

Importing Data from BW to R/3 at the Time of Data Extraction from R/3 to BW



Applies to:

SAP BW 3.x and higher versions as BW system and SAP 4.6c and higher versions as R/3 system.
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Summary

The artifact provides the sample code to import data from BW system to R/3 system at the time of extraction from R/3 to BW. This will be useful in scenarios where hard coding of field values needs to be avoided in extractor enhancement code on the R/3 side.

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Business Requirement Overview:-

Consider a case wherein, at the time of extraction in R/3, a field in the append structure of a data-source needs to be populated **only for certain values of a characteristic**. For example, let us consider the data-source OFI_AA_006, which extracts Asset related transaction data. In FI-AA module, certain transactions are done which cause an asset to transfer a certain amount/value to another asset. The asset which transfers the value is called the transferring asset, the asset which acquires the value is called the acquiring asset and the value transferred is called 'Acquisition value for transactions'. Now, the extractor OFI_AA_006 extracts only the 'Transferring Asset' and 'Acquisition value for transactions' by the corresponding extract structure fields ANL1 and (BW_ANSBW_T). In addition, the extractor also extracts the transaction type of the transaction which has occurred between the assets by the field BWASL.

Now, let us have a scenario where we need to enhance the extract structure of data-source OFI_AA_006 to extract the 'Acquiring Asset' (using an appended field – ZZ_ANLU1) also, from the Document Header Asset Posting table ANEK **only for a few transaction types**. In such a case, we can make use of the flexibility of maintenance available with the BW master data tables to maintain the list of transaction types for which the code for the population of 'Acquiring Asset' needs to be executed and import them from BW into an internal table in R/3 for use while extraction.

Steps Involved:-

For the example mentioned the steps involved would be:-

- 1) Create a characteristic info-object (say Z_CONTRN) in BW with specifications similar to the field BWASL in R/3.
- 2) Through the maintain master-data option, maintain the list of transaction types for which the field 'Acquiring Asset' needs to be populated at the time of extraction of the extractor OFI_AA_006 in R/3.

In our case let them be as shown in the screen shot

Configurat L	Descript.
300	EN
310	EN
320	EN
330	EN
331	EN
336	EN
338	EN
339	EN
340	EN
341	EN
345	EN
346	EN
Z07	EN
Z17	EN

These will be available in the SID table as shown:-

Data Browser: Table /BIC/SZ_CONTRN				
	SID	CHCKFL	DATAFL	INCFL
	0	X	X	X
300	2	X		
310	3	X		
320	6	X		
330	7	X		
331	8	X		
336	9	X		
338	10	X		
339	11	X		
340	12	X		
341	13	X		
345	14	X		
346	15	X		
Z07	16	X		
Z17	17	X		

Note: - The P table, i.e. /BIC/PZ_CONTRN, can be used if the info-object is checked as a master data object.

3) In the include ZXRSAU01, use the sample code mentioned below to import these transaction types from BW into an internal table in R/3 at the time of extraction.

Here, we will have to use the following tables and function modules :-

i) **Table T000** (clients table) -

The fields MANDT and LOGSYS of this table give the 'Client IDs' and 'Logical IDs' of the R/3 system as shown.

Table to be searched	T000	Clients
Number of hits	16	
Runtime	0	Maximum no.
Cl.	Logical system	
010	DR3CLNT010	
020	DR3CLNT020	
011	DR3CLNT011	

ii) **Table RSBASIDOC** (Assignment of source systems to BIW systems incl. IDoc typ) -

In this, the fields SLOGSYS, RLOGSYS and OBJSTAT correspondingly hold the Logical Id of source system (R/3), Logical ID of the receiver system (BW) and the status of the connection between them.

Table to be searched	RSBASIDOC
Number of hits	11
Runtime	0

Source system	DWH System	Status
DR3CLNT011	DBWCLNT010	ACT
DR3CLNT011	SBWCLNT010	INA
DR3CLNT011	TBWCLNT010	INA
DR3CLNT011	QBWCLNT010	INA

iii) Function Module RFC_READ_TABLE:-

This function module gives access to query all tables and views **across SAP systems** which have an active RFC connection between them. This will be used to export the BW table (/BIC/SZ_CONTRN) from which we want to import data, the Logical Id of the BW system (variable i_fromsystem) and the internal table into which we want to import data (l_t_contran) .

