# Expanding Blue Chameleon

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# Appendix A

# The OSL Scripting Language

OSL is a scripting language originally developed for building **Blue Chameleon** ; its high versatility, as well as its ease at incorporating and handling other languages such as HTML and SQL, make it the first choice whenever you may need to develop any web-based application - no matter how complex - dealing with database processing and displaying.

Reference Web Page : `http://www.inc.lu/OSL/script.htm`

## A.1 Writing and running OSL scripts

OSL scripts are written into `.phs` files. They can be typed in any text editor, preferably with HTML highlighting.

`.phs` files are run automatically whenever called by Blue Chameleon or by another `.phs` file.

## A.2 Syntax overview

### A.2.1 Commands

OSL is mainly built around **commands**, which consist in a COMMAND name (always in uppercase) followed (or not) by one or several arguments, sandwiched between opening and closing guillemots «...».

For instance :

```
«SYSTEM ECHO "Hello world !"»
```

which outputs string "Hello world !" on the system.

Commands can also be made of an opening and a closing tag :

```
«IF <condition>»
  [Do stuff]
«ENDIF»
```

### A.2.2 Functions

OSL also makes use of functions, which aim is to achieve various operations on variables such as string manipulations, date operations... A function name is always in lowercase, preceded by @ and followed by its argument(s) between parentheses. If function requires several arguments, they are separated by semicolons. For instance, this call :

```
«VAR NEW _Trunc=@substr("Hello world"; 6; 5)
```

which stores into variable _Trunc 6 characters from string "Hello world" starting from the 5th position.

It is to note that any result of a function call can be assessed to a variable of the right type : myDouble=@atof("12.1") stores for example 12.1 into double myDouble.

To evaluate *and* display any function result, command EXPR is used :

```
«EXPR @atof("12.1")»
```

which outputs 12.1. Or even simpler, for the same result :

```
«=@atof("12.1")»
```

### A.2.3 HTML code

HTML code is used like in any HTML editor and it is possible to use commands and functions within it, as featured in Fig.A.1.

Example.phs :

```
<TABLE border=1 cellpadding=2 cellspacing=0>
 <TR>
  <TD><B>Client status</B></TD>
  <TD><B>Consumption (hours)</B></TD>
 </TR>
 <TR>
  <TD>
   «IF @toi(idClientStatus)==1»
    Very good client
    «ELSE» Normal client
   «ENDIF»
  </TD>
  <TD>
   «EXPR @minute2hourstr(iConsumption)»
  </TD>
 </TR>
</TABLE>
```

Output :

| Client status | Consumption (hours) |
|---|---|
| Very good client | 03:00 |

Figure A.1: HTML code and OSL commands and functions can be mixed in a very straightforward way.

### A.2.4 Comments

They can be added anywhere via

```
«* Now processing default case...  *»
```

## A.3 OSL variables

### A.3.1 Managing variables

#### A.3.1.1 Declaring and assigning

Variables can be declared anywhere in a .phs file with commands VAR NEW for local variables and LET for global variables ; for both, values can be assigned right at the declaring. For instance :

```
«VAR NEW dMyDouble=200.0»
```

```
«LET _MyString="A global string..."»
```

It is to note that LET is also used to assign a value to a pre-existing variable, whether local or global.

#### A.3.1.2 Test of existence

Before using a variable in a script where it is not sure if it has been transmitted as a CGI or not, function @exists("<variable>") is useful to test whether this variable does exist, and if not, initialize it :

```
«IF @exists("_DisplayAll")==0»
 «VAR NEW _DisplayAll=0»
«ENDIF»
```

#### A.3.1.3 Local environments

Between the «VAR LOCAL» and «VAR ENDLOCAL» tags, one can define an environment for local variables, even if those already existed before. If so, at the end of this environment, such an already-existing variable will get its former value back.

#### A.3.1.4 Deleting variables

If needed, a variable <var> can be deleted through «VAR DELETE <var>».

### A.3.2 Types

Declaring a variable's type is not mandatory ; however, it can be done through

```
«VAR NEW [double]dMyDouble=200.0»
```

In OSL the following types are used :

- int for integers ;
- int64 for 64-bit integers ;
- double for double-precision floating-points numbers ;
- string for strings, always declared/assigned between double quotes : "...".

In this documentation, variables are represented as <value:type>.

#### A.3.2.1 Casting

Several functions exist to cast variables :

- @atoi(<value:string>) converts a string to the integer value ; if unsure of the variable type - string or integer -, function @toi(<value:string or integer>) might rather be used. This latter function must be for instance **called before using a integer CGI variable**, as the previous URL redirection (...&_intCGIVar=25&...) has cast it into a string :

  ```
  «LET _intCGIVar=@toi(_intCGIVar)»
  ```

- @atof(<value:string>) converts a string to the floating-point value ;
- @itoa(<value:int>) converts an integer to a string ; if unsure of the variable type - integer or string -, function @toa(<value:integer or string>) might rather be used.

This example

```
«VAR NEW _fiveString="5"»
«VAR NEW _fiveInt=5»
Converting _fiveString to integer :  «=@toi(_fiveString)+1»
Converting _fiveInt to string :  «=@toa(_fiveInt)+"+1"»
```

will then output

Converting _fiveString to integer : 6
Converting _fiveInt to string : 5+1

### A.3.3 Naming

While the naming of OSL variables is free, it is advised to follow some simple guidelines in order to distinguish at a glance what is the type of a variable :

- integers can be named with a 'i' or 'id' prefix (e.g. iZipCode, idClient) ;
- doubles can be named with a 'd' prefix (e.g. dOrderAmount) ;
- strings can be named with a 'az' prefix (e.g. azClientFirstName).

Most usually, an underscore is put before a variable's name when SQL queries are involved (A.6) ; e.g., so that variable _idClient is distinguished from field name idClient.

### A.3.4 Evaluating variables

There are two ways of evaluating a variable <var> : either by command EXPR or by placing it between guillemots : «<var>».

When <var> is already in a «...» context (for instance in «IF <var>==1»), there is no need to use those ; otherwise, anytime when <var> is outside those and needs to be evaluated, guillemots are used, for instance :

```
<TABLE border=«MyOwnBorder» cellpadding=2 cellspacing=0>
```

### A.3.5 Predefined variables

There exists various system variables that are called to give information about statuses, success or failure of operations... Most of them are dedicated to OSL's SQL functions (A.6).

All the names of the predefined variables are in uppercase, sandwiched between two #. They cannot be assigned any value. For example,

```
«EXPR #SQLSTATUS#»
```

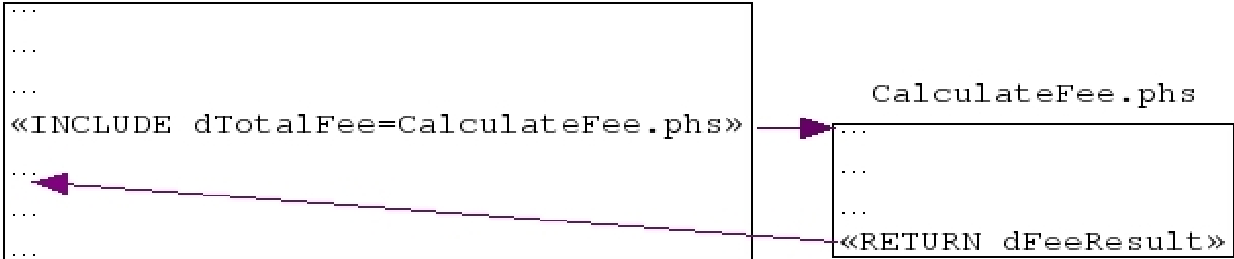
or

```
«VAR NEW _Succ=#SQLSTATUS#»
```

outputs/stores whether the last SQL operation has succeeded (returning 1) or failed (returning 0).

## A.4 Including : script files, procedures

As the length of a .phs file can grow rapidly, it is clever to split tasks into smaller files and procedures. Those can then be called anywhere, with certain limits.




### A.4.1 Calling other files

The «INCLUDE <scriptfile>» command simply calls the contents of file <scriptfile>. If this file happens to RETURN a value, it can be assessed to a variable of the calling file by precising its name in the command :

It is to note that whenever RETURN is called, the script is exited.

#### A.4.1.1 Passing variables to a called script

It is possible to pass a list of variables to be used in the called script, for instance :

```
«INCLUDE dMonthlyFee=MonthlyFee.phs;_azMonth="February";_azStatus="VIP"»
```

There, the MonthlyFee.phs script has two string variables _azMonth and _azStatus that are initialized to fixed values "February" and "VIP" and used to perform calculations accordingly, thus returning a result dMonthlyFee.

If the values to be given are variables themselves, they are passed with guillemots, **unless it is a string** ; for instance :

```
«INCLUDE modifyName.phs;_ClientId=«_idClient»;_NewName=_ThisName»
```

In this example, integer value _idClient and string value _ThisName serve as to assess values to variables _idClient and _NewName in script modifyName.phs. Operations there (for instance a SQL table update) will be performed using those two imputed values.

#### A.4.1.2 Persistence of variables as used in a called script

It is to note that, if some variables as used in a called script are initialized before the call, they are kept after the call. It is for instance used when getting user-related information (B.6.1) :

```
«VAR NEW _UserRealName=""»
«VAR NEW _UserFirstName=""»

«INCLUDE
ossbo:OSSUserInfo.phs;_MerchantId=«_MerchantId»;_UserId=«#SQLUSERID#»»

Current user :  «_UserFirstName»  «_UserRealName»
```

### A.4.2 Calling procedures

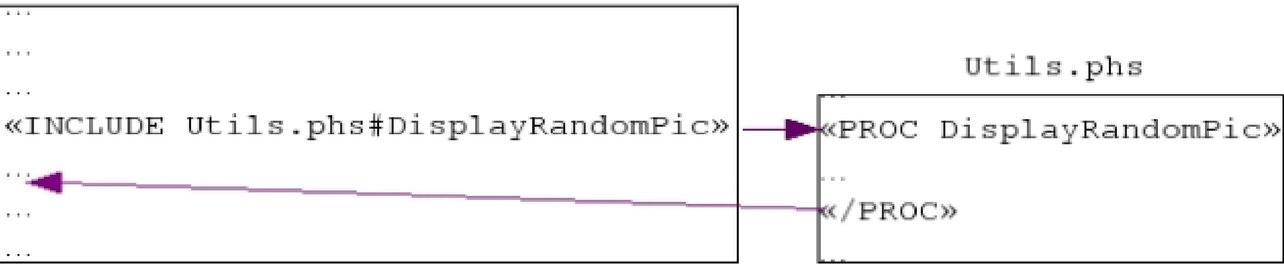
A procedure, in the OSL context, is a list of instructions placed between the PROC <procedure_name> and /PROC tags. It is then simply executed by command line

«INCLUDE <procedure_name>»

.

#### A.4.2.1 Calling procedures from other files

The example above supposes that the called procedure is defined in the same file as the calling script. It is also possible to call a procedure belonging to another script by precising its name (preceeded by #) right after called script's name :




### A.4.3 Including other files

What preceded dealt with the including of .phs files ; it can be said that other files can be included can be included, in particular HTML files, with the INCLUDE command, for example :

«INCLUDEFILE HeaderLayout.html»

Command LIBRARY fills the same role.

Refer to *The structure of a Blue Chameleon Add-on* (B.1) to know where to upload your external files.

## A.5 Programming instructions

OSL handles usual programming instructions such as variable tests and loops.

### A.5.1 Tests

Command «IF <condition>», eventually terminated by an ENDIF, is used to perform instructions according the veracity of <condition>. It can be enriched with an ELSE followed by other instructions to perform if <condition> was false, as well as an ELSEIF stating a new condition to test for :

```
«IF <condition>»
  <instructions>
«ELSE»
  <other instructions>
«ENDIF»

«IF <condition1>»
  <instructions1>
«ELSEIF <condition2>»
  <instructions2>
«ELSEIF <condition3>»
  <instructions3>
«ENDIF»
```

An ELSEIF command may be followed by an ELSE one, but not the other way around (which would be equivalent to two consecutive *elses*).

The following table sums up the OSL syntax of numerical and logical tests :

| **Test** | OSL **syntax** |
|---|---|
| A equal to B | A==B |
| A different from B | A<>B |
| A greater than B | A>B |
| A less than B | A<B |
| A greater than or equal to B | A >= B |
| A lesser than or equal to B | A <= B |
| A AND B | A && B |
| A OR B | A || B |

### A.5.2 Loops

A while-type loop can be implemented in the following way :

```
«WHILE»
 <instructions>
«/WHILE <condition>»
```

Instructions between the two tags are executed as long as condition is true. The following example, where instructions are repeated N times, then shows how a for-loop can be implemented :

```
«LET _Counter=0»
«WHILE»
  <instructions that may modify _Counter's value...>
  «LET _Counter=_Counter+1»
«/WHILE _Counter<N»
```

Another way of performing a loop with defined repetitions is using the `SQLREPEAT` command, for example :

```
«SQLREPEAT»
  <instructions>
«/SQLREPEAT <begin> ; <end>»
```

will perform `instructions` end-begin+1 times.

The `BREAK` command can be used to escape the `WHILE` and `SQLREPEAT` loops. It is useful for instance in long loops where just one test is needed to have confirmation that some test is fulfilled :

```
«VAR NEW _Found=0»
«SQLREPEAT»
  <some instructions to fetch a test value _TestValue, for instance
   the result of a SQL query using #SQLREPEAT# value>
  «IF _TestValue==_AimedValue»
   «LET _Found=#SQLREPEAT#»
   «BREAK»
  «ENDIF»
«/SQLREPEAT 1;10000»
```

There, the `SQLREPEAT` loop will stop some *as soon as the `_AimedValue`* is found, also keeping where it found it (the `#SQLREPEAT#` value as stored in `_Found`, now not null anymore).

#### A.5.2.1 Loop counter

The predefined variable `#SQLREPEAT#` can be used to access the value of the loop counter which :

- in case of a `WHILE` loop, is initialized at 1 at the beginning of the loop and is incremented by one at each repetition ;
- in case of a `SQLREPEAT` loop, is initialized at `<begin>` at the beginning of the loop and is incremented by one until reaching `<end>`.

The loop counter predefined variable may be useful to implement a for-loop, using condition `FOREVER` (which creates a dead-end loop) along with the `BREAK` command :

```
«SQLREPEAT»
  <instructions>
  «IF #SQLREPEAT#==10»
   «BREAK»
  «ENDIF»
«/SQLREPEAT FOREVER»
```

## A.6 OSL and SQL

One of OSL's greatest features lies in its straightforward way to handle databases and tables ; indeed, varied functions dedicated to SQL operating fulfill all needs associated with database handling.

### A.6.1 Performing a SQL command

#### A.6.1.1 Result-less queries

A SQL query without expected result (such as an insert) can be simply done via OSL's SQL command, for instance :

```
«SQL insert into COUNTRIES values (15,'Finland')»
```

The success or failure of lastly done SQL command can be accessed by evaluating predefined variable #SQLSTATUS#, equal either to 1 or 0.

#### A.6.1.2 Queries with results

According to the expected result of the SQL query to execute - integer, double or string -, three commands SQLEXEC INT, SQLEXEC DOUBLE or SQLEXEC STRING are available. For example,

```
«SQLEXEC DOUBLE dPrice=select dItemPrice from ITEMS where idItem=2»
The price of the Arrow is $ «dPrice».
```

outputs The price of the Arrow is $ 3..

### A.6.2 Displaying contents of a SQL table

Showing the contents of a table is a very usual operation that OSL performs through command tags «SQLOUTPUT» and «/SQLOUTPUT <SQL select query>». In between those tags are placed the names of the columns to display (always between guillemots) and the SQL can be followed of two optional numbers.

For instance, Fig.A.2 shows how two columns of a table are displayed ; the '0' after the SQL query specifies that no result records have to be skipped while the '3' specifies that three (at maximum) records have to be given.
In order for all records to be output, /SQLOUTPUT select idItem, azItem from ITEMS (i.e., without anything after the query) is used.

The «SQLOUTPUT» and «/SQLOUTPUT <SQL select query>» constitute a loop than can be conditionally exited thanks to the «BREAK» line :

Example.phs :

```
<TABLE border=1 cellpadding=2 cellspacing=0>
 <TR>
  <TD>Item #</TD><TD>Item name</TD>
 </TR>
 «SQLOUTPUT»
  <TR>
   <TD>«idItem»</TD><TD>«azItem»</TD>
  </TR>
 «/SQLOUTPUT select idItem, azItem from ITEMS;0;3»
</TABLE>
```

Output :

| Item # | Item name |
|---|---|
| 1 | Bow |
| 2 | Arrow |
| 3 | Quiver |

Figure A.2: Dropping the three first rows of the idItem and azItem columns of the ITEMS table.

```
«VAR NEW _Found=""»
«SQLOUTPUT»
  «IF dItemPrice>100.0»
   «LET _Found=azItem»
   «BREAK»
  «ENDIF»
«/SQLOUTPUT select azItem, dItemPrice from ITEMS order by dItemPrice
   asc»

«IF _Found<>""»
  The cheapest item above 100.0 is «_Found»
«ELSE»
  No item above 100.0 !
«ENDIF»
```

In this example, records consisting in item names and prices are processed with ascending `dItemPrice` values ; as soon as a price is over 100.0 (if ever), item name is stored in variable `_Found` (now not an empty string anymore) and `SQLOUTPUT` loop, now pointless, is exited.

### A.6.3 SQL transactions

`OSL` of course handles the concept of SQL transactions with the `«SQLSTATUS TRANSACTION BEGIN»` and `«SQLSTATUS TRANSACTION END»` commands, between which `«SQL ...»` commands are placed. For instance,

```
«SQLSTATUS TRANSACTION BEGIN»
  «SQL delete from ITEMS where idItem=«idOut»»
  «SQL insert into OUTDATED_ITEMS values («idOut»,«azOut»,«dOut»)»
  «VAR NEW _TransacSuccess=#TRANSACTIONSTATUS#»
«SQLSTATUS TRANSACTION END»
```

ensures that the two `SQL` commands in the middle are both successful before being committed ; otherwise they will be rolled back. In the former case, the `#TRANSACTIONSTATUS#`

predefined variable as estimated just before the end is equal to 1, and to 0 in the latter.

A rollback can also be forced by command line «SQLSTATUS ROLLBACK».

#### A.6.3.1 Disabling autocommitting

With command line «SQLSTATUS AUTOCOMMIT OFF», it is possible to disable the committing unless system encounters a SQLSTATUS TRANSACTION END ; otherwise, a rollback will be done.

### A.6.4 Useful things to know

SQL queries need most of the times some of the current script variables to be used ; for instance,

```
«SQL insert into COUNTRIES values («_CountryID»,'«_CountryName»')»
```

is the way of inserting into the COUNTRIES table the numerical value as stored in _CountryID and the string as stored in _CountryName. In the case of the string, notice the guillemots within the single quotes.

## A.7 Use of files

During the execution of a script, a non-script file may have to be opened or written to.

