QlikView Connector for use with SAP Netweaver™

Installation and Usage Guide

English

QV Connector Version: 5.6 - 01 September 2011

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1 About this document

This document describes the installation procedure and usage of the QlikView Connector for use with SAP NetVeawer™. The latest version of this document is available through support@qliktech.com.

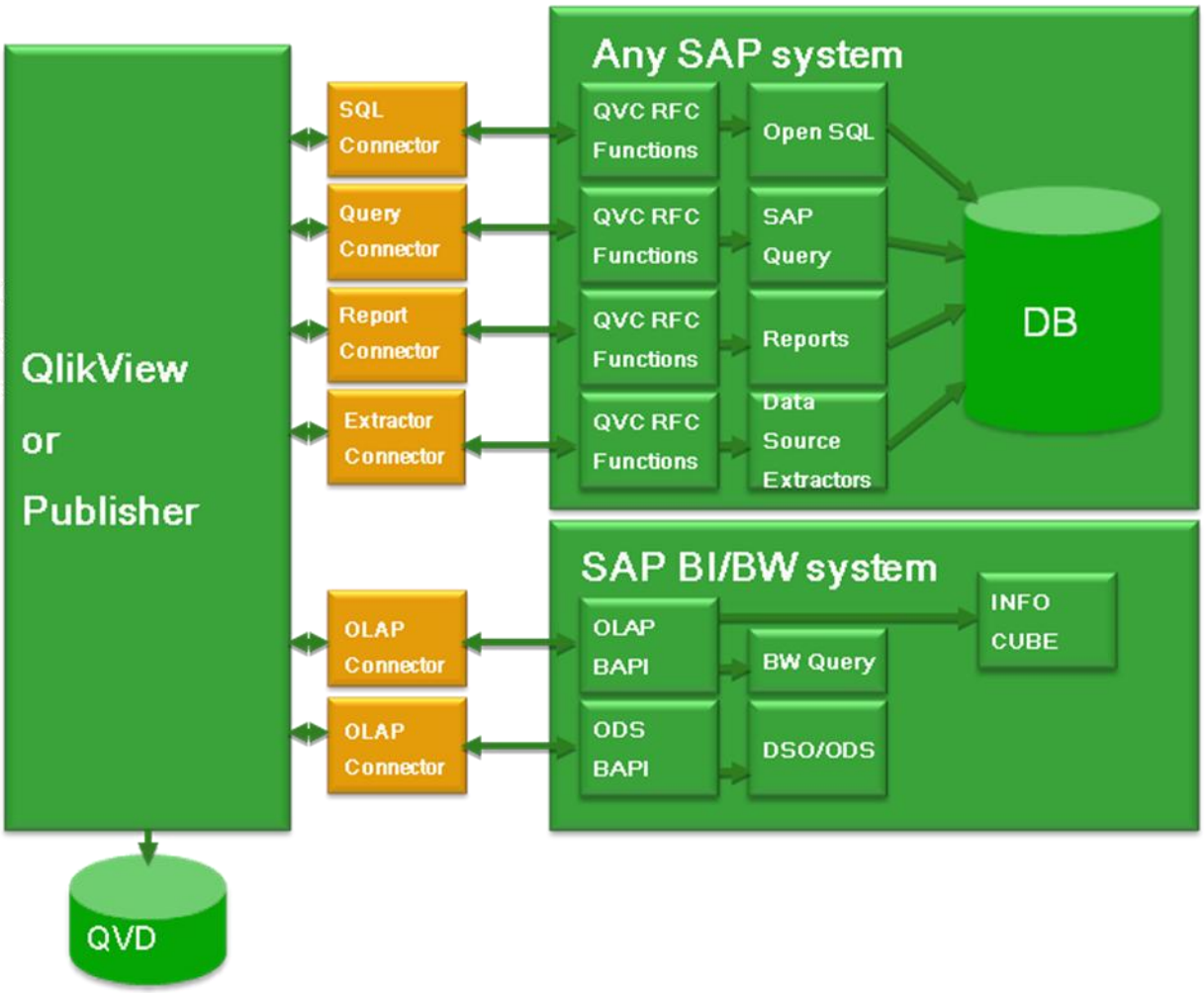
2 Introduction

Components of the QlikView are installed on two different types of computers:

1. The SAP system
2. The QlikView SAP Connector Client

Below, procedures for each of these systems are described.

The Connector package now consists of six different connectors; the SQL Connector, the Query Connector. The Report Connector (that can be used on any SAP system), the SAP Extractor Connector (that can be used on any SAP system) the OLAP Connector and the DSO/ODS Connector (that can be used on a SAP BW/BI system).



3 The QlikView SAP SQL Connector

3.1 The SAP System

3.1.1 Prerequisites

- SAP BASIS system 610 or later (R/3 4.7 or later)

3.1.2 Installation of Transports

Two transports need to be installed on the SAP System. These are copied to your computer during the installation of the QlikView SAP Connector to folder "C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector\Transports".

A third transport is also supplied, to be used with OLAP and/or DSO Connectors.

They can also be obtained through the QlikTech Support (support@qliktech.com).

3.1.3 SAP BASIS system 4.6

For these systems, please use 5.30 version of QlikView SAP Connector.

3.1.4 SAP BASIS system 6.10 and 6.20

For these systems, the following transports should be installed on the SAP System:

1) E6DK900219 (Data extraction)
2) E6DK900223 (User profile)

The transports must be installed in the above order. The first is cross-client; the second transport is client-specific and has to be installed in all clients where it is intended to be used.

3.1.5 SAP BASIS system 6.40 and 7.

For these systems, the following transports should be installed on the SAP System:

3) E6DK900222 (Data extraction)
4) E6DK900223 (User profile)

The transports must be installed in the above order. The first is cross-client; the second transport is client-specific and has to be installed in all clients where it is intended to be used.

3.1.6 User configuration for SAP BASIS system 6.10, 6.20, 6.40 and 7.

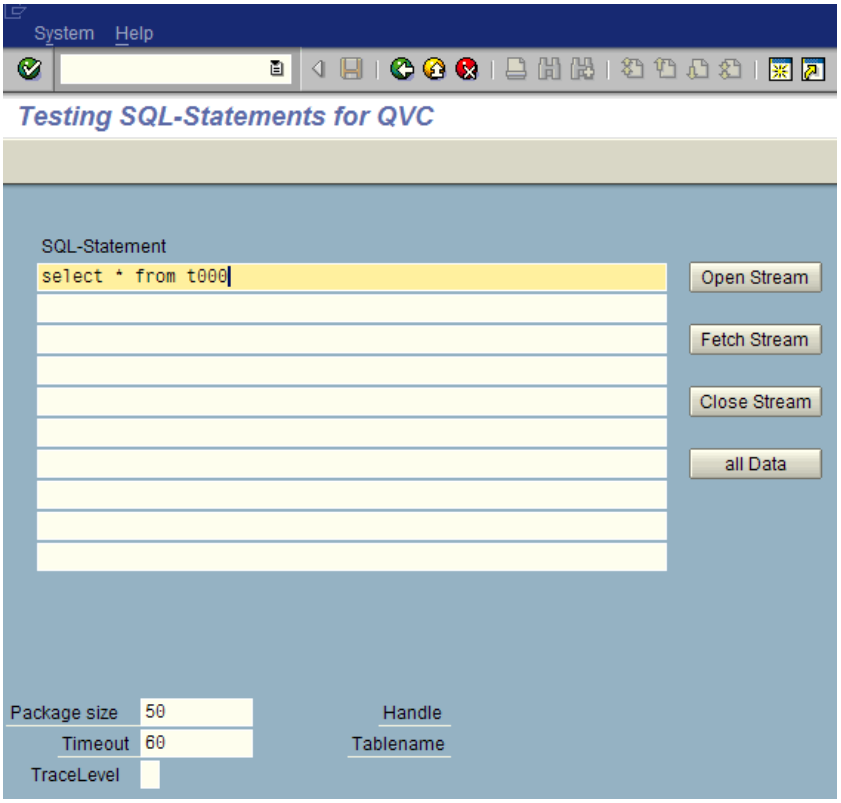
After the transports are in the system, the following steps have to be completed:

1) Create one or more Users
   a. Go to transaction SU01
   b. Click Create (F8)
   c. The user can be named and given password according to your own preference
   d. In the tab Logon data, the user has to be assigned User Type: Service
   e. In the tab Roles, add the Role QTQVCACCESS.
   f. Click Save

2) If the installation is an upgrade from previous a version and the Role QTQVCACCESS has been updated, you need to update all users assigned to the Role.
   a. Go to transaction PFCG
   b. Enter Role name “QTQVCACCESS” - Click Change Role
   c. In the User tab - Enter the name of the User(s) created above
   d. Click the “User comparison” button
   e. Click the “Complete comparison” button
   f. Click Save

3.1.7 **Testing SQL Statements - /QTQVC/SQL**

This transaction makes it possible to test SQL Select statements. After installing the transports and creating a User, you can use this transaction to test that everything has been installed correctly; Log on with the newly created User and try this transaction: /n/QTQVC/SQL.



- Key in the SQL statement.
- Click on the “Open Stream”-button.
- Click on the Fetch Stream”-button to view the result.

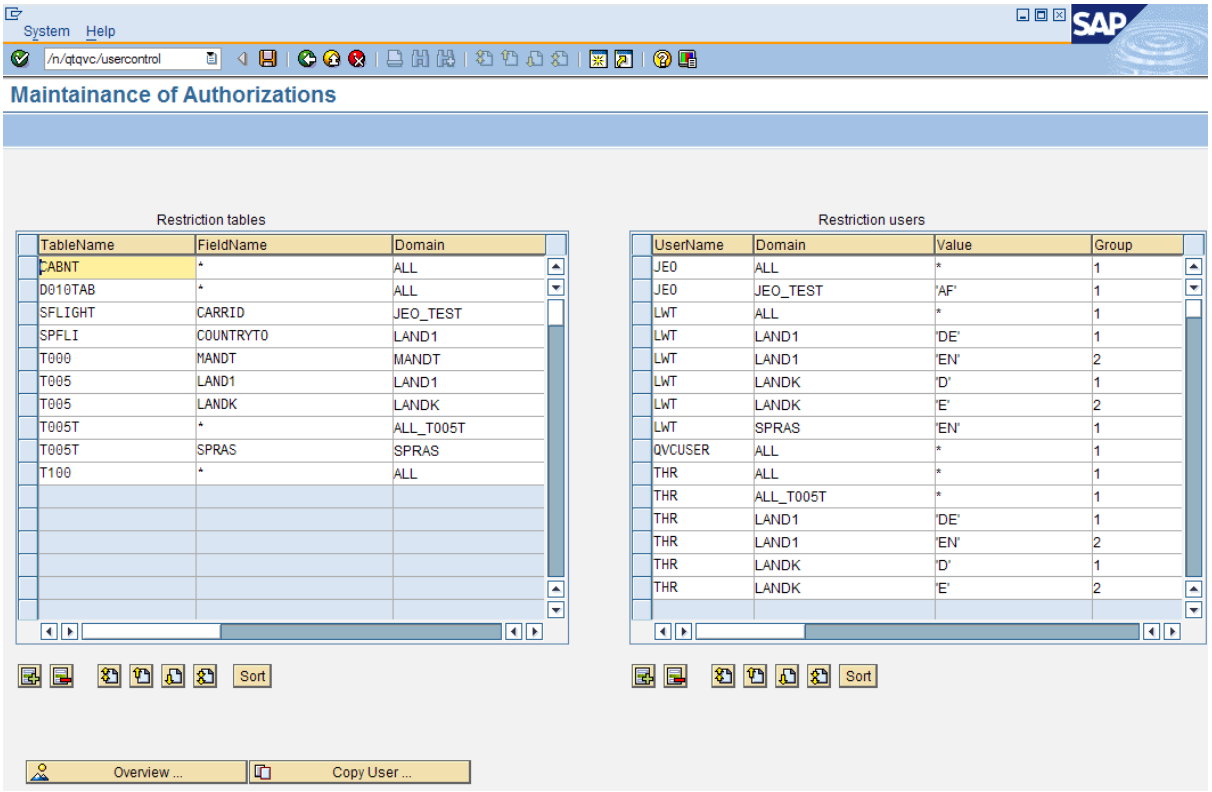
3.1.8 **Row Based Access control - /n/QTQVC/USERCONTROL**

In this transaction you can define row-based access to specific tables for a User.

If you are going to use this functionality, you have to create an additional user that has the right to use this transaction. Create a user in the same manner as above, but assign the Role QTQVCADMIN instead. The download users you create should **not** have this Role assigned.

This transaction should only be used if you need to restrict download on row-level. If the tables are empty the table-based access restriction is used instead, see 3.1.10. If you have at least one row in this row-based restriction it takes precedence over the table based restriction.

