HP Connect-It

Software Version: 9.20

Programmer's Reference

Document Release Date: October 2010

Software Release Date: October 2010

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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 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 is 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 assigment 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 euclidien 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>
>	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 numb er>
```

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: • **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: • **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.

Symbol	Description
	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 [MacAdress] <> "" Then
RetVal = [MacAdress]
Else
```

```
RetVal = [IPAdress]
End If
```

This script tests whether the **MacAdress** and **IPAdress** 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 MAcAdress")
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 **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.

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 = [MacAdress]
```

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 **Sofware.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 Integer
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 Integer
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 (**amEmplDept**) and call the produced document type (**Document type** field) amEmplDeptForMapping. 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", "amEmplDeptForMappi ng",
"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. 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("Ass
etTag 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	• **dValue**: Number for which you want to know the absolute value.
Example	`Dim iSeed as Integer` `iSeed = Int((10*Rnd)-5)` `RetVal = Abs(iSeed)` If the random number is **-1**, the value returned will be **15**.

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: `strExpr strOperator strOperand` ***Note:*** *If one of the* ***strExpr*** *or* ***strOperand*** *parameters is omitted, strOperator is not used in the concatenation.*
Input parameters	• **strExpr**: Expression to be concatenated. • **strOperator**: Operator to concatenate. • **strOperand**: Operand to concatenate.
Example	`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**.

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	• **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	• **strAsc**: Character sting on which the function operates.
Example	`RetVal=Asc("ABC")` The value returned is **65**, which is the decimal value of the character **A**.

Atn()

Syntax	**Function Atn(dValue As Double) As Double**
Description	Returns the arc tangent of a number, expressed in radians.
Input parameters	• **dValue**: Number for which you want to know the arc tangent.
Example	`Dim dPi as Double` `Dim strString as String` `dPi=4*Atn(1)` `strString = Str(dPi)` `RetVal=strString` The value returned is ***pi*** **(3.14....)**.

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	• **strDateBasic**: Date in Basic format to convert.
Example	`Dim strDateBasic as string` `strDateBasic = "02/01/2010"` `RetVal = BasicToLocalDate(strDateBasic)` If the local Windows system uses the dd/mm/yyyy format, the value returned would be the equivalent of January 2nd, 2010.

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	• **strTimeBasic**: Time in Basic format to convert.
Example	`Dim strTimeBasic as string` `strTimeBasic = "18:25:35"` `RetVal = BasicToLocalTime(strTimeBasic)` 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.

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	• **strTSBasic**: Date+Time in Basic format to convert.
Example	`Dim strTimeStampBasic as string` `strTimeStampBasic = "02/01/2010 18:25:35"` `RetVal = BasicToLocalTimeStamp(strTimeStampBasic)` 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.

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	• **dValue**: Expression to convert.
Example	`Dim dNumber As Double` `Dim iInteger as Integer` `iInteger = 2500000` `dNumber=CDbl(iInteger)` `RetVal=dNumber` The value returned would be **2500000**.

ChDir()

Syntax	**Function ChDir(strDirectory As String)**
Description	Changes the current directory.
Input parameters	• **strDirectory**: New current directory.
Example	`Dim strDirectory as string` `strDirectory = "C:/tmp/"` `ChDir(strDirectory)` This changes the directory to `C:/tmp/`.

ChDrive()

Syntax	**Function ChDrive(strDrive As String)**
Description	Changes the current drive.
Input parameters	• **strDrive**: New drivename.
Example	`Dim strDrive as string` `strDrive = "R:"` `ChDrive(strDrive)` This changes the drive to the R drive.

Chr()

Syntax	**Function Chr(IChr As Long) As String**
Description	Returns a string corresponding to the ASCII passed by the iChr parameter.
Input parameters	• **IChr**: ASCII code of the character.
Example	`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` The value returned would be **ABCDEFGHIJKLMNOPQRSTUVWXYZ**.

CInt()

Syntax	**Function CInt(iValue As Long) As Long**
Description	Converts any valid expression to an Integer.
Input parameters	• **iValue**: Expression to convert.
Example	`Dim iNumber As Integer` `Dim dDouble as Double` `dDouble = 25` `iNumber=CInt(dDouble)` `RetVal=iNumber` The value returned would be **25**.

CLng()

Syntax	**Function CLng(lValue As Long) As Long**
Description	Converts any valid expression to a Long.
Input parameters	• **lValue**: Expression to convert.
Example	`Dim lNumber As Long` `Dim iInteger as Integer` `iInteger=25` `lNumber=CLng(iInteger)` `RetVal=lNumber` The value returned would be **25**.

Cos()

Syntax	**Function Cos(dValue As Double) As Double**
Description	Returns the cosine of a number, expressed in radians.
Input parameters	• **dValue**: Number whose cosine you want to know.
Example	`Dim dCalc as Double` `dCalc=Cos(2.79)` `RetVal=dCalc` The value returned would be **-0.938825404**.

Note: *The conversion formula for degrees to radians is the following:*

`angle in radians = (angle in degrees) * Pi / 180`

CountOccurences()

Syntax	**Function CountOccurences(strSearched As String, strPattern As String, strEscChar As String) As Long**
Description	Counts the number of occurrences of a string inside another string.
Input parameters	▪ **strSearched**: Character string in which to perform to the search. ▪ **strPattern**: Character string to find inside the strSearched parameter. ▪ **strEscChar**: Escape character. If the function encounters this character inside the strSearched string, the search stops.
Example	`Dim MyStr` `MyStr=CountOccurences("you|me|you,me|you", "you", ",")` The returned value would be **2**. `MyStr=CountOccurences("you|me|you,me|you", "you", "|")` The returned value would be **1**.

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	• **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 count or not ▪ 0: empty string is not counted (default) ▪ 1: empty string is counted
Example	`Dim MyStr` `MyStr=CountValues("you|me|you\\\|me|you", "|", "\")` This would return the value **4**. `MyStr=CountValues("you|me|you\\\|me|you", "|", "")` This would return the value **5**. `MyStr=CountValues("MAIN MENUE,,HOME", ",","\",1)` This would return the value **3**.

CSng()

Syntax	**Function CSng(fValue As Single) As Single**
Description	Converts any valid expression to a floating point number ("Float").
Input parameters	• **fValue**: Expression to convert.
Example	`Dim dNumber As Double` `Dim iInteger as Integer` `iInteger = 25` `dNumber=CSng(iInteger)` `RetVal=dNumber` The returned value would be **25**.

CStr()

Syntax	**Function CStr(strValue As String) As String**
Description	Converts any valid expression to a String.
Input parameters	• **strValue**: Expression to convert.
Example	`Dim dNumber As Double` `Dim strMessage as String` `dNumber = 2452873` `strMessage=CStr(dNumber)` `RetVal=strMessage` The returned value would be **2452873**, but would be used only as text, not as a number that could be calculated.

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	• **vValue**: Expression to convert.
Example	`Dim vValue as Variant` `vValue = CVar(2.3 + 3)` `RetVal = vValue` The value returned would be **5.3**.

Date()

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

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	• **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	`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)`

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	• **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	`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)`

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	• **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	`DateDiff("1998/01/01 00:00:00", "1999/01/01 00:00:00")` The example calculates the time elapsed between 01/01/98 and 01/01/99, which is 31536000 seconds.

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	• **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	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)` Returns the value: `1989/1/7` 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.

DateValue()

Syntax	**Function DateValue(tmDate As Date) As Date**
Description	This function returns the date portions of a "Date+Time" value.
Input parameters	• tmDate: "Date+Time" format date.
Example	The following example: `DateValue ("1999/09/24 15:00:00")` Returns the value: `1999/09/24`

Day()

Syntax	**Function Day(tmDate As Date) As String**
