

Step by Step Guide to Enhance a Data Source



Applies to:

SAP BI 7.0. For more information, visit the [Business Intelligence homepage](#)

Summary

This article provides a step by step guide to enhance a Standard Datasource as well as an LO Extractor Datasource with code.

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Overview

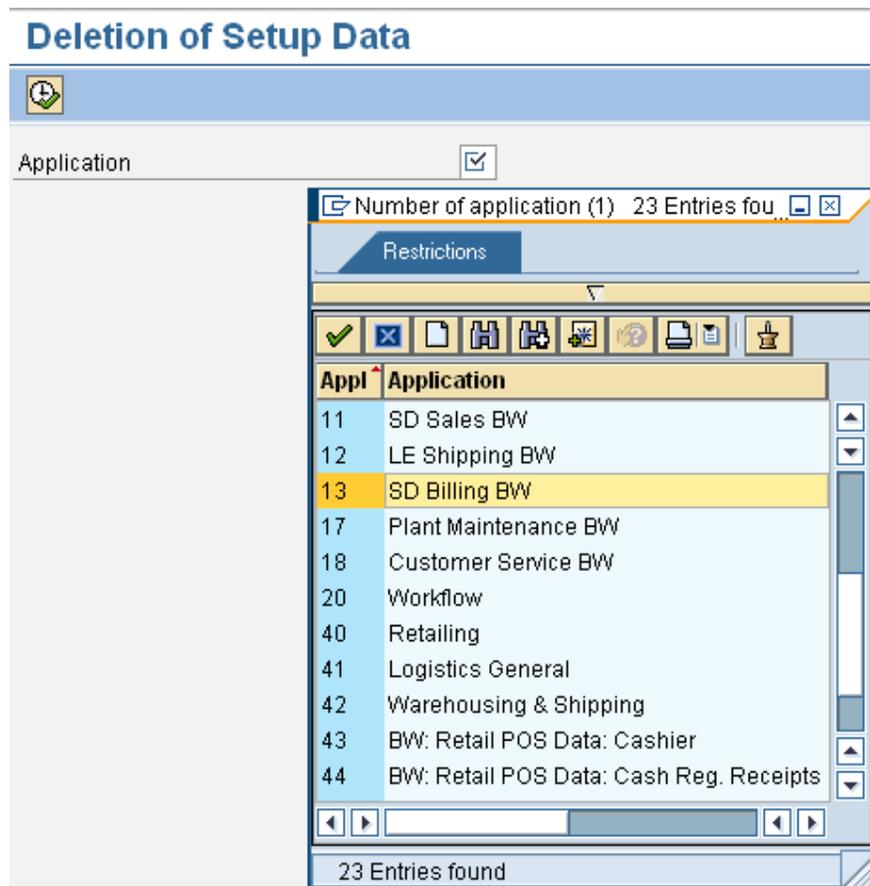
In almost every project we get into a situation in which some extra fields are required in addition to what's already present in a standard data-source. In case of an LO extractor datasource we have a pool of reserved fields which can be added to the extractor at any time but for other datasources we have to append the structure and then write an enhancement code for populating the appended fields. We will explain each process with screen-shots for a better understanding.

For LO Extractor Datasource:

In the present example we are enhancing the data-source 2LIS_13_VDITM with an additional field RFBSK (Posting Status) from the communication structure MCVBRK which is present as a reserve field for this datasource.

One important thing to note here is that the enhancement and the load of setup tables should be done at a posting free time i.e. no new documents are created or processed at that time so the best way is to lock out the users while filling up the setup tables so that no loss of data takes place. Also batch job schedule need to be put on hold.

1. The first step here is to log-on to the source system and goto transaction LBWG to delete the setup tables for the application specific to this datasource and in the present case being **13 – SD Billing BW**.



Execute the transaction by selecting application 13 and you will get a prompt for your choice, click on yes.

