input parameters	<ul style="list-style-type: none"> • strDSN: Name of the data source for the ODBC connection. • strLogin: Login used to connect to the ODBC database. • strPwd: Password associated with the login (strLogin) used to connect to the ODBC database.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.

Example	<pre>Dim iRet As Integer iRet = PifOpenOdbcDatabase(PifStrVal("DSN"), PifStrVal("LOGIN"), PifStrVal("PWD")) If iRet = 0 Then Dim strQuery As String strQuery = "SELECT a.AssetName, a.FullName FROM Asset a" iRet = PifCreateDynaMatable (PifStrVal("DSN"), "Assets", strQuery, FALSE) End If Dim strRes as String if iRet = 0 Then strRes = PifMapValue ([FullName], "Assets", 1, "", 1) End If If iRet = 0 and strRes = "" Then strQuery = "SELECT a.AssetName FROM Asset a Where a.Name=" & FullName] strRes= PifExecODBCSql(PifStrVal("DSN"), strQuery) End If iRet = PifCloseODBCDatabase(PifStrVal("DSN"))</pre>
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PifQueryClose()

Syntax	Function PifQueryClose(IQueryHandle As Long) As Long
Description	This function closes the query and frees the internal resources used by the query.
Input parameters	<ul style="list-style-type: none"> • IQueryHandle: This parameter contains a handle of the query created using the PifNewQueryFromFmtName() or PifNewQueryFromXml() functions.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>dim hQuery as long dim iRc as long hQuery = pifNewQueryFromFmtName("Asset Management", "amEmplDept", "Name li ke 'A%'") Dim strValue as string while (iRc = 0) iRc = pifQueryNext(hQuery) if iRc = 0 then strValue = pifQueryGetStringVal(hQuery, "Name") piflogInfoMsg strValue end if wend iRc = pifQueryClose(hQuery)</pre>

PifQueryGetDateVal()

Syntax	Function PifQueryGetDateVal(IQueryHandle As Long, strPath As String, bPathMustExist As Long) As Date
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Description	This function returns the value (as a Date) of a node of the current document. The current document is the one on which the query cursor has been set using the PifQueryNext() function.
Input parameters	<ul style="list-style-type: none"> • IQueryHandle: This parameter contains a handle of the query created using the PifNewQueryFromFmtName() or PifNewQueryFromXml() functions. • strPath: This parameter contains the path of the node of the current document for which you want to recover the value. • bPathMustExist: Depending on this parameter, an error is logged (=TRUE) or not (=FALSE) in the event log when no value can be retrieved for the path specified in the strPath parameter.
Output parameters	Value of the identified node.
Example	<code>strValue = PifQueryGetLongVal(IQueryHandle, "dModify")</code>

PifQueryGetDoubleVal()

Syntax	Function PifQueryGetDoubleVal(IQueryHandle As Long, strPath As String, bPathMustExist As Long) As Double
Description	This function returns the value (as a Double) of a node of the current document. The current document is the one on which the query cursor has been set using the PifQueryNext() function.
Input/Output parameters	See PifQueryGetDateVal .

PifQueryGetIntVal()

Syntax	Function PifQueryGetIntVal(IQueryHandle As Long, strPath As String, bPathMustExist As Long) As Long
Description	This function returns the value (as an Integer) of a node of the current document. The current document is the one on which the query cursor has been set using the PifQueryNext() function.
Input/Output parameters	See PifQueryGetDateVal .

PifQueryGetLongVal()

Syntax	Function PifQueryGetLongVal(IQueryHandle As Long, strPath As String, bPathMustExist As Long) As Long
Description	This function returns the value (as a Long) of a node of the current document. The current document is the one on which the query cursor has been set using the PifQueryNext() function.
Input/Output parameters	See PifQueryGetDateVal .

PifQueryGetStringVal()

Syntax	Function PifQueryGetStringVal(IQueryHandle As Long, strPath As String, bPathMustExist As Long) As String
Description	This function returns the value (as a string) of a node of the current document. The current document is the one on which the query cursor has been set using the PifQueryNext() function.
Input/Output parameters	See PifQueryGetDateVal .

PifQueryNext()

Syntax	Function PifQueryNext(IQueryHandle As Long) As Long
Description	This function set the query cursor on the next result. The cursor is not set on the first document after calling the PifNewQueryFromFmtName() or PifNewQueryFromXml() functions. The user must call the PifQueryNext() function to access the values of the current document with one of the following functions: <ul style="list-style-type: none">• PifQueryGetStringVal()• PifQueryGetDateVal()• PifQueryGetDoubleVal()• PifQueryGetLongVal()• PifQueryGetIntVal()

Input parameters	<ul style="list-style-type: none"> • IQueryHandle: This parameter contains a handle of the query created using the PifNewQueryFromFmtName() or PifNewQueryFromXml() functions.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre> dim hQuery as long dim iRc as long hQuery = pifNewQueryFromFmtName("Asset Management", "amEmp1Dept", "Name li ke 'A%'") Dim strValue as string while (iRc = 0) iRc = pifQueryNext(hQuery) if iRc = 0 then strValue = pifQueryGetStringVal(hQuery, "Name") piflogInfoMsg strValue end if wend iRc = pifQueryClose(hQuery) </pre>

PifRejectCollectionMapping()

Syntax	Function PifRejectCollectionMapping(strMsg As String) As Long
Description	<p>This function enables you to reject all the elements of a collection, only in a collection-to-collection mapping. As a reminder, the PifRejectNodeMapping() function simply enables you to reject the current node of a collection. A message, contained in the strMsg parameter is sent to the log file.</p> <p>Note: Using this function is equivalent to a partial rejection of the document. Partial rejections can be recovered in the process reports of the mapping box.</p>
Input parameters	<ul style="list-style-type: none"> • strMsg: This optional parameter contains the message to be written to the log file.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<p>In the following example, all the elements of the collection are rejected if one of the elements has a quantity node whose value is set to '-1':</p> <pre> if [root.item(pifGetInstance).quantity] = -1 then pifRejectCollectionMapping("invalid quantity") end if </pre> <p>For comparison with the PifRejectNodeMapping() function, in the following example, only those elements of the collection with a quantity node whose value is set to '-1' are rejected:</p> <pre> if [root.item(pifGetInstance).quantity] = -1 then pifRejectNodeMapping end if </pre>

PifRejectDocumentMapping()