Sample Code:-

```
*****
* Begin of Sample Code to be written in ZXRSAU01
*****
CASE i_datasource.
  WHEN '0FI_AA_006'.
    *Declaration of internal tables and variables
    * Define internal table l_t_contran which is used for filling the transaction
    * types imported from BW.
DATA: BEGIN OF l_t_contran occurs 0,
      bwasl type anep-bwasl,
    END OF l_t_contran.
    * Define workarea wa_rsbasidoc with structure similar to table rsbasidoc
DATA: wa_rsbasidoc LIKE rsbasidoc.
    * Define workarea similar to the structure of data-source '0FI_AA_006'
DATA: l_s_datasource LIKE FIAA_IS006. "->extract structure
    * Define variables i_logsys and i_fromsystem to hold the logical ID's of
    * R/3 and BW system respectively.
DATA: i_logsys LIKE t000-logsys,
      i_fromsystem LIKE t000-logsys.
    *Get logical ID of R/3 system from table T000 and populate to i_logsys
SELECT SINGLE logsys FROM t000 CLIENT SPECIFIED
INTO i_logsys
WHERE mandt = sy-mandt.

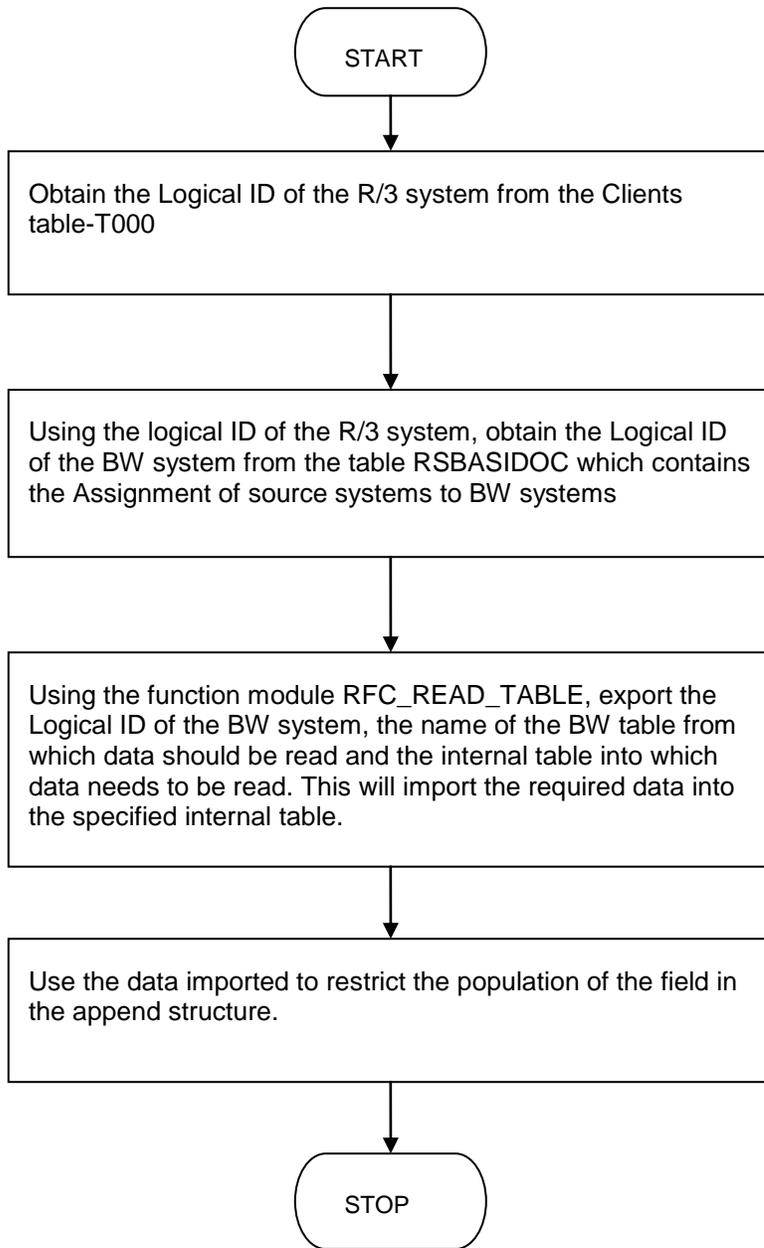
    * Get the logical Id of BW system from table RSBASIDOC and populate
    * i_fromsystem.
SELECT SINGLE rlogsys FROM rsbasidoc
INTO i_fromsystem
WHERE slogsys = i_logsys
AND objstat = 'ACT'.
    * Using the function module 'RFC_READ_TABLE', get transaction types from the
```

```

* table /BIC/SZ_CONTRN' - SID table of info-object Z_CONTRN into the internal
* table l_t_contran by passing the logical ID of BW system available in
* the variable i_fromsystem.
CALL FUNCTION 'RFC_READ_TABLE' DESTINATION i_fromsystem
EXPORTING
  QUERY_TABLE          = '/BIC/SZ_CONTRN'
  TABLES
  DATA                = l_t_contran
EXCEPTIONS
  TABLE_NOT_AVAILABLE = 1
  TABLE_WITHOUT_DATA  = 2
  OPTION_NOT_VALID     = 3
  FIELD_NOT_VALID      = 4
  NOT_AUTHORIZED       = 5
  DATA_BUFFER_EXCEEDED = 6
  OTHERS                = 7.
IF SY-SUBRC = 0.
  DELETE l_t_contran WHERE bwasl IS INITIAL.
  SORT l_t_contran BY bwasl.
ENDIF.
* Code to Populate l_s_datasource-ZZ_ANLU1 for only those transaction types
* that have been imported from info-object Z_CONTRN BW to internal
* table l_t_contran
LOOP AT c_t_data INTO l_s_datasource.                "C_T_DATA
  READ TABLE l_t_contran WITH KEY
    bwasl = l_s_datasource-bwasl.
  IF sy-subrc EQ 0.
    < Include the logic for population of field l_s_datasource-ZZ_ANLU1
    as required>
    MODIFY c_t_data FROM l_s_datasource.
  ENDIF.
ENDLOOP.
ENDCASE.
*****
* END of Sample Code to be written in ZXRSAU01
*****