2. Then we check for any Outbound Queue for the specific application component in transaction LBWQ and if some entries are present for that then we have to delete them.

qRFC Monitor (Outbound Queue)

Number of LUW Entries

Queue Informationen

Number of Entries Displayed: 28
Number of Queues Displayed: 4

Cl.	Queue Name	Destination	Entries
<input type="checkbox"/>	120 MCEX02	NONE	10
<input type="checkbox"/>	120 MCEX03	NONE	7
<input type="checkbox"/>	120 MCEX11	NONE	6
<input checked="" type="checkbox"/>	120 MCEX13	NONE	5

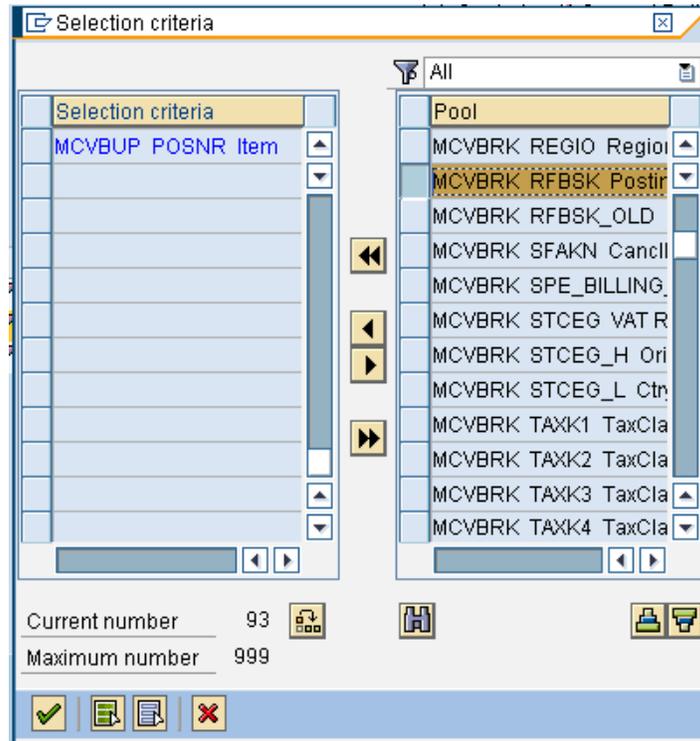
Select the queue and click on delete.

- We should also check in transaction RSA7 for our particular data-source and if some records have been posted then we should also delete them.