### A.7.1 Creating and/or opening a file

Command FILE CREATE allows to create a file, for instance

```
«FILE CREATE Dump.txt»
```

Once created, this file is opened by

```
«FILE OPEN <mode> <filename>»
```

where <mode> is chosen amongst these following options :

- READ : for a read-only file ;
- READTEXT : for a read-only text file ;
- WRITE : for a file that is to be read and written to ;
- WRITETEXT : for a text file that is to be read and written to ;
- APPEND : for a file that is to be read and appended to ;
- APPENDTEXT : for a text file that is to be read and appended to.

Also, if file did not exist, command FILE OPEN creates it.

### A.7.2 Reading from a file

Once opened, a file does not need to be called by name to be read from.

There exist different ways of reading a file :

- command line «FILE READ 20 Container», for instance, reads the next 20 characters from the currently opened file and stores them in variable Container ;
- command line «FILE READLINE Container», on the other hand reads and stores into Container the current line of the file ;
- command line «FILE READFILE Container» reads until the end of the file, storing it in variable Container.

The success of these three operations is stored into predefined variable #SQLSTATUS#.

### A.7.3 Writing into a file

Similarly as for reading, once the file is opened, its name does not need to be mentioned for the <data> to be written to it.

The following writing operations are possible :

- command line «FILE WRITE <data>» writes the value of <data> to the currently opened file ;
- command «FILE WRITETEXT "..."» does the same, but using text only, to be put in quotes ;
- command «FILE WRITESTRING <data>» can also be used to write <data> as a string ;
- command «FILE WRITELINE <data>» is similar to FILE WRITE but also adds a line end ;
- a line end alone, without added data, can be also achieved with «FILE WRITENEWLINE».

The success of these writing operations is stored into predefined variable #SQLSTATUS#.

### A.7.4 Closing a file

The command line «FILE CLOSE» is enough to close the currently opened file.

## A.8 Various mathematical functions

Table A.1 lists the functions that OSL provides for basic number operation.

Table A.1: Various mathematical functions

| Function | Description / Example |
|---|---|
| @abs(<val:integer>) | returns the absolute value of val<br>«=@abs(-10)» → 10 |
| @int(<val:double>) | returns the integer value of val<br>«=@int(-3.14)» → 3 |
| @random(<val:double>) | returns a random integer number between 0 and val<br>«=@random(1000)» → 698 |
| @round(<number:double>; <decimals:integer>) | returns number as rounded to decimals position(s)<br>«=@round(3.14159;2)» → 3.14 |

## A.9 Date and Time functions

OSL handles date and time in these following formats :

- expressed as values of year, month, day, hour, minute and second ;
- using 1/1/1970 (Unix time) as a reference ;
- in Excel "Serial" format.

### A.9.1 Getting current date/time

Obtaining current date/time can be performed in various outputs with three argument-less functions, as shown in Table A.2.

Table A.2: Functions returning the current date/time in various formats :

| Functions | Output |
|---|---|
| @today() | Serial |
| @daytime() | Number of days elapsed since 1-1-1970 |
| @time() | c-time |

*Examples :*

| Code | Output |
|---|---|
| «LET Today=@today()» | |
| «Today» | 40084.38 |
| | |
| «LET cTime=@time()» | |
| «cTime» | 1254121956 |

### A.9.2 Getting any date/time

As featured in Table A.3, functions `@date` and `@timetime` return any date/time given in days, months, years,... into Serial and c-time date/time.

Table A.3: Functions returning a given date/time in various formats :

| **Functions** | **Output** |
|---|---|
| @date(<day:integer>; <month:integer>; <year:integer>) | Serial |
| @timetime(<day:integer>; <month:integer>; <year:integer>; <hour:integer>; <minute:integer>; <second:integer>;) | c-time |

*Examples :*

| Code | Output |
|---|---|
| «LET Date=@date(22;09;2003)» | |
| «Date» | 37886.00 |
| | |
| «LET cTime=@timetime(22;09;2003;17;32;00)» | |
| «cTime» | 1064244720 |

Table A.4: Date- and Time- converting functions using 1-1-1970 as a reference, either in days elapsed since or seconds (c-time) :

| **Functions using days elapsed since 1-1-1970** | **Output** |
| --- | --- |
| @daytimeyear | Year (1970 -) |
| @daytimemonth | Month (1 - 12) |
| @daytimeday | Day (1 - 31) |
| @daytimetotime | c-time |

| **Functions using a c-time** | **Output** |
| --- | --- |
| @timestr(<ctime:integer>; <format:integer>) | see table A.5 |
| @timeserial | Serial |
| @timeyear | Year (1970 -) |
| @timemonth | Month (1 - 12) |
| @timeday | Day (1 - 31) |
| @timehour | Hour (0 - 23) |
| @timeminute | Minute (0 - 59) |
| @timesecond | Second (0 - 59) |

*Examples :*

| **Code** | **Output** |
| --- | --- |
| «LET DateStr=@timestr(1064244720;6)» | |
| «DateStr» | 22/09/2003 |
| | |
| «LET Mnt=@timeminute(1064244720)» | |
| «Mnt» | 32 |

### A.9.3 Functions using Unix time reference

Table A.4 features extensively the OSL date and time functions that use the Unix time reference, with argument either in days elapsed since 1-1-1970 or seconds (c-time).

Table A.5: format options for function @timestr(<ctime:integer>; <format:integer>) :

| format | **Output** |
|---|---|
| 1 | DMY (e.g. 27/9/2009) |
| 2 | MDY |
| 3 | YMD |
| 4 | DMYHM |
| 5 | RFC822 |
| 6 | DDMMYYYY (e.g. 27/09/2009) |
| 7 | MMDDYYYY |
| 8 | YYYYMMDD |

### A.9.4 Functions using Serial date/time

Table A.6 features extensively the OSL functions that use a serial time, to output various date/time components (corresponding year, month, week,...)

Table A.6: Date- and Time- converting functions using a serial date-time (double) :

| **Functions** | **Output** |
|---|---|
| @sqlstrdate | SQL format |
| @year | Year (1899 -) |
| @month | Month (1 - 12) |
| @week | Week (1 - 52) |
| @weekday | Weekday (0 - 6 ; 0 : Monday, 1 : Tuesday...) |
| @day | Day (1 - 31) |
| @hour | Hour (0 - 23) |
| @minute | Minute (0 - 59) |
| @second | Second (0 - 59) |

*Examples :*

| **Code** | **Output** |
|---|---|
| «LET Today=@today()» | |
| «LET Day=@day(Today)» | |
| «LET Month=@month(Today)» | |
| «LET Year=@year(Today)» | |
| «Day» «Month» «Year» | 28 9 2009 |

## A.10 String functions

OSL provides various string-related functions.

### A.10.1 Declaring, concatenating

A empty string is declared the following way :

```
«VAR NEW _NewString="" »
```

Two (or more) existing strings are simply concatenated via operator '+' :

```
«VAR NEW _String1="Dog"»
«VAR NEW _String2="Cat"»
«VAR NEW _String3=_String1+" & "+_String2»
```

### A.10.2 Tests on a single string

Functions @strlen and @type, operating on a single string, respectively return the length of the string and its type of variable (returning 0 if variable does not exist, 1 for an integer, 2 for a double, 3 for a string and 4 for a date). For instance:

```
«=@strlen("Hello world !")» → 13
«=@type("B52")» → 3
```

### A.10.3 Extracting parts of a string

#### A.10.3.1 To and from any position

Function @substr(string; <offset:integer>; <count:integer>) reads count characters into string from position offset ; count is set to -1 to specify end of string. For instance :

```
«=@substr("Hello world !";0;4)» → Hell
```

Table A.7: String extracting functions

| `@strthis(string; <char:integer>)` |
| --- |
| returns a copy of `string` where the first occurrence of `char` is replaced by a string end : «=@strthis("Hello World !";111)» → Hell |
| `@strrthis(string; <char:integer>)` |
| returns a copy of `string` where the last occurrence of `char` is replaced by a string end : «=@strrthis("Hello World !";111)» → Hello W |
| `@strnext(string; <char:integer>)` |
| returns the part of `string` after the first occurrence of `char` : «=@strnext("No easy way out";32)» → easy way out |
| `@strrnext(string; <char:integer>)` |
| returns the part of `string` after the last occurrence of `char` : «=@strrnext("No easy way out";32)» → out |

#### A.10.3.2 To and from any character

The four functions `@strthis`, `@strrthis`, `@strnext` and `@strrnext` all extract a part of a string based on the search of a character, given as its `ASCII` decimal value. Table A.7 sums up how they work, with 111 and 32 being the ASCII codes for letter 'o' and 'Space'.

### A.10.4 Comparison of two strings

#### A.10.4.1 Equality

Testing for equality of two strings `_String1` and `_String2` is simply done via '==' :

```
«VAR NEW _Equal=0»
«IF _String1==_String2»
 «LET _Equal=1»
«ENDIF»
```

#### A.10.4.2 Containment

`@strstrsearch(string; search_string)` looks for the presence of `search_string` in `string`, returning :

- if found, the position of the first occurrence of `search_string` in `string` (0 if right at the beginning of `string`) ;
- -1 if not found.

For instance :

«=@strstrsearch("Hello world !";"Hell")» → 0

### A.10.5 String manipulations functions

These functions act on a string's contents, in various ways : replacing its contents, changing it to lower or uppercase...

### A.10.5.1 Shifting to lower-/uppercase

The shifting of a string from lower- to uppercase and vice-versa is performed by function `@toupper` (viz. `@tolower`). For instance :

> `«=@toupper("2000 Light-Years From Home")»` → 2000 LIGHT-YEARS FROM HOME

> `«=@tolower("2000 Light-Years From Home")»` → 2000 light-years from home

These functions only act on alphabetic characters.

### A.10.5.2 Simplifying strings

The aim of the following functions is to remove spaces, separators,... to make string comparison easier.

- `@trim` removes spaces at the beginning and end of a string and, inside the string, removes all consecutive spaces to let just one :

  `«=@trim(" too    much   spacing   ")»` → too much spacing

- `@strtoname` removes all dots from a string so that it may be used as a variable name :

  `«=@strtoname("A.New.Var")»` → ANewVar

- `@tocompare` shifts all of the string's alphabetic characters to uppercase, removing accents and eliminating separators such as spaces, dot, commas...

  `«=@tocompare("6 O'clock, Jo's Café")»` → 6OCLOCKJOSCAFE

- `@tosqlcompare` is similar to `@tocompare`, except that the underscore and percentage character are conserved :

  `«=@tosqlcompare("...a 20% bargain")»` → A20%BARGAIN

### A.10.5.3 Replacing parts of a string

Two functions fulfill replacing tasks for a string, whether of a character by another, or of a substring by another

- @strreplace(string; <old char:integer>; <new char:integer>) replaces every occurrence of `old char` by `new char` (both of them given as `ASCII`) ; for instance, with 100 and 103 being ASCII codes for letters 'd' and 'g' :

  `«=@streplace("Blue drapes";100;103)»` → Blue grapes

- @strstrreplace(string; <old char:integer>; <new char:integer>) replaces every occurrence of `old string` by `new string` ; for instance :

  `«=@strstrreplace("Inflation increase";"in";"de")»` → Inflation decrease

### A.10.6 Use of strings with special characters

#### A.10.6.1 In SQL queries

If the string to be inserted in a SQL contains special characters (such as the single quote - which would result in the query failing), the function @atosql() should be used. The following query is ensured to never fail whatever the value of _CountryName is :

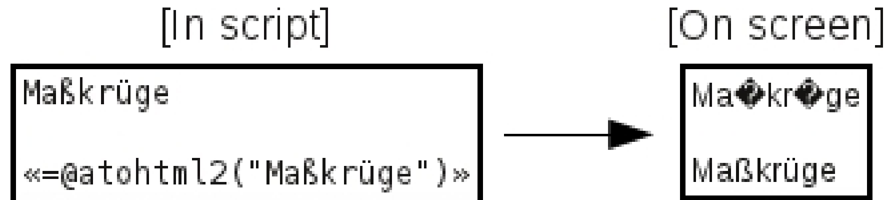
```
«SQL insert into COUNTRIES values («_CountryID»,'«=@atosql(_CountryName)»')»
```

#### A.10.6.2 For display on the screen

When a string variable belongs to a script called by an Ajax request, display problems might surface if string contains non-ASCII characters such as letters with diacritics.

To circumvent this, functions @atohtml and @atohtml2 can be used : the former indeed converts certain caracters (<, >, &) of the string to HTML character sequences (<, >, &) while the latter transforms all characters into their HTML equivalent, to be then interpreted by the browser.

In the following example, text as shown through an Ajax request has display issues which are corrected thanks to @atohtml2 :




This function can be also used in the shorter form «%html;=_MyString» (B.3.3).

#### A.10.6.3 For Javascript

Should an OSL string be used in a Javascript environment or as an argument for a JS function call, premature string termination problems will arise if string contains characters ' and/or ". To be avoid this, function @atojavascript is to be used as it indeed prefixes single and double quotes (also backslash) as present in the string with a '\'.

For instance, «=@atojavascript("Patrick O'Hara")» would output Patrick O\'Hara'.

This function can be also used in the shorter form «%js;=_MyString» (B.3.3).

#### A.10.6.4 For URLs

When a string variable is used in a URL (as a CGI variable), it might contain non-functional URL characters such as spaces and ampersands :

```
(...)
«VAR NEW _String="Smith & Wesson"»
«LET _URL=_URL+_String»
```

To make such strings work properly as URLs, the `@atocmd` function should be used : it transforms spaces by the character '+' and +, &, " and all caracters above decimal code 127 by their %hh hexadecimal codes. In the example above, doing `«VAR NEW _String=@atocmd(_String)»` (after its initializing) will indeed assess to `_String` the new value "Smith+%26+Wesson". Function `@atocmd2` is similar, except that it transforms spaces into %20.

#### A.10.6.5 Various string functions

Function `@strreverse` fully reverses a string :

`«=@strreverse("Not a palindrome")»` → emordnilap a toN

## A.11 MAIL functions

These functions are used by Blue Chameleon when an email is automatically sent, for instance when an order has been done. Their simplicity makes them fully integrable in a developed script, as shown at *Using Blue Chameleon's mail gate* (B.9).

# Appendix B

# A guide to developing your Blue Chameleon Add-On

Blue Chameleon brings company management concept to a higher plane by giving you the power to develop the add-on that suits your needs. You will be able to create your own screens, forms, data elements... and act on them as a full-fledged part of your Blue Chameleon account.

The scripting language `OSL` (see Chapter 1), though better suited to be handled by IT people already familiar with programming concepts, database manipulation and HTML layout, still remains simple, straightforward and quick to learn.

## B.1 The structure of a Blue Chameleon Add-on

Inside Blue Chameleon, an add-on is made of different components :

- a `.phs` **library**, resulting from the compiling (B.2.1) of individual `.phs` files written in Blue Chameleon scripting language `OSL` ;
- files such as `html` files, Javascript `.js` files, custom style sheets `.css`, images...

The `.phs` library and the other files are to be uploaded (B.2.2) onto their dedicated directories, respectively called the ***SysLibHome*** and the ***PublisherHome*** :

```
                     SysLibHome :
AddOn.phs         →  /srv/www/osl/OSS/[YourShopName]/

                     PublisherHome :
Header.html       →  /srv/www/htdocs/IncShop/IncModelShop/[YourShopName]/
processStuff.js   →  /srv/www/htdocs/IncShop/IncModelShop/[YourShopName]/js/
MyOwnStyle.css    →  /srv/www/htdocs/IncShop/IncModelShop/[YourShopName]/css/
Banner.jpg        →  /srv/www/htdocs/IncShop/IncModelShop/[YourShopName]/images/
                     ...
```

In the above, `[YourShopName]` is the alphanumerical, 16-character string featured in your shop login page URL
(`http://www1.inc.lu/IncShop/IncModelShop/[YourShopName]/osslogin.htm`).

### B.1.1 How .phs pages are interpreted and displayed

The following address displays for instance the "`Default.phs`" page belonging to a compiled *MyLibrary* library :

```
http://www1.inc.lu/Scripts/sql.exe?SqlDB=[YourShopName]&Sql=MyLibrary:Default.phs
    &xid=123...&Var1=&Var2=...
```

It is made of the following elements :

- the Blue Chameleon shop server, calling the `sql.exe` script (which interprets the `OSL` language) ;
- a string of CGI variables, amongst which three are essential :
  - `SqlDB`, which identifies your shop ;
  - `Sql`, which is the page that is displayed, always in the form `LibraryName:Page.phs` ;
  - `xid`, which is an alphanumerical string (automatically generated upon login) identifying your session.

## B.2 Basics of add-on developing : how it is integrated

Generally speaking, as summed up on Fig.B.1,the process of developing your own add-on will consist in :

- write the `.phs` files that constitute it (mandatorily including a `ossModuleRegister.phs` one, see B.3.1.1) ;
- compile them into a compiled library (`AddOn.phs`) ;
- upload this library to your shop's *SysLibHome* ;
- register your library and create related menu element (this has only to be done the first time).

***For add-on to be registered, it must contain a `ossModuleRegister.phs` script (B.3.1.1).***

The add-on has to be registered first and inserted as a menu, before being accessible. After, developing will consist only in generating the library and uploading it.

***It is to note that file names (including the .phs extension) should not be greater than 23 characters.***

developed phs scripts

AddStuff.phs Default.phs EditStuff.phs RmvStuff.phs ... ossModuleRegister.phs

sqllib.cmd

Generated library

AddOn.phs

upload to SysLibHome

Figure B.1: A single compiled library `AddOn.phs` is generated and is to be uploaded unto the *SysLibHome*.

### B.2.1 Compiling your `.phs` files

All of these files need to be placed in the same directory. Then, the `sqllib.cmd` (or `sqllib.sh`) executable will generate the compiled library `AddOn.phs` (final name can be set by modifying executable).

### B.2.2 Uploading your library and files

Uploading of compiled library and, if applicable, of other files, is done respectively in the *SysLibHome* and *PublisherHome* directories as cleared up in B.1.

### B.2.3 Registering your add-on

**Registering your add-on inside your shop - as well as menu-related concerns - has only to be done once.**

Inside the Blue Chameleon environment, the add-on you develop is called a 'custom library', which has to be registered as such. The process of doing so is described at Fig.B.2.

It has to be emphasized that the name as entered in the 'Library:' field must correspond exactly to the uploaded library's name, minus the `.phs` extension.

The 'Label:' can be entered as a multilingual string (B.3.3).

Figure B.2: The compiled library AddOn.phs is added.

#### B.2.3.1 Setting a new menu script and a menu element for the add-on

*User rights for menu script management can be set up either at the Modify User Page or the User Right Page under the element*

**Script management**

Ideally, your add-on would be accessed through the menu. For this to be possible, a 'menu script' has to be created. It will link to the *entry point*, which is the page of your add-on your want to be displayed when accessing it, for instance `Default.phs`. Fig.B.3 features how a new menu script is added, provided that the custom library has been well registered as described above.