Syntax	Function PifRejectDocumentMapping(strMsg As String) As Long
Description	This function enables you to reject a document. An information message, contained in the strMsg parameter, can be sent to the log. The document is not transmitted to the next connector.
Input parameters	<ul style="list-style-type: none"> • strMsg: Optional parameter. Character string sent to the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim strNetAddress As String strNetAddress = [Hardware.TCPIP.PhysicalAddress] If strNetAddress = "" Then PifRejectDocumentMapping("Document rejected: missing MAC address") Else RetVal = strNetAddress End If</pre>

PifRejectDocumentReconc()

Syntax	Function PifRejectDocumentReconc(strMsg As String) As Long
Description	<p>This function is used to reject a document during a reconciliation operation. No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.</p> <p>This function can only be used in non-parallelized mode.</p>
Input parameters	<ul style="list-style-type: none"> • strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim strNetAddress As String strNetAddress = [Hardware.TCPIP.PhysicalAddress] If strNetAddress = "" Then PifRejectDocumentReconc("Document rejected: missing MAC address") Else RetVal = strNetAddress End If</pre> <p>This example would return either the value of the device's MAC S address (if the MAC address exists), or the message "Document rejected: missing MAC address" if there was no information about the MAC address.</p>

PifRejectNodeMapping()

Syntax	Function PifRejectNodeMapping(strMsg As String) As Long
Description	This function enables you to reject the current node of a document. An information message, contained in the strMsg parameter, can be sent to the log. Note: Using this function is equivalent to a partial rejection of the document. Partial rejections can be recovered in the process reports of the mapping box.
Input parameters	<ul style="list-style-type: none">• strMsg: Optional parameter. Character string sent to the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.

PifRejectNodeReconc

Syntax	Function PifRejectNodeReconc(strMsg As String) As Long
Description	This function is used to reject the current node (sub-document, collection, structure, etc.) during a reconciliation operation. No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.
Input parameters	<ul style="list-style-type: none">• strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none">• 0: Normal execution.• Other than zero: Error code.
Example	<pre>If [Location.Name] = "" Then PifRejectNodeReconc(PifStrVal("UNKNOWN_LOCATION")) End If</pre>

Note: This function is only available in the reconciliation scripts.

PifRejectSubDocumentReconc()

Syntax	Function PifRejectSubDocumentReconc(strMsg As String) As Long
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Description	This function is used to reject a sub-document during a reconciliation operation. No insertion or update is performed. A message, stored in the strMsg parameter, can be displayed in the log.
Input parameters	strMsg : This parameter contains the message displayed in the log.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim strFile strFile = pifScenarioPath & "Format.xml" Open strFile For Output As #1 Print #1, pifXmlDump Close #1</pre>

Note: This function is only available in the reconciliation scripts.

PifScenarioPath()

Syntax	Function PifScenarioPath() As String
Description	This function returns the full path of a scenario file. If the scenario has not yet been saved the function returns an empty value.
Example	<pre>Dim strFile strFile = pifScenarioPath & "Format.xml" Open strFile For Output As #1 Print #1, pifXmlDump Close #1</pre>

PifSetBlobVal()

Syntax	Function PifSetBlobVal(strPath As String, strFileName As String) As Long
Description	This function enables you to set the blob value of a node in the target document. If the node does not exist, the function creates it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation. • strFileName: This parameter contains the full path of the file that you want to set.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.

Example	<pre>Dim strFileName as String Dim lRet as Long strFileName = "C:\sample.jpg" lRet = PifSetBlobVal("mail.attachment", strFileName)</pre>
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PifSetDateVal()

Syntax	Function PifSetDateVal(strPath As String, dtVal As Date) As Long
Description	This function enables you to set the value of a node in the target document. If the node does not exist, the function creates it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation. • dtVal: This parameter contains the value (date) that you want to assign to the node.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim dtCurrent as Date Dim lRet as Long dtCurrent = Date() lRet = PifSetDateVal("ValueDate", dtCurrent)</pre>

PifSetDoubleVal()

Syntax	Function PifSetDoubleVal(strPath As String, dVal As Double) As Long
Description	This function enables you to set the value of a node in the target document. If the node does not exist, the function creates it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation. • dVal: This parameter contains the value (double) that you want to assign to the node.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim d as Double Dim lRet as Long d = 2.5 lRet = PifSetDoubleVal("ValueDouble", d)</pre>

PifSetLongVal()

Syntax	Function PifSetLongVal(strPath As String, IVal As Long) As Long
Description	This function enables you to set the value of a node in the target document. If the node does not exist, the function creates it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation. • IVal: This parameter contains the value (long integer) that you want to assign to the node.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim l as Long Dim lRet as Long l = 2 lRet = PifSetLongVal("ValueLong", l)</pre>

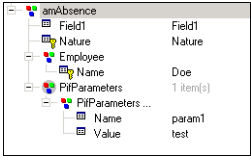
PifSetNullVal()

Syntax	Function PifSetNullVal(strPath As String) As Long
Description	This function enables you to populate a node in the target document with the value 'NULL'. If the node does not exist, the function will create it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full name of the node concerned by the operation. If this parameter is omitted or empty, the current node is selected.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>If [Name] = "" Then PifSetNullVal("FirstName") End if</pre>

PifSetParamValue()

Syntax	Function PifSetParamValue(strParamName As String, strValue As String, strPath As String)
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Description	This function is available for the AssetManagement, Database and ServiceCenter / Service Management connectors, only when the connector is in consumption mode. This function is used to define a text type value which can be accessed in a mapping script or a reconciliation script.
Input parameters	<ul style="list-style-type: none">• strParamName: Value stored in the 'Name' attribute of the PifParameters collection.• strValue: Value stored in the 'Value' attribute of the PifParameters collection.• strPath: Relative path for the data node. <p>Note: Collection nodes must have been created and a value set for the 'value' attribute. Use the "." syntax to navigate within the mapping tree structure</p>
Output parameters	The function returns the value as a string. When the scenario is executed for the second time, field 1 keeps its value (because vOldVal=vNewVal='Field1'). The reconciliation script changes the 'param1' parameter by assigning the value 'newvalue' to it (the initial value was 'test').