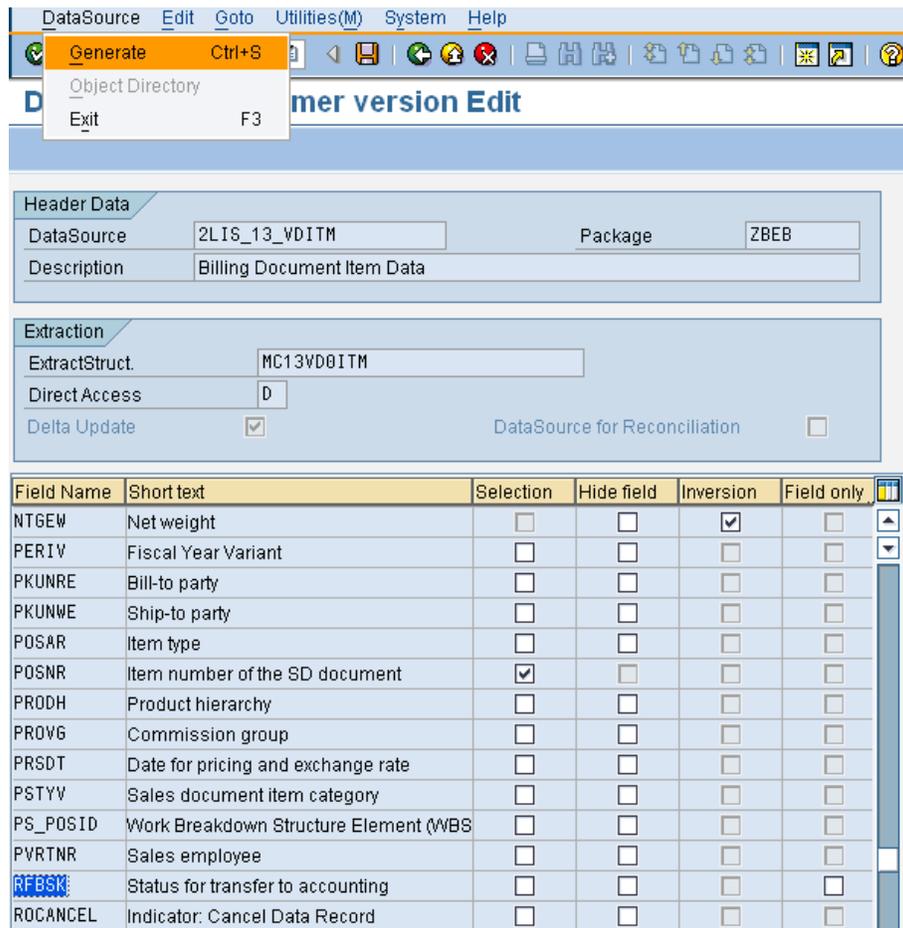
BW Delta Queue Maintenance

Stat	DataSource	BW System	Total	Stat
<input type="checkbox"/>	2LIS_11_VASTI	DB5CLNT100	1	
<input type="checkbox"/>	2LIS_11_VAITM	DB5CLNT100	1	
<input type="checkbox"/>	2LIS_13_VDITM	DB5CLNT100	0	
<input type="checkbox"/>	2LIS_12_VCSCL	DB5CLNT100	0	
<input type="checkbox"/>	2LIS_12_VCITM	DB5CLNT100	0	
<input type="checkbox"/>	2LIS_03_BF	DB5CLNT100	0	
<input type="checkbox"/>	1_CO_PA120Z002	DB5CLNT100	0	<input type="checkbox"/> P
<input type="checkbox"/>	1_CO_PA120Z001	DB5CLNT100	0	<input type="checkbox"/> P
<input type="checkbox"/>	0VEN_PURORG_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0VEN_COMPC_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0VENDOR_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0RT_MBEW_ATTR	DB5CLNT100	0	<input type="checkbox"/> P
<input type="checkbox"/>	0MAT_PLANT_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0MATERIAL_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0GL_ACCOUNT_ATTR	DB5CLNT100	0	
<input type="checkbox"/>	0FI_GL_14	DB5CLNT100	0	<input type="checkbox"/> P
<input type="checkbox"/>	0CUST_SALES_ATTR	DB5CLNT100	0	

- After completing these steps goto transaction LBWE which is for customizing the data-sources like enhancements or choosing a different Update Mode depending on the requirement.



After this step our datasource will become inactive and we will see a red light indicator, so just click on the icon for datasource generation and unhide the newly enhanced field and Generate the datasource.



After this step the indicator for datasource will turn yellow and now you have to just click on the Inactive icon to activate this datasource.

5. We are done with the enhancement of the datasource and now we have to reload the setup tables using transaction SBIW or we can directly use the transaction OLI9BW for our application component **13 – SD Billing BW**.

Statistical Setup from Old Documents: Billing Docs

Document data restriction	
Archiving session	<input type="text"/>
Sales Organization	<input type="text"/>
Company code	<input type="text"/>
SD document	<input type="text"/>
	to <input type="text"/>
	to <input type="text"/>
	to <input type="text"/>

Control of the setup run	
Name of run	<input type="text" value="NEW RUN"/>
<input checked="" type="checkbox"/> New run	
Termination date	<input type="text" value="27.11.2009"/>
Termination time	<input type="text" value="08:02:01"/>
<input type="checkbox"/> Block all billing documents?	
No. tolerated faulty documents	<input type="text"/>
<input checked="" type="checkbox"/> Extraction structures BW	
<input type="checkbox"/> Simulation extr. str. BW	

Just enter the Name of run and enter the termination date & time as per your needs so that all the documents are processed. Click on execute to start the document processing.