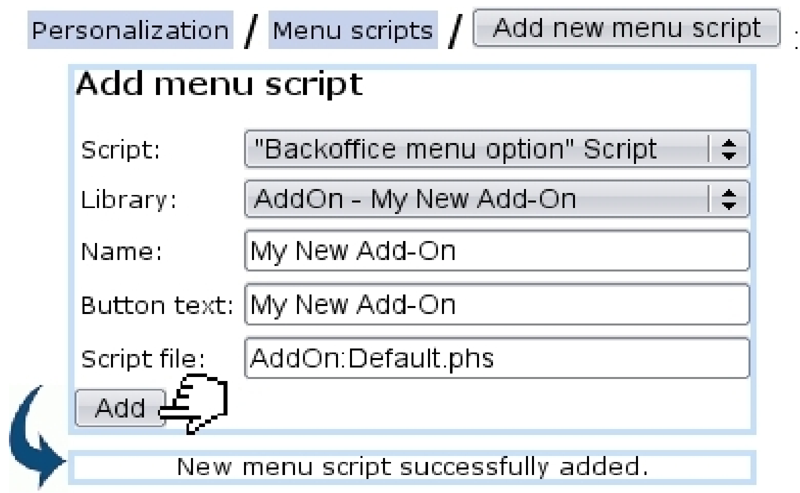



Figure B.3: This enables to make the new add-on accessible (more precisely, its `Default.phs` script) from menu configuration.

It is to note that the "Script file:" as featured there must always be entered this form : add-on name, colon and script file. The 'Button text:' can be entered as a multilingual

string (B.3.3).

Once created, as shown in Fig.B.4, the add-on name (as typed in the 'Button name:' field) now appears in the list of available procedures while at the Menu Configuration context.

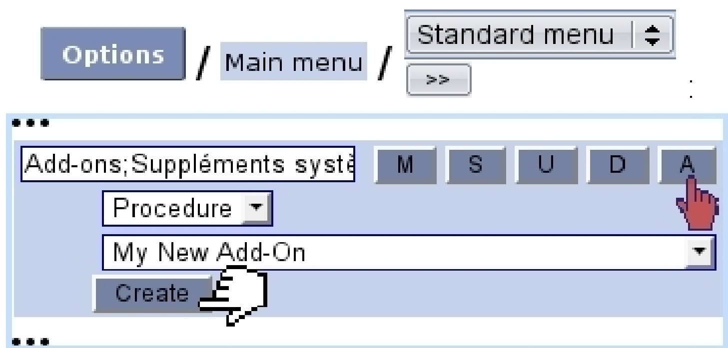



Figure B.4: The add-on is indeed now available to be added as a menu element.

Nonetheless, for the new add-on to appear at the menu (here through Add-ons), the menu script user rights to the add-on must be set.

#### B.2.3.2 Setting the add-on's access rights

As shown on Fig.B.5, the add-on's access rights are now featured on the *Modify User Page* under [*Menu script user rights :*]. When they are set sufficiently, the new add-on can be accessed.

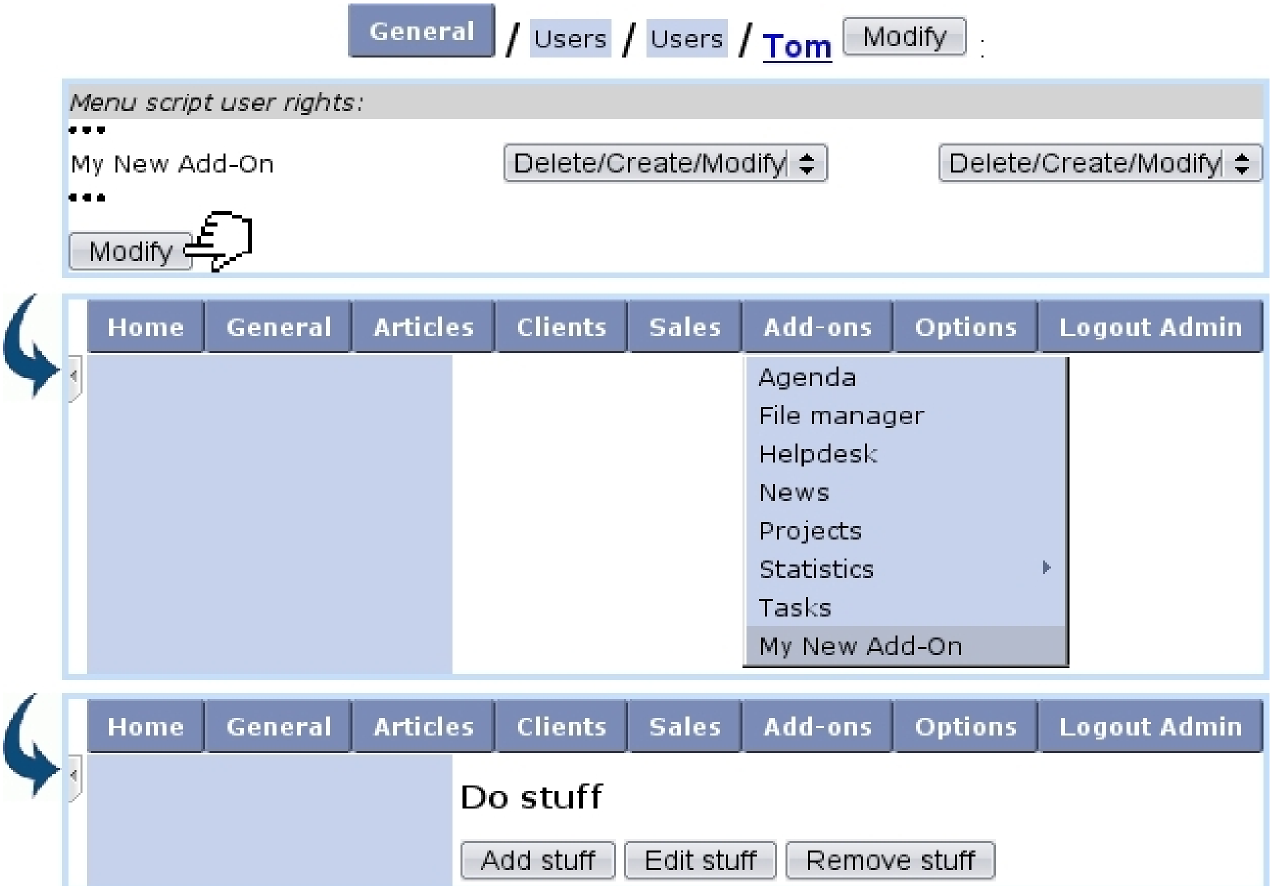



Figure B.5: Access user rights for the new add-on, initially set by default to 'None', are raised up for user Tom and add-on thus becomes accessible.

## B.3 Basics of add-on developing : how to organize your .phs scripts

Fig.B.6 illustrates in a general way how an add-on could be ideally structured. An add-on is constituted of a "main" `.phs` file, most conveniently named `Default.phs` and which is the entry point when registering the library (B.2.3.1).

As the add-on is developed through time, other script files are created. They might be called by `Default.phs` or between each other, by the way of `INCLUDE`s (A.4.1) and forms (B.4.3.2).

Also, it is to note that "outer" scripts, especially belonging to the `ossbo` library, may have to be called, for inserting header/footer (B.3.2), getting user rights (B.5.1)... `ossbo` is Blue Chameleon's main library.

As for a `.phs` script itself, it may be composed most conveniently along general guidelines, as shown in Fig.B.7.

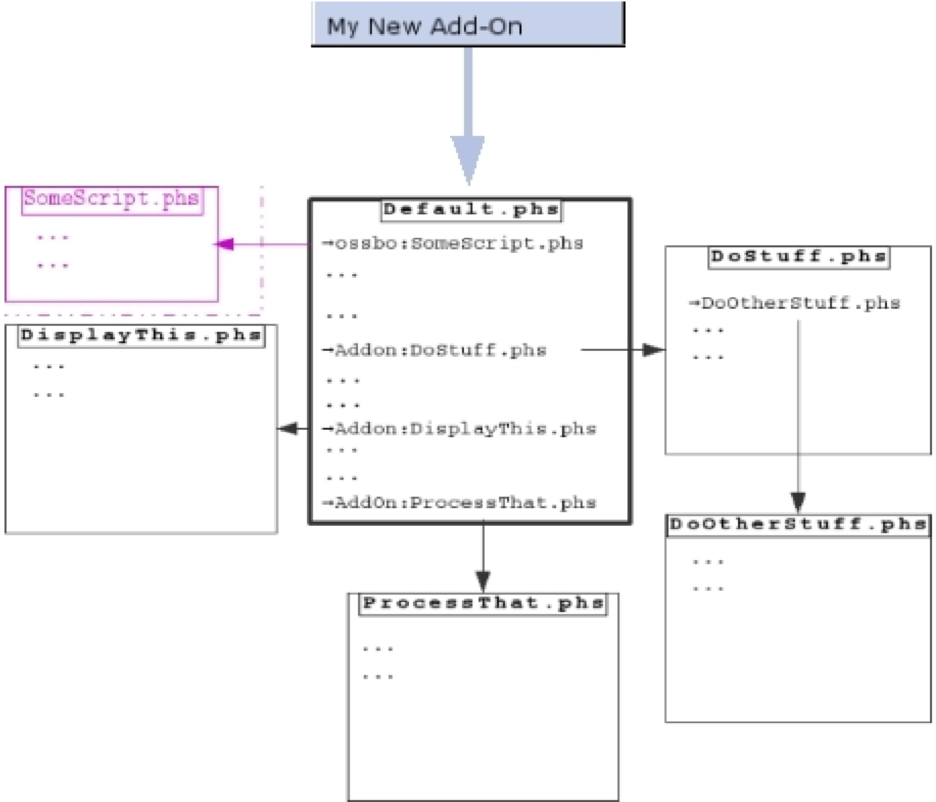
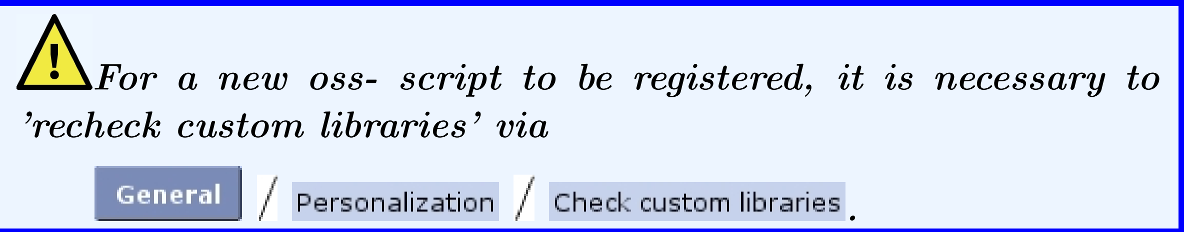



Figure B.6: An example of the branching between `.phs` files in an add-on.

### B.3.1 "oss-" scripts : the basics

These are scripts that will be recognized and used by Blue Chameleon to provide various things such as the registering of your library (`ossModuleRegister.phs`, mandatory), dedicated user rights (`ossUserConfig.phs`, `ossUserModify.phs`)...

The oss- scripts that your add-on (or any library, for that matter) has been equipped with can simply be seen checked as seen in Fig.B.8.




More about oss- scripts can be found at B.10.

#### B.3.1.1 `ossModuleRegister.phs`

This script, which has to be included amongst your set of `.phs` files, simply consists in one line :

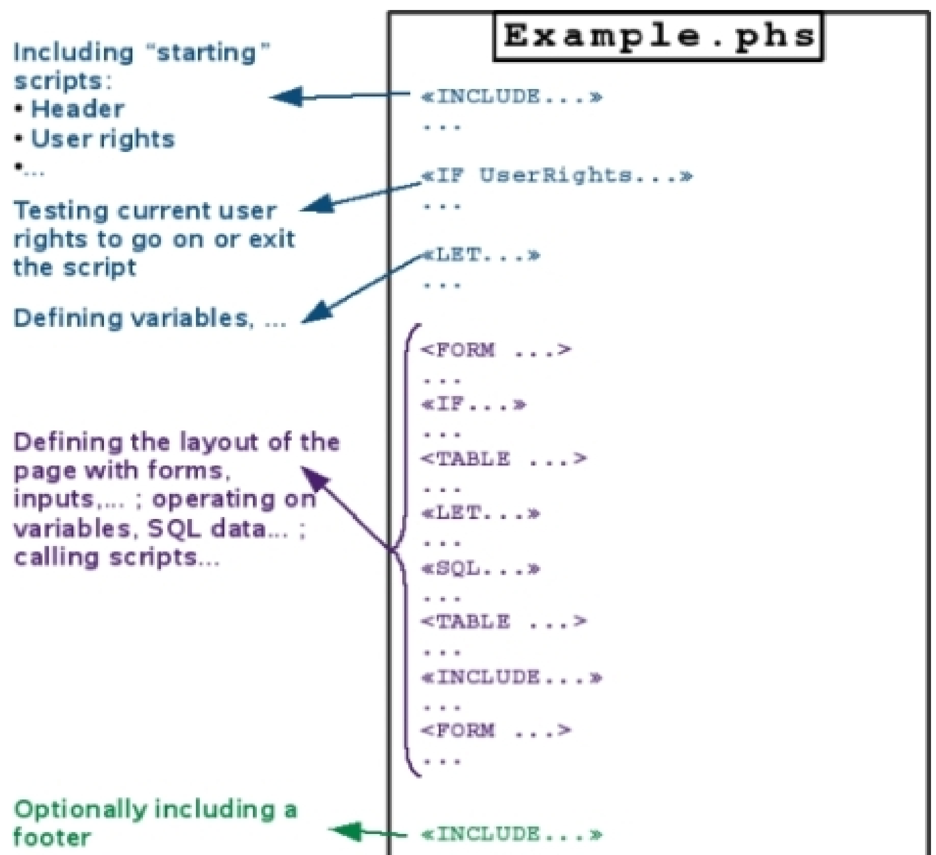



Figure B.7: A `.phs` file may be composed in this rather practical way.

Figure B.8: oss- scripts that the add-on contains. The presence of `ossModuleRegister.phs` is confirmed by the existence of a 'Signature:'.

```
«RETURN 1003»
```

"1003" there is an example, any integer over 1000 can be taken. This number is called the *signature* of the *library* and it is used to identify it (see Fig.B.8).

#### B.3.1.2 `ossUserConfig.phs`, `ossUserModify.phs`

How to compose these library-right-generating scripts is explained in detail at *Making custom library user rights for your add-on* (B.5.3).

### B.3.2 Headers and footers

In order to have your add-on displayed in the same style than the rest of Blue Chameleon, it is advised to include, around the beginning, the "Header.phs" script (belonging to library *ossbo*), in the following way :

```
«VAR NEW _Title="My page title;Mon titre de page;Mein Seitentitel"»
«INCLUDE ossbo:Header.phs;_Title=_Title;_Style="print";»
```

with :

- `_Title` being the title you want to give to the page generated by the script, as displayed in the top of the browser's window. It can be entered as a multilingual string (B.3.3) ;
- `_Title="print"` calling for Blue Chameleon's usual `css` style sheet, but it is possible to use your own, for instance `_Style="MyOwnStyle"` (provided that a `MyOwnStyle.css` has been uploaded to *PublisherHome/css*).

As for the footer, as included via `«INCLUDE ossbo:Footer.phs»`, it allows to display the links as featured in Fig.B.9, enabling, for this page :

- to go back to the previous one ;
- to reload it ;
- to print it ;
- to add it as a User Menu link (see Blue Chameleon Documentation, **General Interface Handling**, *Link management*).

These header and footer are to be included in the script only if it displays a new page ; it is unnecessary to feature them in scripts that do not display anything on screen, nor in `INCLUDE`'d scripts.

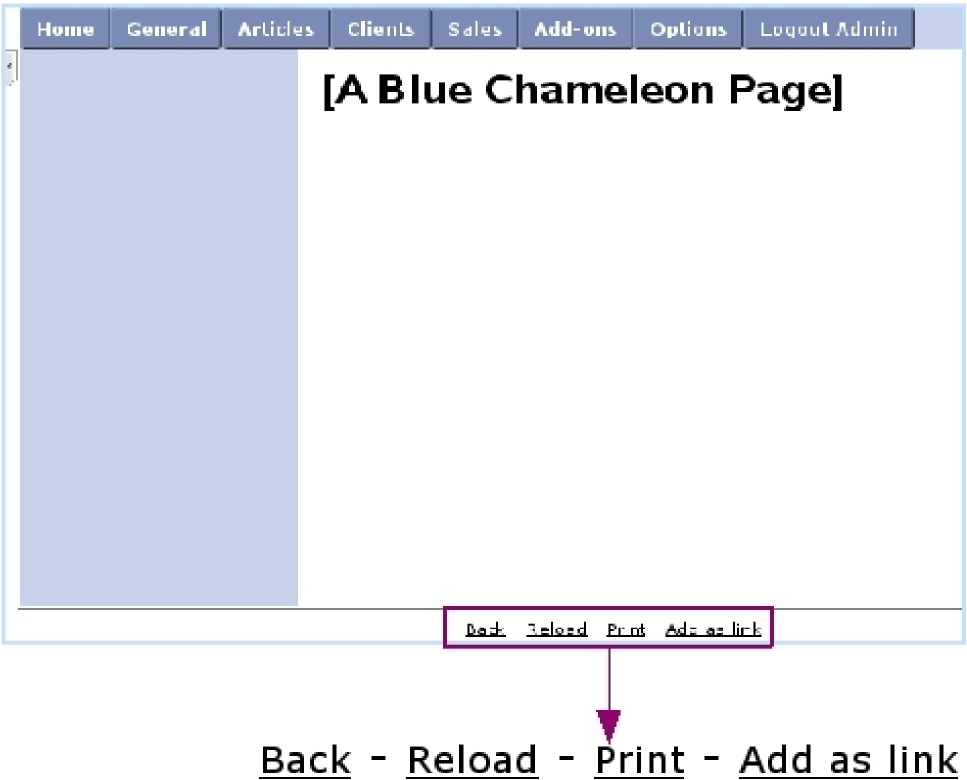



Figure B.9: These four links are enabled by script **ossbo:**Footer.phs.

### B.3.3 Languages

As Blue Chameleon can handle different languages that you enable while at the *Merchant Configuration Page* , you might want to make sure that - especially if users have selected different preferred languages -, any displayed text element of your add-on is provided through a *multilingual string*, i.e. as an example `My Text;Mon Texte;Mein Text;...`.

This multilingual string, when it has to be displayed, is then interpreted with the `WRITE LANGUAGE` command.

For instance, while the following code would display a Search button only in English :

```
<input type="submit" name="Search" value="Search">
```

...this code below, on the other hand, would display Suchen if user's preferred language were German :

```
<input type="submit" name="Search"
value="«WRITE LANGUAGE Search;Chercher;Suchen»">
```

Therefore, if you wish to allow any piece of text to be displayed according to user's preferred language, you should replace it by command `«WRITE LANGUAGE My Text;Mon Texte;Mein Text;...»` for as many languages that you have enabled at the *Merchant Configuration Page*. The order of languages is as follows :

| Language | Value |
|---|---|
| English | 1 |
| French | 2 |
| German | 3 |
| Dutch | 4 |
| Portuguese | 5 |
| Luxembourgish | 6 |
| Spanish | 7 |
| Italian | 8 |
| Swedish | 9 |
| Polish | 10 |
| Hungarian | 11 |
| Russian | 12 |

Function `@languageitem` also performs the same duty :

```
«=@languageitem("Search;Chercher;Suchen")»
```

If multilingual string is to be used in an Ajax environment, display issues might arise if special characters or accented letters are involved : it is then advised to use function `@atohtml2` (A.10.6.2), or more directly the following syntax :

```
«WRITE LANGUAGE %html;Next;Précédent;Nächst»
```

or also

```
«%html;=@languageitem("Next;Précédent;Nächst")»
```

This `%html;` right a string directly performs `@atohtml2`'s action.