<p>Example</p>	<p>The amAbsence structure contains the PifParameters collection.</p>  <p>The values of the amAbsence structure's child items are as follows:</p> <ul style="list-style-type: none"> • Field1: Field1 • Nature: Nature • Employee.Name: Doe • PifParameters.Name: param1 • PifParameters.Value: test <p>The reconciliation script (in update mode) that calls this function is carried by the Nature field.</p> <pre>call PifSetParamValue("param1", "newValue") RetVal = vNewVal</pre> <p>When the scenario is executed for the first time, an absence is created for employee Doe. The value for field 1 is 'Field 1' and the value for the Nature field is 'nature'.</p> <p>Note: You must add the PifParameters collection to the structure or collection for this function to operate correctly. The PifParameters collection is available for each structure or collection of the document type, in consumption mode.</p>
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PifSetPendingDocument()

<p>Syntax</p>	<p>Function PifSetPendingDocument(strMsg As String) As Long</p>
<p>Description</p>	<p>This function is used to instruct a document to wait during a reconciliation operation. The document is not inserted or updated. A message, stored in the strMsg parameter, can be displayed in the log.</p> <p>Note: This function can only be used in non-parallelized mode.</p>
<p>Input parameters</p>	<ul style="list-style-type: none"> • strMsg : This parameter contains the message displayed in the log.
<p>Output parameters</p>	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.

Example	<pre>If vNewVal >= vOldVal Then RetVal = vNewVal Else RetVal = vOld PifSetPendingDocument(PifStrVal("RECONC_PROPOSAL_NOT_VALIDATED")) End If</pre>
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Note: This function is only available in the reconciliation scripts.

PifSetStringVal()

Syntax	Function PifSetStringVal(strPath As String, strVal As String) As Long
Description	This function enables you to set the value of a node in the target document. If the node does not exist, the function creates it.
Input parameters	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the node concerned by the operation. • strVal: This parameter contains the value (character string) that you want to assign to a node.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>Dim str as String Dim lRet as Long str = "100.10.1.1" lRet = PifSetStringVal("ipaddress", str)</pre> <p>You must retrieve the return code for the function. Failure to do so will result in a compilation error.</p> <p>The syntax to use to set the value of a field for a collection item is as follows: <code>PifSetStringVal(a.b(index).c)</code> Where c is field, b is collection, and index is the number to target.</p> <p>For example, for the Name field of the amComputer.LogicalDrives collection: <code>PifSetStringVal(amComputer.LogicalDrives(3).Name)</code></p> <p>This syntax is used to set the value for the Name of the third logical disk drive (LogicalDrive(3)) in the collection.</p>

PifStrVal()

Syntax	Function PifStrVal(strID As String) As String
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Description	Returns the character string associated with the identifier contained in the strID parameter.
Input parameters	<ul style="list-style-type: none"> • strID: Identifier of the character string to recover.
Output parameters	If the identifier is not found, the function returns an empty string and writes an error in the Connect-It log. If the identifier is found, the function returns its associated character string.
Example	<pre>If [DeviceType] = "" Then RetVal = PifStrVal("BRAND_UNKNOWN") End If</pre>

PifUserFmtStrToVar()

Syntax	Function PifUserFmtStrToVar(strData As String, strUserFmtName As String) As Variant
Description	This function processes a character string according to a format predefined using a wizard in the graphical interface of Connect-It, and returns a Date or Number type number according to the nature of the predefined format.
Input parameters	<ul style="list-style-type: none"> • strData: This parameter contains the string to be processed. • strUserFmtName: This parameter contains the name of the predefined format.
Example	<p>If we consider the following two predefined formats:</p> <ul style="list-style-type: none"> • origin = "yyyy'-'mm'-'dd" • destination = "dddd' 'dd' 'mmmm' 'yyyy" <p>Then the script:</p> <pre>Dim dTmp as Variant dTmp=PifUserFmtStrToVar([date_modified],"origin") RetVal = PifUserFmtVarToStr(dTmp,"destination")</pre> <p>Returns for [date_modified]= 2001-05-30 the value "Thursday, May 30, 2001"</p> <p>Note: For further information on the predefined formats, refer to the Connect-It User Guide.</p>

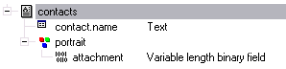
PifUserFmtVarToStr()

Syntax	Function PifUserFmtVarToStr(vData As Variant, strUserFmtName As String) As String
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Description	This function processes a variant according to a predefined format and returns a character string.
Input parameters	<ul style="list-style-type: none"> • vData: This parameter contains the variant processed by the function. • strUserFmtName: This parameter contains the name of the predefined format.
Example	<p>If we consider the following two predefined formats:</p> <ul style="list-style-type: none"> • origin = "yyyy'-'mm'-'dd" • destination = "dddd' 'dd' 'mmmm' 'yyyy" <p>Then the script:</p> <pre>Dim dTmp as Variant dTmp=PifUserFmtStrToVar([date_modified],"origin") RetVal = PifUserFmtVarToStr(dTmp,"destination")</pre> <p>Returns for [date_modified]= 2001-05-30 the value "Thursday, May 30, 2001"</p> <p>Note: For further information on predefined formats, refer to the Connect-It User Guide.</p>

PifWriteBlobInFile()

Syntax	Function PifWriteBlobInFile(strPath As String, strFileName As String) As Long
Description	This function enables you to write a binary element (blob) to a file. If the file does not exist, it is created by the function. If the file already exists, it is overwritten by the function.
Input parameters	<ul style="list-style-type: none"> • strPath : This parameter contains the full path of the binary element (blob) in the source document. • strFileName: This parameter contains the full path of the file in which the binary object is saved.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.

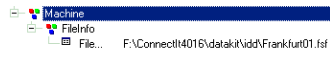
<p>Example</p>	<p>The screen capture below shows a source document containing the name and the picture of an employee:</p>  <p>The following script saves the picture of each employee in the c:\bitmap folder. The filename is the name of the employee.</p> <pre>Dim lErr As Long Dim strFileName As String strFileName = "C:\bitmap\" & ['contact.name'] & ".bmp" lErr = PifWriteBlobInFile("portrait.attachment", strFileName)</pre> <p>Note: The contact.name element contains a dot ("."). It is therefore mandatory to surround it by quotes to reference it (['contact.name']).</p> <p>When a function returns an error code, a variable should always be assigned to the function return code (as in : lErr = PifWriteBlobInFile()). If this is not the case, the script is not valid.</p> <p>Note: The function returns an error if the path of the file is not valid, the path of the source element does not exist in the source document, or the source element is not a binary element.</p>
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PifXMLDump()

<p>Syntax</p>	<p>Function PifXMLDump(strPath As String) As String</p>
<p>Description</p>	<p>This function enables you to dump the content of an element (and all its sub-elements) of the source document in XML format, inside a string.</p>
<p>Input parameters</p>	<ul style="list-style-type: none"> • strPath: This parameter contains the full path of the element of the source document concerned by the operation.