```

Flow Chart Detailing the Code Written:-



Result:

At the time of extraction the internal table `l_t_contran` will be populated with the data read from BW table as shown below which can then be used for restricting the population of fields in the datasource.

Internal table		l_t_contran
1	BWASL	
1	300	
2	310	
3	320	
4	330	
5	331	
6	336	
7	338	
8	339	
9	340	
10	341	
11	345	
12	346	
13	Z07	
14	Z17	

As shown below, during extraction, the population of the field `ZZ_ANLU1` will be restricted to only those transaction types maintained in the info-object `Z_CONTRN` in the BW system.

Seq.n	Asset (ANLN1)	Tra	(ZZ_ANLU1)
1	1000003	330	1000006
2	1000003	320	1000008
2	1000006	320	1000003
1	1000008	330	1000003
5	1000000	320	1000002
1	1000002	330	1000000
2	1000000	330	1000030
3	1000000	330	1000030
4	1000001	260	
2	1000011	250	
4	1000012	210	
2	1000013	250	
4	1000013	260	
2	1000015	345	1000030
3	1000015	345	1000030
4	1000015	320	1000000
5	1000015	320	1000000
6	1000015	320	1000001
7	1000015	320	1000001
8	1000015	320	1000002
4	1000017	Z17	1000000
2	1000019	250	

Alternative Approaches and Their Disadvantages:-

- 1) Hard coding: - The transaction types can be hard coded in the extractor code itself to populate the internal table `L_T_CONTRAN`. In such a case, when new transaction types are to be considered, the

code needs to be changed and transported to the production systems which requires a greater effort and is hence not advisable.

- 2) Maintaining the transaction types in a custom table in the R/3 system itself:-

From the security and authorization perspective most R/3 systems (especially Quality and Production systems) are locked for direct maintenance of data in database tables. This can affect the flexibility in deployment and maintenance of the custom tables.

Summary:-

The solution described in this document can be used wherever hard coding of characteristic values needs to be avoided in BW data source enhancement exits to bring about additional flexibility.

Related Contents:

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

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