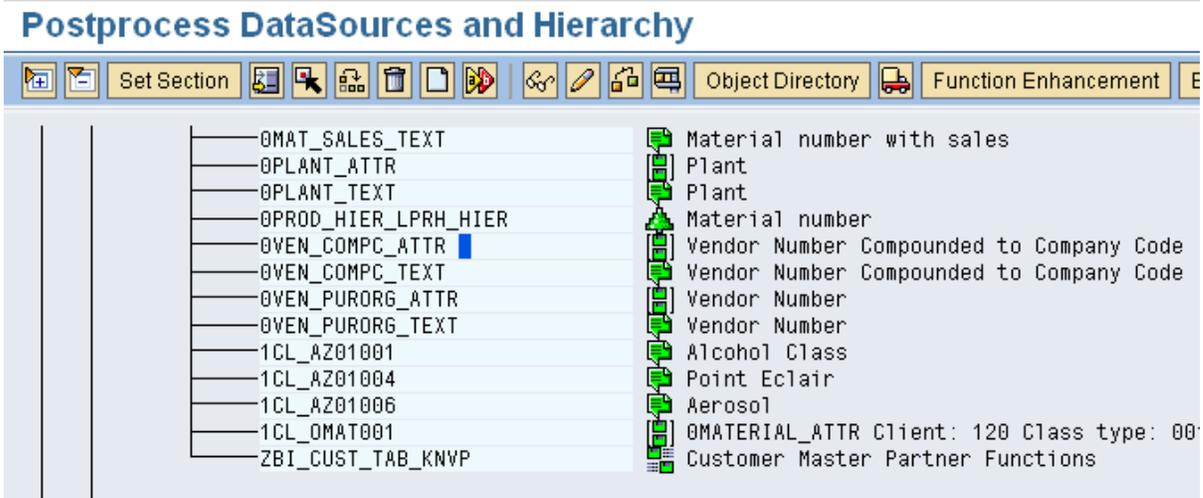
6. After this step we are done with the enhancement on the Source System side and can simply check in RSA3 whether we are getting the proper data, now just logon to the BI system, replicate the data-source and activate it for the changes to appear in BI. And thereafter we can do the necessary mappings and modeling.

If the fields that need to be enhanced are not available in the communication structures of the datasource in LBWE then we need to follow the below mentioned approach for them as well.

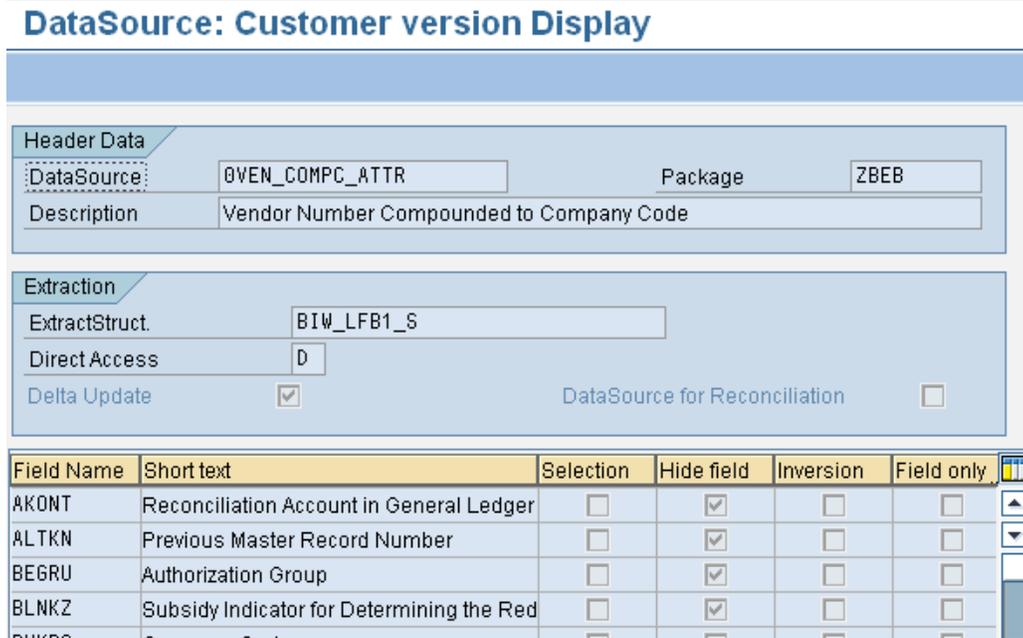
For Standard Data Source:

In the present example we will enhance a master data standard datasource 0VEN_COMPC_ATTR with three new fields WITHT, WT_WITHCD and WT_SUBJECT all coming from the same table LFBW.

1. Logon to the Source System and goto transaction RSA6 which is used for post-processing datasources after they have been activated from the Business Content using transaction RSA5. Choose the datasource 0VEN_COMPC_ATTR (in the present case) and double click on it.



The following screen with all the present fields will appear.