Description	Returns the day contained in the tmDate parameter.
Input parameters	• **tmDate**: Parameter in Date+Time format to be processed.
Example	`Dim strDay As StringDim` `dCurDate as date` `dCurDate= Date()` `strDay = Day(dCurDate)` `RetVal=strDay` This value returned would be **2** if it were the 2nd day of the month.

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	• **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	`Dim MyStr` `MyStr=EscapeSeparators("you|me|you,me|you", "|\,", "\")` This would return the value **you|me|you\,me|you**

ExeDir()

Syntax	**Function ExeDir() As String**
Description	This function returns the full path of the executable.
Example	`Dim strPath as string` `strPath=ExeDir()`

Exp()

Syntax	**Function Exp(dValue As Double) As Double**
Description	Returns the exponent of a number.
Input parameters	• **dValue**: Number whose exponent you want to know.
Example	`Dim iSeed as Integer` `iSeed = Int((10*Rnd)-5)` `RetVal = Exp(iSeed)` If the random number were 100, this would return the value **1.81123908 × 10^{41}**.

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	• **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	`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=""`

FileCopy()

Syntax	**Function FileCopy(strSource As String, strDest As String) As Long**
Description	Copies a file or a folder.
Input parameters	• **strSource**: Full path of the file or directory to copy. • **strDest**: Full path of the target file or directory.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`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` This would copy the file `myfile.log` to the location `c:\archive\` and given the new name that reflects the date.

FileDateTime()

Syntax	**Function FileDateTime(strFileName As String) As Date**
Description	Returns the time and date of a file as a Long.
Input parameters	• **strFileName**: Full path name of the file concerned by the operation.
Example	`RetVal = FileDateTime("c:/temp/a.txt")`

FileExists()

Syntax	**Function FileExists(strFileName As String) As Long**
Description	This function tests for the existence of a file. The function returns the following values: • 0: File not found. • 1: File found.
Input parameters	strFileName: This parameter contains the full path of the file you want to test for.
Example	`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` This would copy a new file to `c:\archive\` if the file `myfile.log` does not exist.

FileLen()

Syntax	**Function FileLen(strFileName As String) As Long**
Description	Returns the size of a file.
Input parameters	• **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	• **dValue**: Number whose integer portion you want to know.
Example	`Dim dSeed as Double` `dSeed = (10*Rnd)-5` `RetVal = Fix(dSeed)` The value returned would be **2.05547511577606**.

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	• **tmFormat**: Date to be formatted. • **strFormat**: Expression containing the formatting instructions.
Example	`Dim MyDate` `MyDate="2000/03/14"` `RetVal=FormatDate(MyDate, "dddd d mmmm yyyy")` The value returned would be **Tuesday 14 March 2000**.

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	• **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	`FormatResString("I$1he$2you$3", "you", "we", "they")` The value returned would be **Iyouheweyouthey**.

FV()

Syntax	**Function FV(dblRate As Double, iNper As Long, dblPmt As Double, dblPV 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.
Input parameters	• **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: ▪ 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) 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.
Example	``` ' 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**.

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	• **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	`RetVal = getEnvVar("PROMPT")`

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	• **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	`GetListItem("this_is_a_test", "_", 2, "%")` This would return **is**. `GetListItem("this%_is_a_test", "_", 2, "%")` This would return **a**.

GetXmlAttributeValue()

Syntax	**Function GetXmlAttributeValue(strVal As String) As String**
Description	This function escapes the invalid characters for a given XML element value.
Input parameters	• This parameter contains the character to be escaped.
Example	For example, the following function transforms the single quote character into a valid character: `GetXmlAttributeValue("doesn't")` It has the following result: `"doesn&quote;t"`

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	You can use this function in a WHERE clause as described below: `strLayer = strLayer + "<Where Path='ItemsUsed'>" + GetXmlElementValue("AssetTag like 'A%'") + "</Where>"`

Hex()

Syntax	**Function Hex(dValue As Double) As String**
Description	Returns the hexadecimal value of a decimal parameter.
Input parameters	• **dValue**: Decimal number whose hexadecimal value you want to know.
Example	`RetVal = Hex(10000)` The value returned would be **2710**.

Hour()

Syntax	**Function Hour(tmTime As Date) As Long**
Description	Returns the hour value contained in the tmTime parameter.
Input parameters	• **tmTime**: Parameter in Date+Time format to be processed.
Example	`Dim strHour as String` `strHour=Hour(Date())` `RetVal=strHour` The value returned would be hour value of the current system time.

InStr()

Syntax	**Function InStr(lPosition 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	• **lPosition**: 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). ***Note:*** *The position of the first occurrence is always 1. The function returns 0 if the character string searched is not found.*
Example	`Dim strSource as String` `Dim strToSearch as String` `Dim iPosition` `strSource = "Good Bye"` `strToSearch = "Bye"` `iPosition = Instr(2, strSource, strToSearch)` `RetVal=iPosition` This value returned would be **6**.

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	• **dValue**: Number whose integer portion you want to know.
Example	`Dim iSeed as Integer` `iSeed = Int((10*Rnd)-5)` `RetVal = Abs(iSeed)` The value returned would be **2**.

IPMT()

Syntax	**Function IPMT(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 interest for an given date of payment of an annuity.
Input parameters	• **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. n 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: ▪ 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) ***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.*

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.
Input parameters	• **strString**: This parameter contains the character string to evaluate.
Example	`Dim strValue as string` `Dim lRc as long` `strvalue = "15.32"` `lRc = IsNumeric(strvalue)` The returned value for this example would be a non-zero value. `strvalue = "15.32as"` `lRc = IsNumeric(strvalue)` The returned value for this example would be **0**.

Kill()

Syntax	**Function Kill(strKilledFile As String) As Long**
Description	Deletes a file.
Input parameters	• **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	• **strString**: Character string to convert to lowercase.
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. LCase and UCase are also shown in this example as well as the use ' of nested function calls . `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->".` Using the Trim function alone achieves the same result. `strTrimString = UCase(Trim(strString)) :' strTrimString = "<-TRIM->".` `RetVal= "|" & strTrimString & "|"`

Left()

Syntax	**Function Left(strString As String, lNumber As Long) As String**
Description	Returns the left most iNumber characters of a string parameter.
Input parameters	• **strString**: Character string to process. • **lNumber**: Number of characters to return.
Example	`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()**.

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	• **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	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**

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	• **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	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**

Len()

Syntax	**Function Len(vValue As Variant) As Long**
Description	Returns the number of characters in a string or a variant.
Input parameters	• **vValue**: Variant concerned by the operation.
Example	`Dim strTest as String` `Dim iLength as Integer` `strTest = "Connect-It"` `iLength = Len(strTest)` `RetVal=iLength` The value returned would be **10**.

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	• **strDateLocal**: Date as string to convert.
Example	`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**.

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	• **strTimeLocal**: Time in string format to convert.
Example	`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(strTimeBasic)"`

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	• **strTSLocal**: Date+Time in string format to convert.
Example	`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)`

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	• **tmLocal**: "Date+Time" format date.
Example	`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)`

Log()

Syntax	**Function Log(dValue As Double) As Double**
Description	Returns the natural log of a number.
Input parameters	• **dValue**: Number whose logarithm you want to know.
Example	`Dim dSeed as Double` `dSeed = Int((10*Rnd)-5)` `RetVal = Log(dSeed)` The value returned would be **2**.

LTrim()