You should create one User per organizational entity you want to restrict access for. This is not intended for end-user usage; only a few download users should be created.



In the left-hand table “Restriction tables” you define which table you want to download data from.

- If you don’t need to restrict on row-level; key in * as Fieldname and “ALL” as Domain.
- Any user assigned to a domain with a “*” in TableName, will have access to all tables.
- If you want to restrict on row-level; Key in the Fieldname on which you want to make a value-based restriction. The Domain field is a free text field, several Fieldnames in different Tables can be linked to the same Domain, this to ease the maintenance of Values.

In the right-hand table “Restriction users” you define per User allowed values per Domain.

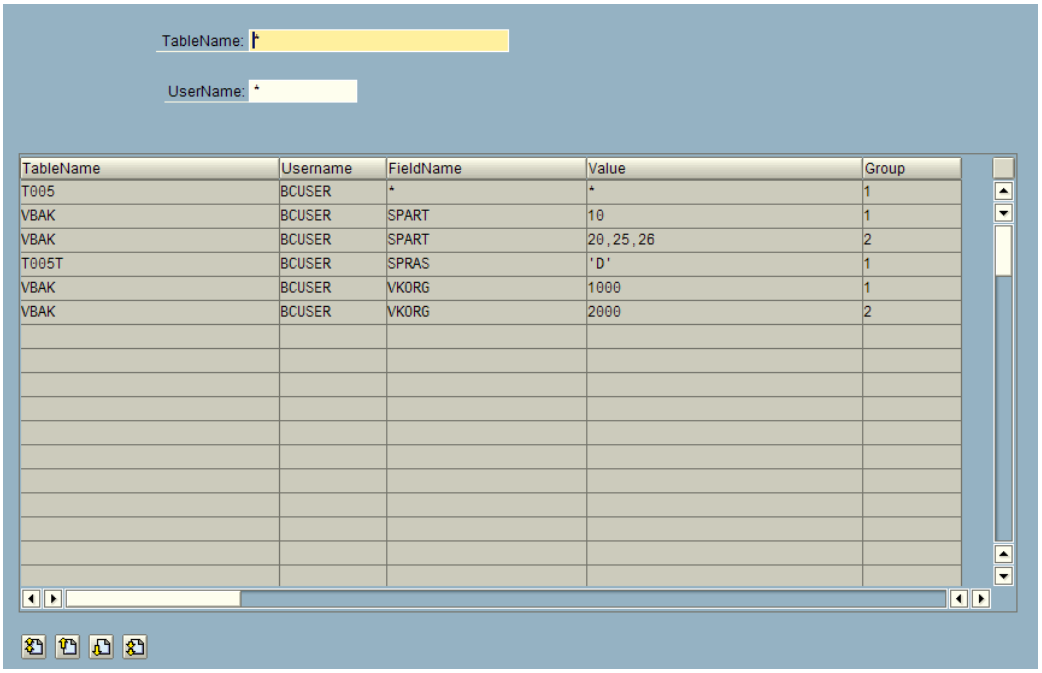
- If all values are allowed; enter "*" in the Value field and "ALL" in the Domain field.
- If you want to restrict; enter one or more values in the Value field. Several values must be separated by ",". Non-numeric values must be enclosed with 'x' (single-quotes). Ranges can be specified as: *BT('a'-'d')*
- If you need to restrict on more than one field in a table; create more lines in each table.
- If you need to create OR conditions; you have to use the Group field to link together the values in pairs (or triplets). Example below:

  (VKORG = 1000 AND SPART = 10) OR (VKORG =2000 AND SPART =20) →
  VKORG value=1000 group=1
  SPART value=10 group=1
  VKORG value=2000 group=2
  SPART value=20 group=2

To get a better overview of what has been entered for a specific Table or User click on the "Overview…"-button. This screen is only used to view the defined access.

The left-hand and right-hand tables are here joined together using the Domain field.

You can filter on Table and/or User.



To ease the maintenance a "Copy User"-function exist, click the button and you will get the below dialog. If the "To"-user already exist the lines of the "From"-user will be appended to any existing lines.

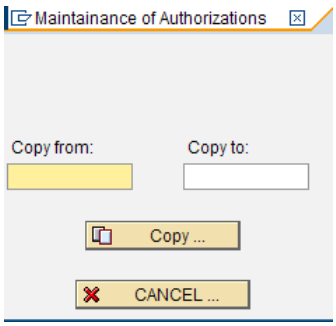
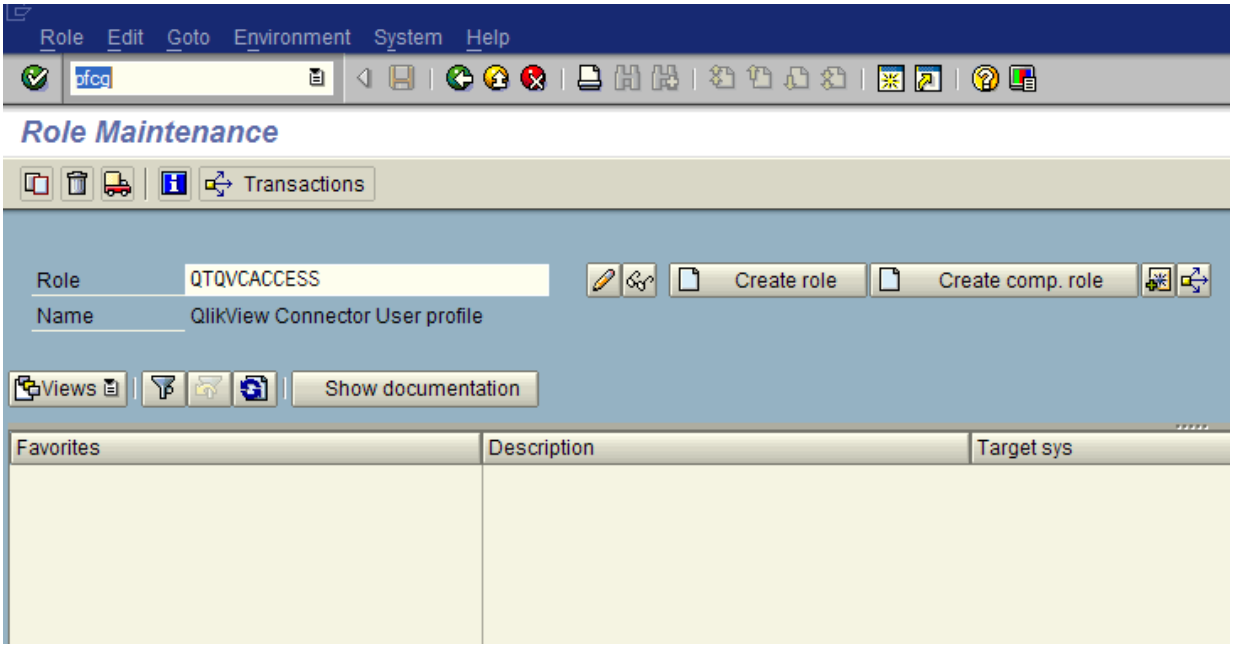
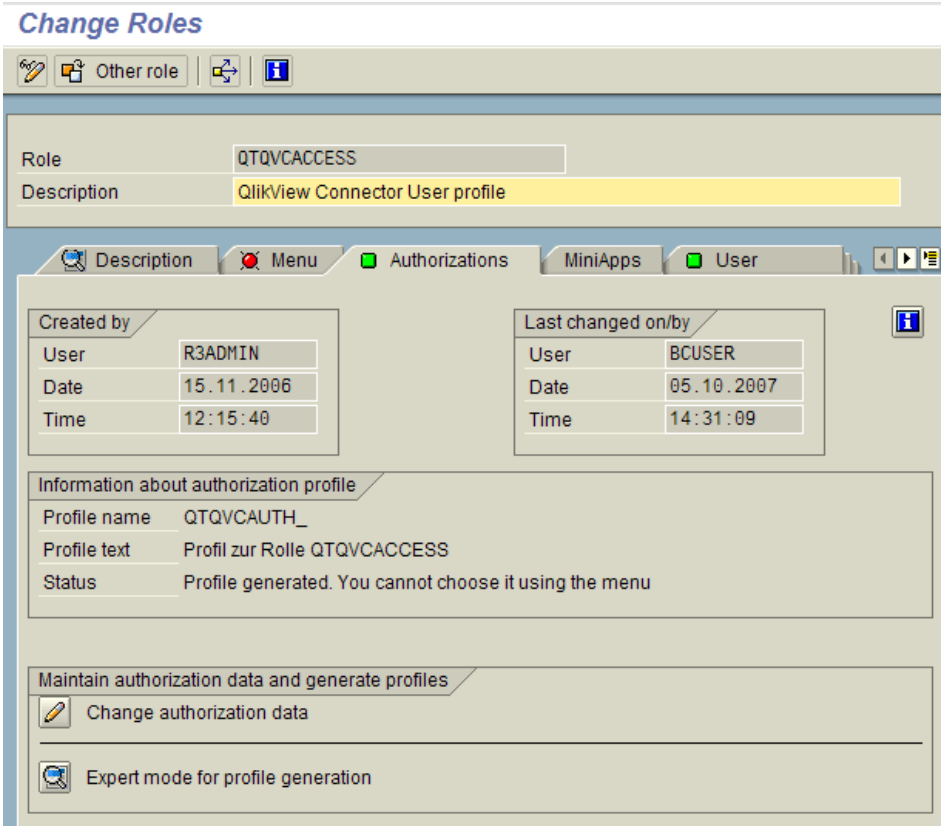


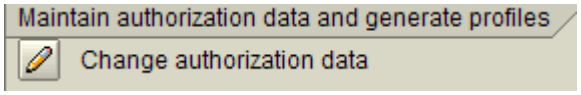
Table Based Access control

Go to transaction PFCG and enter the Role “QTQVCACCESS” then click on the Change icon.

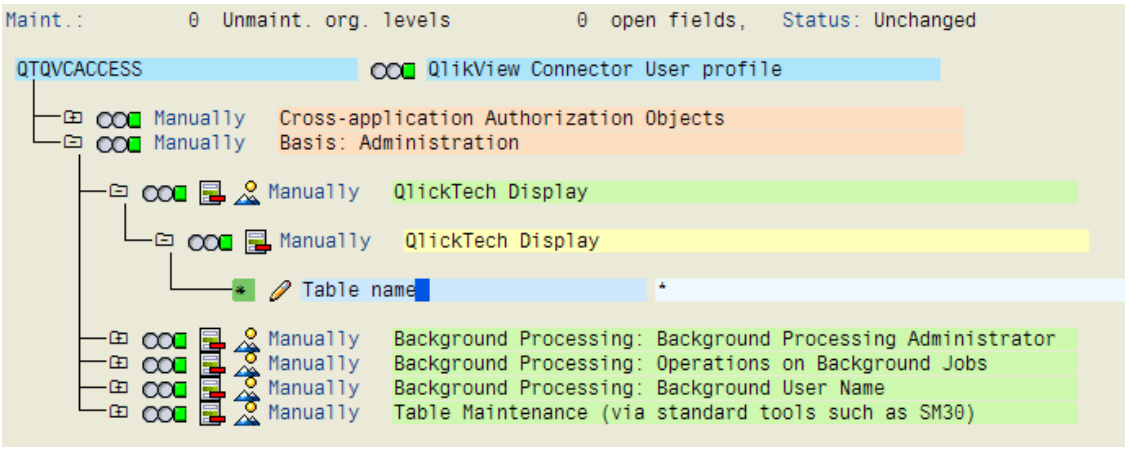


Then click on the Authorizations tab

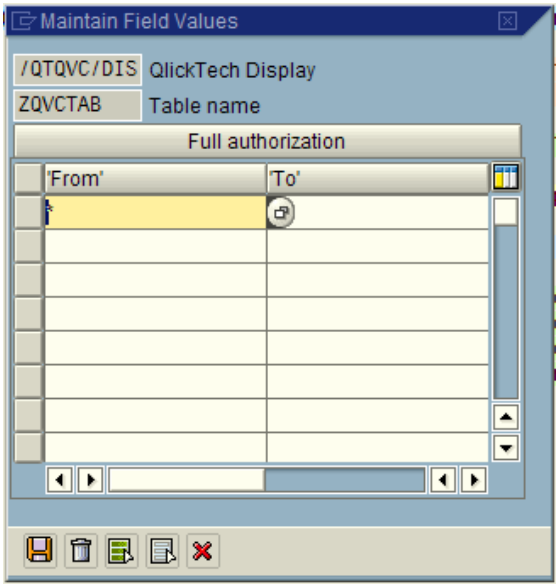


Then click on the “Change authorization data” icon 

Expand the list until you can see the “QlikTech Display” → “Table name” row



Click on the Pencil icon  , to be able to change the values. By default it has the value “*”, which means all tables are accessible. Here you can enter single values or ranges of tables.