Example

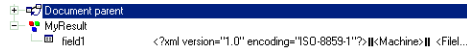
This first example describes how to save the content of the element below with the PifXMLDump() function.



The following script, associated to the "field1" field, is used:

```
RetVal = PifXMLDump("")
```

The screen capture below shows the result of the script execution.



"field1" contains the following XML document:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Machine>
<FileInfo>
<FileName>F:\ConnectIt4016\datakit\idd\Frankfurt01.fsf
</FileName>
</FileInfo>
</Machine>
```

To save only the structure of the FileInfo element, the following script can be used:

```
RetVal = PifXMLDump("FileInfo")
```

The XML document contained in the field will then be:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<FileInfo>
<FileName>F:\ConnectIt4016\datakit\idd\Frankfurt01.fsf
</FileName>
</FileInfo>
```


Functions (PMT to Year)

PMT()

Syntax	Function PMT(dbIRate As Double, iNper As Long, dbIPV As Double, dbIFV As Double, iType As Long) As Double
Description	This function returns the amount of an annuity based on constant and periodic payments, and at a constant interest rate.
Input parameters	<ul style="list-style-type: none"> ■ dbIRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be $0.06/12=0.005$ or 0.5% ■ iNper: This parameter contains the total number of dates of payment for the financial operation. ■ dbIPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future. ■ dbIFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil. ■ iType: This parameter indicates the payment deadline. It can have one of the following values: <ul style="list-style-type: none"> ○ 0 if the payments are due in arrears (i.e. at the end of the period) ○ 1 if the payments are due in advance (i.e. at the start of the period) <p>Note: The Rate and Nper parameters must be calculated using payments expressed in the same units. Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>

Example	<pre> ' The interest rate per date of payment: Dim dblRate as double ' The total number of dates of payment for the financial operation: Dim iNper as long ' The actual value (or overall sum) for a series of payments to be made in the future: Dim dblPV as double ' The future value or the balance that you want to obtain after having paid the final date of payment: Dim dblFV as double ' The payment deadline: Dim iType as long dblRate = 0.005 iNper = 365 dblPV = 100 dblFV = 0 iType = 0 RetVal = PMT(dblRate, iNper, dblPV, dblFV, iType) The value returned would be -0.596624840530552. </pre>
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PPMT()

Syntax	Function PPMT(dblRate As Double, iPer As Long, iNper As Long, dblPV As Double, dblFV As Double, iType As Long) As Double
Description	This function returns the amount of capital reimbursed for a given date of payment in an annuity based on constant and periodic payments and at a constant interest rate.

Input parameters	<ul style="list-style-type: none">■ dblRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be $0.06/12=0.005$ or 0.5%■ iPer: This parameter indicates the period for the calculation, between 1 and the value of the Nper parameter.■ iNper: This parameter contains the total number of dates of payment for the financial operation.■ dblPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future.■ dblFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil.■ iType: This parameter indicates the payment deadline. It can have one of the following values:<ul style="list-style-type: none">○ 0 if the payments are due in arrears (i.e. at the end of the period)○ 1 if the payments are due in advance (i.e. at the start of the period) <p>Note: The Rate and Nper parameters must be calculated using payments expressed in the same units. Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>
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Example	<pre> ' The interest rate per date of payment: Dim dblRate as double ' The period for the calculation, between 1 and the value of the Nper parameter: Dim iPer as double ' The total number of dates of payment for the financial operation: Dim iNper as long ' The future value or the balance that you want to obtain after having paid the final date of payment: Dim dblPV as double ' The future value or the balance that you want to obtain after having paid the final date of payment: Dim dblFV as double ' The payment deadline: Dim iType as long dblRate = 0.005 iPer = 100 iNper = 365 dblPV = 100 dblFV = 0 iType = 0 RetVal = PPMT(dblRate, iPer, iNper, dblPV, dblFV, iType) The value returned would be -0.158317492992482. </pre>
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PV()

Syntax	Function PV(dblRate As Double, iNper As Long, dbIPmt As Double, dbIFV As Double, iType As Long) As Double
Description	This function returns the actual amount of an annuity based on constant and periodic future deadlines, and on a fixed interest rate.

<p>Input parameters</p>	<ul style="list-style-type: none"> ■ dblRate: This parameter indicates the interest rate per date of payment. For example, the rate per date of payment for a loan with a 6% annual interest rate, paid back by monthly dates of payment, would be $0.06/12=0.005$ or 0.5% ■ iNper: This parameter contains the total number of dates of payment for the financial operation. ■ dblPmt: This parameter indicates the amount of the payment made at each date of payment. The payment generally includes both principal and interest. ■ dblFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil. ■ iType: This parameter indicates the payment deadline. It can have one of the following values: <ul style="list-style-type: none"> ○ 0 if the payments are due in arrears (i.e. at the end of the period) ○ 1 if the payments are due in advance (i.e. at the start of the period) <p>Note: The Rate and Nper parameters must be calculated using payments expressed in the same units. Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.</p>
<p>Example</p>	<pre>' The interest rate per date of payment: Dim dblRate as double ' The total number of dates of payment for the financial operation: Dim iNper as long ' The amount of the payment to be made at each date of payment. The payment generally includes both principal and interest: Dim dblPmt as double ' The actual value (or overall sum) for a series of payments to be made in the future: Dim dblFV as double ' The payment deadline: Dim iType as long dblRate = 0.005 iNper = 365 dblPmt = 100 dblFV = 0 iType = 0 RetVal = PV(dblRate, iNper, dblPmt, dblFV, iType)" The value returned would be -16760.9514734711.</pre>

Randomize()

Syntax	Function Randomize(IValue As Long)
Description	Initializes the random number generator.
Input parameters	<ul style="list-style-type: none"> ■ IValue: Optional parameter used to initialize the random-number generator of the Rnd function by specifying a new initial value. If this parameter is omitted, the value returned by the system clock is used as the initial value.
Example	<pre>Dim MyNumber Randomize MyNumber= Int((10*Rnd)+1 RetVal=MyNumber)</pre> <p>This would return a number between 0 and 10.</p>