Syntax	**Function LTrim(strString As String) As String**
Description	Removes all leading spaces in a string.
Input parameters	• **strString**: Character 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.

MakeInvertBool()

Syntax	**Function MakeInvertBool(lValue As Long) As Long**
Description	This function returns an inverse Boolean; (0 becomes 1, all other numbers become 0).
Input parameters	• **lValue**: Number concerned by the operation.
Example	`Dim MyValue` `MyValue=MakeInvertBool(0)` Returns **0**. `MyValue=MakeInvertBool(1)` Returns **1**. `MyValue=MakeInvertBool(254)` Returns **0**.

Mid()

Syntax	**Function Mid(strString As String, lStart As Long, lLen As Long) As String**
Description	Returns a substring within a string.
Input parameters	▪ **strString**: String concerned by the operation. ▪ **lStart**: Start position of the string to extract from within strString. ▪ **lLen**: Length of the string to extract.
Example	`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**.

Minute()

Syntax	**Function Minute(tmTime As Date) As Long**
Description	Returns the number of minutes contained in the time expressed in the tmTime parameter.
Input parameters	• **tmTime**: Parameter in Date+Time format to be processed.
Example	`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`

MkDir()

Syntax	**Function MkDir(strMkDirectory As String) As Long**
Description	Creates a new directory.
Input parameters	• **strMkDirectory**: Full path of the directory to create.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim lErr as Long` `lErr = MkDir("c:\tmp")`

Month()

Syntax	**Function Month(tmDate As Date) As Long**
Description	Returns the month contained in the date expressed in the tmDate parameter.
Input parameters	• **tmDate**: Parameter in Date+Time format to be processed.
Example	`Dim lMonth as Long` `lMonth=Month(Date())` `RetVal=lMonth`

Name()

Syntax	**Function Name(strSource As String, strDest As String)**
Description	Changes the name of file.
Input parameters	▪ **strSource**: Full path of the file to rename. ▪ **strDest**: New file name.
Example	`Dim lErr as Long` `lErr = Name("C:\tmp\src.txt", "D:\tmp\dst.txt")`

Now()

Syntax	**Function Now() As Date**
Description	Returns the current date and time.
Example	`RetVal = Now()`

NPER()

Syntax	**Function NPER(dblRate As Double, dblPmt As Double, dblPV As Double, dblFV 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	▪ **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% ▪ **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. ▪ **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: ◦ 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) Amounts paid (expressed in particular by the Pmt parameter) are represented by negative numbers. Sums received are represented by positive numbers.
Example	``` ' 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**.

Oct()

Syntax	**Function Oct(dValue As Double) As String**
Description	Returns the octal value of the decimal parameter.
Input parameters	• **dValue**: Number whose octal value you want to know.
Example	`Dim dSeed as Double` `dSeed = Int((10*Rnd)-5)` `RetVal = Oct(dSeed)` The value returned would be **2**.

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	▪ **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: ◦ 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	`Dim dDate as date` `dDate=ParseDate("2001/05/01", "YYYY/MM/DD")`

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	• **strDate**: Date stored as a string.
Example	`Dim dDate as Date` `dDate = ParseDMYDate("31/02/2003")`

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	• **strDate**: Date stored as a string.
Example	`Dim dDate as Date` `dDate = ParseMDYDate("02/31/2003")`

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	• **strDate**: Date stored as a string.
Example	`Dim dDate as Date` `dDate = ParseYMDDate("2003/02/31")`

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.
Input parameters	• **strCntrName**: Connector name. • **strFmtName**: Document type to produce that will define the contents of the maptable. • **strLayer**:Where clause used for the document type. • **strMaptableName**: Name of the maptable to create. • **strKeyName**: Column name that is used as key for the maptable to create. If no column name is specified as key, the first attribute of the query used to create the maptable 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 maptable is used for the current document type. • **bCreateOnce**: ▪ 0: The maptable is created each time the function is called. ▪ 1: The maptable is created for the entire session.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`'-------------------------------------------------------------------------` `' 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 = PifCreateDynaMaptableFromFmtName("Asset Management", "amProdClassCode",` `"lModelId <> 0", "UNSPSC_Model", "UnspscKey", 1)` `lErr = PifCreateDynaMaptableFromFmtName("Asset Management", "amEmplDept",` `"lEmplDeptId <> 0 AND bDepartment = 0 AND UserName <> ''", "AC_EMPL", "UserName", 1)` `End Sub`

	`'At this point, you can create dynamic maptable while the session is opened.`

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	• **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	`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`

List and description of time zones:

Table 2-1: 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
W. Europe Standard Time	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm,

Name	Description
	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
Central Asia Standard Time	(GMT+06:00) Astana, Dhaka
Sri Lanka Standard Time	(GMT+06:00) Sri Jayawardenepura

Name	Description
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

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**.
Input parameters	▪ **strPathCol**: Path of the collection being searched. ▪ **strChildCond**: Search condition on the element. The condition is in the following form: `<Chemin> = <Valeur>` where: ○ <Chemin> is the path to an element in the collection ○ <Valeur> is the value given as a character string in the same locale as Connect-It ▪ **iStartCount**: Search start index. ***Note:*** *If n is the number of elements in the collection, iStartCount must be between 0 and n-1.*
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim iToTal As Integer` `Dim iIndex As Integer` `iToTal = 0` `iIndex = 0` `Do` `iIndex = PifFirstInCol("Software", "Brand=Peregrine", 0)` `If iIndex <> 0 Then` `iToTal = iToTal + 1` `End If` `Loop Until iIndex = 0`

PifGetBlobSize()

Syntax	**Function PifGetBlobSize(strPath As String) As Long**
Description	This function returns the size of a blob object.
Input parameters	• **strPath**: This parameter contains the full path of the blob object in the collection.
Example	`Dim iSize a Integer` `iSize = PifGetBlobSize("Description")`

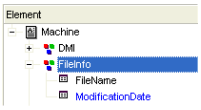
PifGetDateVal()

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	• **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	`Dim DateVal As Date` `DateVal = PifGetDateVal("field containing a date")` `RetVal = DateVal`

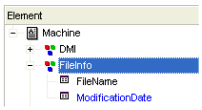
PifGetDoubleVal()

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	• **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	`RetVal = PifGetDoubleVal("field containing a double type number")`

PifGetElementChildName()

Syntax	**Function PifGetElementChildName(strPath As String, iItem 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	▪ **strPath**: This parameter contains the full path of the node concerned by the operation. ▪ **iItem**: This parameter contains the number of the sub-element whose name you want to recover.
Output parameters	This function returns the name of the element. An error is logged in the tracking lines and an empty string is returned by the function if the parameter iItem is either negative or greater than the number of sub-elements of the node.
Example	`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. 

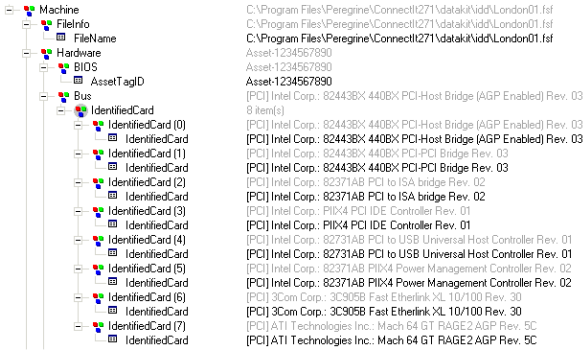
PifGetElementCount()

Syntax	**Function PifGetElementCount(strPath As String) As Long**
Description	This function returns the number of sub-elements of an identified node of a source document type.
Input parameters	• **strPath**: This parameter contains the full path of the node concerned by the operation.
Output parameters	The function returns the number of sub-items of the node whose path is specified by strPath.
Example	`Dim iChildCount as Integer` `iChildCount = PifGetElementCount("FileInfo")` returns 2. The FileInfo element has 2 sub-elements: FileName and ModificationDate. 

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	▪ **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	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. `RetVal = PifGetHexStringFromBlob("ObjectGUID", TRUE)`

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

PifGetIntlStringVariantVal()

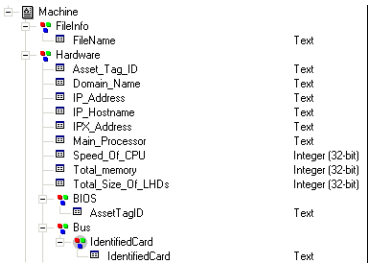
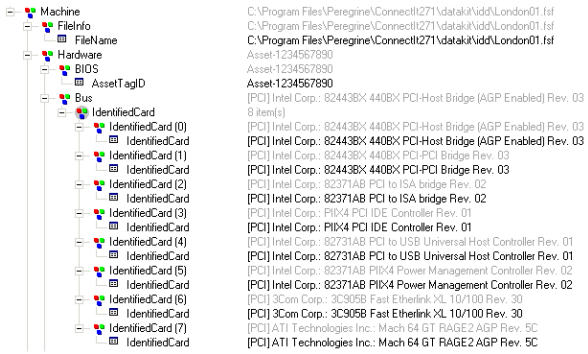
Syntax	**Function PifGetIntlStringVariantVal(strPath As String, bCkeckNodeExists As Long) As String**
Description	This function retrieves the value defined by the **strPath** parameter and converts it to an international string.
Input parameters	• **strPath**: Path for the data node to convert. • **bCkeckNodeExists**: This function is used to check that the data node exists in the data that is returned.
Output parameters	The function returns the value that is converted into the international string format.