3.2 The QlikView SAP SQL Connector Client

3.2.1 Prerequisites

- QlikView version 8.20 build 5415 or later.
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

3.2.2 Windows folders

The different parts of the connector will be installed in 2 different parts of the Windows folder structure. First folder is for the Program installation "C:\Program Files\Common Files\QlikTech\Custom Data\QVSAPConnector, second folder is for ScriptBuilder, Licenses, Logfiles. This path is different depending on Windows version according to below:

Win XP	C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\
Win Vista and later	C:\ProgramData\QlikTech\Custom Data\QvSAPConnector\

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3.2.3 Installation of the SAP SQL Connector Client

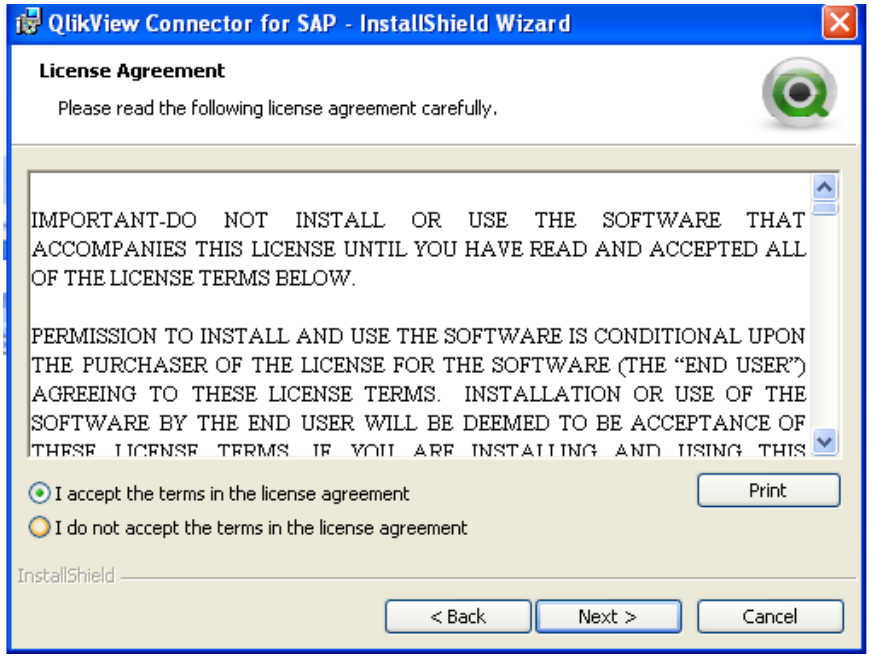
To install the Windows part of the Connector, there exist one 32-bit and one 64-bit installation package. Check if your QlikView is 32-bit or 64-bit and chose the correct Installation package.

The package includes all the SAP Connectors, they will all be installed.

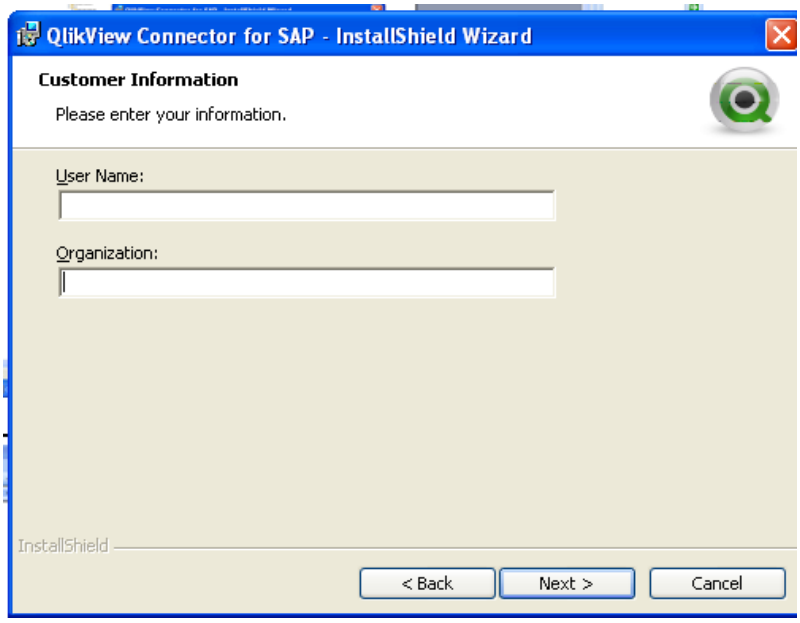
Double-click on the installation file and follow the instructions below:

- Click on the Next button.

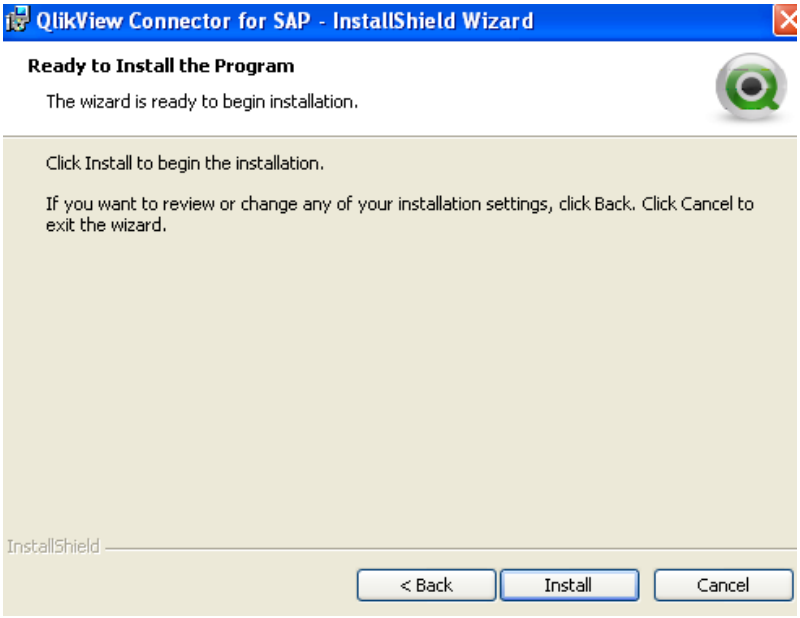
- Choose a Region.
- Click on the Next button.



- Click in the Accept radio-button.
- Click on the Next button.



- Click on the Next button.

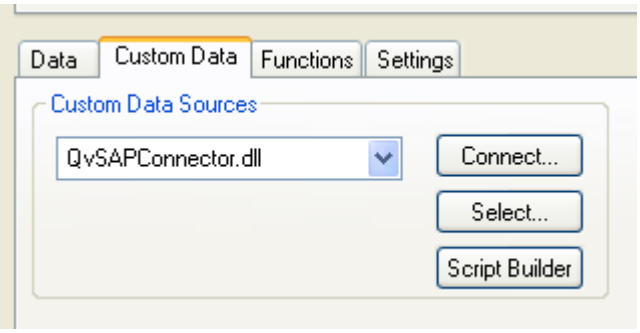


- Click on the Install button to start the installation.

- Click on the Finish button.

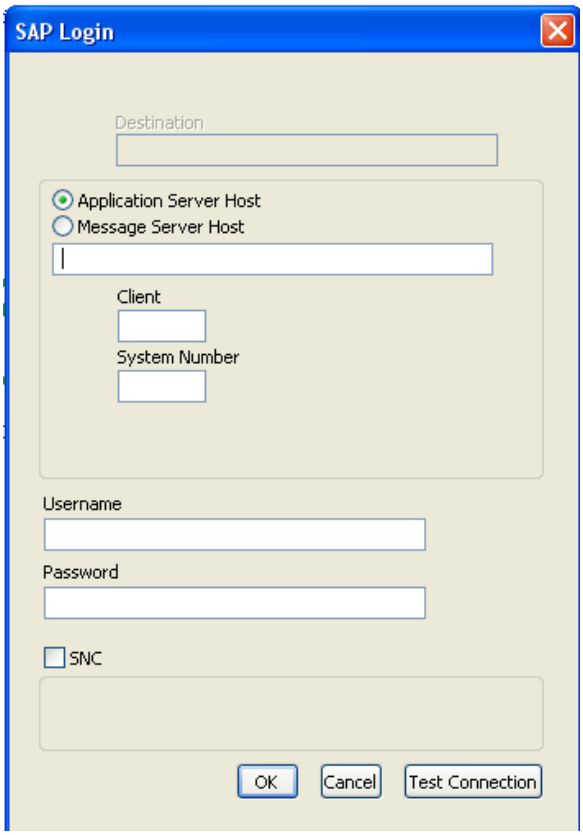
3.2.4 Using the SAP SQL Connector

Start QlikView and open the Script Editor and click on the Custom Data tab. In QlikView 10 the Data and Custom Data tabs are combined.



The QvSAPConnector.dll should be visible if everything is installed correctly.

Click on the Connect… button



In the Login window enter the Host-address, Client and System number of the target SAP system or switch to the Message Server Host alternative and enter the Message Server Address, Client, System Id and Group.

If passing through a Message Server you might need to add an entry in the C:\WINDOWS\system32\drivers\etc\services file. Add “sapmsxxx 36nn/tcp”; where “xxx” is the System id and “nn” is the System number. If it is the last line of the file you have to add new line-break after the entry.

If passing through a SAP Router, paste the router-string into the Host-address field.

As well enter the User and password of the user that should be used for this specific download. Remember that different users can get different results due to Row-based access control.

Click “Test Connection”-button to verify that all fields are filled in correctly.

After you click the “OK”-button, you get a connection-string in your Script.

There are a number of extra parameters you can add to the Connection string if needed, in normal cases the default values for these parameters should be sufficient. Separate parameters with “;” in the Connection string.

1. ConvRoutine=0/1 (default 0, 1=on) – indicates that Output Conversion routines should be used, commonly used for some fields like Material Number (MATNR).
2. KeepCasing=0/1 (default 0 off, but all newly generated Connection strings will have value 1) – indicates that lowercase characters in the SELECT statement remains lowercase. In previous versions (530 and below) the complete statement was converted to uppercase, thus preventing the use of lowercase characters in Where clause values.
3. CheckSeparator=0/1 (default=0 off) A specific combination of characters are used as field separator in the Connector. This combination might occur in a field in the database and will then cause an error. If this happens; turn this parameter On and the Connector will try with alternative character combinations. Since this will slow down performance, it should only be used when necessary.
4. Nulldate=0/1 (default 0 off, but all newly generated Connection strings will have value 1) – If On Date-type fields with value ‘00000000’ will be returned as NULL to QlikView.
5. RemoveAllBlanks=0/1 default=0 off . If used gives possibility to get “old” behavior where fields in SAP containing only Blank characters, all Blanks got trimmed. The default behavior leaves one Blank character to be able to distinguish from Null fields.
6. TargetServer=xxxxxxx; If Specified forces the Background Job to be executed on the specified Application Server. The correct name can be found in transaction SM51, name is Case-sensitive.
7. JobClass=A/B/C (default=C); Possibility to give a higher priority to the Background Job. Can be useful for small jobs that need to be reloaded often.
8. BufferPercentage=nn (default 10) defines how large part of the free Shared Memory Buffer can be used by the Job. Higher value gives better speed, but larger risks for conflicts with other jobs.
9. TimeOutBatch=n (default 600 seconds) how long the background job will wait for the Client side to fetch data.
10. TimeOutFetch=n (default 1200 seconds) - number of seconds of trying to fetch from SAP without getting any records back.
11. TimeOutStartBatch=n (default 2400 seconds) how long the Client side will wait for the Background job to get started.
12. PacketSize=n (default 20 000). Maximum number of rows the Connector will try to download for each fetch. This will be re-calculated by the Connector and might be reduced automatically depending of the actual amount of shared memory in the SAP system.
13. Log=0/1 (default 0 =off, 1 =on), if On writes log-file in Windows directory “C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\”.
14. Logpath=xxxx, will place logfiles in subfolder named “xxxx”. The folder will be created if necessary. “xxxx” can be any text-string that can be a valid part of a folder name in Windows.

15. LogFile=yyyy, will name logfile yyyydatetime-n.txt. “yyyy” can be any text-string that can be a valid part of a filename in Windows.
16. Trace=0/1 (default 0 =off, 1 =on). Turns on/off trace-function in SAP-programs. Writes trace-information into table “/QTQVC/TRACE”.

3.2.5 ScriptBuilder

This is a QlikView application that can help you find the tables you want to download from your SAP system and also to generate the Script code.

You can find the application via Start-> Programs -> QlikView or find it in C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QVSAPConnector\ScriptBuilder\.