RATE()

Syntax	Function RATE(iNper As Long, dbIPmt As Double, dbIFV As Double, dbIPV As Double, iType As Long, dbIGuess As Double) As Double
Description	This function returns the interest rate per date of payment for an annuity.
Input parameters	<ul style="list-style-type: none"> ■ iNper: This parameter contains the total number of dates of payment for the financial operation. ■ dbIPmt: This parameter indicates the amount of the payment to be made at each date of payment. The payment generally includes both principal and interest. ■ dbIFV: This parameter contains the future value or the balance that you want to obtain after having paid the final date of payment. In general, and particularly when reimbursing a loan, this parameter is set to "0". In effect, once you have made all the dates of payment, the value of the loan is nil. ■ dbIPV: This parameter contains the actual value (or overall sum) for a series of payments to be made in the future. ■ iType: This parameter indicates the payment deadline. It can have one of the following values: <ul style="list-style-type: none"> ○ 0 if the payments are due in arrears (i.e. at the end of the period) ○ 1 if the payments are due in advance (i.e. at the start of the period) ■ dbIGuess: This parameter contains the estimated value of the interest rate per date of payment.

Example	<pre> ' The total number of dates of payment for the financial operation: Dim iNper as long ' The amount of the payment to be made at each date of payment. The payment generally includes both principal and interest: Dim dblPmt as double ' The actual value (or overall sum) for a series of payments to be made in the future: Dim dblPV as double ' The actual value (or overall sum) for a series of payments to be made in the future: Dim dblFV as double ' The payment deadline: Dim iType as long ' The estimated value of the interest rate per date of payment: Dim dblGuess as double iNper = 365 dblPmt = -100 dblPV = 100 dblFV = 0 iType = 0 dblGuess = 0.00008 RetVal = RATE(iNper, dblPmt, dblPV, dblFV, iType, dblGuess) The value returned would be -0.0560381563814955. </pre>
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Note: Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.
 This function performs its calculation using iterations, starting with the value assigned in the Guess parameter. If no result is found after 20 iterations, the function fails.

RemoveRows()

Syntax	Function RemoveRows(strList As String, strRowNames As String) As String
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Description	<p>Performs a deletion in a list of lines identified by the <code>strRowNames</code> parameter. This function is useful when processing "ListBox" control type values. Values from this type of control are represented as arrays as described below:</p> <ul style="list-style-type: none"> • The " " character is used as the column separator. • The "," character is used as the line separator. • Each line ends with a unique identifier at the right of the "=" sign.
Input parameters	<ul style="list-style-type: none"> • strList: Source string containing the values of a "ListBox" control to be processed. • strRowNames: Identifiers of lines to be deleted. The identifiers are separated by commas.
Example	<pre>Dim MyStr MyStr=RemoveRows("a1 a2=a0,b1 b2=b0", "a0,c0") RetVal=MyStr The value returned is b1 b2=b0.</pre>

Rename()

Syntax	Function Rename(strSource As String, strDest As String) As Long
Description	Changes the name of file.
Input parameters	<ul style="list-style-type: none"> ▪ strSource: Full path of the file to rename. ▪ strDest: Full path of the target file.
Output parameters	<p>0: Normal execution. Other than zero: Error code.</p>
Example	<pre>Dim lErr as Long lErr = Name("C:\tmp\src.txt", "D:\tmp\dst.txt")</pre>

Replace()

Syntax	Function Replace(strData As String, strOldPattern As String, strNewPattern As String, bCaseSensitive As Long) As String
Description	Replaces all occurrences of the <code>strOldPattern</code> parameter with the <code>strNewPattern</code> parameter inside the character string contained in the <code>strData</code> parameter. The search for the <code>strOldPattern</code> parameter can be made case-sensitive using the value of the <code>bCaseSensitive</code> parameter.

Input parameters	<ul style="list-style-type: none"> ■ strData: Character string containing the occurrences to be replaced. ■ strOldPattern: Occurrence to find in the string contained in the strData parameter. ■ strNewPattern: Text replacing each occurrence found. ■ bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0). By default, this parameter is set to 1.
Example	<pre>Dim MyStr MyStr=Replace("youmeyoumeyou", "you", "me",0) This returns mememememe.</pre> <pre>MyStr=Replace("youmeyoumeyou", "You", "me",1) This returns youmeyoumeyou.</pre> <pre>MyStr=Replace("youmeYoumeyou", "You", "me",1) This returns youmememeyou.</pre>

Right()

Syntax	Function Right(strString As String, INumber As Long) As String
Description	Returns the rights most iNumber characters of the string parameter.
Input parameters	<ul style="list-style-type: none"> ● strString: Character string to process. ● INumber: Number of characters to return.
Example	<pre>Dim lWord, strMsg, rWord, iPos strMsg = "Left() Test." iPos = InStr(1, strMsg, " ") lWord = Left(strMsg, iPos - 1) rWord = Right(strMsg, Len(strMsg) - iPos) strMsg=rWord+lWord RetVal=strMsg This returns the value Test.Left().</pre>

RightPart()

Syntax	Function RightPart(strFrom As String, strSep As String, bCaseSensitive As Long) As String
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Description	Extracts the portion of a string to the right of the separator specified in the strSep parameter. The search for the separator is performed from right to left. The search can be made case sensitive using the bCaseSensitive parameter.
Input parameters	<ul style="list-style-type: none"> • strFrom: Source string to be processed. • strSep: Character used as separator in the source string. • bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0).
Example	<pre>Dim iSeed as Integer iSeed = Int((10*Rnd)-5) RetVal = Abs(iSeed) These examples illustrate use of the LeftPart, LeftPartFromRight, RightPart, and RightPartFromLeft functions on the same string: "This_is_a_test": LeftPart("This_is_a_test","_",0) Returns This. LeftPartFromRight("This_is_a_test","_",0) Returns This_is_a. RightPart("This_is_a_test","_",0) Returns test. RightPartFromLeft("This_is_a_test","_",0) Returns is_a_test.</pre>

RightPartFromLeft()

Syntax	Function RightPartFromLeft(strFrom As String, strSep As String, bCaseSensitive As Long) As String
Description	Extracts the portion of a string to the right of the separator specified in the strSep parameter. The search for the separator is performed from left to right. The search can be made case sensitive using the bCaseSensitive parameter.
Input parameters	<ul style="list-style-type: none"> • strFrom: Source string to be processed. • strSep: Character used as separator in the source string. • bCaseSensitive: Depending on this parameter, the search is case sensitive (=1) or not (=0). By default, this parameter is set to 1.