Example	`Dim strTest As String` `strTest = PifGetIntlStringVariantVal("int64")` `PifLogInfoMsg(CStr([int64]))` `RetVal = strTest` 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).

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	• **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	`Dim IValue As Int` `IValue = PifGetIntVal("field containing an integer")` `RetVal = IValue`

PifGetItemCount()

Syntax	**Function PifGetItemCount(strPath As String) As Long**
Description	This function returns the number of elements in a fully identified collection.
Input parameters	• **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".
Example	With the following document type:  `Dim iCount As Integer` `iCount = PifGetItemCount("Hardware.Bus.IdentifiedCard")` returns the number of sub-elements of the Hardware.Bus.IdentifiedCard collection. For example, on the document below, the script returns "8". 

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	• **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	`Dim IValue As Long` `IValue = PifLongVal("field containing a long integer")` `RetVal = IValue` `strValue = PifQueryGetLongVal(hQuery, "ID")` `RetVal strValue` The output of strValue returned would be

PifGetOpenSessionTime()

Syntax	**Function PifGetOpenSessionTime() As Date**
Description	This function returns the date and time of the start of the session.
Example	`pifLogInfoMsg("Session start time is: '" & pifGetSessionStartTime & "'")`

PifGetParamValue()

Syntax	**Function PifGetParamValue(strParamName As String, strDefaultValue As String, strPath As String) As String**
Description	This function is available for the AssetManagement, Database and ServiceCenter / Service Management connectors, only when the connector is in consumption mode. 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.
Input parameters	• **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. Use the ".." syntax to navigate within the mapping tree structure.
Example	The amAbsence structure contains the PifParameters collection. The values of the amAbsence structure's child items are as follows: • **Field1**: Field1 • **Nature**: Nature • **Employee.Name**: Doe • **PifParameters.Name**: param1 • **PifParameters.Value**: test The reconciliation script (in update mode) that calls this function is carried by the Field1 field. `PifGetParamValue("param2", "notest")`

PifGetStringFromBlob()

Syntax	**Function PifGetStringFromBlob(strPath As String, bCkeckNodeExists As Long) As Long**
Description	This function retrieves the value from a blob and defined by the **strPath**parameter and converts it to a string.
Input parameters	• **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	`Dim StrValue As String` `StrValue = PifGetStringFromBlob("field containing a blob")` `RetVal = StrValue`

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	• **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	`Dim StrValue As String` `StrValue =` `PifGetStringVal("amComputer.LogicalDrives(3).Name")` `RetVal = StrValue` 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.

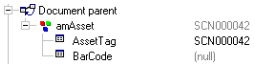
PifGetVariantVal()

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	• **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	`Dim StrValue As String` `StrValue =` `PifGetStringVal("amComputer.LogicalDrives(3).Name")` `RetVal = StrValue` 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.

PifIgnoreCollectionMapping()

Syntax	**Function PifIgnoreCollectionMapping(strMsg As String) As Long**
Description	This function enables you to ignore a collection, only in a collection-to-collection mapping. 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.
Input parameters	• **strMsg**: Optional parameter. Character string sent to the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	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': `if [root.item(pifGetInstance).quantity] = 0 then` `pifIgnoreCollectionMapping` `end if` 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: `if [root.item(pifGetInstance).quantity] = 0 then` `pifIgnoreNodeMapping` `end if`

PifIgnoreDocumentMapping()

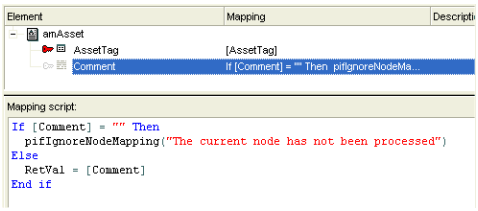
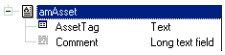
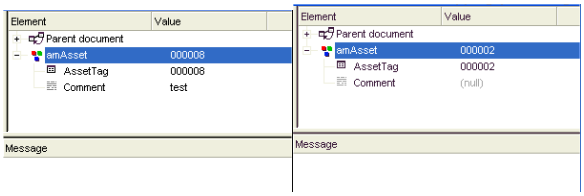
Syntax	**Function PifIgnoreDocumentMapping(strMsg As String) As Long**
Description	This function enables you to ignore a document. An information message, contained in the strMsg parameter, can be sent to the log. The produced document is logged in the document log but is not transmitted to the next connector.
Input parameters	**strMsg**: Optional parameter. Character string sent to the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	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: `If [BarCode] = "" Then` `PifIgnoreDocumentMapping([AssetTag])` `Else` `RetVal = [BarCode]` `End If` If this script is used on the document below:  the following document appears in the document log (it is not transmitted to the next connector) :  An information message is also logged in the tracking lines.

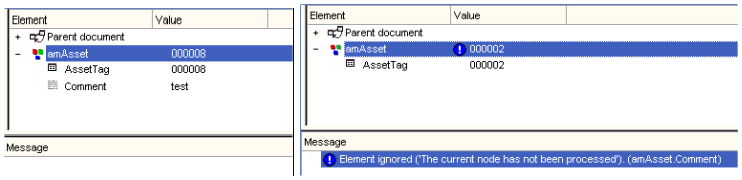
PifIgnoreDocumentReconc()

Syntax	**Function PifIgnoreDocumentReconc(strMsg As String) As Long**
Description	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. ***Note:****This function can only be used in non-parallelized mode.*
Input parameters	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If [BarCode] = ""` `Then PifIgnoreDocumentReconc([AssetTag])` `Else` `RetVal = [BarCode]` `End If`

This function is only available in the reconciliation scripts.

PifIgnoreNodeMapping()

Syntax	**Function PifIgnoreNodeMapping(strMsg As String) As Long**
Description	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. ***Caution:****This function cannot be used on the root node of a document. To ignore a full document, use the* ***PifIgnoreDocumentMapping()*** *function.*
Input parameters	• **strMsg**: Optional parameter. Character string sent to the log.
Output parameters	• 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` `PifIgnoreNodeMapping("The current node was not processed")` `Else` `RetVal = [Comment]` `End If`  For example, if the mapping source document is the following:  If the **PifIgnoreNodeMapping()** function is not used, the following documents can be produced:  If the **PifIgnoreNodeMapping()** 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.*

PifIgnoreNodeReconc()

Syntax	**Function PifIgnoreNodeReconc(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	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If [Comment] = ""` `Then PifIgnoreNodeReconc("The current node was not processed")` `Else` `  RetVal = [Comment]` `End If`

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	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If vNewVal = ""` ` Then RetVal = PifIgnoreSubDocumentReconc` `Else` ` RetVal = vNewVal` `End If`

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, strMaptable As String, bCaseSensitive As Long) As Long**
Description	This function tests if a keyword is in a maptable. The search can be made case sensitive.
Input parameters	• **strKey**: Keyword. • **strMaptable**: Name of the maptable being searched. ▪ 0:Case insensitive. ▪ 1:Case sensitive. • **bCaseSensitive**: This parameter specifies whether the search is casesensitive.
Output parameters	• 0: Keyword not found. • 1: Keyword found.
Example	`If PifIsInMap("CAT_PC", "MainAsset") Then` `RetVal = 1` `Else` `RetVal = 0` `End If`

PifLogInfoMsg()

Syntax	**Function PifLogInfoMsg(strMsg As String) As Long**
Description	Sends an information message, contained in the **strMsg** parameter, to the log.
Input parameters	• **strMsg**: Character string containing the message to be sent to the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim strBrand As String` `strBrand = [DeviceBrand]` `If strBrand = "" Then` `PifLogInfoMsg(PifStrVal("BRAND_UNREGISTERED"))` `RetVal = PifStrVal("BRAND_UNKNOWN")` `Else` `RetVal = strBrand` `End If`

PifLogWarningMsg()

Syntax	**Function PifLogWarningMsg(strMsg As String) As Long**
Description	Sends an information message, contained in the **strMsg** parameter, to the log.
Input parameters	• **strMsg**: Character string containing the message to be sent to the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If [Brand] = "" Then` `PifLogWarningMsg("Unknown brand")` `Else` `RetVal = [Brand]` `End if`

PifMapValue()

Syntax	**Function PifMapValue(strKey As String, strMaptable 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 maptable. The element is uniquely identified using the **strKey**, **strMapTable**, and **iPos** parameters. The search can be made case sensitive.
Input parameters	• **strKey**: Keyword identifying the line in the maptable containing the element. • **strMaptable**: Name of the maptable 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. ▪ 0: Case insensitive. ▪ 1: Case sensitive (default value). • **bLogErrIfOutOfRange**: Depending on this parameter, en 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 maptable. By default, this parameter is set to TRUE. • **bLogNewEntries**: This parameter creates the maptable for keys found and not previously declared in a maptable in a new file adjoining the scenario. This file has the same name as the scenario but is prefixed by _NewMapKeys.mpt. 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 maptable file. ▪ 0 (default value): The automatic creation of maptable files is disabled. ▪ 1: The automatic creation of maptable files is enabled.
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	For example, consider the following maptable:

Detail

File name: C:\Program Files\Peregrine\ConnectIt310\config\idd\mpt\idd.mpt