2. Open the extract structure and then click on append structure.

Dictionary: Display Structure

Structure: BIW_LFB1_S Active
Short Description: Provider Structure: Vendor Master Data from LFB1

Attributes Components Entry help/check Currency/quantity fields

Predefined Type 1 / 64

Component	RTy	Component type	Data Type	Length	Decim	Short Description
MANDI	<input type="checkbox"/>	MANDI	CLNT	3		Client
LIFNR	<input type="checkbox"/>	LIFNR	CHAR	10		Account Number of Vendor or Creditor
BUKRS	<input type="checkbox"/>	BUKRS	CHAR	4		Company Code
PERNR	<input type="checkbox"/>	PERNR_D	NUMC	8		Personnel Number
ERDAT	<input type="checkbox"/>	ERDAT_RE	DATS	8		Date on which the Record Was Created
ERNAM	<input type="checkbox"/>	ERNAM_RE	CHAR	12		Name of Person who Created the Object

If the enhancement is being done for the first time then you'll have to create a new append structure by specifying a technical name.

Create Append Structure for BIW_LFB1_S

Append Name

- Then you add the new fields with a prefix of ZZ and specify their component type. Afterwards check, save and activate the append structure and this will appear in the extract structure of the datasource.

Dictionary: Maintain Append Structure

Append Structure: ZBEB_BIW_LFB1_S Active
Short Description: Append Structure for 0VEN_COMPC

Attributes Components Entry help/check Currency/quantity fields

Predefined Type Show Appending Obj 1 / 3

Component	RTy	Component type	Data Type	Length	Decim	Short Description
ZZWITHT	<input type="checkbox"/>	WITHT	CHAR	2		Indicator for withholding tax type
ZZWT WITHCD	<input type="checkbox"/>	WT WITHCD	CHAR	2		Withholding tax code
ZZWT SUBJCT	<input type="checkbox"/>	WT SUBJCT	CHAR	1		Indicator: Subject to withholding tax?

One important point to remember is that if you are enhancing with a key-figure then do not forget to add its respective unit/currency field in the append structure.

- Now refresh the system and again goto transaction RSA6 and edit the datasource 0VEN_COMPC_ATTR. Unhide the newly enhanced fields which will be present at the end.

DataSource: Customer version Edit

Header Data						
DataSource	<input type="text" value="OVEN_COMPC_ATTR"/>	Package	<input type="text" value="ZBEB"/>			
Description	<input type="text" value="Vendor Number Compounded to Company Code"/>					
Extraction						
ExtractStruct.	<input type="text" value="BIW_LFB1_S"/>					
Direct Access	<input type="text" value="D"/>					
Delta Update	<input checked="" type="checkbox"/>				DataSource for Reconciliation	<input type="checkbox"/>
Field Name	Short text	Selection	Hide field	Inversion	Field on	
ZUAWA	Key for sorting according to assignment n	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ZWELS	List of the Payment Methods to be Consid	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ZZWITH	Indicator for withholding tax type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ZZWT_SUBJECT	Indicator: Subject to withholding tax?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ZZWT_WITHCD	Withholding tax code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

5. After completing these steps we need to write an enhancement code for populating these new fields from there respective table. For this goto transaction CMOD and choose the project for Enhancements ZBW00001 (in present case), if it's not present then you have to create a project using the enhancement RSAP0001. SAP provides enhancement RSAP0001 that can be used to populate the extract structure.

Project Management of SAP Enhancements

Project Management of SAP Enhancements	
Project	<input type="text" value="ZBW00001"/> <input type="button" value="Create"/>
Subobjects <input type="radio"/> Attributes <input type="radio"/> Enhancement Assignment <input checked="" type="radio"/> Components <input type="radio"/> Documentation	
<input type="button" value="Display"/> <input type="button" value="Change"/>	

Check the radio button for Components and click on change.

Display ZBW0001

Enhancement assignments				Enhancement
Project		■		ZBW00001 BW Enhancement
Enhancement	Impl	■	Exp	RSAP0001 Customer function calls in the service API
Function exit	✓	■		EXIT_SAPLRSAP_001
	✓	■		EXIT_SAPLRSAP_002
	✓	■		EXIT_SAPLRSAP_003
	✓	■		EXIT_SAPLRSAP_004

It has four components that are specific to each of the four types of R/3DataSources:

Transaction data - EXIT_SAPLRSAP_001

Master data attributes - EXIT_SAPLRSAP_002

Master data texts - EXIT_SAPLRSAP_003

Master data hierarchies - EXIT_SAPLRSAP_004

- Go to enhancement of Master data attributes datasources and click on include ZXRSAU02. All the codes will be written inside this include.