Example	<p>These examples illustrate use of the LeftPart, LeftPartFromRight, RightPart, and RightPartFromLeft functions on the same string: "This_is_a_test":</p> <pre>LeftPart("This_is_a_test", "_", 0) Returns This.</pre> <pre>LeftPartFromRight("This_is_a_test", "_", 0) Returns This_is_a.</pre> <pre>RightPart("This_is_a_test", "_", 0) Returns test.</pre> <pre>RightPartFromLeft("This_is_a_test", "_", 0) Returns is_a_test.</pre>
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RmAllInDir()

Syntax	Function RmAllInDir(strRmDirectory As String, bStopIfError As Long) As Long
Description	This function deletes all items (files and folders) from a folder. The folder itself is not deleted.
Input parameters	<ul style="list-style-type: none"> • strRmDirectory: This parameter contains the full path of the folder concerned by the operation. • bStopIfError: If this parameter is set to 1, the delete operation is suspended if the file or folder cannot be deleted. If this parameter is set to 0, the operation continues and moves on to the following file or folder.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	RetVal = RmAllInDir("c:\files\test", 1)

Rmdir()

Syntax	Function Rmdir(strRmDirectory As String) As Long
Description	Removes an existing directory. Note: The directory to be deleted must be empty.
Input parameters	<ul style="list-style-type: none"> • strRmDirectory: Full path of the directory to be removed.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	RetVal = Rmdir("c: mp")

Rnd()

Syntax	Function Rnd(dValue As Double) As Double
Description	Returns a value containing a random number.
Input parameters	<ul style="list-style-type: none">• dValue: Optional parameter whose value defines the mode of execution of the function:<ul style="list-style-type: none">▪ Less than zero: The same number is generated each time.▪ Greater than zero: Next random number in the series.▪ Equal to zero: Last random number generated.▪ Omitted: Next random number in the series.
Example	<pre>Dim MyNumber Randomize MyNumber= Int((10*Rnd)+1) RetVal=MyNumber</pre> <p>This returns a random value between 1 and 10.</p>

Note: Before calling this function, you must use the Randomize function, without parameters, to initialize the random number generator.

RoundValue()

Syntax	Function RoundValue(dValue As Double, iDigits As Long) As Double
Description	This function calculates the rounding value of a number to the number of digits after the decimal point as specified by the iDigits parameter.
Input parameters	<ul style="list-style-type: none">• dValue: This parameter contains the number to be rounded.• iDigits: This parameter contains the number of decimal places to keep for the rounding operation.
Example	<pre>RetVal = RoundValue(1.2568, 2)</pre> <p>This returns the value 1.26.</p> <pre>RetVal = RoundValue(1.2568, 0)</pre> <p>This returns the value 1.</p>

RTrim()

Syntax	Function RTrim(strString As String) As String
Description	Removes all trailing spaces in a string.
Input parameters	<ul style="list-style-type: none"> • strString: String to process.
Example	<p>This example uses the LTrim and RTrim functions to strip leading and trailing spaces, respectively, from a string variable. It uses the Trim function alone to strip both types of spaces.</p> <pre>Dim strString as String Dim strTrimString as String strString = " string "</pre> <pre>strTrimString = RTrim(strString) RetVal= " " & strTrimString & " "</pre> <p>This returns the value string .</p>

Second()

Syntax	Function Second(tmTime As Date) As Long
Description	Returns the number of seconds contained in the time expressed by the tmTime parameter.
Input parameters	<ul style="list-style-type: none"> • tmTime: Parameter in Date+Time format to be processed.
Example	<pre>Dim strSecond strSecond=Second(Date()) RetVal=strSecond</pre> <p>This returns the number of seconds elapsed in the current hour; for example, 30 if the time is 15:45:30.</p>

SetMaxInst()

Syntax	Function SetMaxInst(lMaxInst As Long) As Long
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Description	This function enables you to set the maximum number of instructions that a Basic script can execute. By default, the number of instructions is limited to 10000.
Input parameters	<ul style="list-style-type: none"> • IMaxInst: This parameter contains the maximum number of instructions that can be executed by a script.
Output parameters	<ul style="list-style-type: none"> • 0: Normal execution. • Other than zero: Error code.
Example	<pre>SetMaxInst(1000)</pre> <p>Sets the number to 1000.</p> <pre>SetMaxInst(0)</pre> <p>Sets the number to infinity.</p>

If you set the IMaxInst parameter to "0", the number of instructions that a script can execute is unlimited.

SetSubList()

Syntax	Function SetSubList(strValues As String, strRows As String, strRowFormat As String) As String
Description	Defines the values of a sublist for a "ListBox" control.
Input parameters	<ul style="list-style-type: none"> ■ strValues: Source string containing the values of a "ListBox" control to be processed. ■ strRows: List of values to add to or replace the characters contained in the string in the strValues parameter. The values are separated by the " " character. The lines that are processed are identified by their identifier, situated to the right of the "=" sign. Unknown lines are not processed. n ■ strRowFormat: Formatting instructions for the sublist. Instructions are separated by the " " character. This parameter has the following characteristics: <ul style="list-style-type: none"> ○ "1" represents the information contained in the first column of the sublist. ○ "i-j" can be used to define a group of columns. ○ "-" takes all columns into account. ○ An unknown column does not return a value.