When `Javascript` dialog boxes are involved, the `@atojavascript` (A.10.6.3) should be used in order to display multilingual strings with non-ASCII characters correctly. It is also available in a short form :

```
<script language="JavaScript">
alert("«WRITE LANGUAGE %js;Item is not available;Objet non disponible;Produkt
   ist nicht verfügbar»")
...
```

# B.4 Variables, forms, scripts

## B.4.1 CGI variables

As previously explained (*How `.phs` pages are interpreted and displayed*, B.1.1), 3 CGI variables (`SqlDB`, `Sql` and `xid`) are *a minima* necessary to display a Shop page. They are completed by two others :

- `_MerchantId`, which is the identifier for your Merchant ;
- `_CustomScriptId`, which identifies the add-on, script-wise.

The value of these need not to be known explicitly nor modified, except for `Sql`, which rules what `.phs` script is displayed, and thus subject to be changed.

As scripts are called (B.4.3.2), **other CGI variables can be created and used**.

### B.4.2 Accessing names and values of CGI variables

For debugging purposes, the names and values of current CGI variables are accessed via `CGINAME` and `CGIVALUE`.
In order to go through all of them, these are used within a `«LIST»`...`«/LISTCGI»` loop environment, in which instructions are executed as many times as there are CGI variables.

For instance, the following codes can be used to list all CGI variables (and their values) as used in the current script :

```
<TABLE>
  «LIST»
  <TR><TD>«CGINAME»:</TD><TD>«CGIVALUE»</TD></TR>
  «/LIST CGI»
</TABLE>
```

### B.4.3 CGI variables and HTML forms

Whenever a `HTML` form is defined in a `.phs` script, CGI variables need to be recalled as `INPUT`s, as written in Code 1.

**Code 1** Basic code to create `HTML` forms.

```
<FORM METHOD="post" ACTION="/Scripts/sql.exe">
 <INPUT TYPE="hidden" NAME="SqlDB" VALUE="«SqlDB»">
 <INPUT TYPE="hidden" NAME="Sql" VALUE="«Sql»">
 <INPUT TYPE="hidden" NAME="xid" VALUE="«xid»">
 <INPUT TYPE="hidden" NAME="_CustomScriptId" VALUE="«_CustomScriptId»">
 <INPUT TYPE="hidden" NAME="_MerchantId" VALUE="«_MerchantId»">
 [Form contents]
</FORM>
```

As it can be seen, the value of these is accessed like any other `OSL` variable, i.e. by putting them between guillemots.

Recalling the five basic CGI variables, this is the most basic form that can be created : but other CGI variables can be created within a form, as shown below.

#### B.4.3.1 Creating CGI variables in a form

Simply enough, a new CGI variable as used in a form can be created as an `INPUT` :

```
<INPUT TYPE="hidden" NAME="MyCGIVar" VALUE="«MyCGIVarValue»">
```

This of course requires that, somewhere inside the form, variable `MyCGIVar` is actually assessed a value.
Various types of `input` (`hidden`, `text`, `checkbox`, `radiobutton`) can be used.

#### B.4.3.2 Form calling another script

In Code 1, line

```
<INPUT TYPE="hidden" NAME="Sql" VALUE="«Sql»">
```

means that, upon generating of this form, the current script (which name always is accessible via `«Sql»`) was called : thus, upon submit, system remained on the current script.

On the other hand, if we wanted the form to call another script, named for instance `AddStuff.phs` script, this line would have been replaced by :

```
<INPUT TYPE="hidden" NAME="Sql" VALUE="AddOn:AddStuff.phs">
```

It has to be noted that a script is always referred to as this way, *LibraryName:ScriptName.phs*.

Code 2 then shows what could be done to make appear an Add stuff button that, upon click, calls the `AddStuff.phs` script.

**Code 2** A `HTML` form that calls another script ; other lines are similar to Code 1.

```
<FORM METHOD="post" ACTION="/Scripts/sql.exe">
  ...
  <INPUT TYPE="hidden" NAME="Sql" VALUE="AddOn:AddStuff.phs">
  ...
  <INPUT TYPE="submit" NAME="Add" VALUE="Add stuff">
  ...
</FORM>
```

Inside the called script, any CGI variable as defined within the previous form then exists, and its value is accessible with the usual `«...»`.

### B.4.4 Conserving variables from one script to another

There are different ways to branch `.phs` scripts :

- by means of form submission, which conserves only CGI variables defined therein ;
- by means of an `«INCLUDE... »`, thanks to which any variable as used before exists in the included script (this is used for instance to initialize new variables before an included script that will assess values to them, see for instance *Information on users* B.6.1.2) ;
- by means of a redirection.

In the latter case, a string containing all basic 5 CGI variables, as well as other variables you want to pass, must be built in the following fashion :

```
...
...
...
<META HTTP-EQUIV="refresh" CONTENT="0;
URL=/Scripts/sql.exe?SqlDB=«SqlDB»&Sql=AddOn:RedirScript.phs&xid=«xid»
&_MerchantId=«_MerchantId»&_CustomScriptId=«_CustomScriptId»
&_Var1=«_Var1»&_Var2=«_Var2»"&...>
```

### B.4.5 CGI variables and `javascript` functions

It can happen that the *same* form provides different possible actions, for instance several buttons that would call each for a different script. In order to implement this, Code 3 provides a solution using simple `javascript` functions ; inside this example form :

- CGI input for `Sql` does not call for any script ;
- two Modify and Delete buttons (for instance) call for two `javascript` functions `onModify()` and `onDelete()` as shown in Code 4.

The `onModify()` and `onDelete()` functions then simply consist in assigning the right script name (`AddOn:Modify.phs` or `AddOn:Delete.phs`) to CGI variable `Sql`.

### B.4.6 Incorporating other files

In order to make the layout of a `.phs` script less cluttered, the *PublisherHome* (B.1) can be used to store various files such as `javascript` files, custom style sheets... This is done as shown in Code 5 by using the predefined variable `«#SQLWWWHOME#»` which stores the *PublisherHome* root.

**Code 3** This form contains buttons that, on click, call for `javascript` functions outside the form.

```
<FORM METHOD="post" ACTION="/Scripts/sql.exe">
  ...
  <INPUT TYPE="hidden" NAME="Sql" VALUE="">
  ...
  <INPUT TYPE="button" VALUE="Modify" onClick="onModify()">
  ...
  <INPUT TYPE="button" VALUE="Delete" onClick="onDelete()">
  ...
</FORM>
```

**Code 4** How `javascript` functions for calling a `.phs` script are made .

```
<script language="JavaScript">

   function onModify(){
    document.edit.Sql.value="AddOn:Modify.phs";
    document.edit.submit();
   }

   function onDelete(){
    Cfrm_Box=confirm("«WRITE LANGUAGE Are you sure;Etes-vous sûr;Sind Sie
sicher»?");
    if (Cfrm_Box==true){
     document.edit.Sql.value="AddOn:Delete.phs";
     document.edit.submit();
    }
   }

</script>
```

**Code 5** Including files "`processStuff.js`" and "`MyOwnStyle.css`" from their respective locations `js/` and `css/` on *PublisherHome* root.

```
<script type="text/javascript" src="«#SQLWWWHOME#»/js/processStuff.js">
</script>

<link rel="stylesheet" href="«#SQLWWWHOME#»/css/MyOwnStyle.css"
type="text/css" media="screen"/>
```

## B.5 Setting aimed user rights for the add-on

***For general information about user rights, please check*** **User right basics** ***in the Annex of Blue Chameleon's Extended or Full Documentation.***

User rights' purpose is that to restrict certain actions that, when done carelessly, could harm the data the add-on deals with.

### B.5.1 Getting the current (Menu Script) user rights inside a script

During the insertion of the add-on, dedicated user rights for it ("Menu script user rights") are indeed created (B.2.3.2) : they may rule in a simple what can or cannot be done inside the add-on.

For a `.phs` script to know what these current rights for your add-on are, it must `INCLUDE` the `ossbo:OSSCustomUserRights.phs` script as shown in Code 6. Indeed, it uses as a parameter the CGI variable (B.4.1) `_CustomScriptId` that identifies your add-on menu script-wise and stores the right values (strings) into two previously initialized variables, one for the owner's user rights and the other for "All".

**Code 6** This code stores in `_OwnerUserRights` and `_UserRights` the values of current **Menu Script user rights** for the add-on.

```
«VAR NEW _OwnerUserRights=""»
«VAR NEW _UserRights=""»

«INCLUDE ossbo:OSSCustomUserRights.phs;_MerchantId=«_MerchantId»;
_CustomScriptId=«_CustomScriptId»»
```

This code must be placed at the top of *any* script in which the values of menu script user rights are going to be needed ; this is not necessary if `_OwnerUserRights` and `_UserRights` are carried around from script to script as CGI variables.

#### B.5.1.1 User rights values

With Code 6 included at the beginning of a script, add-on user rights for "All" have been recuperated and can be accessed via `_UserRights[0]`, which stores a value that increases as user's rights become more extended, according to the following :

| Value of `_UserRights[0]` | Corresponding user right |
|---|---|
| 48 | None |
| 49 | View |
| 50 | Modify |
| 51 | Create/Modify |
| 52 | Delete/Create/Modify |
| 88 | Unrestricted |

(These values correspond in fact to the `ASCII` value of characters 0, 1, 2, 3, 4 and X.)

For instance, for a user that has been set with Create/Modify rights for the add-on (at her/his *Modify User Page*) estimating `_UserRights[0]` will return 51.

This now can be used in practice to restrict the access to the add-on's features, as explained below.

### B.5.2 Fine-tuning the access to add-on's features

Inside your add-on, data might have to be modified, other data to be created while deleting some might also come around ; some of these actions will never be performed by certain users.

#### B.5.2.1 Access to elements of a script

Whenever an element of an add-on's script shall not appear unless user rights are sufficient enough to allow it, it can be put between `«IF»...«ENDIF»` tags, with a test done on `_UserRights[0]` : for instance, the following code

```
«IF _UserRights[0]>51»
 [Instructions]
«ENDIF»
```

will process `[Instructions]` only if user has at least Delete/Create/Modify menu script user rights. It can therefore be used for instance (taking the example as used in B.4.5 for `javascript` functions) to hide data-deleting features as shown on Code 7.

Thanks to this way of testing for user rights, the following is achieved :

- the Delete button only appears for users who have at least Delete/Create/Modify rights. Therefore, this call to the `onDelete()` function is *de facto* disabled for users who have insufficient rights ;
- the fact that the `onDelete()` function is also *itself* protected in a similar way is a further protection ensuring that, if ever "unprotected" calls to it are done, they will abort.

**Code 7** These elements are accessed only if `_UserRights[0]` corresponds to at least Delete/Create/Modify.

```
<FORM METHOD="post" ACTION="/Scripts/sql.exe">
  ...
  «IF _UserRights[0]>51»
    <INPUT TYPE="button" VALUE="Delete" onClick="onDelete()">
  «ENDIF»
  ...
</FORM>

...

<script language="JavaScript">
  ...
  «IF _UserRights[0]>51»
    function onDelete(){
     ...
    }
  «ENDIF»
  ...
</script>
```

#### B.5.2.2 Access to a whole script

As scripts multiply, it becomes sometimes uneasy to tell if a particular script, access to which was supposed to be protected, is indeed accessed under sufficient user rights.

To ensure that no "trespass" will happen, as well as to simply render a script restricted under other circumstances, the command `EXIT STOP` can be used to stop the execution of the script. For instance, the Code 8, placed at the beginning of the script (after user rights have been recuperated), tests if user has at least Modify rights and aborts the script if not, displaying the "You don't have the necessary rights to access this function." message.

**Code 8** This restricts the access to the rest of the script to any user who has insufficient rights.

```
[Code 6]

«*Is user allowed to go further ?*»
«IF _UserRights[0]<50»
  «INCLUDE ossbo:MessageAccessDenied.phs#Message»
  «EXIT STOP»
«ENDIF»
...
```

### B.5.3 Making custom library user rights for your add-on

In the above, the user rights that were recuperated as described in B.5.1 were the "Menu Script User Rights" : a single value for each user was obtained. As an add-on expands, it may eventually nonetheless require more than one value.

Blue Chameleon provides the possibility to create new - library - user rights for your add-on. In order to do this, follow this guideline :

1. open two files called `ossUserConfig.phs` and `ossUserModify.phs` ;
2. paste the Codes 9 and 11 ;
3. fill below in your custom user rights as shown as an example in Code 10 ;
4. compile the library.

#### B.5.3.1 Building your own `ossUserConfig.phs` script

This script's aim is to make appear, on the *Modify User Page*, your own custom user rights.

**Code 9** The preamble to put in `ossUserConfig.phs`.

```
«IF _UserId == -1»
  «VAR NEW azOwnerUserRights = "00000000"»
  «VAR NEW azUserRights = "00000000"»
«ELSE»
  «SQLEXEC STRING azUserRights = select azUserRights from
OSSCUSTOMLIBRARYUSERRIGHTS where idUser = «_UserId»  AND idLibrary =
«_LibraryId»»
  «SQLEXEC STRING azOwnerUserRights = select azOwnerUserRights from
OSSCUSTOMLIBRARYUSERRIGHTS where idUser = «_UserId»  AND idLibrary =
«_LibraryId»»
«ENDIF»
```

In Code 9, two strings of rights (for "All" and "Owner") are selected for the current user and the current library (your add-on) : they correspond to the custom rights that are going to be defined displayed further down, in Code 10.

There :

- a general title is given ("*My AddOn's Custom User Rights*") ;
- a first custom right is defined (here, "Gizmo Management"), under which are defined two list-boxes :
  - one giving the usual values of user rights (None, View,... **but you can even define what you wish**), and the choice is stored in `_OwnerUserRight«_LibraryId»_0` : this will be the user right value assigned to right "Gizmo Management" concerning Owner ;
  - a similar one, this time defining in `_UserRight«_LibraryId»_0` the user right value assigned to right "Gizmo Management" concerning All.
- a second custom right ("Widget Handling") is defined, similarly as for "Gizmo Management", this time with user values stored in `_OwnerUserRight«_LibraryId»_1` and `_UserRight«_LibraryId»_1` ;
- and so on, incrementing the integer as put after `_[Owner]UserRight«_LibraryId»....`

#### B.5.3.2 Building the corresponding `ossUserModify.phs` script

While the previous script made the various new right elements appear on the *Modify User Page*, a script whose code is detailed at 11 is still necessary in order to validate changes.

There :

**Code 10** An example of a `ossUserConfig.phs` file : defining various custom rights for AddOn, building for each list-boxes with multiple user right choices, for "Owner" and for "All".

```
[Code 9]

<tr>
 <td colspan=3><i>My AddOn's Custom User Rights</i></td>
</tr>

<tr>
 <td>Gizmo Management</td>
 <td>
  <select name="_OwnerUserRight«_LibraryId»_0">
   <option value="0" «IF azOwnerUserRights[0]==48»selected«ENDIF»>None</option>
   <option value="1" «IF azOwnerUserRights[0]==49»selected«ENDIF»>View</option>
   <option value="2" «IF azOwnerUserRights[0]==50»selected«ENDIF»>Modify</option>
   <option value="3" «IF azOwnerUserRights[0]==51»selected«ENDIF»>Create/Modify</option>
   <option value="4" «IF azOwnerUserRights[0]==52»selected«ENDIF»>Delete/Create/Modify</option>
   <option value="X" «IF azOwnerUserRights[0]==88»selected«ENDIF»>Unrestricted</option>
  </select>
 </td>
 <td>
  <select name="_UserRight«_LibraryId»_0">
   <option value="0" «IF azUserRights[0]==48»selected«ENDIF»>None</option>
   [...]
   <option value="X" «IF azOwnerUserRights[0]==88»selected«ENDIF»>Unrestricted</option>
  </select>
 <td>
</tr>

<tr>
 <td>Widget Handling</td>
 <td>
  <select name="_OwnerUserRight«_LibraryId»_1">
   [...]
  </select>
 </td>
 <td>
  <select name="_UserRight«_LibraryId»_1">
   [...]
  </select>
 </td>
</tr>
```

**Code 11** The ossUserModify.phs file corresponding to the ossUserConfig.phs as previously defined.

```
«SQLEXEC INT existSqlLine = select count(*) from
OSSCUSTOMLIBRARYUSERRIGHTS where idMerchant=«_MerchantId» AND
idLibrary=«_LibraryId» AND idUser=«_UserId»»

«IF existSqlLine==0»
  «SQL INSERT INTO OSSCUSTOMLIBRARYUSERRIGHTS
(idMerchant,idLibrary,idUser,azOwnerUserRights,azUserRights)
VALUES(«_MerchantId»,«_LibraryId»,«_UserId»,'«_OwnerUserRight«_LibraryId»_0»
«_OwnerUserRight«_LibraryId»_1»000000','«_UserRight«_LibraryId»_0»
«_UserRight«_LibraryId»_1»000000')»
«ENDIF»

«SQL update OSSCUSTOMLIBRARYUSERRIGHTS set
azOwnerUserRights='«_OwnerUserRight«_LibraryId»_0»«_OwnerUserRight«_LibraryId»_1»
000000',azUserRights='«_UserRight«_LibraryId»_0»«_UserRight«_LibraryId»_1»000000'
where idMerchant=«_MerchantId» AND idLibrary=«_LibraryId» AND
idUser=«_UserId»»
```

- a first SQL command tests if the custom rights pertaining to your library have been inserted into Blue Chameleon's OSSCUSTOMLIBRARYUSERRIGHTS ;
- a SQL command places into this table the values of the Owner user rights for each group of rights : «_OwnerUserRight«_LibraryId»_0»«_OwnerUserRight«_LibraryId»_1», that correspond respectively to "Gizmo Management" and "Widget Handling". This makes two values, and the string is thus completed by six zeros, as, in the preamble of ossUserConfig.phs, the variable azOwnerUserRights was defined with eight zeros. A similar thing is done for "All" user rights with «_UserRight«_LibraryId»... ;
- a last SQL command sets the rights themselves in the same way.

#### B.5.3.3 These two scripts in force

Once the ossUserConfig.phs and ossUserModify.phs files have been integrated and compiled with the library, these new user rights finally appear at the bottom of the *Modify User Page*, as featured in Fig.B.10 : they can now be set and used in your scripts, as cleared up below.