Function Builder: Display EXIT_SAPLRSAP_002

Function module: EXIT_SAPLRSAP_002 Active

Attributes | Import | Export | Changing | Tables | Exceptions | Source code

```

1  FUNCTION EXIT_SAPLRSAP_002 .
2  *"--
3  *"--"Lokale Schnittstelle:
4  *"--
5  *"--      IMPORTING
6  *"--          VALUE(I_DATASOURCE) TYPE  RSAOT_OLTPSOURCE
7  *"--          VALUE(I_CHABASNM) TYPE  SBIWA_S_INTERFACE-CHABASNM
8  *"--          VALUE(I_UPDMODE) TYPE  SBIWA_S_INTERFACE-UPDMODE
9  *"--
10 *"--      TABLES
11 *"--          I_T_SELECT TYPE  SBIWA_T_SELECT
12 *"--          I_T_FIELDS TYPE  SBIWA_T_FIELDS
13 *"--          I_T_DATA
14 *"--          C_T_MESSAGES STRUCTURE  BALMI OPTIONAL
15 *"--      EXCEPTIONS
16 *"--          RSAP_CUSTOMER_EXIT_ERROR
17 *"--
18 INCLUDE ZXRSAU02 .
19
20
21 ENDFUNCTION.

```

Here we are not using the old technique of writing a Case statement and then a When condition for each datasource as it makes the code quite messy and if several developers/teams are modifying the code then creates challenges for transport management.

So after using the below code in the Include we can simply create a new program starting with ZBWIN_XXXX for each data-source which will be independent from any other enhancement so won't create any problems.

ABAP Editor: Display Include ZXRSAU02

```

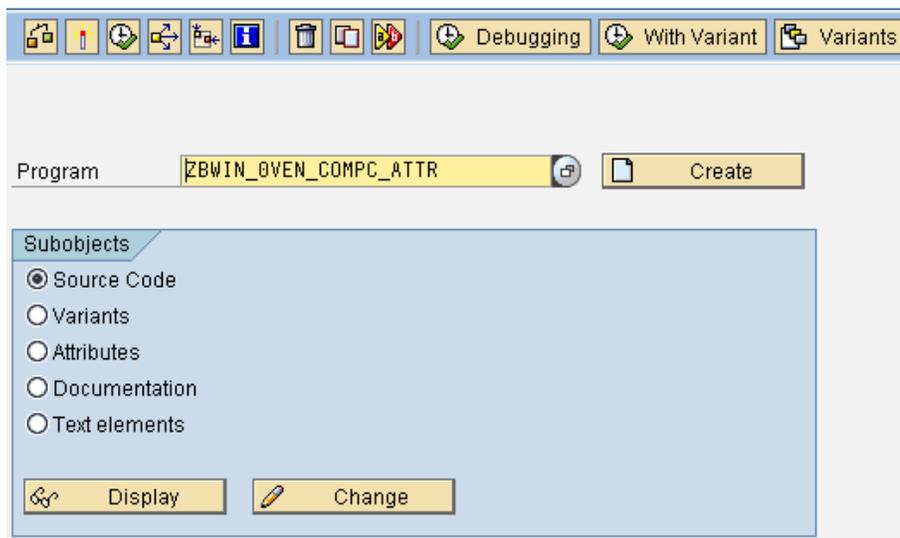
10  *-----*
11  *  This include will call a form 'execute_user_exit' in a program  *
12  *  whose name is determined dynamically based on the name of the  *
13  *  datasource  *
14  *  Name of program called = ZBWIN_XXXXXXX where XXXXXX is the name *
15  *  of the datasource  *
16  *  Ex: datasource 'ztest', the code of the exit is found in the  *
17  *  program ZBWIN_ZTEST  *
18  *  *
19  *  The modularisation of the user exit ZXRSRU02 will allow X number *
20  *  of developers to create the code for the datasources  *
21  *  simultaneously. In order to maintain the modularisation, it is  *
22  *  advised not to write any code this include.  *
23  *-----*
24
25
26  *local variable for the include/program name for each datasource
27  DATA: l_prog_name LIKE trdir-name.
28
29  *-- ZBWIN_ is the assumed prefix for the datasource program
30
31  CONCATENATE 'ZBWIN_' i_datasource INTO l_prog_name.
32  *-- execute corresponding user exit. if exist
33  PERFORM execute_user_exit IN PROGRAM (l_prog_name)
34  TABLES I_T_SELECT
35  I_T_FIELDS
36  I_T_DATA
37  C_T_MESSAGES
38  IF FOUND.