Example	<pre>Dim MyStr MyStr=SetSubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "A2 A1=a0, B2 B1=b 0", "2 1")</pre> <p>Returns A1 A2 a3=a0,B1 B2 b3=b0,c1 c2 c3=c0.</p> <pre>MyStr=SetSubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "Z2=*,B2=b0", "2")</pre> <p>Returns a1 Z2 a3=a0,b1 B2 b3=b0,c1 Z2 c3=c0.</p> <pre>MyStr=SetSubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "B5 B6 B7=b0,C5 C6 ,C7=c0", "5-7")</pre> <p>Returns a1 a2 a3=a0,b1 b2 b3 B5 B6 B7=b0,c1 c2 c3 C5 C6 C7=c0.</p> <pre>MyStr=SetSubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "B1 B2 B3 B4=b0", "-")</pre> <p>Returns a1 a2 a3=a0,B1 B2 B3 B4=b0,c1 c2 c3=c0.</p> <pre>MyStr=SetSubList("A B C,D E F", "X=*", "2")</pre> <p>Returns A X C,D X F" RetVal=".</p>
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Sgn()

Syntax	Function Sgn(dValue As Double) As Double
Description	Returns a value indicating the sign of a number.
Input parameters	<ul style="list-style-type: none"> dValue: Number whose sign you want know.
Output parameters	<p>The function can return one of the following values:</p> <ul style="list-style-type: none"> 1: The number is greater than zero. 0: The number is equal to zero -1: The number is less than zero.
Example	<pre>Dim dNumber as Double dNumber=-256 RetVal=Sgn(dNumber) The value returned would be -256.</pre>

Shell()

Syntax	Function Shell(strExec As String, bShowWindow As Long, bBackground As Long) As Long
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Description	Launches an executable program.
Input parameters	<ul style="list-style-type: none"> • strExec: Full path of the executable to be launched. • bShowWindow: If this parameter is set to 1 (default value), the command box is displayed when the program is launched. If this parameter is set to 0, the command box is not displayed. • bBackground: If this parameter is set to 1 (default value), the program is executed asynchronously. If this parameter is set to 0, the function waits for the end of execution of the program before giving you back control (synchronous execution).
Example	<pre>Dim MyId MyId=Shell("C:\WinNT\explorer.exe") RetVal=""</pre>

Sin()

Syntax	Function Sin(dValue As Double) As Double
Description	Returns the sine of an number that is expressed in radians.
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose sine you want to know.
Example	<pre>Dim dCalc as Double dCalc=Sin(2.79) RetVal=dCalc</pre> <p>The value returned would be 0.344393467.</p>

The conversion formula for degrees to radians is the following:
 $\text{angle in radians} = (\text{angle en degrees}) * \text{Pi} / 180$

Space()

Syntax	Function Space(iCount As Long) As String
Description	Creates a string including the number of spaces indicated by the iSpace parameter.
Input parameters	<ul style="list-style-type: none"> • iCount: Number of spaces to be inserted into the string.
Example	<pre>Dim MyString ' Returns a string of 10 spaces. MyString = Space(10) ' Inserts 10 spaces between two strings. MyString = "Space" & Space(10) & "inserted" RetVal=MyString</pre>

Sqr()

Syntax	Function Sqr(dValue As Double) As Double
Description	Returns the square root of a number.
Input parameters	<ul style="list-style-type: none"> • dValue: Number whose square root you want to know.
Example	<pre>Dim dCalc as Double dCalc=Sqr(81) RetVal=dCalc The value returned would be 9.</pre>

Str()

Syntax	Function Str(strValue As String) As String
Description	Converts a number to a string.
Input parameters	<ul style="list-style-type: none"> • strValue: Number to convert to a string.
Example	<pre>Dim dNumber as Double Dim StringConv as String Dim StringTotal as String dNumber=2.1) StringConv=Str(dNumber) StringTotal = "This is a string" & StringConv RetVal = StringTotal This would return This is a string: 2.1.</pre>

StrComp()

Syntax	Function StrComp(strString1 As String, strString2 As String, iOptionCompare As Long) As Long
Description	Compares two strings.
Input parameters	<ul style="list-style-type: none"> • strString1: First string. • strString2: Second string. • iOptionCompare: Comparison type. This parameter can be set to "0" for a binary comparison, or "1" for a text comparison.

Output parameters	<ul style="list-style-type: none"> • -1: strString1 is greater than strString2. • 0: strString1 is equal to strString2. • 1: strString1 is less than strString2.
Example	<pre>Dim strValue1 as string Dim strValue2 as string Dim lRc as long strValue1 = "Connect-It" strValue2 = "Connect It" lRc = StrComp(strValue1, strValue2, 1) if lRc > 0 then PifLogInfoMsg("strValue1 is less than strValue2") elseif lRc = 0 then PifLogInfoMsg("strValue1 is equal to strValue2") else PifLogInfoMsg("strValue1 is greater than strValue2") end if</pre> <p>The value of lRc would be strValue1 is greater than strValue2.</p>

String()

Syntax	Function String(iCount As Long, strString As String) As String
Description	String returns a string consisting of the strString character repeated over and over iCount times.
Input parameters	<ul style="list-style-type: none"> • iCount: Number of occurrences of the character strString. • strString: Character used to compose the string.
Example	<pre>Dim iCount as Integer Dim strTest as String strTest="T" iCount=5 RetVal=String(iCount,strTest) The value returned would be TTTTT.</pre>

SubList()

Syntax	Function SubList(strValues As String, strRows As String, strRowFormat As String) As String
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Description	Returns a sublist of a list of values contained in a string representing the values of a "ListBox" control.
Input parameters	<ul style="list-style-type: none"> • strValues: Source string containing the values of a "ListBox" control to be processed. • strRows: Identifiers of lines to be included in the sublist. The identifiers are separated by commas. Certain wildcard characters can be used: <ul style="list-style-type: none"> ■ "*" includes all identifiers in the sublist. ■ An unknown identifier returns an empty value for the sub-list. • strRowFormat: Formatting instructions for the sublist. Instructions are separated by the " " character. This parameter has the following characteristics: <ul style="list-style-type: none"> ■ "1" represents the information contained in the first column of the list from which we are extracting a sublist. ■ "0" represents the identifier of the line in the list from which we are extracting a sublist. ■ "*" represents the information contained in all the columns (except the line identifier). ■ An unknown column does not return a value.
Example	<pre>Dim MyStr MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "a0,b0,a0", "3 2 3") :'Returns "a3 a2 a3,b3 b2 b3,a3 a2 a3" MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "*", "* 0") :'Returns "a1 a2 a3 a0,b1 b2 b3 b0,c1 c2 c3 c0" MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "*", "*=0") :'Returns "a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0" MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "*", "999=0") :'Returns "=a0,=b0,=c0" MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "z0", "*=0") :'Returns "" MyStr=SubList("a1 a2 a3=a0,b1 b2 b3=b0,c1 c2 c3=c0", "*", "=1") :'Returns "=a1,=b1,=c1" MyStr=SubList("A B C,D E F", "*", "2=0") :'Returns "B,E" RetVal=""</pre>

Tan()

Syntax	Function Tan(dValue As Double) As Double
Description	Returns the tangent of a number expressed in radians.
Input parameters	<ul style="list-style-type: none">• dValue: Number whose tangent you want to know.
Example	<pre>Dim dCalc as Double dCalc=Tan(2.79) RetVal=dCalc</pre> The value returned would be -0.366834414

The conversion formula for degrees to radians is the following:
 $\text{angle in radians} = (\text{angle en degrees}) * \text{Pi} / 180$

Time()

Syntax	Function Timer() As Double
Description	Returns the number of seconds elapsed since 12:00 AM.
Example	<pre>RetVal = Time()</pre>

TimeSerial()

Syntax	Function TimeSerial(iHour As Long, iMinute As Long, iSecond As Long) As Date
Description	This function returns a time formatted according to the iHour, iMinute and iSecond parameters.
Input parameters	<ul style="list-style-type: none">▪ iHour: Hour.▪ iMinute: Minutes.▪ iSecond: Seconds.