```
#-------------------------------------------------
# List of Asset type and category association
#-------------------------------------------------
{ Maptable TypeCategory
  PRINTER | CAT_PRINTER
  MODEM   | CAT_MODEM
  MONITOR | CAT_MONITOR
}
```

The following script:
`pifMapValue("PRINTER", "TypeCategory", 1, "")`

returns CAT_PRINTER.

The following script:
`pifMapValue("Printer", "TypeCategory", 1, "")`

returns the default value. The search being case-sensitive, the searched element is not found.

The following script:
`pifMapValueContaining("Print", "TypeCategory", 1, 1, 1 "")`

returns the default value, saves an error to the event log, and creates a maptable file.

This function correctly handles the following wildcard characters:

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

PifMapValueContaining()

Syntax	**Function PifMapValueContaining(strKey As String, strMaptable As String, iPos As Long, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String**
Description	This function returns the value of an element in a maptable. The element is uniquely identified using the **strKey**, **strMapTable**, and **iPos** parameters. The search can be made case sensitive. 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.
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, strMaptable As String, strColName As String, strDefault As String, bCaseSensitive As Long, bLogErrIfOutOfRange As Long, bLogNewEntries As Long) As String**
Description	This function returns the value of an element in a maptable. The element is uniquely identified by these parameters: **strKey**, **strMapTable**, **strColName**. The search for the element can be made case sensitive. As opposed to the **PifMapContaining()** function, the **strColName()** parameter defines the column name instead of its position. This function is useful when: • The maptable was created from a format (the column names correspond to the element names of the format) • The column names were defined manually in the maptables using the maptable editor.
Input parameters	In addition to the parameters in PifMapValue, • **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 maptable is created from a format or manually using the maptable 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	This function returns the value of an element in a maptable. 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. The search for the element can be made case sensitive. This function is useful when: • The maptable was created from a format (the column names correspond to the element names of the format), • The column names were defined manually in the maptables using the maptable editor.
Input parameters	In addition to the parameters in PifMapValue, • **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 maptable is created from a format or manually using the maptable 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.
Input parameters	• **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: ▪ 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. 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. For better performance, create a dedicated connector (**strCntrName**) only for queries, along with a produced document type (**strFmtName**) containing the query fields.
Example	The following example shows a simple Where clause for the strLayer parameter: `dim hQuery as long` `dim iRc as long` `hQuery = pifNewQueryFromFmtName("Asset Management", "amEmplDept", "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)`

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	• **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.
Example	`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>"` 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(). ***Note:*** *When strLayer contains a simple AQL Where clause, it is not necessary to use GetXmlElementValue().* 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. `dim hQuery as long` `dim strQuery as string` `dim strLayer as string` `dim iRc as long` `strQuery = "<STRUCTURE Name='amEmplDept'>"` `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)
```