You should start with the ReLoadSAPDD.qvw application that downloads data from the Data Dictionary of your SAP system. Since the content of the Dictionary is different for different variants and versions of SAP this is a necessary first step.

The ReLoadSAPDD.qvw creates .qvd files that can be loaded into the ScriptBuilder application. You should change the Script regarding the connection and language in this application prior to doing a reload.

The Popular Tables and Data Models sheets might refer to tables that don't exist in your version of SAP.

To use this application for several SAP systems, copy the complete folder and change the connection in the script. Redo the refresh of the Dictionary content.

Detailed instructions on the usage can be found in the applications.

3.2.6 SQL SUBSELECT Syntax

The Connector has one addition to the standard SAP OPENSQL syntax, SUBSELECT. This addition has been developed since it is not possible to do JOIN or SUBSELECT with Cluster tables. Quite often this requested for tables like BSEG or KONV to be able to do delta loads.

Please note that the sub select method is not possible to use if the ‘row based security’ concept of the QlikView SAP SQL connector is activated.

The result of the select from the main table is temporarily stored in the ABAP program in an internal table . There is a size limitation of internal tables, so try to avoid SELECT *, only select the fields necessary.

The syntax of the sub select in the QlikView script is like:

SQL SUBSELECT BUKRS BELNR GJAHR BUZEI BUZID AUGDT FROM BSEG WHERE BUKRS BELNR IN (SELECT BUKRS BELNR FROM BKPF WHERE BLDAT GE '20070101');

Only one sub select is allowed (within the parenthesis).
The sub select can have condition(s).
One or many comparison fields can be passed.
If the SELECT of the sub table returns duplicates, they are removed before selecting from the main table. So there is no need (and it does not work) to use the DISTINCT addition to the sub select.

The comparison field or fields (in bold above) has to match between main and sub select. The field names of the comparison fields does not have to be the same in the main and sub select, but the corresponding fields (of main and sub select) must have the same Data Types.

To achieve a good performance it is important to provide as many of the key fields in the main table as possible. Try to select them from the sub table. Most important is to provide the first key field (after Client).

If the subselect fails, the reason can often be found in the log for job /QTQVC/READ_DATA in transaction SM37.

Other examples of subselect statements:

SQL SUBSELECT KDATU KAWRT KBETR WAERS FROM KONV WHERE KNUMV IN (SELECT KNUMV FROM VBRK);

SQL SUBSELECT CHANGENR TABNAME TABKEY FNAME CHNGIND VALUE_NEW VALUE_OLD FROM CDPOS WHERE OBJECTCLAS OBJECTID CHANGENR IN (SELECT OBJECTCLAS OBJECTID CHANGENR FROM CDHDR WHERE CHANGENR BETWEEN '0000100000' AND '0000300000');

3.2.7 **SAP SQL Connector Log**

This is a QlikView application that analyzes the usage of the SQL Connector and shows the Security setup.

You can find the application via Start-> Programs -> QlikView or find it in C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QVSAPConnector\SAPConnectorLog\.

You should start with adding a connection string to the script and do a reload from your SAP system.

4 The QlikView SAP OLAP Connector

4.1 The SAP System

4.1.1 Prerequisites

SAP BW / Netweaver BI

- 3.0B with Support Pack 30 or higher
- 3.1 with Support Pack 24 or higher
- 3.5 with Support Pack 16 or higher
- 7.0 with Support Pack 6 or higher

4.1.2 Installation of Transports

No transports have to be installed.

4.1.3 User configuration

A role Transport is supplied that can be imported named E6DK900102. It contains a readymade role named QTQVCBWACCESS with the below content. If importing into SAP BW versions below 7.00 you will receive errors/warnings about missing objects, these can be ignored.

Or you can manually Create a Role with transaction PFCG with the below access-rights.

Add the following authorization objects:

a. S_RFC
   i. ACTVT:16
   ii. RFC_NAME:RFC1, RRT0, RSAB, RSOB, SDIFRUNTIME, SYST,OCSB, SYSU,SRTT
   iii. RFC_TYPE: FUGR
b. S_RS_AUTH
   i. BIAUTH: 0BI_ALL
c. S_RS_COMP
   i. ACTVT: 03,16, 22
   ii. RSINFOAREA: Restrict according to customer (* to access all)
   iii. RSINFOCUBE: Restrict according to customer (* to access all)
   iv. RSZCOMPID: Restrict according to customer (* to access all)
   v. RSZCOMPTYPE: Restrict according to customer (* to access all)
d. S_RS_COMP1
   i. ACTVT: 03, 16, 22
   ii. RSINFOAREA: Restrict according to customer (* to access all)
   iii. RSZCOMPID: Restrict according to customer (* to access all)
   iv. RSZCOMPTYPE: Restrict according to customer (* to access all)
   v. RSZOWNER: Restrict according to customer (* to access all)
e. S_RS_ERPT
   i. ACTVT: 03, 16, 22
   ii. RSERPTID: Restrict according to customer (* to access all)
   iii. RSZOWNER: Restrict according to customer (* to access all)
f. S_RS_HIER
   i. ACTVT: 71
   ii. RSHIENM: Restrict according to customer (* to access all)
   iii. RSIOBJNM: Restrict according to customer (* to access all)
   iv. RSVERSION: Restrict according to customer (* to access all)

g. S_RS_ICUBE
    i. ACTVT: 03
    ii. RSCUBEOBJ: DATA, DEFINITION
    iii. RSINFOAREA: Restrict according to customer (* to access all)
    iv. RSINFOCUBE: Restrict according to customer (* to access all)
h. S_RS_MPRO
    i. ACTVT: 03
    ii. RSINFOAREA: Restrict according to customer (* to access all)
    iii. RSMPRO: Restrict according to customer (* to access all)
    iv. RSMPROBJ: DATA, DEFINITION

- Create one or more download user with the above Role. You should not use the same Download User as the SQL Connector.
    - Go to transaction SU01
    - Click Create (F8)
    - The user can be named and given password according to your own preference
    - In the tab Logon data, the user has to be assigned User Type: Service or Communications
    - In the tab Roles; add the role you just created.
- If you need download users with different access-rights to cubes/queries, copy the above created Role and change the second Role according to requirements. Create a new user with the second Role assigned.

4.2 The QlikView SAP OLAP Connector Client

4.2.1 Prerequisites

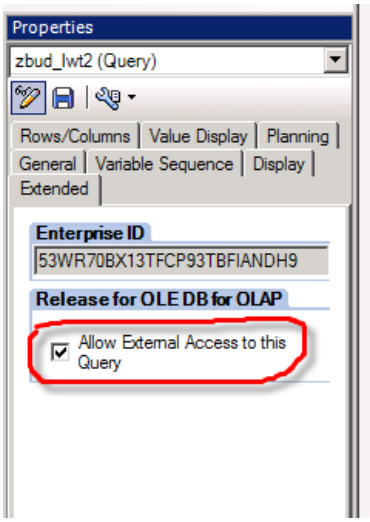
- QlikView version 8.50 build 6206 or later.
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

4.2.2 Installation of the SAP OLAP Connector Client

The OLAP Connector is included in the same installation package as the other Connectors, for installation instructions please see 3.2.

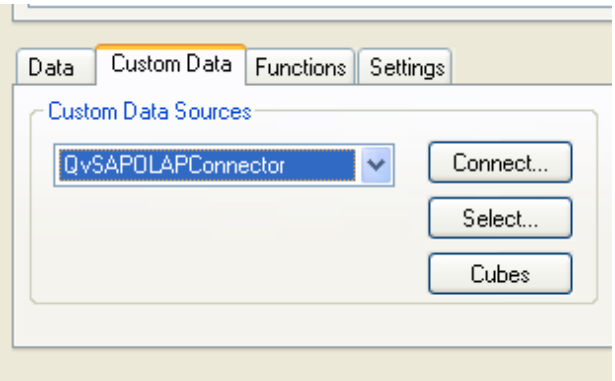
4.2.3 Accessing BEX Queries

To be able to access BEX Queries through the OLAP interfaces, they need to have the below property set in BEX Query Designer (looks slightly different between BEX versions)



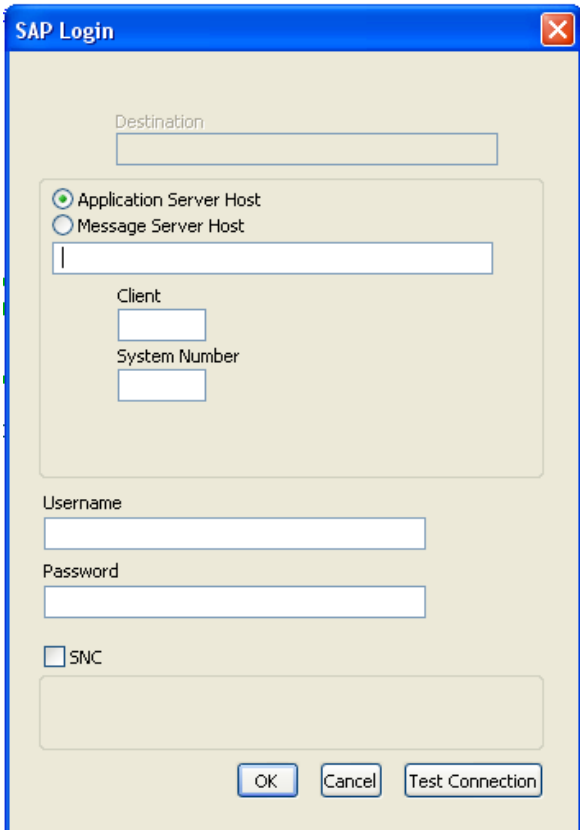
4.2.4 Using the SAP OLAP Connector

Start QlikView and open the Script Editor and click on the Custom Data tab.



The QvSAPOLAPConnector.dll should be visible if everything is installed correctly.

Click on the Connect… button



In the Login window enter the Host-address, Client and System number of the target SAP system ot switch to the Message Server Host alternative and enter the Message Server Address, Client, System Id and Group.

If passing through a Message Server you might need to add an entry in the C:\WINDOWS\system32\drivers\etc\services file. Add “sapmsxxx 36nn/tcp”; where “xxx” is the System id and “nn” is the System number. If it is the last line of the file you have to add new line-break after the entry.

If passing through a SAP Router, paste the router-string into the Host-address field.

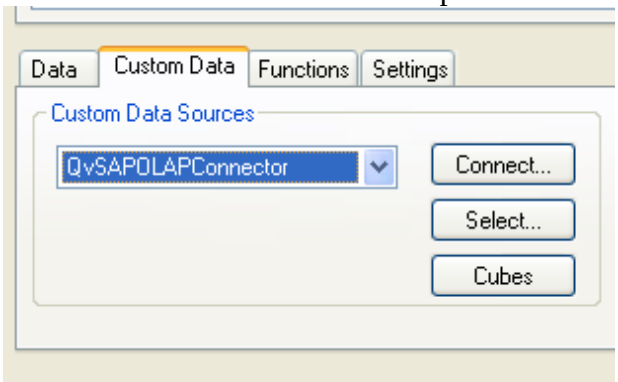
As well enter the User and password of the user that should be used for this specific download.
Click “Test Connection”-button to verify that all fields are filled in correctly.
After you click the “OK”-button, you get a connection-string in your Script.

There are a number of parameters you can add to the Connection string if needed, in normal cases the default value for the parameters should be sufficient. Separate parameters with “;” in the Connection string.