Example	<p>Each of these parameters can be set to a numeric expression representing a number of hours, minutes or seconds. Thus in the following example: <code>TimeSerial(12-8, -10, 0)</code></p> <p>Returns the value s3:50:00.</p> <p>When the value of a parameter is out of the expected range (i.e. 0-59 for minutes and seconds and 0-23 for hours), it is converted to the parameter the next up. Thus, if you enter "75" for the iMinute parameter, it will be interpreted as 1 hour and 15 minutes.</p> <p>The following example: <code>TimeSerial (16, 50, 45)</code></p> <p>Returns the value 16:50:45</p>
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TimeValue()

Syntax	Function TimeValue(tmTime As Date) As Date
Description	This function returns the time portion of a "Date+Time" value.
Input parameters	<ul style="list-style-type: none"> • tmTime: "Date+Time" format date.
Example	<p>The following example: <code>TimeValue ("1999/09/24 15:00:00")</code></p> <p>Returns the value 15:00:00.</p>

ToSmart()

Syntax	Function ToSmart(strString As String) As String
Description	This function reformats a source string by capitalizing the first letter of each word.
Input parameters	<ul style="list-style-type: none"> • strString: Source string to reformat.
Example	<p>The following example: <code>TimeValue ("1999/09/24 15:00:00")</code></p> <p>Returns the value 15:00:00.</p>

Trim()

Syntax	Function Trim(strString As String) As String
Description	Returns a copy of a string with the leading and trailing spaces removed.
Input parameters	<ul style="list-style-type: none">• strString: String to process.
Example	This example uses the LTrim and RTrim functions to strip leading ' and trailing spaces, respectively, from a string variable. It uses the Trim function alone to strip both types of spaces. See RTrim .

UCase()

Syntax	Function UCase(strString As String) As String
Description	Returns a copy of a sting in which all lowercase characters are converted to uppercase.
Input parameters	<ul style="list-style-type: none">• strString: Character string to convert to uppercase.

UnEscapeSeparators()

Syntax	Function UnEscapeSeparators(strSource As String, strEscChar As String) As String
Description	Deletes all the escape characters from a string.
Input parameters	<ul style="list-style-type: none">• strSource: Character string to process.• strEscChar: Escape character to be deleted.
Example	<pre>Dim MyStr MyStr=UnEscapeSeparators("you\ me\ you\ ", "\") RetVal="" The value returned would be you me you .</pre>

Union()

Syntax	Function Union(strListOne As String, strListTwo As String, strSeparator As String, strEscChar As String) As String
Description	Merges two strings delimited by separators. Duplicates are deleted.
Input parameters	<ul style="list-style-type: none"> • strListOne: First string. • strListTwo: Second string. • strSeparator: Separator used to delimit the elements contained in the strings. • strEscChar: Escape character. If this character prefixes the separator, it will be ignored.
Example	<pre>Dim MyStr MyStr=Union("a1 a2,b1 b2", "a1 a3,b1 b2", ",", "\") :Returns "a1 a2,b1 b2 ,a1 a3" MyStr=Union("a1 a2,b1 b2", "a1 a3\",b1 b2", ",", "\") :Returns "a1 a2,b1 b 2,a1 a3\",b1 b2" RetVal=""</pre>

UTCToLocalDate()

Syntax	Function UTCToLocalDate(tmUTC As Date) As Date
Description	This function converts a date in UTC format (time-zone independent) to a "Date+Time" format date.
Input parameters	<ul style="list-style-type: none"> • tmUTC: Date in UTC format.
Example	RetVal = UTCToLocaldate([DateTime])

Val()

Syntax	Function Val(strString As String) As Double
Description	Converts a string representing a number to a double.
Input parameters	<ul style="list-style-type: none"> • strString: Character string to convert.

Example	<pre>Dim strYear Dim dYear as Double strYear=Year(Date()) dYear=Val(strYear) RetVal=dYear</pre>
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WeekDay()

Syntax	Function WeekDay(tmDate As Date) As Long
Description	Returns the day of the week contained in the date expressed by the tmDate parameter.
Input parameters	<ul style="list-style-type: none"> • tmDate: Parameter in Date+Time format to be processed.
Output parameters	The number returned corresponds to a day of the week where "1" represents Sunday, "2" Monday, ..., "7" Saturday.
Example	<pre>Dim strWeekDay strWeekDay=WeekDay(Date()) RetVal=strWeekDay</pre>

XmlAttribute()

Syntax	Function XmlAttribute(strName As String, strValue As String) As String
Description	<p>This function generates the strName="strValue" string, where strName remains unchanged and the predefined XML entities in strValue are converted into XML. The five predefined XML entities and their conversions are as follows:</p> <ul style="list-style-type: none"> • The &lt; entity corresponding to the < character • The &gt; entity corresponding to the > character • The &amp; entity corresponding to the & character • The &apos; entity corresponding to the ' character • The &quot; entity corresponding to the " character
Input parameters	<ul style="list-style-type: none"> • strName: This parameter contains the name of the XML attribute. • strValue: This parameter contains the value of the XML attribute.
Example	<p>The example below:</p> <pre>RetVal = XmlAttribute("Equation & condition","ten < eleven")</pre> <p>Returns the value Equation & condition = "ten &lt; eleven".</p>

Year()

Syntax	Function Year(tmDate As Date) As Long
Description	Returns the year contained in the value expressed by the tmDate parameter.
Input parameters	<ul style="list-style-type: none">• tmDate: Parameter in Date+Time format to be processed.
Example	<pre>Dim strYear strYear=Year(Date()) RetVal=strYear</pre>

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