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 replaced with the corresponding entities (<,&...).

For better performance, create a dedicated connector (strCntrName) only for queries, along with a query string (strQuery).

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	• **strPath**: Full path of the node concerned by the operation.
Output parameters	Returns either of the following values: • 0:if the node does not exist. • 1:if the node exists
Example	`If PifNodeExists("Hardware.Peripherials.Printer") = 0 Then` `PifIgnoreNodeMapping` `End If`

PifQueryClose()

Syntax	**Function PifQueryClose(lQueryHandle As Long) As Long**
Description	This function closes the query and frees the internal resources used by the query.
Input parameters	• **lQueryHandle**: This parameter contains a handle of the query created using the PifNewQueryFromFmtName() or PifNewQueryFromXml() functions.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`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)`

PifQueryGetDateVal()

Syntax	**Function PifQueryGetDateVal(lQueryHandle As Long, strPath As String, bPathMustExist As Long) As Date**
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	• **lQueryHandle**: 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	`strValue = PifQueryGetLongVal(lQueryHandle, "dModify")`

PifQueryGetDoubleVal()

Syntax	**Function PifQueryGetDoubleVal(lQueryHandle 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(lQueryHandle 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(lQueryHandle 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(lQueryHandle 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(lQueryHandle 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: • **PifQueryGetStringVal()** • **PifQueryGetDateVal()** • **PifQueryGetDoubleVal()** • **PifQueryGetLongVal()** • **PifQueryGetIntVal()**
Input parameters	• **lQueryHandle**: This parameter contains a handle of the query created using the **PifNewQueryFromFmtName()** or **PifNewQueryFromXml()** functions.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`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)`

PifRejectCollectionMapping()

Syntax	**Function PifRejectCollectionMapping(strMsg As String) As Long**
Description	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. ***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	• **strMsg**: This optional parameter contains the message to be written to the log file.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	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': `if [root.item(pifGetInstance).quantity] = -1 then` `pifRejectCollectionMapping("invalid quantity")` `end if` 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: `if [root.item(pifGetInstance).quantity] = -1 then` `pifRejectNodeMapping` `end if`

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	• **strMsg**: Optional parameter. Character string sent to the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim strNetAddress As String` `strNetAddress = [Hardware.TCPIP.PhysicalAddress]` `If strNetAddress = "" Then` `PifRejectDocumentMapping("Document rejected: missing MAC address")` `Else` `RetVal = strNetAddress` `End If`

PifRejectDocumentReconc()

Syntax	**Function PifRejectDocumentReconc(strMsg As String) As Long**
Description	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. This function can only be used in non-parallelized mode.
Input parameters	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim strNetAddress As String` `strNetAddress = [Hardware.TCPIP.PhysicalAddress]` `If strNetAddress = "" Then` `PifRejectDocumentReconc("Document rejected: missing MAC address")` `Else` `RetVal = strNetAddress` `End If` 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.

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	• **strMsg**: Optional parameter. Character string sent to the log.
Output parameters	• 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	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If [Location.Name] = "" Then` `  PifRejectNodeReconc(PifStrVal("UNKNOWN_LOCATION"))` `End If`

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

PifRejectSubDocumentReconc()

Syntax	**Function PifRejectSubDocumentReconc(strMsg As String) As Long**
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	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim strFile` `strFile = pifScenarioPath & "Format.xml"` `Open strFile For Output As #1` `Print #1, pifXmlDump` `Close #1`

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	`Dim strFile` `strFile = pifScenarioPath & "Format.xml"` `Open strFile For Output As #1` `Print #1, pifXmlDump` `Close #1`

PifSetDateVal()

Syntax	**Function PifSetDateVal(strPath As String, dttVal 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	• **strPath**: This parameter contains the full path of the node concerned by the operation. • **dttVal**: This parameter contains the value (date) that you want to assign to the node.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim dtCurrent as Date` `Dim lRet as Long` `dtCurrent = Date()` `lRet = PifSetDateVal("ValueDate", dtCurrent)`

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	• **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	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim d as Double` `Dim lRet as Long` `d = 2.5` `lRet = PifSetDoubleVal("ValueDouble", d)`

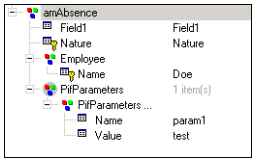
PifSetLongVal()

Syntax	**Function PifSetLongVal(strPath As String, lVal 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	• **strPath**: This parameter contains the full path of the node concerned by the operation. • **lVal**: This parameter contains the value (long integer) that you want to assign to the node.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim l as Long` `Dim lRet as Long` `l = 2` `lRet = PifSetLongVal("ValueLong", l)`

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	• **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	• 0: Normal execution. • Other than zero: Error code.
Example	`If [Name] = "" Then` `PifSetNullVal("FirstName")` `End if`

PifSetParamValue()

Syntax	**Function PifSetParamValue(strParamName As String, strValue As String, strPath As String)**
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	• **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. ***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*
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').
Example	The amAbsence structure contains the PifParameters collection.  The values of the **amAbsence** structure's child items are as follows: • **Field1**: Field1 • **Nature**: Nature • **Employee**.Name: Doe • **PifParameters.Name**: param1 • **PifParameters.Value**: test The reconciliation script (in update mode) that calls this function is carried by the **Nature** field. `call PifSetParamValue("param1", "newValue")` `RetVal = vNewVal` 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'. ***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.

PifSetPendingDocument()

Syntax	**Function PifSetPendingDocument(strMsg As String) As Long**
Description	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. ***Note:*** *This function can only be used in non-parallelized mode.*
Input parameters	• **strMsg** : This parameter contains the message displayed in the log.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`If vNewVal >= vOldVal Then` `RetVal = vNewVal` `Else` `RetVal = vOld` `PifSetPendingDocument(PifStrVal("RECONC_PROPOSAL_NOT_VALIDATED"))` `End If`

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	• **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	• 0: Normal execution. • Other than zero: Error code.
Example	`Dim str as String` `Dim lRet as Long` `str = "100.10.1.1"` `lRet = PifSetStringVal("ipaddress", str)` You must retrieve the return code for the function. Failure to do so will result in a compilation error. The syntax to use to set the value of a field for a collection item is as follows: `PifSetStringVal(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: `PifSetStringVal(amComputer.LogicalDrives(3).Name)` This syntax is used to set the value for the Name of the third logical disk drive (LogicalDrive(3)) in the collection.