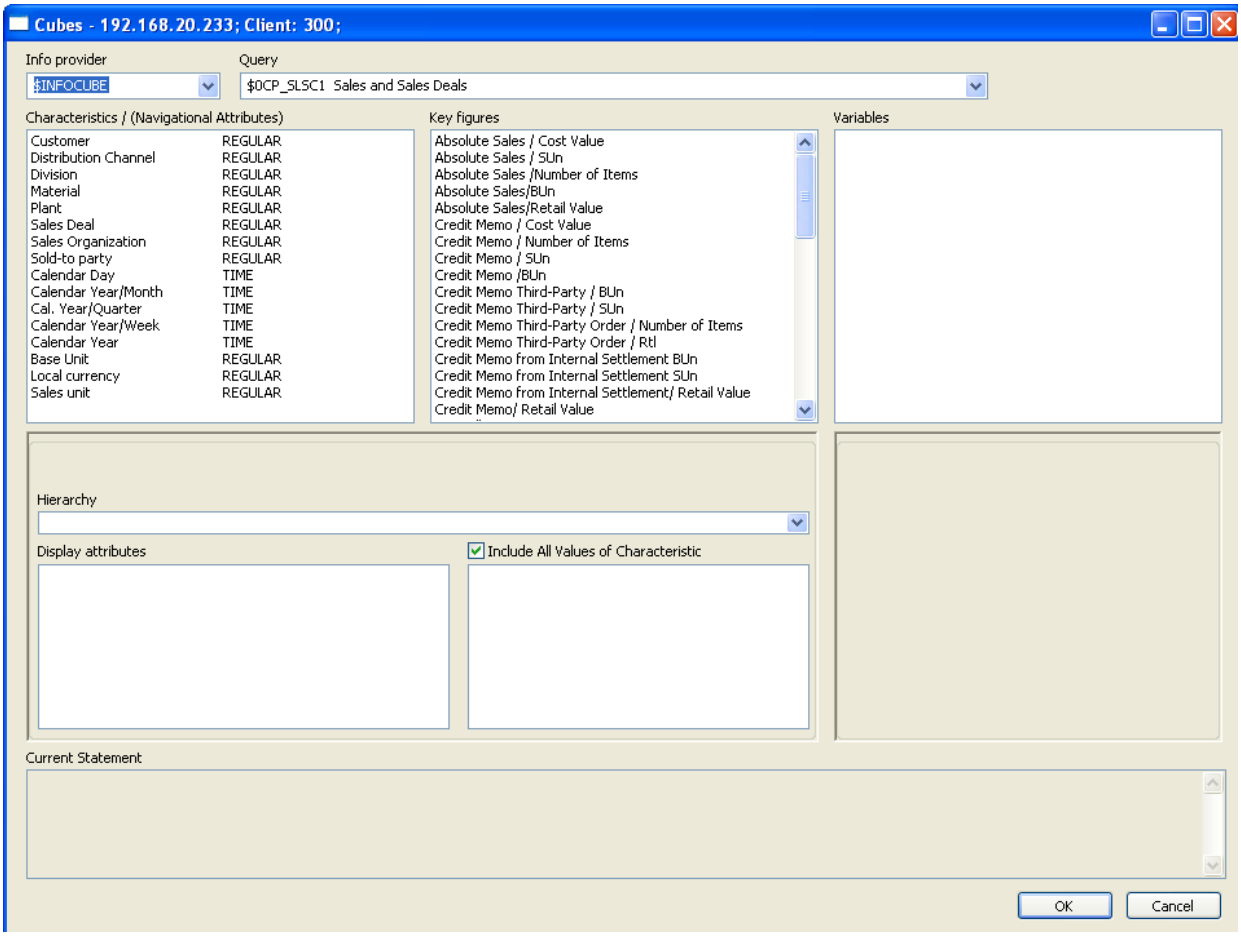
- Log=0/1 (default 1=on, 0=off) ,
  - If On a log-file will be created in Windows directory “C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\”.
- Logpath=xxxx, will place logfiles in subfolder named “xxxx”. The folder will be created if necessary. “xxxx” can be any text-string that can be a valid part of a folder name in Windows.
- LogFile=yyyy, will name logfile yyyydatetime-n.txt. “yyyy” can be any text-string that can be a valid part of a filename in Windows.
- Lang=(EN/DE…)
  - Uses by default the Logon users default language. For the available languages, see table T005. If you need to download texts in multiple languages, you have to download the relevant info-objects with separate Connection-strings.
- ConsistencyCheck=0/1 (default 1= On)
  - If On optimization is being done for maximum speed, if this fails due to inconsistent metadata, change this parameter to Off and retry.
- PartitionSize=nnnnnnn (default=4000000) increasing this will give better speed, but also increase the risk of getting dumps in the SAP system. If you are getting many dumps you should adjust this downwards. The download will in most cases recover
- MinMembersInSlicedCharacteristic=nn (default=10). Automatic slicing will only choose among Characteristics that have more members than this value. In odd cases no other suitable characteristic is available and then you might need to lower this value.

4.2.5 **Defining the Query**

- Click the Cubes-button in the Script Editor



- The first dropdown will show all cubes that have at least one Query that allow External access (see above restriction). The first item in the dropdown is $INFOCUBE, which is a top-level for all InfoCubes in the system.



- Select an InfoCube and the next dropdown will show all Queries (that allow external access) built on that cube. If you select $INFOCUBE you will get all InfoCubes.

- You have to select at least one Characteristic (or navigational Attribute) to get any rows downloaded. It is not necessary to select a Key figure.

- When selecting a Characteristic the bottom part of the window will be populated. If it has more than one Hierarchy you have to select one of them (you can only download one hierarchy / characteristic) and you can select additional Display attributes for the Characteristic. The default attribute will always be downloaded.

- If you uncheck the “Include All Values of Characteristics” checkbox, the possible values for the members of the Characteristic will be shown; selecting one will generate a slice with that value. If the checkbox is checked all members of the Characteristic will be downloaded.

- The far right box Variables will show any variables defined for the specific query. These can be Optional or Mandatory, Single-value or Ranges.

- The generated pseudo MDX statement can be manipulated manually, but this is generally to be avoided.

```
Select PseudoMDX (
Dimensions (
[0APO_PROD] (),
[0CUSTOMER] (),
[0MATERIAL] (),
[0CALWEEK] ()),
Measures (
[64381YV80FHCMZ26ZQQD1003D].[7A9LKMEDKUB9T6IKWEQ73C3PV], //Base Sales Quantity
  [64381YV80FHCMZ26ZQQD1003D].[CD68DKVB8003MAL0SAICC8R6F], //Cost of Sales
  [64381YV80FHCMZ26ZQQD1003D].[AEAIWVOIFO6I466U6IDWVT3D8], //Discount 1
  [64381YV80FHCMZ26ZQQD1003D].[7UBTSBFL7JOPKTEUVINKD4TX6], //Ind. Sales Costs
  [64381YV80FHCMZ26ZQQD1003D].[ETLOUTKELIRDGUSQNJ5CVLRS5], //Net sales
  [64381YV80FHCMZ26ZQQD1003D].[CJQ2FSM751JT7SSRRFJ0T8ICL], //Planning Status
  [64381YV80FHCMZ26ZQQD1003D].[9X0UTMFZ5VWQT208HAJSLV3QM]), //Revenue
 From (0CSAL_C02/LWT1));
//*****
```

4.2.6 Optimizing the Query

If you get dumps in the SAP system or very slow performance, there are a number of performance tricks to use.
The Connector by default suggests the “D” (direct) parameter in the script, this is only intended to be used for small amounts of data, since no slicing will be performed.

```
Select PseudoMDX D (
Dimensions (
[BUD_CTRY] (),
[BUD_LOC] (),
[BUD_PROD] (),
[BUD_SECT] (),
[0CALMONTH] ()),
Measures (
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[05N6UOUENHI2PSWMWNWV0HQS0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[6VMTYSJE733GVSGXA7WME01WO],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AN043YDNYQQUUJIIW73G7SLCX],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AYC6O2WD0MJ1CXERY8AHAKUVC]),
From (ZBUD_CUBE/ZZBUD_LWT));
```

If you remove the “D”, automatic slicing will be done. The automatic method primarily uses a time characteristic for slicing , if this fails or is missing, it goes for the largest characteristic. If this fails or is too slow, you can force the Connector to slice on a specific Characteristic by using the “S” parameter. Please check the Connector logfile for details when the job has failed.

```
Select PseudoMDX (
Dimensions (
[BUD_CTRY] (),
[BUD_LOC] S (),
[BUD_PROD] (),
[BUD_SECT] (),
[0CALMONTH] ()),
Measures (
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[05N6UOUENHI2PSWMWNWV0HQS0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[6VMTYSJE733GVSGXA7WME01WO],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AN043YDNYQQUUJIIW73G7SLCX],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AYC6O2WD0MJ1CXERY8AHAKUVC]),
From (ZBUD_CUBE/ZZBUD_LWT));
```

The Automatic performance optimizations will only work for Basic InfoCubes, for all other we suggest the below.

We recommend downloading the Characteristics and Key Figures in one load and creating separate loads for each Characteristic with its Attributes and Hierarchies. If you store these separate loads into QVD-files, merging these together is simple by using the KEY field of the Characteristic, see example below.

```
//*** Load Characteristics and Key Figures
LOAD [Country - Country Level 01 (Text)],
[Country - Country Level 01 (Key)],
//                  [Location - Location Level 01 (Text)],
                    [Location - Location Level 01 (Key)],
mid([Location - Location Level 01 (Key)],index([Location - Location Level 01 (Key)],'.[')+1) as [Location_Key],  // link
to Region hierarchy bottom level
                    [Month - Month Level 01 (Text)],
[Month - Month Level 01 (Key)],
[Orgainization - Orgainization Level 01 (Text)],
[Orgainization - Orgainization Level 01 (Key)],
//                  [Product - Product Level 01 (Text)],
                    [Product - Product Level 01 (Key)],
mid([Product - Product Level 01 (Key)],index([Product - Product Level 01 (Key)],'.[')+1) as [Product_Key],
[Sector - Sector Level 01 (Text)],
[Sector - Sector Level 01 (Key)],
//                  [Calendar Year/Month - Calendar Year/Month Level 01 (Text)],
                    [Calendar Year/Month - Calendar Year/Month Level 01 (Key)],
Factor, Cost, Budget, Revenue
FROM D:\Testing\5.2\olap\ZBUD_CUBE_Measures.qvd (qvd);

//*** Load Region  Hierarchy and Display attributes
LOAD [Location - Regions Level 01 (Text)],
[Location - Regions Level 01 (Key)],
"Location - Regions Level 01 - [1BUD_LOC]",
"Location - Regions Level 01 - [2BUD_LOC]",
"Location - Regions Level 01 - [4BUD_LOC]",
"Location - Regions Level 01 - [5BUD_LOC]",
[Location - Regions Level 02 (Text)],
[Location - Regions Level 02 (Key)],
"Location - Regions Level 02 - [1BUD_LOC]",
"Location - Regions Level 02 - [2BUD_LOC]",
"Location - Regions Level 02 - [4BUD_LOC]",
"Location - Regions Level 02 - [5BUD_LOC]",
[Location - Regions Level 03 (Text)],
[Location - Regions Level 03 (Key)],
mid([Location - Regions Level 03 (Key)],index([Location - Regions Level 03 (Key)],'.[')+1) as [Location_Key], // link to
Location
                    "Location - Regions Level 03 - [1BUD_LOC]",
"Location - Regions Level 03 - [2BUD_LOC]",
"Location - Regions Level 03 - [4BUD_LOC]",
"Location - Regions Level 03 - [5BUD_LOC]"
FROM D:\Testing\5.2\olap\ZBUD_CUBE_BUD_LOC.qvd (qvd);
LOAD [Product - Product Hierarchy Level 01 (Text)],
[Product - Product Hierarchy Level 01 (Key)],
"Product - Product Hierarchy Level 01 - [1BUD_PROD]",
"Product - Product Hierarchy Level 01 - [2BUD_PROD]",
[Product - Product Hierarchy Level 02 (Text)],
[Product - Product Hierarchy Level 02 (Key)],
mid([Product - Product Hierarchy Level 02 (Key)],index([Product - Product Hierarchy Level 02 (Key)],'.[')+1) as
[Product_Key],      // Link to Product
                    "Product - Product Hierarchy Level 02 - [1BUD_PROD]",
"Product - Product Hierarchy Level 02 - [2BUD_PROD]"
FROM D:\Testing\5.2\olap\ZBUD_CUBE_BUD_PROD.qvd (qvd);
LOAD
[Calendar Year/Month - Calendar Year/Month Level 01 (Text)],
[Calendar Year/Month - Calendar Year/Month Level 01 (Key)],  // link to Calendar Year/Month
                    "Calendar Year/Month - Calendar Year/Month Level 01 - [20CALMONTH]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20CALMONTH2]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20CALYEAR]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20DATEFROM]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20DATETO]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20NUMDAY]",
"Calendar Year/Month - Calendar Year/Month Level 01 - [20NUMWDAY]"
FROM D:\Testing\5.2\olap\ZBUD_CUBE_0CALMONTH.qvd (qvd);
```

4.2.7 **Delta loads**

A special template, “OLAP_delta.qvw”, has been produced as an example of how Delta loads can be done. The procedure is described in a separate document, “OLAPDeltaLoad.doc”. Both can be downloaded from QlikCommunity →SAP User Group→Documents Section.