#### B.5.3.4 Incorporating your add-on custom user rights in scripts

As shown in Code 12 below, calling script ossbo:OSSLibraryUserRight.phs stores into strings _OwnerUserRights and _GroupUserRights (which have to be initialized before)

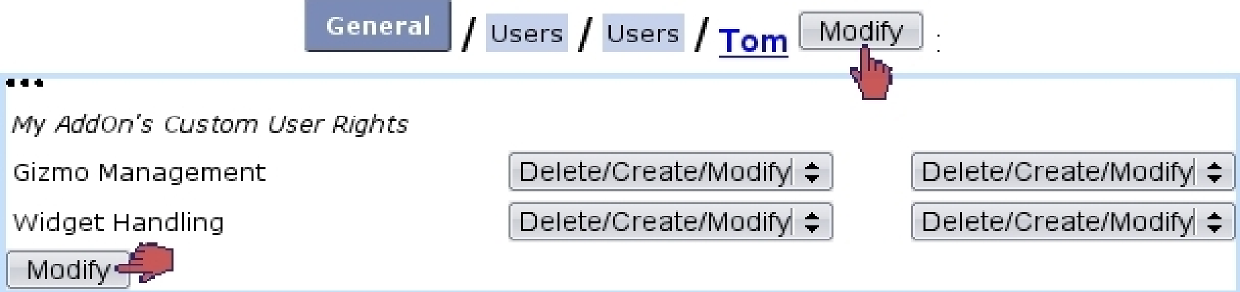



Figure B.10: The custom rights now appear on the Modify User Page.

the right vectors. The input parameters for the script, apart from the usual `_MerchantId`, are several identifiers :

- `_LibraryId`, which value «`_CustomLibraryId`» corresponds to the signature (B.3.1.1) of your add-on (in the current example,1003) ;
- `_UserId`, which is set to the current user (`#SQLUSERID#`) ;
- user's `_UserGroupId`, as obtained via script `ossbo:OSSUserInfo.phs` (B.6.1.2).

**Code 12** Getting the custom user rights of an add-on.

```
«VAR NEW _UserGroupId=""»
«INCLUDE
ossbo:OSSUserInfo.phs;_MerchantId=«_MerchantId»;_UserId=«#SQLUSERID#»»

«VAR NEW _OwnerUserRights=""»
«VAR NEW _GroupUserRights=""»
«INCLUDE ossbo:OSSLibraryUserRight.phs;_MerchantId=«_MerchantId»;
_LibraryId=1003;_UserId=«#SQLUSERID#»;_UserGroupId=«_UserGroupId»»
```

Once initialized, in this current example, the `_OwnerUserRights` string will be `XX000000` for a user that has unrestricted owner rights for "Gizmo Management" and "Widget Handling". The former is then accessed via `_OwnerUserRights[0]` and the latter via `_OwnerUserRights[1]`.

The following code shows for instance how a [Gizmo Management] button can be hidden from users who do not have at least View rights for it :

```
«IF _OwnerUserRights[0]>=49 && _GroupUserRights[0]>=49»
 <INPUT TYPE="button" VALUE="Gizmo Management"
onClick="onManageGizmo()">
«ENDIF»
```

*In order to call* `ossbo:OSSLibraryUserRight.phs` *only once (at the entry script),* `_OwnerUserRights` *and* `_GroupUserRights` *can be conveniently transmitted from script to script as CGI variables :*

```
...&_OwnerUserRights=«_OwnerUserRights»&_GroupUserRights=«_GroupUserRights»...
```

## B.6 Importing information on Shop data

In order to get information related to your Shop data such as users, clients, orders, invoices... Blue Chameleon's main library `ossbo.phs` has been equipped with a wide range of scripts aimed at fetching any kind of information as entered in other places.

Whatever you want to get, those information scripts are used in the same way :

- first, initialize output variables (only those you want to use) ;
- then, call script, using if applicable input parameters.

According to the type of the output variable to fetch, numerical value or string, it is either initialized to 0 (e.g. `«VAR NEW _BillTotalPrice=0»`) or to the null string (e.g. `«VAR NEW _ClientFullName="" »`).

### B.6.1 Importing user and user group information

Through the course of an add-on's development, it might come in necessary to implement functionalities that are user- or user group-dependent.
The following guideline then shows how to bring in those data.

#### B.6.1.1 List of users

The `ossbo:OSSUserList.phs` scripts can be used to return a formatted list of users.

| `ossbo:OSSUserList.phs` | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| `_MerchantId` | Integer | Merchant identifier |
| `_UserCustomScriptId` | Integer | Custom script identifier to test access rights [Optional] |
| `_UserMinUserRights` | Integer | User rights required at least [Optional] |
| `_UserGroupId` | Integer | User group identifier<br>(not existing=all users, -1=users in a user group) |
| Return value : string `<username>=<id>,<username>=<id>,...` | | |

#### B.6.1.1.1 Examples of use

The following returns a list of all users :

```
«VAR NEW _UserList=""»
«INCLUDE _UserList=ossbo:OSSUserList.phs;_MerchantId=1 »
```

Returned variable _UserList is then formatted as "<username>=<id>,<username>=<id>,..." (for instance "admin=1,Dick=4,Harry=7,James=6,...").

This other example features all possible optional input parameters that this script can be called with :

```
«VAR NEW _UserList=""»
«INCLUDE _UserList=ossbo:OSSUserList.phs;_MerchantId=«_MerchantId»»;
_UserCustomScriptId=«_CustomScriptId»;
_UserMinUserRights= 49; _UserGroupId=5»
```

There :

- the identifier of the custom script is passed on ;
- the 'View' user right (49) is passed on to select users that have at least this menu script user right on the add-on ;
- the identifier for the user group "Accounting" (5) is passed to select users belonging to this group.

Consequently, the _UserList as obtained by this call will contains only the members of the "Accounting" user group that have at least view rights on the add-on.

### B.6.1.2 Information on users

A call to script ossbo:OSSUserInfo.phs, with only parameters _MerchantId and _UserId, allows to access a multitude of user-related data as filled on the *Create/Modify User Page.*

| ossbo:OSSUserInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| _MerchantId | Integer | Merchant identifier |
| _UserId | Integer | User identifier |
| **Output Variable** | **Type** | **Corresponding data** |
| _UserName | String | User name |
| _UserGroupId | Integer | Default user group identifier |
| _UserGroup | String | Default user group label |
| _UserGroupList | String | User group list id:label;id:label... |
| _UserGroupIdList | String | User group identifier list id;id... |
| _UserRealname | String | User name |
| _UserFirstName | String | User first name |
| _UserTel | String | User phone number |
| _UserMobile | String | User mobile number |
| _UserEMail | String | User email address |
| _UserNotification | String | User notification |
| Return value : _Status (1 if user was found, 0 if not) | | |

#### B.6.1.2.1 Example of use

The following bit of script stores the current user's first name and last name as string `_CurrFullName` and displays it :

```
«VAR NEW _UserRealName=""»
«VAR NEW _UserFirstName=""»
«INCLUDE ossbo:OSSUserInfo.phs;_MerchantId=«_MerchantId»;_UserId=«#SQLUSERID#»»
«VAR NEW _CurrFullName=_UserFirstName+" "+_UserRealName»
«WRITE LANGUAGE Your are;Vous êtes;Sie sind» «_CurrFullName»
```

### B.6.1.3 List of user groups

The `ossbo:OSSUserGroupList.phs` script returns a formatted list of user groups.

| ossbo:OSSUserGroupList.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| `_MerchantId` | Integer | Merchant identifier |
| Return value : string `<id>:<label>:<prefs>;<id>:<label>:<prefs>...` | | |

#### B.6.1.3.1 Example of use

This call

```
«VAR NEW _UserGroupList=""»
«INCLUDE
_UserGroupList=ossbo:OSSUserGroupList.phs;_MerchantId=«_MerchantId»»
```

stores into `_UserGroupList`, as an example, "5:Accounting:00000000;1:Administrator:10000000;...". The `<prefs>` string consists in a 8-digit boolean string coding for user group preferences ; as of now, only the first digit is used meaning if group is open (0) or closed (1).

### B.6.1.4 Information on user groups

Calling the script `ossbo:OSSUserGroupInfo.phs` allows to obtain the label, preferences and default user identifier of user group as identified by `_UserGroupId`.

| ossbo:OSSUserGroupInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| `_MerchantId` | Integer | Merchant identifier |
| `_UserGroupId` | Integer | User group identifier |
| `_DefaultUserId` | Integer | Default user identifier |
| **Output Variable** | **Type** | **Corresponding data** |
| `_UserGroup` | String | User group label |
| `_UserGroupPrefs` | String | User group preferences |
| Return value : `_Status` (1 if group was found, 0 if not) | | |

#### B.6.1.4.1 Example of use

For instance :

```
«VAR NEW _UserGroup=""»
«VAR NEW _UserGroupPrefs=""»
«VAR NEW _DefaultUserId=0»
«INCLUDE
ossbo:OSSUserGroupInfo.phs;_MerchantId=«_MerchantId»;_UserGroupId=5»
```

would store the name of the user group as well as its preferences (see *Getting list of user groups, Example of use* above) in the initialized variables for user group number 5.

## B.6.2 Information on Merchant

The data entered at the *Merchant General Information Page* can be retrieved through the `ossbo:OSSMerchantInfo.phs` script.

| ossbo:OSSMerchantInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| `_MerchantId` | Integer | Merchant identifier |
| `_LanguageId` | Integer | Language identifier (B.3.3) [Optional] |
| **Output Variable** | **Type** | **Corresponding data** |
| `_MerchantName` | String | Merchant name |
| `_MerchantAddress1`<br>`_MerchantAddress2`<br>`_MerchantAddress3` | String<br>String<br>String | Merchant address |
| `_MerchantPCode` | String | Merchant postcode |
| `_MerchantCity` | String | Merchant city |
| `_MerchantCountryId` | Integer | Merchant country identifier |
| `_MerchantCountry` | String | Merchant country name |
| `_MerchantPhone` | String | Merchant phone number |
| `_MerchantFax` | String | Merchant fax number |
| `_MerchantEmail` | String | Merchant email |
| `_MerchantPrefs` | String | Merchant preferences string |
| `_MerchantUserGroupId` | Integer | Merchant user group identifier |
| Return value : `_Status` (1 if merchant info was correctly fetched, 0 if not) | | |

### B.6.2.1 Example of use

An example on the purpose of recuperating some data about your merchant is cleared up at *Advanced developing : using Blue Chameleon's mail gate* (B.9).

## B.6.3 Information on clients

The script `ossbo:OSSClientInfo.phs` aims at getting all client information as entered/modified at the *Add/Modify Client Page*.

| ossbo:OSSClientInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| _MerchantId | Integer | Merchant identifier |
| _LanguageId | Integer | Language identifier (B.3.3) [Optional] |
| _ClientId | Integer | Client identifier |
| _ClientUsername | String | Client username [Optional] |
| _NoWalletInfo | Integer | Flag to ignore wallet (0-1) [Optional] |
| **Output Variable** | **Type** | **Corresponding data** |
| _ClientType | Integer | Client type |
| _ClientTitle | String | Client title |
| _ClientCompany | String | Client company name |
| _ClientFName | String | Client first name |
| _ClientName | String | Client name |
| _ClientFullName | String | Client full name (name, first name, company) |
| _ClientAddress1<br>_ClientAddress2<br>_ClientAddress3 | String<br>String<br>String | Client address |
| _ClientPCode | String | Client postcode |
| _ClientCity | String | Client city |
| _ClientCountryId | Integer | Client country identifier |
| _ClientCountry | String | Client country |
| _ClientPhone | String | Client phone number |
| _ClientOffice | String | Client office phone number |
| _ClientMobile | String | Client mobile phone number |
| _ClientFax | String | Client fax number |
| _ClientEmail | String | Client email address |
| _ClientUsername | String | Client username |
| _ClientPassword | String | Client password |
| _ClientLanguage | String | Client language |
| _ClientDelivery | String | Client delivery |
| _ClientDeliveryData | String | Client delivery data |
| _ClientBilling | String | Client billing |
| _ClientPayment | String | Client payment |
| _ClientPaymentData | String | Client payment data |
| _ClientPaymentStatus | String | Client payment status label |
| _ClientSLA | String | Client service level agreement |
| Return value : _Status (1 if client was found, 0 if not) | | |

#### B.6.3.1 Example of use

The following displays a table of clients' full names and phone numbers :

```
<TABLE>
 <TR>
  <TD>Name</TD><TD>Number</TD>
 </TR>
```

```
 «SQLREPEAT»
  «VAR NEW _ClientName=""»
  «VAR NEW _ClientPhone=""»
  «INCLUDE _Status=ossbo:OSSClientInfo.phs;_MerchantId=1;_ClientId=«#SQLREPEAT#»»
  «IF _Status==1»
   <TR>
    <TD>«_ClientName»</TD><TD>«_ClientPhone»</TD>
   </TR>
  «ENDIF»
 «/SQLREPEAT 0;1000»
</TABLE>
```

### B.6.4 Information on subscriptions

The script `ossbo:OSSSubscriptionInfo.phs` returns various information on subscriptions, and also on the related client.

| ossbo:OSSSubscriptionInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| _MerchantId | Integer | Merchant identifier |
| _LanguageId | Integer | Language identifier (B.3.3) [Optional] |
| _SubscriptionId | Integer | Subscription identifier |
| **Output Variable** | **Type** | **Corresponding data** |
| _SubscriptionParentId | Integer | Parent subscription identifier |
| _SubscriptionChildList | String | List of subscription children identifiers |
| _SubscriptionPrevId | Integer | Previous subscription identifier |
| _SubscriptionNextId | Integer | Next subscription identifier |
| _SubscriptionName | String | Subscription name |
| _SubscriptionStatus | String | Subscription status (<iStatus>=<label>) |
| _SubscriptionCustomStatus | String | Subscription custom status (<id>=<label>) |
| _SubscriptionStartDate | Integer | Subscription start date (cdate) |
| _SubscriptionEndDate | Integer | Subscription end date (cdate) |
| _ArtId | Integer | Article identifier |
| _ArtPrice | Integer | Article price |
| _ArtBasePrice | Integer | Article base price |
| _ArtFollowUpPrice | Integer | Article follow-up price |
| _ArtUnits | Integer | Article units |
| _ArtUnitsType | Integer | Article units type |
| _ArtUnitsPrice | Integer | Article units price |
| _ArtLibraryData | String | Article external library data |
| _OrderNumber | String | Order reference number |
| _OrderDate | Integer | Order date as ctime |
| _OrderSalesman | String | Order salesman identifier |
| _OrderPayment | String | Order payment method |
| _OrderBilling | String | Order billing method |
| _OrderTicketId | Integer | Order ticket identifier |
| _ClientId | String | Client identifier (Param=<id>) |
| ⊕ All ossbo:OSSClientInfo.phs (B.6.3) output variables | | |
| Return value : _Status (1 if subscription was found, 0 if not) | | |

#### B.6.4.1 Example of use

Part *Developing subscription (configure, display) custom scripts : an example* (B.7.2.2) shows in detail how ossbo:OSSSubscriptionInfo.phs can be useful.

### B.6.5 Information on orders

The script ossbo:OSSOrderInfo.phs returns various information on orders, and also on the related client.

| ossbo:OSSOrderInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| _MerchantId | Integer | Merchant identifier |
| _LanguageId | Integer | Language identifier (B.3.3) [Optional] |
| _OrderId | Integer | Order identifier |
| **Output Variable** | **Type** | **Corresponding data** |
| _OrderOwner | Integer | Order owner identifier |
| _OrderNumber | String | Order reference number |
| _OrderDate | Integer | Order date as ctime |
| _OrderSalesman | String | Order salesperson identifier |
| _OrderPayment | Integer | Order payment method |
| _OrderBilling | Integer | Order billing method |
| ⊕ All ossbo:OSSClientInfo.phs (B.6.3) output variables | | |
| Return value : _Status (1 if client and order were found, 0 if not) | | |

#### B.6.5.1 Example of use

The following outputs a table of order numbers, salespersons and client names of orders done in 2010.

```
<TABLE>
 <TR>
  <TD>Order</TD><TD>Salesperson<TD>Client</TD>
 </TR>
 «SQLREPEAT»
  «VAR NEW _OrderNumber=""»
  «VAR NEW _OrderSalesman=""»
  «VAR NEW _ClientName=""»
  «INCLUDE ossbo:OSSOrderInfo.phs;_MerchantId=1;_OrderId=«#SQLREPEAT#»»
  «IF @strstrsearch(_OrderNumber;"2010")==0»
   <TR>
    <TD>«_OrderNumber»</TD><TD>«_OrderSalesman»</TD><TD>«_ClientName»</TD>
   </TR>
  «ENDIF»
 «/SQLREPEAT 0;10000»
</TABLE>
```

### B.6.6 Information on invoices

The script ossbo:OSSBillInfo.phs returns various (mostly numerical) information on invoices.

| ossbo:OSSBillInfo.phs | | |
|---|---|---|
| **Input Variable** | **Type** | **Corresponding data** |
| _MerchantId | Integer | Merchant identifier |
| _BillId | Integer | Invoice identifier |
| **Output Variable** | **Type** | **Corresponding data** |
| _BillOrderId | Integer | Invoice order identifier |
| _BillUserId | Integer | Invoice user identifier that registered the invoice |
| _BillClientId | Integer | Invoice client identifier |
| _BillReference | String | Invoice reference |
| _BillCurrencyId | Integer | Invoice currency identifier |
| _BillDate | Integer | Invoice date (cday) |
| _BillValueDate | Integer | Invoice value date (cday) |
| _BillTotalPrice | Integer | Invoice total price |
| _BillTotalTax | Integer | Invoice total tax |
| _BillOpenPrice | Integer | Invoice total open price |
| _BillStatus | Integer | Invoice status (0=editable, 1=sent, 2=reminder 1, 3=reminder 2, 4=reminder 3, 5=reminder 4, 100=finished) |
| _BillPaid | Integer | Invoice paid status (0=unpaid, 1=paid) |
| _BillExport | Integer | Invoice export status (0=not exported, 1=exported, 2=exported and confirmed) |
| Return value : _Status (1 if invoice was found, 0 if not) | | |

#### B.6.6.1 Example of use

The following shows a table featuring already-paid invoices over a certain amount (_MyAmount) as recorded in 2010, giving also the user's names that recorded them :

```
<TABLE>
 <TR>
  <TD>Reference</TD><TD>Amount</TD><TD>Recorded by</TD>
 </TR>
 «SQLREPEAT»
  «VAR NEW _BillReference=""»
  «VAR NEW _BillTotalPrice=0»
  «VAR NEW _BillUserId=0»
  «VAR NEW _BillPaid=0»
  «INCLUDE _Status=ossbo:OSSBillInfo.phs;_MerchantId=1;_BillId=«#SQLREPEAT#»»
  «IF _Status==1 && _BillPaid==1 && _BillTotalPrice>_MyAmount»
   «VAR NEW _UserRealname=""»
   «INCLUDE ossbo:OSSUserInfo.phs;_MerchantId=«_MerchantId»;_UserId=«_BillUserId»
   <TR>
    <TD>«_BillReference»</TD><TD>«_BillTotalPrice»</TD><TD>«_UserRealname»</TD>
   </TR>
  «ENDIF»
 «/SQLREPEAT 0;10000»
```

</TABLE>

## B.7 Advanced developing : custom scripts

The previous showed how information related to Blue Chameleon objects could be retrieved. Now, conversely, when dealing with articles, clients, subscriptions... in the regular shop, you might want to, *in this very environment*, link to data pertaining to your add-on.

This can be achieved thanks to *custom scripts*, where a particular, dedicated script belonging to your add-on is declared in the Shop environment to be actionable there. For instance, while on a subscription search, buttons for each subscription may be available to display further data.