PifStrVal()

Syntax	**Function PifStrVal(strID As String) As String**
Description	Returns the character string associated with the identifier contained in the **strID** parameter.
Input parameters	• **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	`If [DeviceType] = "" Then` `  RetVal = PifStrVal("BRAND_UNKNOWN")` `End If`

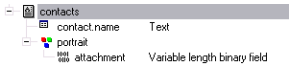
PifUserFmtStrToVar()

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	• **strData**: This parameter contains the string to be processed. • **strUserFmtName**: This parameter contains the name of the predefined format.
Example	If we consider the following two predefined formats: • origin = "yyyy'-'mm'-'dd" • destination = "'dddd' 'dd' 'mmmm' 'yyyy'" Then the script: `Dim dTmp as Variant` `dTmp=PifUserFmtVarToStr([date_modified],"origin")` `RetVal = PifUserFmtStrToVar(dTmp,"destination")` Returns for [date_modified]= 2001-05-30 the value "Thursday, May 30, 2001" ***Note:*** *For further information on the predefined formats, refer to the Connect-It User Guide*

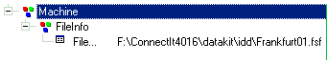
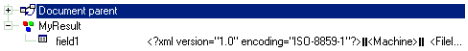
PifUserFmtVarToStr()

Syntax	**Function PifUserFmtVarToStr(vData As Variant, strUserFmtName As String) As String**
Description	This function processes a variant according to a predefined format and returns a character string.
Input parameters	• **vData**: This parameter contains the variant processed by the function. • **strUserFmtName**: This parameter contains the name of the predefined format.
Example	If we consider the following two predefined formats: • origin = "yyyy'-'mm'-'dd" • destination = "'dddd' 'dd' 'mmmm' 'yyyy'" Then the script: `Dim dTmp as Variant` `dTmp=PifUserFmtVarToStr([date_modified],"origin")` `RetVal = PifUserFmtStrToVar(dTmp,"destination")` Returns for [date_modified]= 2001-05-30 the value "Thursday, May 30, 2001" ***Note:*** *For further information on predefined formats, refer to the Connect-It User Guide.*

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	• **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	• 0: Normal execution. • Other than zero: Error code.
Example	The screen capture below shows a source document containing the name and the picture of an employee:  The following script saves the picture of each employee in the c:\bitmap folder. The filename is the name of the employee. `Dim lErr As Long` `Dim strFileName As String` `strFileName = "C:\bitmap\" & ['contact.name'] & ".bmp"` `lErr = PifWriteBlobInFile("portrait.attachment", strFileName)` ***Note:*** *The contact.name element contains a dot ("."). It is therefore mandatory to surround it by quotes to reference it (['contact.name']).* *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.* ***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, ir the source element is not a binary element.*

PifXMLDump()

Syntax	**Function PifXMLDump(strPath As String) As String**
Description	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.
Input parameters	• **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>`

PMT()

Syntax	**Function PMT(dblRate As Double, iNper As Long, dblPV As Double, dblFV 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	▪ **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. ▪ **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: ◦ 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) ***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.*
Example	``` ' 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**.

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	▪ **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: ◦ 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) ***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.*
Example	`' 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**.

PV()

Syntax	**Function PV(dblRate As Double, iNper As Long, dblPmt As Double, dblFV 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.
Input parameters	▪ **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: ◦ 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) ***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.*
Example	`' 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**.

Randomize()

Syntax	**Function Randomize(lValue As Long)**
Description	Initializes the random number generator.
Input parameters	▪ **lValue**: 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	`Dim MyNumber` `Randomize MyNumber= Int((10*Rnd)+1` `RetVal=MyNumber)` This would return a number between **0** and **10**.

RATE()

Syntax	**Function RATE(iNper As Long, dblPmt As Double, dblFV As Double, dblPV As Double, iType As Long, dblGuess As Double) As Double**
Description	This function returns the interest rate per date of payment for an annuity.
Input parameters	▪ **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. ▪ **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. ▪ **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: ◦ 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) ▪ **dblGuess**: This parameter contains the estimated value of the interest rate per date of payment.
Example	```' 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**.

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**
Description	Performs a deletion in a list of lines identified by the strRowNames parameter. This function is useful when processing "ListBox" control type values. Values from this type of control are represented as arrays as described below: • 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	• **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	`Dim MyStr` `MyStr=RemoveRows("a1|a2=a0,b1|b2=b0", "a0,c0")` `RetVal=MyStr` The value returned is **b1|b2=b0**.

Replace()

Syntax	**Function Replace(strData As String, strOldPattern As String, strNewPattern As String, bCaseSensitive As Long) As String**
Description	Replaces all occurrences of the strOldPattern parameter with the strNewPattern parameter inside the character string contained in the strData parameter. The search for the strOldPattern parameter can be made case-sensitive using the value of the bCaseSensitive parameter.
Input parameters	▪ **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	`Dim MyStr` `MyStr=Replace("youmeyoumeyou", "you", "me",0)` This returns **mememememe**. `MyStr=Replace("youmeyoumeyou", "You", "me",1)` This returns **youmeyoumeyou**. `MyStr=Replace("youmeYoumeyou", "You", "me",1)` This returns **youmememeyou**.

Right()

Syntax	**Function Right(strString As String, lNumber As Long) As String**
Description	Returns the rights most iNumber characters of the string parameter.
Input parameters	• **strString**: Character string to process. • **lNumber**: Number of characters to return.
Example	`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()**.

RightPart()

Syntax	**Function RightPart(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 right to left. The search can be made case sensitive using the bCaseSensitive parameter.
Input parameters	• **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	`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**.

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	• **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	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**.

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	• **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 a 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	• 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	• **strRmDirectory**: Full path of the directory to be removed.
Output parameters	• 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	• **dValue**: Optional parameter whose value defines the mode of execution of the function: ▪ **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	`Dim MyNumber` `Randomize` `MyNumber= Int((10*Rnd)+1)` `RetVal=MyNumber` This returns a random value between **1** and **10**.

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	• **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	`RetVal = RoundValue(1.2568, 2)` This returns the value **1.26**. `RetVal = RoundValue(1.2568, 0)` This returns the value **1**.

RTrim()

Syntax	**Function RTrim(strString As String) As String**
Description	Removes all trailing spaces in a string.
Input parameters	• **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. `Dim strString as String` `Dim strTrimString as String` `strString = " string "` `strTrimString = RTrim(strString)` `RetVal= "|" & strTrimString & "|"` This returns the value **| string|**.

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	• **tmTime**: Parameter in Date+Time format to be processed.
Example	`Dim strSecond` `strSecond=Second(Date())` `RetVal=strSecond` This returns the number of seconds elapsed in the current hour; for example, **30** if the time is 15:45:30.

SetMaxInst()

Syntax	**Function SetMaxInst(lMaxInst As Long) As Long**
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	• **lMaxInst**: This parameter contains the maximum number of instructions that can be executed by a script.
Output parameters	• 0: Normal execution. • Other than zero: Error code.
Example	`SetMaxInst(1000)` Sets the number to **1000**. `SetMaxInst(0)` Sets the number to infinity.