5 The QlikView SAP DSO/ODS Connector

5.1 The SAP System

5.1.1 Prerequisites

SAP BW / Netweaver BI

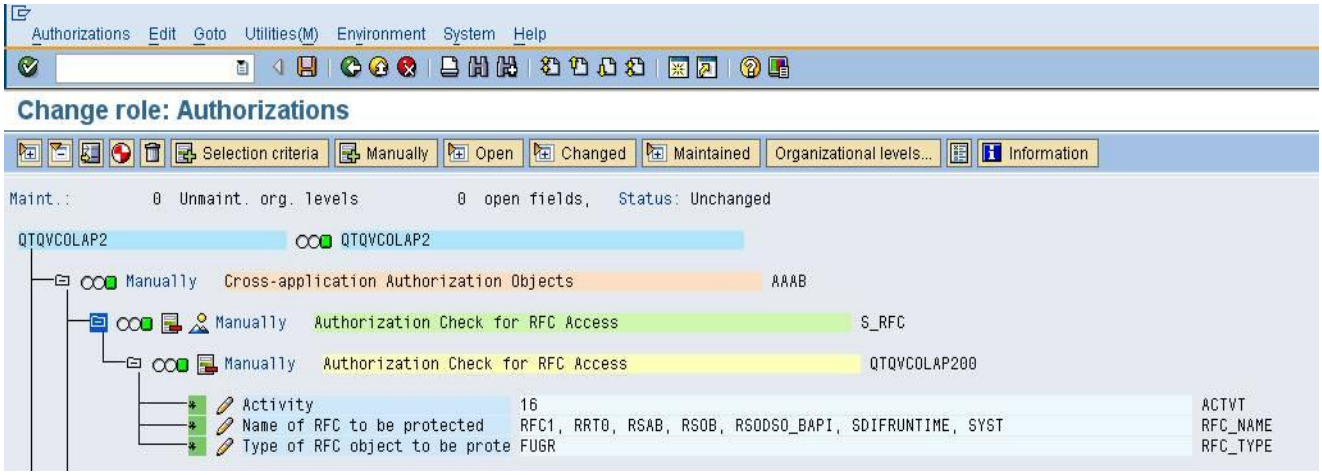
- 3.0B with Support Pack 30 or higher
- 3.1 with Support Pack 24 or higher
- 3.5 with Support Pack 16 or higher
- 7.0 with Support Pack 6 or higher

5.1.2 Installation of Transports

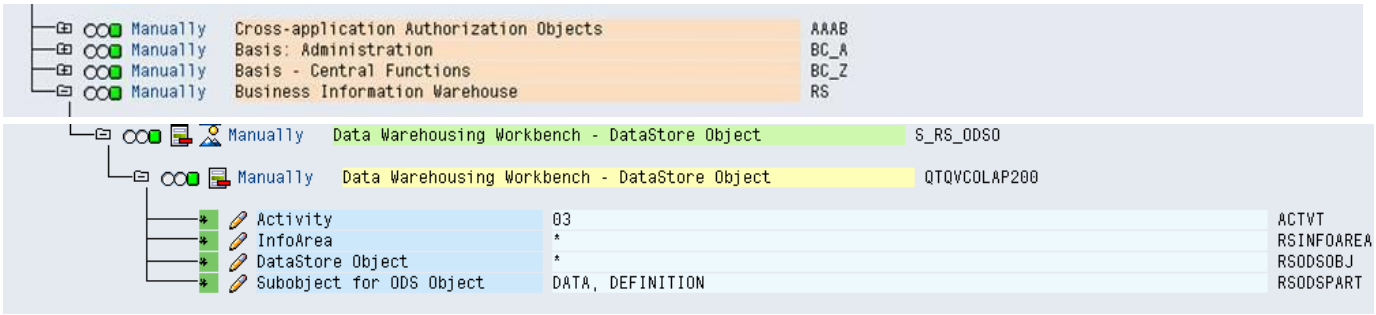
No transports have to be installed.

5.1.3 User configuration

- Use the same Role as defined for the OLAP Connector or create Role manually as below.
- 2 additional function groups : RSAB and RSODSO_BAPI



and the authorization object S_RS_ODSO with DATA and DEFINITION



- Use the same Download User as the OLAP Connector.

5.2 The QlikView SAP DSO/ODS Connector Client

5.2.1 Prerequisites

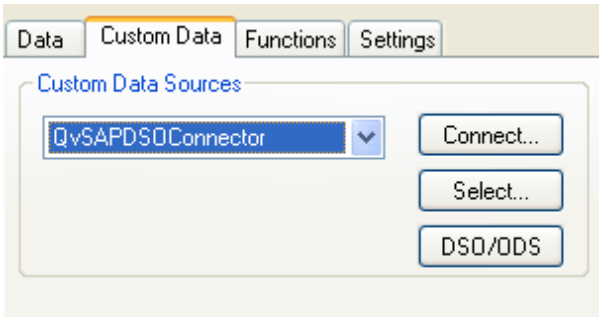
- QlikView version 8.50 build 6206 or later.
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

5.2.2 Installation of the SAP DSO/ODS Connector Client

The DSO/ODS Connector is included in the same installation package as the SQL Connector, for installation instructions please see 3.2.2.

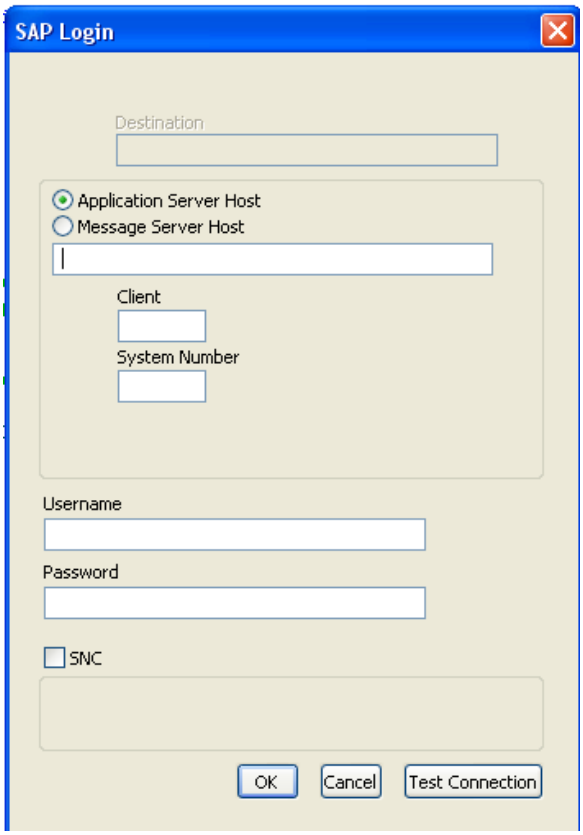
5.2.3 Using the SAP DSO/ODS Connector

Start QlikView and open the Script Editor and click on the Custom Data tab.



The QvSAPDSOConnector.dll should be visible if everything is installed correctly.

Click on the Connect… button



In the Login window enter the Host-address, Client and System number of the target SAP system ot switch to the Message Server Host alternative and enter the Message Server Address, Client, System Id and Group.

If passing through a Message Server you might need to add an entry in the C:\WINDOWS\system32\drivers\etc\services file. Add “sapmsxxx 36nn/tcp”; where “xxx” is the System id and “nn” is the System number. If it is the last line of the file you have to add new line-break after the entry.

If passing through a SAP Router, paste the router-string into the Host-address field.

As well enter the User and password of the user that should be used for this specific download.

Click “Test Connection”-button to verify that all fields are filled in correctly.

After you click the “OK”-button, you get a connection-string in your Script.

.

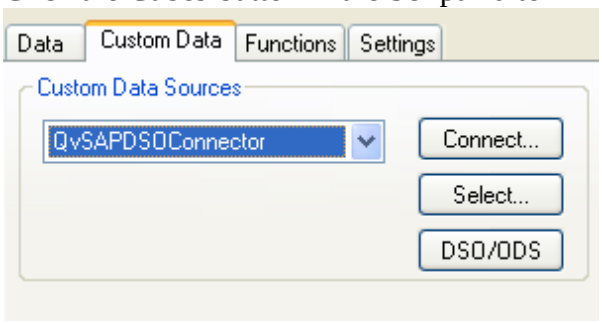
There are 6 parameters you can add to the Connection string if needed, in normal cases the default value for the parameters should be sufficient. Separate parameters with “;” in the Connection string.

- ODSMAXROWS, this is by default 10 000 000 records. This is to avoid huge memory consumption, which is the problem with this BAPI. The Connector will stop reading data when reaching this number and give an error message. Be careful when reading very large tables, since memory consumption might get high.

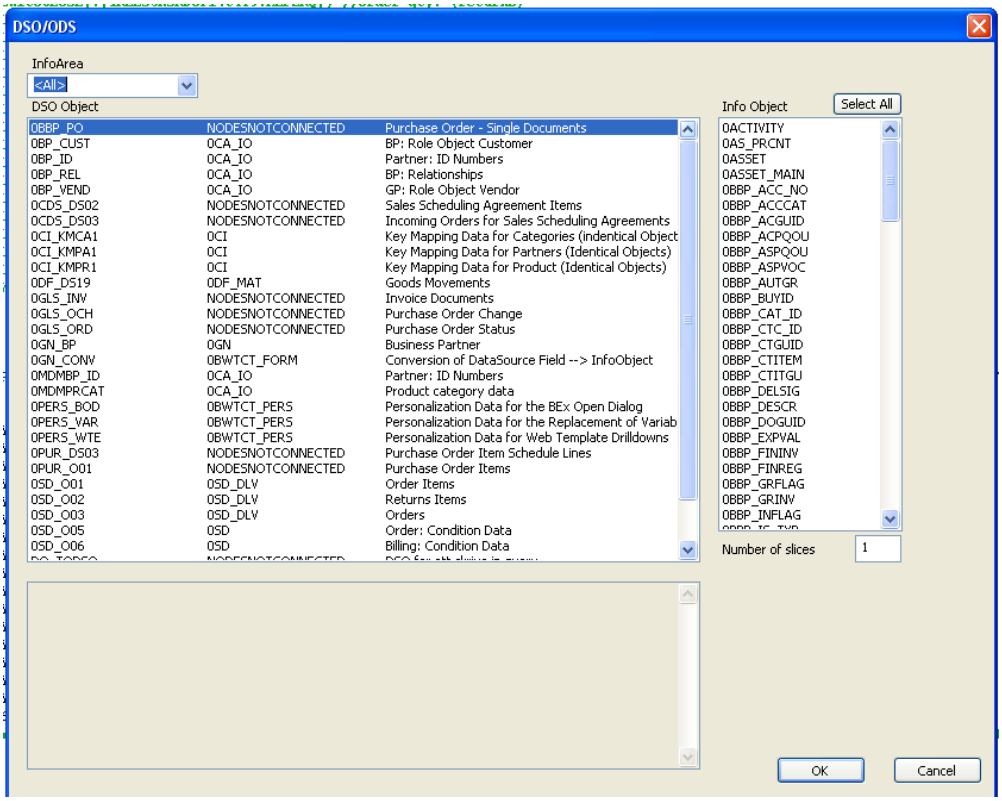
- Log=0/1 (default 1=on, 0=off) ,
  - If On a log-file will be created in Windows directory “C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\”.
- Logpath=xxxx, will place logfiles in subfolder named “xxxx”. The folder will be created if necessary. “xxxx” can be any text-string that can be a valid part of a folder name in Windows.
- LogFile=yyyy, will name logfile yyyydatetime-n.txt. “yyyy” can be any text-string that can be a valid part of a filename in Windows.
- Lang=(EN/DE…)
  - Uses by default the Logon users default language. For the available languages, see table T005. If you need to download texts in multiple languages, you have to download the relevant info-objects with separate Connection-strings.

5.2.4 Defining the Query

- Click the Cubes-button in the Script Editor



- The first dropdown will show all InfoAreas, if you want to show only DSO’s for a specific areas, select the actual InfoArea. Select a DSO object in the listbox below and you will see the available fields.



- Select the fields and the script will appear in the bottom box.

- To reduce the memory need we have added a SLICE functionality, which slices by columns, since row slicing is not possible. The Script generated will store the result into separate QVD-files which has to be merged later on. All QVD-files have a common key field to make the merge simple.

- Unfortunately no Navigational attributes are available.

- You can manually add a WHERE clause with the following syntax:

  WHERE
  ColumnName1 sign option value,
  ColumnName2 sign option value1 value2

  No display attributes or key characteristics are allowed as columns in the Where-clause.
  The following values are valid in the SIGN field:
  - 'E' = exclude
  - 'I' = include

  The following values are valid in the OPTION field:
  - 'EQ' = equal to

- 'GE' = greater than or equal to
- 'LE' = less than or equal to
- 'GT' = greater than
- 'LT' = less than
- 'NE' = not equal to
- 'CP' = contains
- 'BT' = lies between (upper and lower limits)

Conditions for the same column (regardless of the number and sequence in the table) are treated as "OR" operations. Conditions for different columns are treated as "AND" operations.