### B.7.1 Adding a custom script

*User rights for custom script management can be set up either at the Modify User Page or the User Right Page under the element*

**Script management**

No matter what its context use will be, a custom script is created as shown in Fig.B.11.

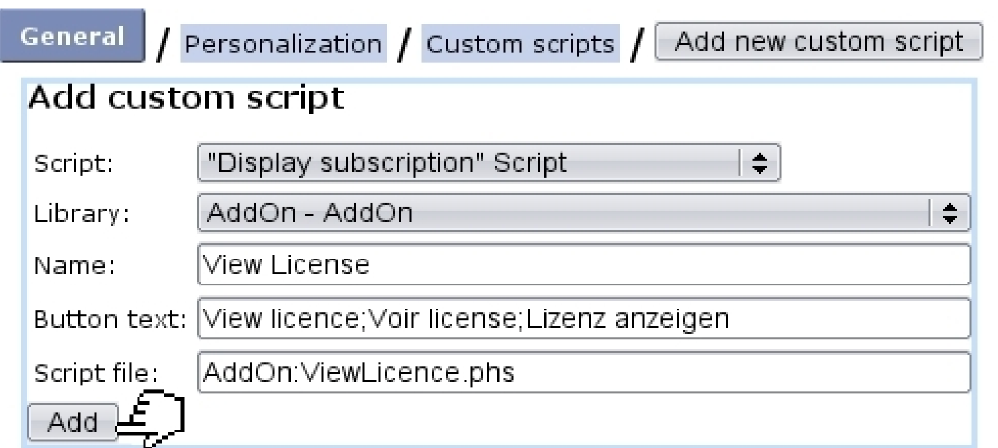



Figure B.11: The *Add New Menu Script Page.*

On this page, the following are chosen :

- a use, through the 'Script:' menu ;
- the library it belongs to (i.e. your add-on) ;
- a name under which it appears on the page where this script is selected ;

- the text of the button that will launch it ;
- finally, the script file itself, always preceeded by the add-on name.

Once created, the rights for the custom script must be set on the *Modify User Page* (Fig.B.12).

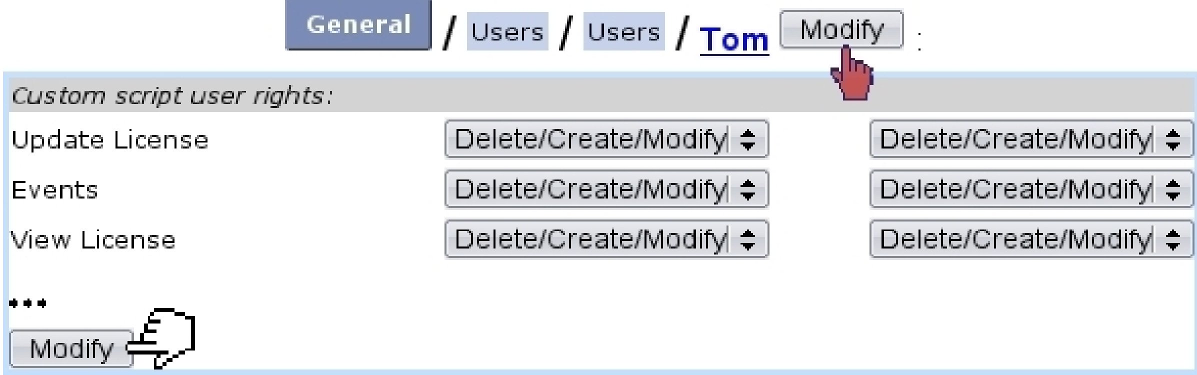



Figure B.12: All defined custom scripts are assessed rights so that the relevant buttons (if applicable) might be displayed.

### B.7.2 Subscription-related custom scripts

They are of different types, as chosen from the 'Script:' menu on the *Add New Menu Script Page* as illustrated above :

- "Configure subscription" ;
- "Display subscription" ;
- "Display subscription consumption" ;
- "Event on subscription".

The first three aim at displaying relevant buttons for each subscription after a subscription search (through either Existing subscriptions or Search subscriptions), while the latter aims at triggering dedicated actions when subscription status is modified (activated, suspended,...).

#### B.7.2.1 Attaching scripts to a subscription article - Effects

For a particular subscription article, defining (if desired) which custom scripts are triggered is done while at the *Modify Subscription Page* (Fig.B.13), accessed through the eponymous button as found on the *Article Management Page* (see *Article Management* chapter, *Managing articles*).

The 'Configuration script', 'View script', 'Consumption script' and 'Event script' menus respectively feature defined custom scripts of the types as listed above. Concerning the 'Event script', the checkboxes respectively rule :

[Article Management Page for "At-Home Help, basic"] Modify subscription :

...

| | Backoffice | Frontoffice |
|---|---|---|
| Configuration script: | Update License | Update License |
| View script: | View License | View License |
| Consumption script: | <None> | <None> |
| Event script: | Events | |

☐ Send client identification to event script on begin/activation/deactivation/end

☑ Don't send confirmation on activation/deactivation

...

Modify

Figure B.13: Picking previously-defined subscription custom scripts to be executed on this subscription article.

- if variables _OssUserName and _OssUserPassword (related client's user name and password) will be available in the 'Event script' ;
- whether an email is automatically sent to client on activating or de-activating. In the former case (with email sent), variable _iCommand (see table below) will be respectively 7 or 8, while in the latter 5 or 6.

Fig.B.14 then shows the new buttons that appear for a particular subscription which article was assessed "Configure subscription" and "Display subscription" scripts.

[Subscription search] :

1 subscriptions found

| Subscription | Order | Client | Status | Start | End | | |
|---|---|---|---|---|---|---|---|
| At-Home Help, basic | 2010091401001 | Smith John | ordered | | | Update licence | View licence |

Figure B.14: These buttons now appear for any "At-Home Help" subscription.

Then, in the scripts as called by the buttons or triggered by a subscription status change, several variables exist :

| Custom script type | Existing variable | Corresponding data |
|---|---|---|
| All | _MerchantId<br>_CustomScriptId | Merchant identifier<br>Custom script identifier |
| Configure subscription<br>Display subscription<br>Display subscription consumption | _SubscriptionId | Subscription identifier |
| Event on subscription | _iOssIdentifier<br><br>_iCommand<br><br><br><br><br><br><br><br><br>_iStartDate<br>_iEndDate<br><br><br>_OssUserName<br>_OssPassword | Subscription identifier<br><br>New subscription status :<br>1=Started<br>2=Ended<br>5=Activated (or re-activated)<br>6=Halted<br>7=Activated (or re-activated)<br>- with email sent<br>8=Halted - with email sent<br>9=Subscription dates modified :<br>- new start date<br>- new end date<br>10=Consumption updated<br><br>Client user name<br>Client password |

#### B.7.2.2 Developing subscription custom scripts : "Display" example

The following codes show an example of what can be done for a "Display subscription" custom script named `AddOn:ViewLicense.phs`. Inside the add-on, a table `ADDON_LICENCE` had been previously created with the fields `idSubscription (int)`, `iEndDate (int)` and `azLicense varchar(128)`. This code basically displays these three values for the clicked-on (via button View licence) subscription.

In Code 13, first, custom script user rights related to this script are loaded and further access is blocked if user does not have at least 'View' user rights (cf. FigB.12). Then, the correct variables to store the subscription end date and client name to are initialized and set by a call to script `ossbo:OSSSubscriptionInfo.phs` (B.6.4).

Finally, last part of `AddOn:ViewLicense.phs` (Code 14) fetches the "license" corresponding to the subscription and displays a table where subscription identifier, end date and license are shown. Concerning end date, a small test is done to check if subscription has no specified end (in which case Blue Chameleon had stored corresponding cdate as 99999), otherwise formats it in DD/MM/YYYY.

Fig.B.15 shows this example "Display subscription" script's final result.

For this page to actually display information, the `ADDON_LICENSE` line as used here

**Code 13** `AddOn:ViewLicense.phs` : rights, initializing variables

```
«VAR NEW _OwnerUserRights=""»
«VAR NEW _UserRights=""»
«INCLUDE
ossbo:OSSCustomUserRights.phs;_MerchantId=«_MerchantId»;_CustomScriptId=«_CustomScriptId»»

«*Is user allowed to do this ?*»
«IF _UserRights[0]<49»
 «INCLUDE ossbo:MessageAccessDenied.phs#Message»
 «EXIT STOP»
«ENDIF»

«VAR NEW _SubscriptionEndDate=0»
«VAR NEW _ClientName=""»
«INCLUDE
ossbo:OSSSubscriptionInfo.phs;_MerchantId=«_MerchantId»;_SubscriptionId=«_SubscriptionId»»
```

**Code 14** `AddOn:ViewLicense.phs` [continued and finished] : display of results

```
«SQLEXEC STRING _License=SELECT azLicense FROM ADDON_LICENSE WHERE
idSubscription=«_SubscriptionId»»

<p>
<table>
 <tr><td>Subscription identifier :</td><td>«_SubscriptionId»</td></tr>
 <tr><td>Client :</td><td>«_ClientName»</td></tr>
 <tr>
  <td>End date :</td>
  «IF _SubscriptionEndDate=99999»«*not specified*»
   <td>Not specified</td>
  «ELSE»
   <td>«=@daytimeday(_SubscriptionEndDate)»/
       «=@daytimemonth(_SubscriptionEndDate)»/
       «=@daytimeyear(_SubscriptionEndDate)»</td>
  «ENDIF»
 </tr>
 <tr><td>License :</td><td><b>«_License»</b></td></tr></table>
<p>
```

At-Home Help, basic 2010091401001... View licence :

View License

Subscription identifier : 28
Client : Smith John
End date : Not specified
License : SMITHJOHN732

Subscription Management | View subscriptions | Continue with this subscription

Figure B.15: The rendering of `AddOn:ViewLicense.phs`. It is to remember that the title of the page is not set in the script itself, but by the 'Name:' as entered while adding this custom script (Fig.B.11).

had to be inserted in the first place : this can be done automatically by using a "Event on subscription" custom script, as cleared up below.

#### B.7.2.3 Subscription events : an example

An "Event on subscription" script, or more precisely one of its parts, is automatically launched when a particular subscription is activated, suspended, modified date-wise,...

The general structure of such a custom script, called in this example `AddOn:Events.phs` is better done following the guideline as shown in Code 15. Basically, already-existing variable `_iCommand` is tested so that specific commands (or even a call to an add-on script) are performed according to how subscription has been acted on.

In the example of the `ADDON_LICENCE` table, the `AddOn:Events.phs` can be equipped with commands that insert a new line in this table when subscription is activated.

In the `SQL` transaction as featured in Code 16, a test is done on whether this subscription is already in the `ADDON_LICENSE` table (so that it may not be inserted another time in the case of a re-activating) ; if not :

- a "license" string is composed by concatenating client's name (put into capitals and simplified thanks to `@tocompare` function) with a random number, casted into a string ;
- this element is inserted into the table along with subscription identifier and end date.

It is to note that in this "Event on subscription" context, subscription is identifier by `_iOssIdentifier`.

At the end, variable `_Success` records the success or failure of the transaction, and result is displayed on the screen, as featured in Fig.B.16.

**Code 15** `AddOn:Events.phs` : a general template.

```
«VAR NEW _OwnerUserRights=""»
«VAR NEW _UserRights=""»
«INCLUDE
ossbo:OSSCustomUserRights.phs;_MerchantId=«_MerchantId»;_CustomScriptId=«_CustomScriptId»»

«IF _iCommand==1»
   [Do stuff associated with this subscription's start]
«ELSEIF _iCommand==2»
   [Do stuff associated with this subscription's end]
«ELSEIF _iCommand==5»
   [Do stuff associated with this subscription's activating or re-activating]
«ELSEIF _iCommand==6»
   [Do stuff associated with this subscription's suspension or block]
«ELSEIF _iCommand==7»
   [Do stuff associated with this subscription's activation or re-activation and send
email]
«ELSEIF _iCommand==8»
   [Do stuff associated with this subscription's suspension or block and send email]
«ELSEIF _iCommand==9»
   [Do stuff when this subscription's start and end dates are modified]
«ELSEIF _iCommand==10»
   [Do stuff when this subscription's consumption is updated]
«ENDIF»
```

Figure B.16: This ordered subscription is activated, which triggers the corresponding event in `AddOn:Events.phs`.

The following code shows another example : it aims at updating `ADDON_LICENSE` where subscription dates are modified.

**Code 16** `AddOn:Events.phs` [part] : do this when subscription is activated

```
...
«VAR NEW _SubscriptionEndDate=0»
«VAR NEW _ClientName=""»
«INCLUDE
ossbo:OSSSubscriptionInfo.phs;_MerchantId=«_MerchantId»;_SubscriptionId=«_iOssIdentifier»»

«IF _iCommand==5 || _iCommand==7 »
  «SQLSTATUS TRANSACTION BEGIN»
   «SQLEXEC INT _Exists=SELECT COUNT(*) FROM ADDON_LICENSE WHERE
idSubscription=«_iOssIdentifier»»
   «IF _Exists==0»
    «VAR NEW _License=@tocompare(_ClientName)+@itoa(@random(1000))»
    «SQL INSERT INTO ADDON_LICENSE
VALUES(«_iOssIdentifier»,«_SubscriptionEndDate»,'«_License»')»
   «ENDIF»
   «VAR NEW _Success=#TRANSACTIONSTATUS#»
  «SQLSTATUS TRANSACTION END»
  «IF _Exists==0»
   «IF _Success==1»
    License insertion succeeded (<b>«_License»</b>).
   «ELSE»
    License insertion failed !
   «ENDIF»
  «ENDIF»
«ENDIF»
...
```

**Code 17** `AddOn:Events.phs` [part] : do this when subscription's dates are modified

```
...
«IF _iCommand==9 »
  «SQL UPDATE ADDON_LICENSE SET iEndDate=«_iEndDate»  WHERE
idSubscription=«_iOssIdentifier»»
  «IF #SQLSTATUS#==1»
    License entry successfully updated.
  «ELSE»
     License entry update failed !
  «ENDIF»
«ENDIF»
...
```

The new end date for that subscription is recuperated through the `_iEndDate` variable and success is shown on the final screen (Fig.B.17).

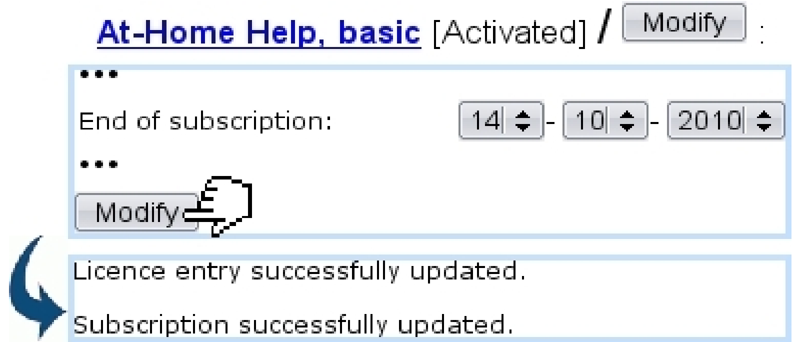



Figure B.17: This activated subscription has its end date modified, which triggers the corresponding event in `AddOn:Events.phs`.

## B.8 Advanced developing : a custom event control

Blue Chameleon is naturally equipped with event controls (see *General Interface Handling*, *Event Controls*) that, when a user logs on, aim to represent the latest tickets, the current/late projects, tasks...

Your add-on can also be featured on Blue Chameleon's Home. In order to do this, an `oss-` script (B.3.1) called `ossModuleHeadline.phs` can be developed.

Code 18 shows an example. The code for your headline must be embedded in the `ELSE...ENDIF` environment, as the first part enables Blue Chameleon to propose your event control to be added, through Options / Configure desktop / AddOn Add.

After the mandatory `IF...` preamble, the example shows how custom user rights are recuperated :

- first, a call to `ossbo:OSSCustomScriptId.phs` is done to recall the identifier of the custom script for your add-on ; '2001' must be used for the `_CustomScript` parameter (it identifies it as 'menu script') and `_RegisterId` is no other than the signature of your add-on (B.3.1.1), here 1003 ;
- the fetched `_CustomScriptId` then enables to recuperate the custom script user rights, through a call to `ossbo:OSSCustomUserRights.phs`.

If needed, the custom rights related to the library can be recuperated as shown in Code 12.

In the rest, the c-date for the current day is evaluated and used to count how many "licenses" end on this day ; if there actually are, through a `SQLOUTPUT` loop, a maximum

of four of them are then displayed as click-links to a `AddOn:ViewAFinLicense.phs` script to which the following values are transmitted :

- the shop identifier «`SqlDB`», session identifier «`xid`», aimed `AddOn:ViewAFinLicense.phs` script ;
- merchant identifier «`_MerchantId`», custom script identifier «`_CustomScriptId`» ;
- finally, the identifier for that particular subscription «`idSubscription`».

At the end, another click-link redirects to a script `AddOn:ViewAllFinLics.phs` proposing to view all finishing licenses of the day.

**Code 18** `ossModuleHeadline.phs` : the dark-blue part is mandatory.

```
«IF @toi(_ossProcInfo)==1»
  «VAR NEW azProcInfo = "AddOn"»
  «RETURN azProcInfo»
«ELSE»

  «INCLUDE _CustomScriptId=ossbo:OSSCustomScriptId.phs;_CustomScript=2001;
_MerchantId=«_MerchantId»;_RegisterId=1003»
  «VAR NEW _OwnerUserRights=""»
  «VAR NEW _UserRights=""»
  «INCLUDE ossbo:OSSCustomUserRights.phs; _MerchantId=«_MerchantId»;
_CustomScriptId=«_CustomScriptId»»

  «VAR NEW _Today=@daytime()»
  «SQLEXEC INT _Count=SELECT COUNT(*) FROM ADDON_LICENSE WHERE iEndDate=«_Today»»
  «IF _Count==0»
   No license ends today
  «ELSE»
   «_Count» license(s) end(s) today :<br>
   «SQLOUTPUT»
    <a href='/Scripts/sql.exe?SqlDB=«SqlDB»&xid=«xid»&Sql=AddOn:ViewAFinLicense.phs
&_MerchantId=«_MerchantId»&_CustomScriptId=«_CustomScriptId»
&_SubscriptionId=«idSubscription»'>
     «azLicense»
    </a>
    <br>
   «/SQLOUTPUT SELECT * FROM ADDON_LICENSE WHERE iEndDate=«_Today»;0;4»
   <a href='/Scripts/sql.exe?SqlDB=«SqlDB»&xid=«xid»&Sql=AddOn:ViewAllFinLics.phs
&_MerchantId=«_MerchantId»&_CustomScriptId=«_CustomScriptId»'>
    View all
   </a>
  «ENDIF»

«ENDIF»
```

The final result is shown at Fig.B.18.

Figure B.18: The custom headline resulting from Code 18.

#### B.8.0.1 Content of a click-link

The following code (19) shows how the linked script `AddOn:ViewAFinLicense.phs` could be implemented : in fact, via an `INCLUDE` it uses again the `AddOn:ViewLicense.phs` one (B.7.2.2), giving it the all parameters it needs (merchant, custom script and subscription identifiers). Also, `ossbo:Header.phs` (B.3.2) is used so as to give to this page the same style as others.