If you set the lMaxInst 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	▪ **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: ◦ "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	`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")` Returns **A1|A2|a3=a0,B1|B2|b3=b0,c1|c2|c3=c0**. `MyStr=SetSubList("a1|a2|a3=a0,b1|b2|b3=b0,c1|c2|c3=c0", "Z2=*,B2=b0", "2")` Returns **a1|Z2|a3=a0,b1|B2|b3=b0,c1|Z2|c3=c0**. `MyStr=SetSubList("a1|a2|a3=a0,b1|b2|b3=b0,c1|c2|c3=c0", "B5|B6|B7=b0,C5|C6 ,C7=c0", "5-7")` Returns **a1|a2|a3=a0,b1|b2|b3||B5|B6|B7=b0,c1|c2|c3||C5|C6|C7=c0**. `MyStr=SetSubList("a1|a2|a3=a0,b1|b2|b3=b0,c1|c2|c3=c0", "B1|B2|B3|B4=b0", "-")` Returns **a1|a2|a3=a0,B1|B2|B3|B4=b0,c1|c2|c3=c0**. `MyStr=SetSubList("A|B|C,D|E|F", "X=*", "2")` Returns **A|X|C,D|X|F" RetVal="**.

Sgn()

Syntax	**Function Sgn(dValue As Double) As Double**
Description	Returns a value indicating the sign of a number.
Input parameters	• **dValue**: Number whose sign you want know.
Output parameters	The function can return one of the following values: • 1: The number is greater than zero. • 0: The number is equal to zero • -1: The number is less than zero.
Example	`Dim dNumber as Double` `dNumber=-256` `RetVal=Sgn(dNumber)` The value returned would be **-256**.

Shell()

Syntax	**Function Shell(strExec As String, bShowWindow As Long, bBackground As Long) As Long**
Description	Launches an executable program.
Input parameters	• 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	`Dim MyId` `MyId=Shell("C:\WinNT\explorer.exe")` `RetVal=""`

Sin()

Syntax	**Function Sin(dValue As Double) As Double**
Description	Returns the sine of an number that is expressed in radians.
Input parameters	• **dValue**: Number whose sine you want to know.
Example	`Dim dCalc as Double` `dCalc=Sin(2.79)` `RetVal=dCalc` The value returned would be **0.344393467**.

The conversion formula for degrees to radians is the following:

```
angle in radians = (angle en degrees) * 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	• **iCount**: Number of spaces to be inserted into the string.
Example	`Dim MyString` `' Returns a string of 10 spaces.` `MyString = Space(10)` `' Inserts 10 spaces between two strings.` `MyString = "Space" & Space(10) & "inserted"` `RetVal=MyString`

Sqr()

Syntax	**Function Sqr(dValue As Double) As Double**
Description	Returns the square root of a number.
Input parameters	• **dValue**: Number whose square root you want to know.
Example	`Dim dCalc as Double` `dCalc=Sqr(81)` `RetVal=dCalc` The value returned would be **9**.

Str()

Syntax	**Function Str(strValue As String) As String**
Description	Converts a number to a string.
Input parameters	• **strValue**: Number to convert to a string.
Example	`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**.

StrComp()

Syntax	**Function StrComp(strString1 As String, strString2 As String, iOptionCompare As Long) As Long**
Description	Compares two strings.
Input parameters	• **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	• -1: strString1 is greater than strString2. • 0: strString1 is equal to strString2. • 1: strString1 is less than strString2.
Example	`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` The value of lRc would be strValue1 is greater than strValue2.

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	• **iCount**: Number of occurrences of the character strString. • **strString**: Character used to compose the string.
Example	`Dim iCount as Integer` `Dim strTest as String` `strTest="T"` `iCount=5` `RetVal=String(iCount,strTest)` The value returned would be **TTTTT**.

SubList()

Syntax	**Function SubList(strValues As String, strRows As String, strRowFormat As String) As String**
Description	Returns a sublist of a list of values contained in a string representing the values of a "ListBox" control.
Input parameters	• **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: ▪ "*" 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: ▪ "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	`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")` `:'Retur ns "=a0,=b0,=c0"` `MyStr=SubList("a1|a2|a3=a0,b1|b2|b3=b0,c1|c2|c3=c0", "z0", "*=0")` `:'Return s ""` `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=""

Tan()

Syntax	**Function Tan(dValue As Double) As Double**
Description	Returns the tangent of a number expressed in radians.
Input parameters	• **dValue**: Number whose tangent you want to know.
Example	Dim dCalc as Double dCalc=Tan(2.79) RetVal=dCalc The value returned would be -**0.366834414**

The conversion formula for degrees to radians is the following:

```
angle in radians = (angle en degrees) * Pi / 180
```

Time()

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

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	▪ **iHour**: Hour. ▪ **iMinute**: Minutes. ▪ **iSecond**: Seconds.
Example	Each of these parameters can be set to a numeric expression representing a number of hours, minutes or seconds. Thus in the following example: `TimeSerial(12-8, -10, 0)` Returns the value **s3:50:00**. 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. The following example: `TimeSerial (16, 50, 45)` Returns the value **16:50:45**

TimeValue()

Syntax	**Function TimeValue(tmTime As Date) As Date**
Description	This function returns the time portion of a "Date+Time" value.
Input parameters	• **tmTime**: "Date+Time" format date.
Example	The following example: `TimeValue ("1999/09/24 15:00:00")` Returns the value **15:00:00**.

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	• **strString**: Source string to reformat.
Example	The following example: `TimeValue ("1999/09/24 15:00:00")` Returns the value **15:00:00**.

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	• **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	• **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	• **strSource**: Character string to process. • **strEscChar**: Escape character to be deleted.
Example	`Dim MyStr` `MyStr=UnEscapeSeparators("you|me|you|", "\")` `RetVal=""` The value returned would be **you|me|you|**.

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	• **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	`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=""`

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	• **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	• **strString**: Character string to convert.
Example	`Dim strYear` `Dim dYear as Double` `strYear=Year(Date())` `dYear=Val(strYear)` `RetVal=dYear`

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	• **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	`Dim strWeekDay` `strWeekDay=WeekDay(Date())` `RetVal=strWeekDay`

XmlAttribute()

Syntax	**Function XmlAttribute(strName As String, strValue As String) As String**
Description	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: • The < entity corresponding to the < character • The > entity corresponding to the > character • The & entity corresponding to the & character • The ' entity corresponding to the ' character • The " entity corresponding to the " character
Input parameters	• **strName**: This parameter contains the name of the XML attribute. • **strValue**: This parameter contains the value of the XML attribute.
Example	The example below: `RetVal = XmlAttribute("Equation & condition","ten < eleven")` Returns the value **Equation & condition = "ten < eleven"**.

Year()

Syntax	**Function Year(tmDate As Date) As Long**
Description	Returns the year contained in the value expressed by the tmDate parameter.
Input parameters	• **tmDate**: Parameter in Date+Time format to be processed.
Example	`Dim strYear` `strYear=Year(Date())` `RetVal=strYear`

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