Example:

```
from 0SAL_DS01
where 0DIVISION I EQ 01;


or

WHERE  0CREATEDON I BT 20100101 20101231
```

6 The QlikView SAP Query Connector

6.1 The SAP System

6.1.1 Prerequisites

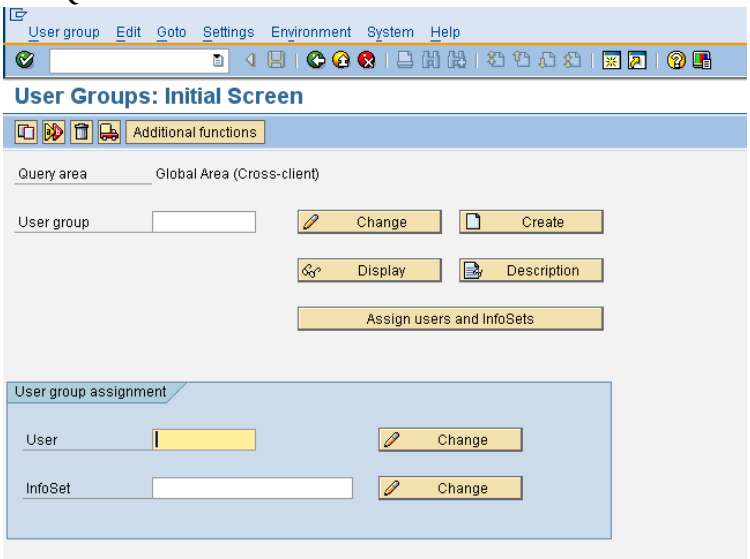
See SQL Connector.

6.1.2 Installation of Transports

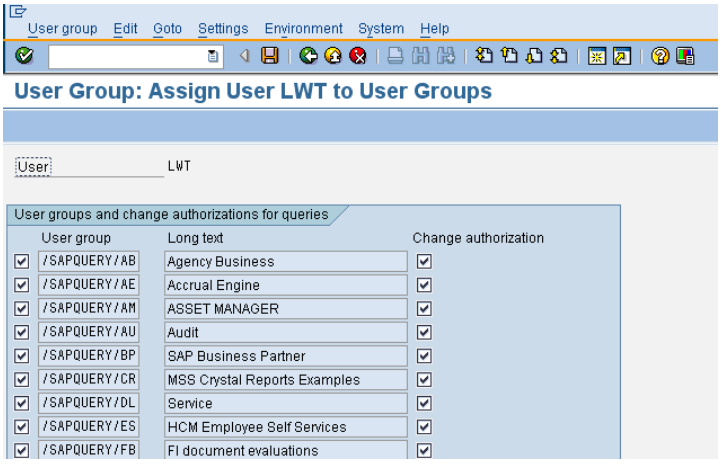
See SQL Connector.

6.1.3 User configuration

Use the same User as defined for the SQL Connector. You have to give this User access to the relevant SAP Query User Groups by using transaction SQ03. All Queries in the User Groups you assign will be available via the Query Connector. For some Queries additional authorization might be needed, this should then be added to an additional Role e.g. QTQVCACCESS_QUERY. The Connector log should in most cases reveal which authorization is missing; otherwise the Infoset definition and/or Logical Database definition have to be checked.
In SQ03 enter the User Id in the User field and click the Change button.



Checkmark all the User Groups the Download user should have access to and click the Save button.



6.2 The QlikView SAP Query Connector Client

6.2.1 Prerequisites

- QlikView version 8.50 build 6206 or later.
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

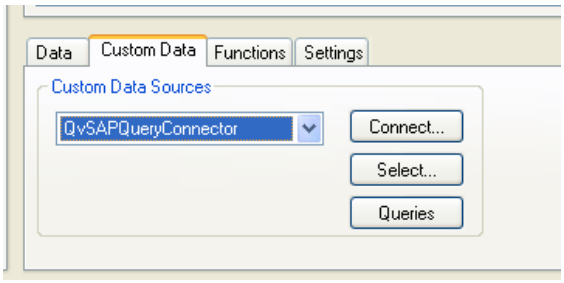
6.2.2 Installation of the SAP Query Connector Client

The Query Connector is included in the same installation package as the SQL Connector, for installation instructions please see 3.2.2.

6.2.3 Using the SAP Query Connector

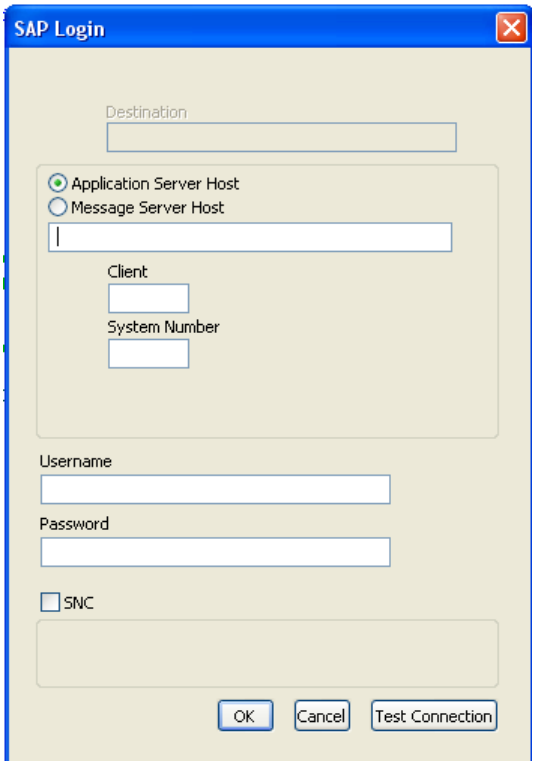
It is strongly recommended that you first test the Query in transaction SQ01 prior to testing it via QlikView. If the Query is prompting for variable input, you have to create a variant of the Query with pre-defined values for these variables.

Start QlikView and open the Script Editor and click on the Custom Data tab.



The QvSAPQueryConnector.dll should be visible if everything is installed correctly.

Click on the Connect… button



In the Login window enter the Host-address, Client and System number of the target SAP system ot switch to the Message Server Host alternative and enter the Message Server Address, Client, System Id and Group.

If passing through a Message Server you might need to add an entry in the C:\WINDOWS\system32\drivers\etc\services file. Add “sapmsxxx 36nn/tcp”; where “xxx” is the System id and “nn” is the System number. If it is the last line of the file you have to add new line-break after the entry.

If passing through a SAP Router, paste the router-string into the Host-address field.

As well enter the User and password of the user that should be used for this specific download.

Click “Test Connection”-button to verify that all fields are filled in correctly.

After you click the “OK”-button, you get a connection-string in your Script.

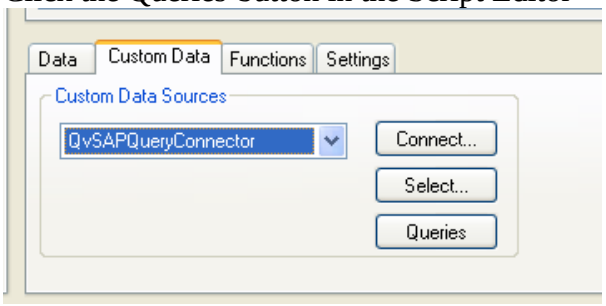
There are 4 parameters you can add to the Connection string if needed, in normal cases the default value for the parameters should be sufficient. Separate parameters with “;” in the Connection string.

- Log=0/1 (default 1=on, 0=off) ,
    - If On a log-file will be created in Windows directory “C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\”.
- Logpath=xxxx, will place logfiles in subfolder named “xxxx”. The folder will be created if necessary. “xxxx” can be any text-string that can be a valid part of a folder name in Windows.
- LogFile=yyyy, will name logfile yyyydatetime-n.txt. “yyyy” can be any text-string that can be a valid part of a filename in Windows.
- Lang=(EN/DE…)

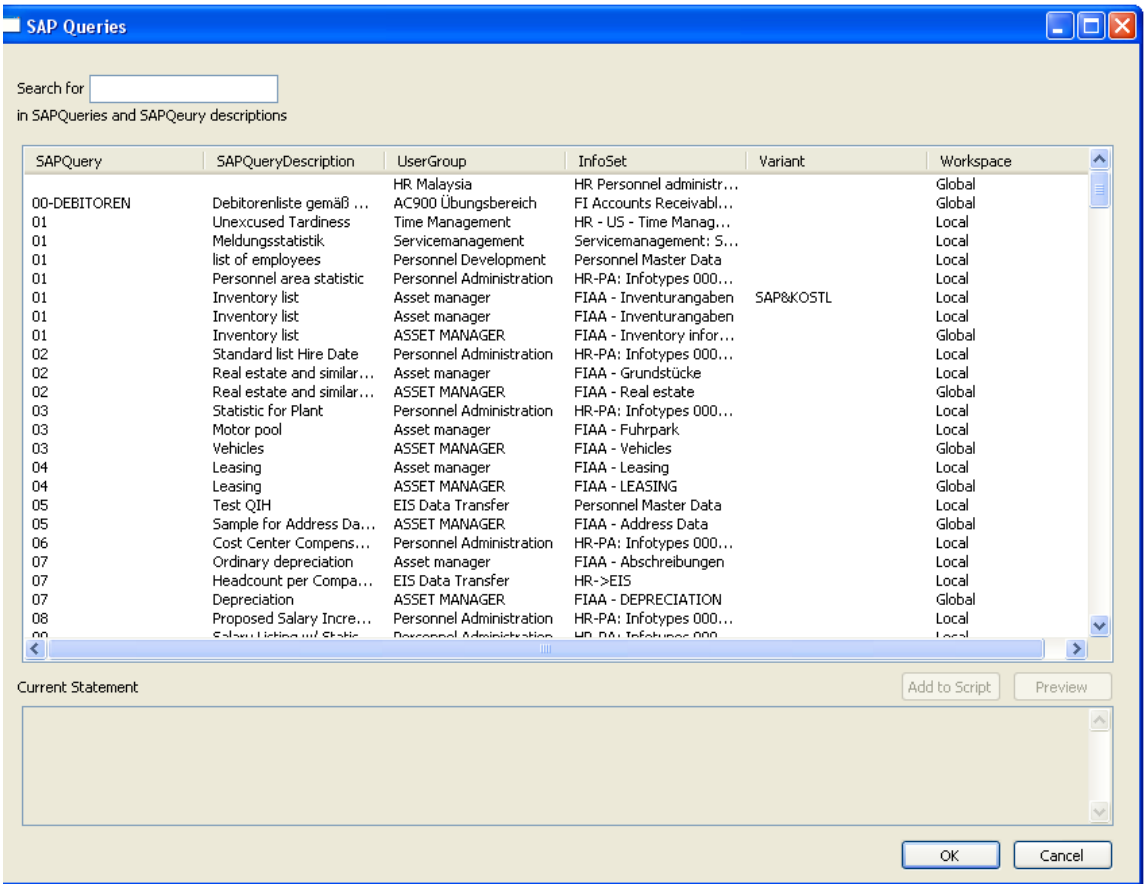
- Uses by default the Logon users default language. For the available languages, see table T005. If you need to download texts in multiple languages, you have to download the relevant info-objects with separate Connection-strings.

6.2.4 Defining the Query

- Click the Queries-button in the Script Editor



- The window will show all SAP Queries you have access to, you can search in the Query name and Query Description by using the Search field. You can also re-sort the list by clicking on the headers.



- Select a Query and either click the Preview button or the Add to Script button.
- When you click the OK button you will return to the Script dialog with the generated script.

7 The QlikView SAP Report Connector

7.1 The SAP System

7.1.1 Prerequisites

See SAP SQL Connector.

7.1.2 Installation of Transports

See installation of the SAP SQL Connector.

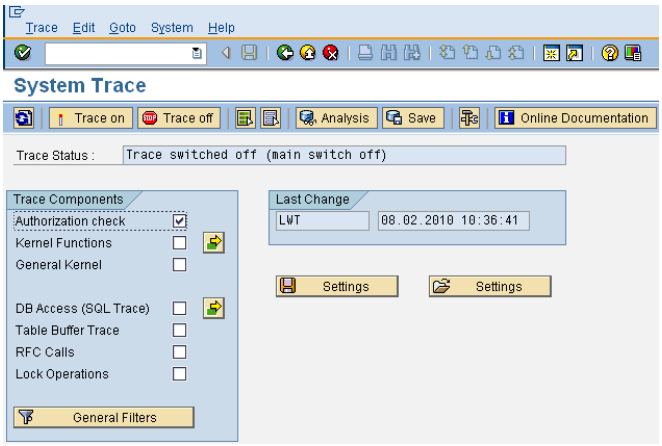
7.1.3 User configuration

You can use the same User as defined for the SQL Connector. You have to give this User access to the relevant SAP Reports; this is **not** included in the QTQVCACCESS Role.
Each Report can check any number of Authorization objects and it is not obvious which objects are being used.

The pre-defined Role (QTQVCACCESS) for QlikView Connector doesn't cover the Authorization objects that could be used by the Reports you intend to be executing.