**Code 19** `AddOn:ViewAFinLicense.phs` : an example of a linked script from an event control.

```
«INCLUDE ossbo:Header.phs;_Title="View finishing license";_Style="print";»

<H1>View finishing license</H1>

  «INCLUDE AddOn:ViewLicense.phs;_MerchantId=«_MerchantId»;
_CustomScriptId=«_CustomScriptId»;_SubscriptionId=«_SubscriptionId»»

<P>
<input type="button" value="Send mail invite"
onClick="window.location.href='/Scripts/sql.exe?SqlDB=«SqlDB»&xid=«xid»
&Sql=AddOn:InviteMailSend.phs&_MerchantId=«_MerchantId»
&_CustomScriptId=«_CustomScriptId»&_SubscriptionId=«idSubscription»'>
```

The output of this is featured at Fig.B.19.

The button at the end redirects to a `AddOn:InviteMailSend.phs` script aimed at sending an automated email to the client whose subscription is finished, inviting her/him to start it again : this uses Blue Chameleon email features and is going to be explained below.

[AddOn Event Control] SHELDONHELEN800 :

View finishing license

Subscription identifier : 29
Client : Sheldon Helen
End date : 17/9/2010
License : **SHELDONHELEN800**

Send mail invite

Figure B.19: A finished "license", as accessed directly from the event control.

## B.9 Advanced developing : using Blue Chameleon's mail gate

While Blue Chameleon offers a wide palette for confirmation, invoice-reminding,... emails, you nonetheless might want a specific kind of email to be sent, as requested by your add-on's features.

For instance, in the add-on example that has been used throughout this chapter, one might want, by a single click, to generate and send an email to a client whose particular subscription has just ended in order to propose her/him to renew it. Code 20 then shows how it could be done, through a `AddOn:InviteMailSend.phs` script.

First, calls to information scripts enable to :

- `ossbo:OSSSubscriptionInfo.phs` : get the name of the subscription article and the order number related to this finished subscription ; client identifier too, under the form `Param=5` (for instance), which needs a string extract and cast to be done ;
- `ossbo:OSSClientInfo.phs` : get client's email, title (Mr, Mrs,...) and last name ;
- `ossbo:OSSMerchantInfo.phs` : get your Merchant's email and name.

Then, mail-related commands are called, first to declare sender as your merchant email (`MAIL FROM`), recipient as the client email (`MAIL TO`) and a mail subject featuring the name of the subscription article (`MAIL SUBJECT`).

Next, the mail's text itself begins, between a `OUTPUT MAIL.../OUTPUT` environment, in which `OSL` commands can be used. A `MAIL SEND` finally sends this text to the client's email and user is informed of the success of the sending.

**Code 20** `AddOn:InviteMailSend.phs` This script sends a dedicated email to a single client.

```
«*Subscription identifier _SubscriptionId and _MerchantId must be inherited from
calling script !*»

«VAR NEW _ClientId=""»
«VAR NEW _SubscriptionName=""»
«VAR NEW _OrderNumber=""»
«INCLUDE
ossbo:OSSSubscriptionInfo.phs;_MerchantId=«_MerchantId»;_SubscriptionId=«_SubscriptionId»»

«LET _ClientId=@toi(@substr(_ClientId;6;-1))»

«VAR NEW _ClientEmail=""»
«VAR NEW _ClientTitle=""»
«VAR NEW _ClientName=""»
«INCLUDE ossbo:OSSClientInfo.phs;_MerchantId=«_MerchantId»;_ClientId=«_ClientId»»

«VAR NEW _MerchantEmail=""»
«VAR NEW _MerchantName=""»
«INCLUDE ossbo:OSSMerchantInfo.phs;_MerchantId=«_MerchantId»»

«MAIL FROM «_MerchantEmail»»
«MAIL TO «_ClientEmail»»
«MAIL SUBJECT About your «_SubscriptionName» subscription...»

«OUTPUT MAIL»
  Dear «IF _ClientTitle<>""»«_ClientTitle»«ENDIF» «_ClientName»,

  Your subscription «_SubscriptionName» (order Nr «_OrderNumber») has just expired
today !

  If you are satisfied with our services, we invite you to renew it.

  Kind Regards,

  The «_MerchantName» Team
«/OUTPUT»

«MAIL SEND»

«IF #SQLSTATUS#==1»
  Email successfully sent to «_ClientEmail»».
«ELSE»
  ERROR : Could NOT send mail to «_ClientEmail»».
«ENDIF»
```

## B.10 Communication add-on to add-on, and shop to add-on : the oss- scripts

Blue Chameleon's great force is that it allows one add-on to perform actions (such as viewing/searching contents, adding an element,...) on an other add-on. Also, when some actions are done in the Shop, some scripts belonging to add-ons, if defined, can be triggered.

This all relies on the concept of *objects* in an explicit manner (in the case of add-on to add-on) or implicit manner (shop to add-on), An object is defined by a triplet of values :

- the identifier of the library if belongs to, as defined in the add-on's `ossModuleRegister.phs` script B.3.1.1 ;
- an identifier to qualify the type of this object ;
- an identifier for the object itself.

As variables, these values are often called `_LibraryId`, `_ObjectTypeId` and `_ObjectId`. Inside an add-on, this triplet fully identifies an object.

By principle, an add-on cannot directly act on the objects of an other add-on, but instead calls scripts belonging to the Shop, which then serves as an intermediary ; it will then call the relevant script aimed add-on (Fig.B.20). The Shop, on the other hand, can act on any add-on, if the corresponding scripts have been implemented for them. These scripts have standardized names. A Shop's script always starts by `OSS...` ; an add-on script by `oss-`

For instance, if add-on "Alpha" wants add-on "Beta" (registered as 1003) to display a list of its objects Widget (which are for instance type 2), the following call is written in add-on Alpha :

```
«INCLUDE
ossbo:OSSObjectSearch.phs;_MerchantId=«_MerchantId»;_ObjectTypeId=2;_LibraryId=1003;
[Other parameters]»
```

The shop script's `OSSObjectSearch.phs` will then call add-on Beta's `ossObjectSearchObj.phs` script (which has to be developed) with several parameters amongst which the object type.

Several scripts of this kind exist ; their name all start with oss-. Once developed, they have to be registered in order to be usable.

### B.10.1 Registering oss- scripts

As any oss- script is written, a recheck of the library must be done, through Articles / Personalization / Personalization / Custom libraries / Library name Register again.

Registered oss- scripts as well as objects available for a add-on (see below) can be checked from the previous link (Fig.B.21).

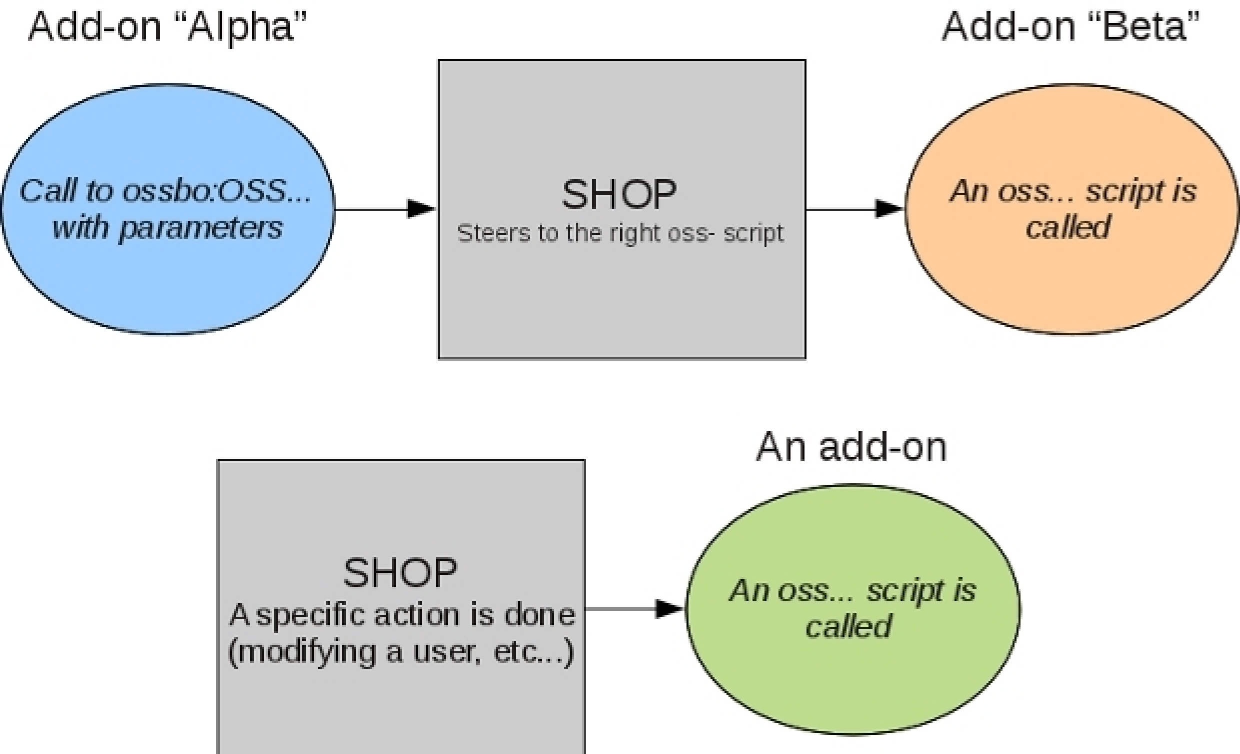



Figure B.20: The principles of add-on to add-on and shop to add-on interactions.

### B.10.2 Recording objects inside an add-on

For objects to be handled inside an add-on, they have to be registered first through a `ossModuleInit.phs` script where the types of the various objects are recorded through a Shop's script. Code 21 shows how `ossModuleInit.phs` is made.

**Code 21** `ossModuleInit.phs` This records add-on Beta's objects.

```
«LET _ObjectTypeName="Gizmo"»
«INCLUDE ossbo:OSSObjectTypeAdd.phs;_ObjectType=1;_ObjectTypePrefs="00"»
«LET _ObjectTypeName="Widget"»
«INCLUDE ossbo:OSSObjectTypeAdd.phs;_ObjectType=2;_ObjectTypePrefs="00"»
```

There, the add-on's objects Gizmo and Widget are thus respectively recorded with the types 1 and 2.

Once done, the library must be recompiled and rechecked (B.10.1).

### B.10.3 Integrating properties in an add-on

In the following example, the add-on in which to include properties has '1003' as identifier (B.3.1.1).

**Beta** :

**View custom library**

| | |
|---|---|
| Library: | Beta |
| Signature: | 1003 |
| Label: | Beta |
| Type: | General |

**Registered object types:**

1 Gizmo
2 Widget

**Available scripts:**

| | |
|---|---|
| ossModuleInit | OK |
| ossModuleLogin | not implemented |
| ossModuleLogout | not implemented |
| ossModuleMessage | not implemented |
| ossModuleHeadline | OK |
| ossModuleObjectType | not implemented |
| ossModuleLoad | not implemented |
| ossModuleStat | not implemented |
| ossObjectStatusSet | not implemented |
| ossObjectBillLabel | not implemented |
| ossObjectQueryInfo | not implemented |
| ossObjectSearchObj | OK |
| ossObjectAdd | not implemented |
| ossObjectModify | not implemented |
| ossObjectDelete | not implemented |
| ossObjectView | not implemented |

...

Figure B.21: Objects and scripts that an add-on possesses.

#### B.10.3.1 Registering the properties to be used

For instance, we want to use two properties called 'Active' for a client and 'Rank' for a salesman.

The add-on's script `ossModuleInit.phs` (B.10.2) must then contain :

```
«VAR NEW _Name1="Active;Actif;Aktiv"»
«INCLUDE ossbo:OSSObjectPropAdd.phs;_MerchantId=«idMerchant»;
_ObjectLibraryId=0;_ObjectType=1;_PropLibraryId=1003;
_PropId=1;_PropertyName=_Name1»
«VAR NEW _Name2="Rank;Rank;Rank"»
«INCLUDE ossbo:OSSObjectPropAdd.phs;_MerchantId=«idMerchant»;
_ObjectLibraryId=0;_ObjectType=14;_PropLibraryId=1003;
_PropId=2;_PropertyName=_Name2»
```

There :

- `_ObjectLibraryId` is the identifier of the library of the objects for which to handle properties (here, 0 for Shop) ;
- `_ObjectType` is the type of the objects for which to handle properties (here, 1 for Clients and 14 for Salesmen) ;
- `_PropLibraryId` is the identifier of the add-on, 1003 ;
- `_PropId` is the identifier of the property **inside** the add-on (here, 1 and 2) ;

Once done, the library must be recompiled and rechecked (B.10.1).

#### B.10.3.2 Creating the properties

Now, the properties themselves must be created inside the **Property** add-on (B.22).

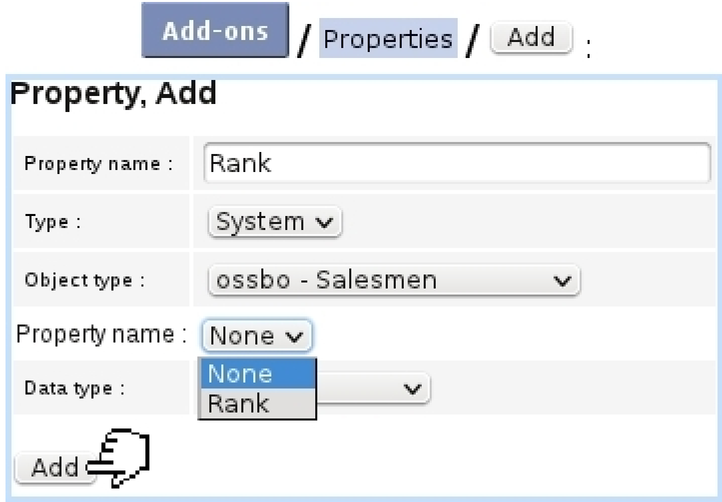



Figure B.22: Creating the properties.

There, 'Type : System' must be chosen as well as the type of object ; the previously registered property will then appear in the 'Property name' listbox.

That property has then to be configured.

#### B.10.3.3 Using properties inside the add-on

**B.10.3.3.1 Getting the list of properties** Inside add-on as identified by 1003, the following call allows to retrieve a string of registered properties along with their data :

```
«VAR NEW _PropObjectList=""»
«INCLUDE
_PropObjectList=Property:PropertySystem.phs#GetPropertyObjectList;
_PropLibraryId=1003»
```

The result string is ...;<PropId>,<PropertyOwnId>,<LibId>,<ObjId>;... where <PropId> is the property's identifier inside add-on 1003 (i.e. 1, 2), <PropertyOwnId> is the property's identifier inside **Property** add-on (e.g. 27, 28) and <LibId>,<ObjId> are the libraries and object types of the handled objects (i.e 0,1 and 0,14).

So in this example, we would get 1,27,0,1;2,28,0,14;.

The <PropertyOwnId> values are used to set and get property values, so that string has to be obtained and exploited before doing anything.

**B.10.3.3.2 Creating a property value** If for instance we want to set the value '6' for Property #2, for a (salesman) object _SomeSalesmanId, first we get the _PropObjectList as shown above ; by cutting the string along ';' and using value '2' as a locator we then extract the property's own identifier, '28'.

The following is then done :

```
«INCLUDE Property:PropertySystem.phs#SetPropertyObjectList;
_PropertyId=28;_LibraryId=0;_ObjectType=14;_ObjectId=«_SomeSalesmanId»;
_Value1=6;_Value2=...;_Value2=...;_Mode=2»
```

This will insert ("_Mode=2") a property 'Rank' with _Value1=6 for object (0,14,_SomeSalesmanId)

**B.10.3.3.3 Removing a property value** To remove a property entry for an object identified by (0,14,_SomeSalesmanId), the same call as above is made, but using _Mode=1.

**B.10.3.3.4 Setting a property value** If we want to change a property value with a unique occurrence (and what's more, even if we don't know whether it already exists), 'remove' and 'insert' calls can be made successively.

**B.10.3.3.5 Fetching a property value** In order to retrieve the value of a property for an object identified by (0,14,_SomeSalesmanId), the following call is made :

```
«VAR NEW_PropertyValueList=""»
«INCLUDE Property:PropertySystem.phs#GetPropertyObjectValueList;
_PropertyId=28;_LibraryId=0;_ObjectType=14;_ObjectId=«_SomeSalesmanId»»
```

The result string _PropertyValueList has the following format : ...@<iOrder>;<iValue1>;<iValue2>;<iValue3>@.... There are several chunks separated by '@' if there are multiple entries for that object and property. In that example, we would simply retrieve '@6,0,0,0'.

### B.10.4 Object management-related scripts

These are add-on to add-on scripts.

Inside an add-on **A**, a shop script is called with parameters, thus calling another add-on **B**'s oss- scripts with certain output parameters.

| **Action to perform in B** | **Shop script to be called in A** | **Result script in B** |
|---|---|---|
| Adding a new object | `ossbo:OSS_ObjectAdd.phs;...` | `ossObjectAdd.phs` |
| Deleting an object | `ossbo:OSS_ObjectDelete.phs;...` | `ossObjectDelete.phs` |
| Modifying an object | `ossbo:OSS_ObjectModify.phs;...` | `ossObjectModify.phs` |
| Name of an object | `ossbo:OSS_ObjectInfo.phs;...` | `ossObjectQueryInfo.phs` |
| Viewing an object | `ossbo:OSS_ObjectView.phs;...` | `ossObjectView.phs` |

Input parameters for the `ossbo:OSS...` calls are `_MerchantId`, `_LibraryId` (register id of add-on B), `_ObjectTypeId` (of the object to add, delete, modify,view, ...) and, except for `ossbo:OSS_ObjectAdd.phs;...`, `_ObjectId` (as deleting, modifying, getting the name of or viewing a specific object require it to be fully defined by the triplet).

On add-on B's side, these parameters are then retrieved as they are. The `oss...` scripts in Add-on B should be developed so as to respectively perform the actions of adding, deleting, modifying or viewing and object.

Code 22 shows how, for instance, a `ossObjectAdd.phs` script can be implemented in add-on B.

**Code 22** An example of template for a `B:ossObjectAdd.phs` script.

```
«IF @toi(_ObjectId)==1 »
 «*perform actions to add an new object of type 1...*»
«ELSEIF @toi(_ObjectId)==2 »
 «*perform actions to add an new object of type 2...*»
...
«ENDIF»
```

It is to note that, should an add-on contain several objects, the `«IF @toi(_ObjectId)==1»` ... `«ELSEIF @toi(_ObjectId)==2»` ... `«ENDIF»` template must always be used.