```

And then activate the include program.

- Now we'll create a new executable program in transaction SE38 for our datasource.

ABAP Editor: Initial Screen



And write the following code:

```

REPORT ZBWIN_0VEN_COMPC_ATTR.

type-pools: sbiwa.
constants : gc_vbeln type vbeln value '2'.

*&-----*
*&      Form EXECUTE_USER_EXIT
*&-----*
*      text
*-----*
*      -->P_I_T_SELECT text
*      -->P_I_T_FIELDS text
*      -->P_C_T_DATA text
*      -->P_C_T_MESSAGES text
*-----*

FORM execute_user_exit
tables i_t_select type sbiwa_t_select
i_t_fields type sbiwa_t_fields
i_t_data structure BIW_LFB1_S " Datasource structure
c_t_messages structure balmi.

TYPES: BEGIN OF T_LFBW,
        LIFNR TYPE LFBW-LIFNR,
        BUKRS TYPE LFBW-BUKRS,
        WITHT TYPE LFBW-WITHT,
        WT_SUBJECT TYPE LFBW-WT_SUBJECT,
        WT_WITHCD TYPE LFBW-WT_WITHCD,
        END OF T_LFBW.

*Internal table declaration
DATA: I_LFBW TYPE STANDARD TABLE OF T_LFBW,
      I_VEN_COMPC_ATTR TYPE STANDARD TABLE OF BIW_LFB1_S.
DATA: l_tabix TYPE SY-TABIX.

* WORK AREA DECLARATION
DATA: WA_LFBW TYPE T_LFBW,
      WA_VEN_COMPC_ATTR TYPE BIW_LFB1_S.

REFRESH: I_LFBW,
         I_VEN_COMPC_ATTR.
CLEAR: WA_LFBW,
       WA_VEN_COMPC_ATTR.

I_VEN_COMPC_ATTR = i_t_data[].

SELECT LIFNR
       BUKRS
       WITHT
       WT_SUBJECT
       WT_WITHCD
FROM LFBW
INTO TABLE I_LFBW
FOR ALL ENTRIES IN I_VEN_COMPC_ATTR
WHERE LIFNR = I_VEN_COMPC_ATTR-LIFNR AND

```

```

                BUKRS = I_VEN_COMPC_ATTR-BUKRS.
IF SY-SUBRC = 0.
    SORT I_LFBW BY LIFNR.
ENDIF.

LOOP AT I_T_DATA INTO WA_VEN_COMPC_ATTR.
    l_tabix = sy-tabix.

    READ TABLE I_LFBW INTO WA_LFBW
        WITH KEY LIFNR = WA_VEN_COMPC_ATTR-LIFNR
        BUKRS = WA_VEN_COMPC_ATTR-BUKRS BINARY SEARCH.

    IF SY-SUBRC = 0.

        WA_VEN_COMPC_ATTR-ZZWITHT = WA_LFBW-WITHT.
        WA_VEN_COMPC_ATTR-ZZWT_SUBJECT = WA_LFBW-WT_SUBJECT.
        WA_VEN_COMPC_ATTR-ZZWT_WITHCD = WA_LFBW-WT_WITHCD.

    ENDIF.
    MODIFY i_t_data FROM WA_VEN_COMPC_ATTR INDEX l_tabix.
ENDLOOP.

ENDFORM.                " EXECUTE_USER_EXIT

```

Check and activate the program.

8. Finally check the data using transaction RSA3. And with this we finish with the enhancement of the data-source in the source system. Now just logon to the BI system, replicate the data-source and activate it for the changes to appear in BI. And thereafter we can do the necessary mappings and modeling.

All above changes will ask for a transport request. Assign appropriate development class/Package and assign all these objects into a transport request.

Related Content

For more information, visit the [Business Intelligence homepage](#).

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