#### B.10.4.1 Example : link to view an object, featuring object's name

The following line code (to put in the originating add-on A) outputs a link to the `ossObjectView.phs` of an object of add-on B :

```
<a
href="/Scripts/sql.exe?xid=«xid»&SqlDB=«SqlDB»&_MerchantId=«_MerchantId»
```

```
&_LibraryId=«_idRefObjectLibrary»&_ObjectTypeId=«_idRefObjectType»&
_ObjectId=«_idRefObject»&Sql=ossbo:OSS_ObjectView.phs">«_ObjectName»</a>
```

The `_ObjectName` had been recuperated thanks to a call to `ossbo:OSS_ObjectInfo.phs` :

*[In A :]*

```
«VAR NEW _ObjectName=""»
«INCLUDE
ossbo:OSS_ObjectInfo.phs;_MerchantId=«_MerchantId»&_LibraryId=«_idRefObjectLibrary»
&_ObjectTypeId=«_idRefObjectType»&_ObjectId=«_idRefObject»»
```

*[In B, : ossObjectQueryInfo]*

```
«SQLEXEC STRING _ObjectName=SELECT azName FROM ...  (use _ObjectTypeId,
_ObjectId as query parameters)»
```

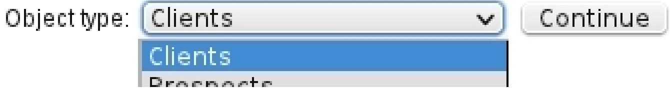
### B.10.5 Searching for an object

#### B.10.5.1 On all libraries' objects

Some add-ons might handle objects from several libraries ; therefore, in order to provide a choice of all available objects, a dedicated Shop script `ossbo:OSSObjectSearch.phs` can be called in the following way in add-on A :

```
«INCLUDE
ossbo:OSSObjectSearch.phs;SqlReturn="A:newObject.phs";_MerchantId=«_MerchantId»;
«CustomScriptId=«_CustomScriptId»»
```

This code produces the following output :




The drop-down menu shows `all objects` available in all libraries ; choosing a particular object then steers to the corresponding library's `ossObjectSearchObj.phs` script, with, amongst other parameters, the following CGI variables :

- `_SearchObjectTypeId`, a string which value is `<value of chosen library id>:<value of chosen object type>` ; type can be extracted through, for instance, `«VAR NEW _TypeId=@item(2;_SearchObjectTypeId;3)` ;
- `SqlReturn`, which serves as to memorize which script of add-on A to come back to when object in `ossObjectSearchObj.phs` is specifically chosen.

The `ossObjectSearchObj.phs` must provide a form in which objects of type `_TypeId` (extracted as shown above) are displayed, with a submit address equal to `SqlReturn`, the chosen object's triplet being well-defined CGI-wise.

#### B.10.5.2 On a specific library, or specific library's object type

If on the other hand, the library on which to search objects is known, the call to `ossbo:OSSObjectSearch.phs` as shown above has to include a further parameter `;_LibraryId=...`.

Furthermore, if the type of object must be forced, the following must be added : `...;_LibraryId=...;_ObjectTypeId=...`.

### B.10.6 User-related oss- scripts

The `ossUserConfig.phs` and `ossUserModify.phs` have been respectively detailed at B.5.3.1 and B.5.3.2 ; as a reminder, their function is to display an add-on's custom user rights on Shop's *Modify User Page* and to record the modifying thereof.

Other add-on-oriented scripts can be launched when users are managed.

| Event in the shop | Script to implement in add-on A | Parameter to use |
| --- | --- | --- |
| A new user is added | `ossUserAdd.phs` | `_UserId` |
| A user is deleted | `ossUserDelete.phs` | `_UserId` |

For instance, if add-on A is equipped with an `ossUserAdd.phs` script, this very script will be triggered each time that a new user is added in the shop. This can be useful for instance if add-on A has a table that requires users to be recorded therein : as a new user is created, `A:ossUserAdd.phs` will be launched, executing for instance `INSERT INTO A_TABLE_USERS VALUES («%:d;_UserId», ...)`, `_UserId` being the shop's inherited variable identifying the new user.

When a user is removed from the shop, an action of deleting a user from some table of add-on A can also be triggered in a similar manner thanks to an implemented `ossUserDelete.phs` script.

### B.10.7 Article-related oss- scripts

If an article has a defined back-office library (as set on the *Add, Modify Article Page*), the following scripts can be developed in the corresponding library each time a specific action has been done on this article, which is identified as `_ArticleId` in these scripts :

| Action | Launched script in back-office library |
| --- | --- |
| Article `_ArticleId` has been added | `ossArticleAdd.phs` |
| Article `_ArticleId` is viewed | `ossArticleView.phs` |
| Article `_ArticleId`'s `Modify` page is displayed | `ossArticleEdit.phs` |
| Article `_ArticleId` has been modified | `ossArticleModify.phs` |
| Article `_ArticleId` has been deleted | `ossArticleDelete.phs` |

`ossArticleView.phs` and `ossArticleEdit.phs` are used to display view/modify add-on-related information or attributes on the *View/Modify Article* pages ; therefore, those scripts must contain the following template :

```
<TR>
  <TD>
    Some add-on article attribute...
  </TD>
</TR>
<TR>
  <TD>
    Value of that attribute, fetched using _ArticleId, in a View
   or Modify way
  </TD>
</TR>
```

Currently, `ossArticleEdit.phs` is only used at the *Modify Subscription Page* (using an `_EditMode` variable equal to 6) and must follow this template :

```
«IF @exists("_FirstMod")==1»
  «IF _EditMode==6»
    (template with TRs, TDs)
  «ENDIF»
«ENDIF»
```

### B.10.8 Client-related oss- script

A `ossClientAction.phs` script can be developed to perform actions in add-on A's tables whenever a client is managed in the shop. Recuperated parameters that are to be used to develop this script are `_ClientId` (identifier of the client that is acted on) and `_Action`, describing what is currently/has been done on the client :

| **Action** | **Value of `_Action`** |
|---|---|
| Client `_ClientId` has been added | 1 |
| Client `_ClientId` has been modified | 2 |
| Client `_ClientId` has been deleted | 3 |
| Client `_ClientId`'s *Modify Page* is displayed | 5 |
| Client `_ClientId` is checked for reference (before deletion) | 6 |
| Client `_ClientId`'s *Management Page* is displayed | 7 |

Generally speaking `ossClientAction.phs` has to follow this template (if add-on requires those actions to be done), using `_ClientId` to identify the client :

```
«IF _Action==1»
  (for example insert this new client in a table)
«ELSEIF _Action==2»
  (update some stuff related to that client)
```

```
«ELSEIF _Action==3»
  (delete that client from some table)
«ELSEIF _Action==5»
  (content that will be seen on the Modify Client Page)
«ELSEIF _Action==6»
  (check if client is referenced some table of the add-on ; RETURN
   1 if he isn't, RETURN 0 otherwise)
«ELSEIF _Action==7»
  (content that will be seen on the Client Management Page)
«ENDIF»
```

Values of 5 and 7 allow the add-on to output on the `Modify/View Client` pages custom content, similarly as the `ossArticleEdit.phs` and `ossArticleView.phs` scripts as used for articles B.10.7. Their template must then use `TR`s and `TD`s.

## B.10.9 External system-related scripts

The following scripts are launched inside any add-on which has them, they will be triggered when performing actions in the external system and thus will allow to export data pertaining to add-on A similarly as for invoices, payments... The available variable is the identifier of the export `_ExportId` :

| **Action** | **Launched script** |
|---|---|
| Count add-on's elements to be exported | `ossExportCount.phs` |
| Export add-on's elements to external system | `ossExportExternal.phs` |
| Export in add-on is validated | `ossExportValidate.phs` |
| Export in add-on is canceled | `ossExportCancel.phs` |

### B.10.9.1 Examples of implementation

If for instance, in add-on's A, table `PAYMENT_DATA` contains information (references, posting dates, debit/credit amounts) that may be exported to the external system, the `oss`-scripts as mentioned are to be used.

**B.10.9.1.1** `ossExportCount.phs` First, as in the shop, elements to be exported are first counted, this shall also be done for add-on A's data. The following code offers an example of how `ossExportCount.phs` could be implemented : along certain conditions (for instance, of dates), relevant data in `PAYMENT_DATA` is counted and result must be `RETURN`'ed to be used by the Shop.

```
«VAR NEW _Count=0»
«SQL SELECT COUNT(*) FROM PAYMENT_DATA WHERE <conditions>»
«RETURN _Count»
```

**B.10.9.1.2** `ossExportExternal.phs` Code 23 shows how the template with which this script should be implemented.

There, it can be noted that, for transaction to be exported, some Shop scripts related to exports must be called :

- `ossbo:ProcExport.phs#ExportTransBegin` : start the export of the transaction. Mandatory parameters : `_Reference` of the transaction posting, value date variables for the transaction (`_PostingDay`, `_PostingMonth`,`_PostingYear`, `_ValueDay`, `_ValueMonth`, `_ValueYear`) and an identifier for the user who does it (`_IdUser`) ;
- `ossbo:ProcExport.phs#ExportPostingTag` : write each movement of the transaction. Mandatory parameters : a transaction `_Reference`, an account `_IdAccount`, `_Credit` and `_Debit` values and a `_Label` ;
- `ossbo:ProcExport.phs#ExportTransEnd` : close the transaction. No parameter.

Therefore, the data from the relevant table in the add-on might be extracted so that it respects this framework.

**Code 23** An example of template for a `ossExportExternal.phs` script.

```
«*Initialize a few date variables before...*»
«SQLOUTPUT»
 «INCLUDE
ossbo:ProcExport.phs#ExportTransBegin;_Reference="PMA«azRefTransac»";
_PostingDay=«_D»;_PostingMonth=«_M»;_PostingYear=«_Y»;
_ValueDay=«_D»;_ValueMonth=«_M»;_ValueYear=«_Y»;
 _IdUser=«#SQLUSERID#»»
 «SQLOUTPUT»
  «INCLUDE
ossbo:ProcExport.phs#ExportPostingTag;_Reference="PMA«azRefTransac»";
_IdAccount=«idAccount»;_Credit=«mCred»;_Debit=«mDeb»;_Label=«azLabel»»
 «/SQLOUTPUT SELECT(*) FROM PAYMENT_DATA WHERE idTransac=«idTransac»»
 «INCLUDE ossbo:ProcExport.phs#ExportTransEnd»
«/SQLOUTPUT SELECT idTransac, azRefTransac, <etc.> FROM PAYMENT_DATA
<conditions>»

«IF #SQLSTATUS#==0 AND @toi(_SqlStatus)==0»
 «SYSTEM ECHOLOG EXPORT FAILED IN A !»
«ELSE»
 «SQL UPDATE PAYMENT_DATA SET idExport=«%d;_ExportId» WHERE
<conditions>»
«ENDIF»
```

At the end, the success of the export is tested ; if they were done successfully, it is possible to update the relevant table of the add-on with the identifier of the export, `_ExportId`.

**B.10.9.1.3** `ossExportValidate.phs` As a value of 1 is expected for a Shop export to be validated, this script simply consists in

```
RETURN 1
```

**B.10.9.1.4** `ossExportCancel.phs` This script, as launched when the export is canceled, may consist in using `_ExportId` to identify the export, and act on add-on A's related table as a consequence, for instance setting there its value back to 0 :

```
«SQL UPDATE PAYMENT_DATA SET idExport=0 WHERE idExport=«%d;_ExportId»»
«IF #SQLSTATUS#==0»
 «SYSTEM ECHOLOG EXPORT CANCELLATION FAILED IN A !»
 «RETURN 0»
«ELSE»
 «RETURN 1»
«ENDIF»
```

Whether this operation was successfully done or not, a value of 1 or 0 is returned to the Shop.

### B.10.10 Other shop-related oss- scripts

The following table sums up those non-object-specific, mostly related to events such as login, logout, etc.

| **Script in add-on A** | **Function** |
|---|---|
| `ossModuleRegister.phs` | Identifies the add-on (mandatory, B.3.1.1) |
| `ossModuleInit.phs` | Registers the add-on's objects (B.10.2) |
| `ossModuleLogin.phs` | Will be launched each time a user logs in |
| `ossModuleLogout.phs` | Will be launched each time a user logs out |
| `ossModuleHeadline.phs` | Outputs an event control on user's desktop (B.8) |
| `ossModuleLoad.phs` | Is triggered when main page's menu is loaded |
| `ossModuleMessage.phs` | Can be used to display a message on main page (old interface, obsolete) |
| `ossModuleObjectType` | Returns the list of object types (obsolete) |

# Appendix C

# Developing your Front-Office with Blue Chameleon

## C.1 What a Front-Office (FO) is

In the previous, the developed add-on was aimed to be used in the Back-office. Now, it is possible to develop an add-on through which through which your clients may for example check products, order them... In other words, a Front-Office.

A Front-Office, which will be used *outside* your Shop environment, has several differences with a 'regular' add-on :

- the library constituting the Front-Office does not need to be registered, just compiled and uploaded ;
- no menu element needs to be set ;
- the Front-Office may entail 'static' `HTML` pages, as a whole, or as headers, footers... ;
- nonetheless, the database used for the Front-Office remains the same as the one used for your Shop.

Simply put, any page for your Front-Office might be composed in two different ways : either entirely static (as `.html`) or 'dynamic' (as `.phs`). This all depends on whether you want to want database operations to be performed right on this page or not.

In the following, the compiled library containing your Front-Office scripts will be called (for instance) `MyFO`.

### C.1.1 Static pages

They contain only `HTML` language. When fully composed, this page is uploaded unto your *PublisherHome* and will then be accessible through

`http://www1.inc.lu/IncShop/IncModelShop/[YourShopName]/Welcome.html`

As a matter of fact, it is the same root as your Back-Office login page :

http://www1.inc.lu/IncShop/IncModelShop/[YourShopName]/osslogin.htm)

Links on this static page could point to other static `HTML` pages - also to be put in the *PublisherHome* - and linked to as, for instance :

```
...
<a href="AboutUs.html">About us</a>
...
```

Images can be uploaded in the *PublisherHome*, unto the `/images` directory :

```
...
<img src="/images/TopBanner.jpg">
...
```

Linking to pages calling `.phs` scripts (*dynamic* pages) can be done as explained below.

#### C.1.1.1 Dynamic pages

In the following, upon click on the uploaded image `images.jpg`, your `ShowItems.phs` script belonging to your Front-Office library `MyFO` is called with some parameter, thus displaying a dynamic page :

```
...
<a href="/Scripts/sql.exe?SqlDB=[YourShopName]&Sql=MyFO:ShowItems.phs&IdCat=25>
     <img src="images/OurWidgets.jpg">
</a>
...
```

## C.2 How a FO page can be ideally structured

While the composing of any page of a Front-Office is free, some time-saving guidelines can nonetheless be used : each page can ideally be made of three elements (Fig.C.1) :

- a Header, containing a banner and clickable menu elements ; also possibly a side menu ;
- Contents, varying from page to page ;
- a Footer, containing for instance a copyright line.

Of these, only the Header and Footer are constant from page to page, thus constituting `Header.phs` and `Footer.phs` scripts.

This example makes use of "dynamic" (.phs) header and footer ; if they do not contain OSL code, they can also well be written as Header.html and Footer.html files. Nevertheless, the dynamic choice is better, as :

- it does not matter if a .phs script only contains html code ;
- it allows the potential inclusion of OSL code - if needed in the future - without changing anything in the other scripts ;
- header and footer files are uploaded through the MyFO library altogether with the other scripts, which saves the further upload to PublisherHome.

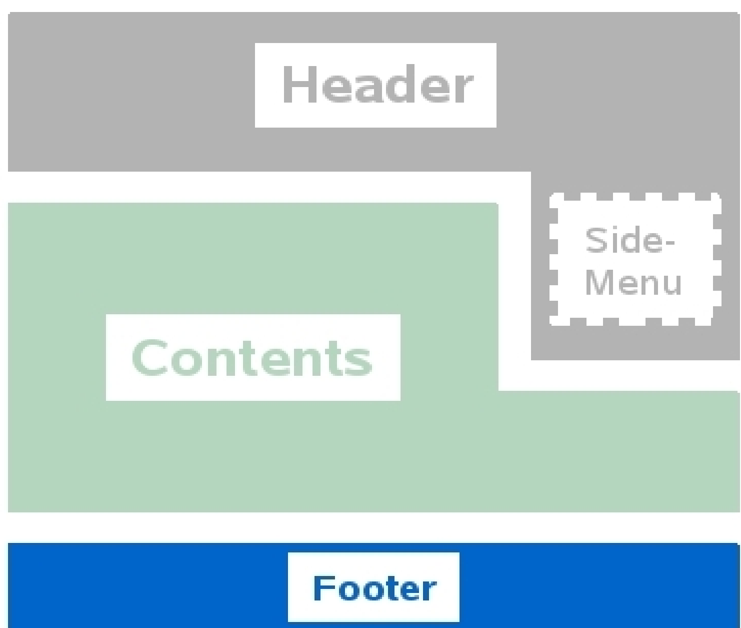



Figure C.1: An example of how any Front-Office page can be built.

The general outline of this example Welcome.phs script is then shown at Code 24.

**Code 24** An all-purpose template for a Front-Office Welcome.phs page.

```
«INCLUDE
MyFO:Header.phs;_Title="Welcome;Bienvenue;Willkommen";_SideMenu="MyFO:SideMenuProducts.phs"»

<H1>Hello and welcome.  Here you will find info about...</H1>

«INCLUDE MyFO:Footer.phs»
```

## C.3 Header and footer structure

The particular structure of these depend on how you want your page to be laid out. Nonetheless, the following provides some useful ideas.

### C.3.1 A Front-Office Header

Code 25 shows a basic structure of a `Header.phs` file to be included as shown in the previous code.

**Code 25** An example of a `Header.phs` script.

```
<!DOCTYPE ...>
<html>
 <head>
  ...
  <link rel="stylesheet" href="/css/MyFO.css"/>   ...
  <title>«=@languageitem(_Title)»</title>
  ...
 </head>
 <body>
  <a href="/Scripts/sql.exe?SqlDB=[YourShopName]&Sql=MyFO:Home.phs>
   <img src="images/TopBanner.jpg">
  </a>
  ...
  «IF @exists("_SideMenu")==1»
   <div class="menu_side">
    «INCLUDE «_SideMenu»»
   </div>
  «ENDIF »
  <!--begin contents-->
```

There :

- usual HTML opening/closing tags are used, leaving the `<html>` and `<body>` environments open ;
- a stylesheet `MyFO.css` (as previously uploaded to the `/css` directory of the *PublisherHome*) is called, giving the page its background color, class attributes,... ;
- the page is given a title, as an interpreted multilingual string (B.3.3), received as argument `_Title` when `Header.phs` was called ;
- a banner image is displayed, as a click-link to the `Home.phs` script. Next, several menu elements can be implemented, such as click-links to for instance *Product*, *Register*,... pages ;

- a test is performed whether a `_SideMenu` variable had been passed as an argument during call to `Header.phs`. If yes, it is the name of the script to display (for instance `SideMenuProduct.phs`). The style given there in the `div` is featured in `MyFO.css`.

Then, the contents themselves are left to be written in the script calling this `Header.phs`. After those contents, a call to `Footer.phs` will close all previously opened tags, wherever in `Header.phs` or in the contents.

### C.3.2 A Front-Office Footer

Code 26 shows an example of a `Footer.phs` file.

**Code 26** This example `Footer.phs` closes tags opened in `Header.phs` (Code 25).

```
  <!--end contents-->
  <HR>
  <center>©2010 Company, Ltd - All Rights Reserved.</center>
 </body>
</html>
```

## C.4 Blue Chameleon's available Front-Office scripts

## C.5 Client's interface

## C.6 Advanced FO developing

### C.6.1 Is a client connected ?