If you don't want to add very wide authorization Roles to the Download User, you have to do an Authorization Trace on each report you intend to use.
You do this by following the below steps:

- Start transaction ST01 and start Authorization Trace:



- Run the Report with a User that you know have sufficient access.
- From the result you can see which Authorization objects were used and add these to the Download User.
- The Where-Used analysis can be done from Transaction SU03.

If you instead choose to add existing Roles to the Download User, you can do a Where-Used analysis on the Objects to figure out appropriate Roles to add. You should in this case change the User Type from Service to Communication to avoid this User being used for log on with SAPGui.

7.2 The QlikView SAP Report Connector Client

7.2.1 Prerequisites

- QlikView version 8.50 build 6206 or later.
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

7.2.2 Installation of the SAP Report Connector Client

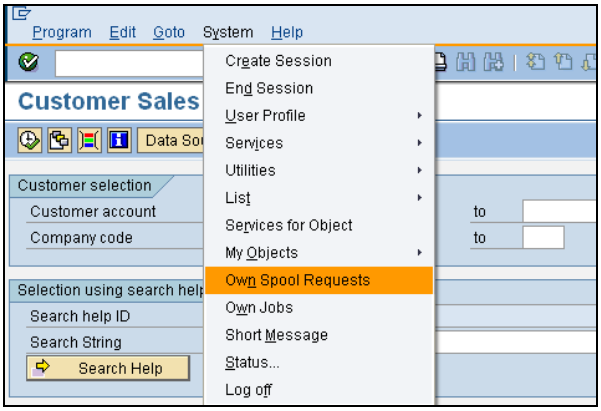
See installation of the SAP SQL Connector.

7.2.3 Preparing the SAP Report

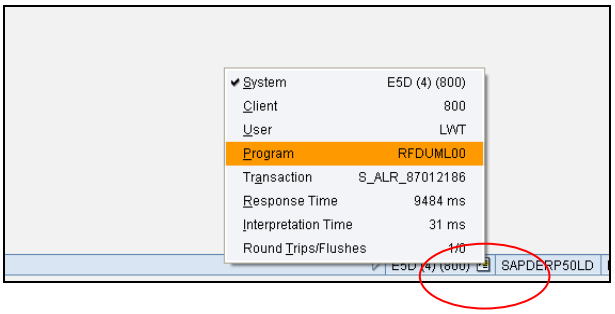
The QlikView SAP Report Connector will not be able to handle 100% of the Reports in your SAP system. Some reports will have too complex layout, some will not create a Spool file (which is the output format the Connector retrieves), some will be too large (maximum width 1000 characters).

It is strongly recommended that you first test the Report in SAPGui prior to testing it via QlikView.

If it doesn't create a spool file it will not be executable through the Connector. You can check this by choosing "Execute and Print" or Execute in Background" when running the report and afterwards checking the Spool queue:



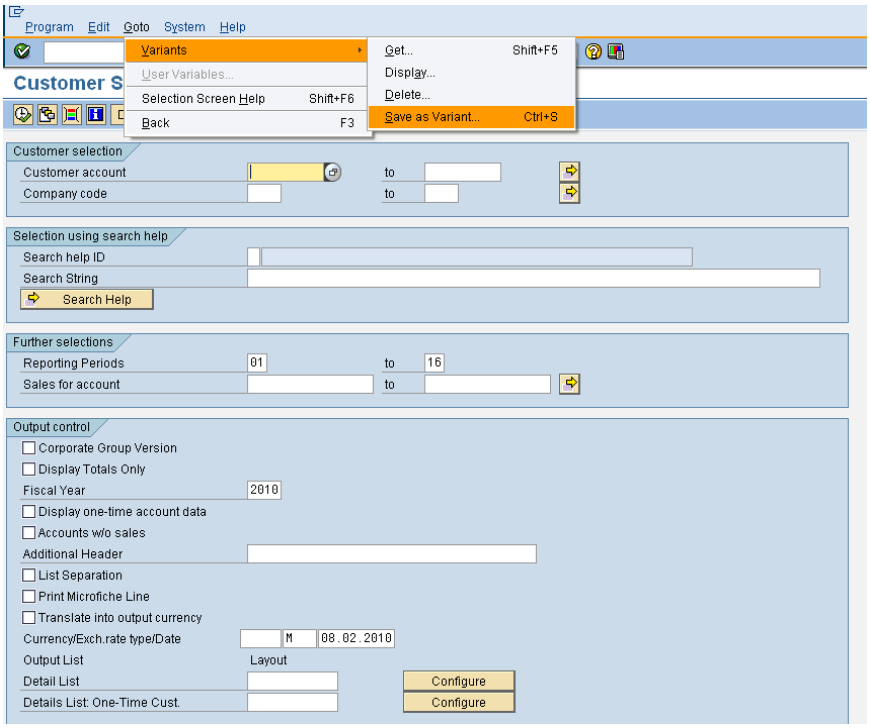
If you don't know the Report program name, only the Transaction Code, you can find this by clicking System Icon at bottom line of the SAPGui Window according to below which will show the Program name in the highlighted line.



You can sometimes run the Report without a Variant but in most cases a Variant is needed to pre-fill mandatory variables, since these can't be added through the Report Connector.

It could also be wise to create a variant with limited amount of pages to use during development, if it is a long-running report.

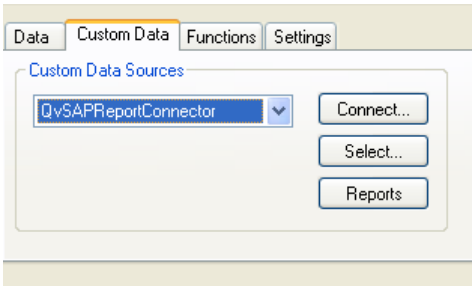
You create a variant when you have entered the desired variable values by Saving it according to image below:



You should always test run the Report variant in SAPGui prior to running via the Report Connector.

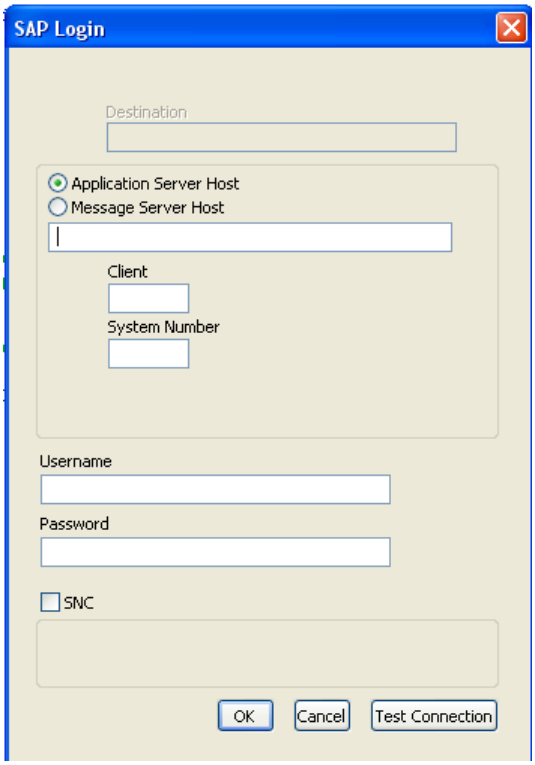
7.2.4 Using the SAP Report Connector

Start QlikView and open the Script Editor and click on the Custom Data tab.



The QvSAPQueryConnector.dll should be visible if everything is installed correctly.

Click on the Connect… button



In the Login window enter the Host-address, Client and System number of the target SAP system ot switch to the Message Server Host alternative and enter the Message Server Address, Client, System Id and Group.

If passing through a Message Server you might need to add an entry in the C:\WINDOWS\system32\drivers\etc\services file. Add “sapmsxxx 33nn/tcp”; where “xxx” is the System id and “nn” is the System number. If it is the last line of the file you have to add new line-break after the entry.

If passing through a SAP Router, paste the router-string into the Host-address field.

As well enter the User and password of the user that should be used for this specific download.

Click “Test Connection”-button to verify that all fields are filled in correctly.

After you click the “OK”-button, you get a connection-string in your Script.

There are 4 parameters you can add to the Connection string if needed, in normal cases the default value for the parameters should be sufficient. Separate parameters with “;” in the Connection string.

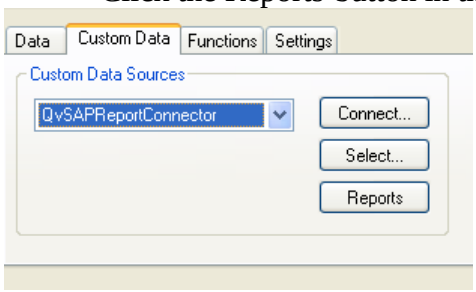
- Log=0/1 (default 1=on, 0=off) ,
    - If On a log-file will be created in Windows directory “C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\”.
- Logpath=xxxx, will place logfiles in subfolder named “xxxx”. The folder will be created if necessary. “xxxx” can be any text-string that can be a valid part of a folder name in Windows.
- LogFile=yyyy, will name logfile yyyydatetime-n.txt. “yyyy” can be any text-string that can be a valid part of a filename in Windows.
- Lang=(EN/DE…)

- Uses by default the Logon users default language. For the available languages, see table T005. If you need to download texts in multiple languages, you have to download the relevant info-objects with separate Connection-strings.

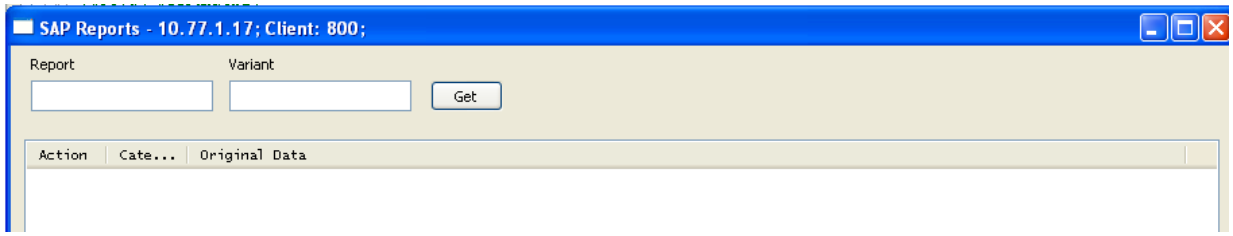
7.2.5 Defining the Report

The Report Connector tries to retrieve a table from the spool file that can be imported into QlikView. Since Reports can look very different the QlikView Developer has to assist the Connector by defining how the spool file should be interpreted.

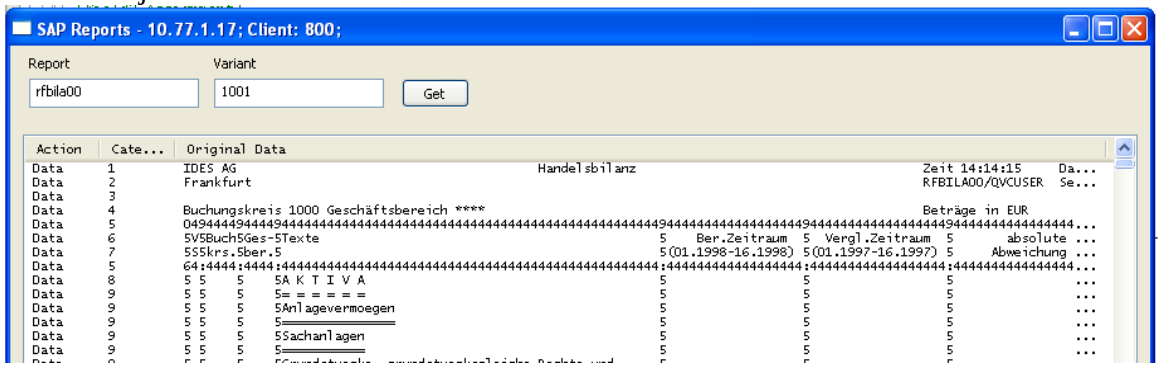
- Click the Reports-button in the Script Editor



- Key in the Report Program Name and eventually a Variant. No Search is possible; you must know the Report Name and should have tested it first in SAPGui according to above procedure.



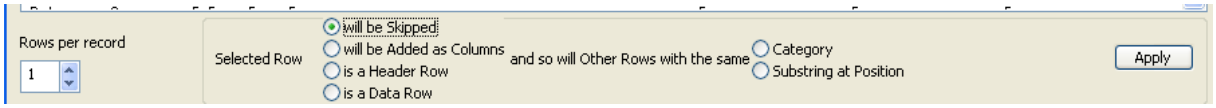
- Click the Get button and the Report will be executed and shown in the 2 areas major areas of the Window. The top Area is where you define which rows will be skipped or considered as Data lines or Header lines. You can also define that sub-header lines should be added as Columns to the major table.



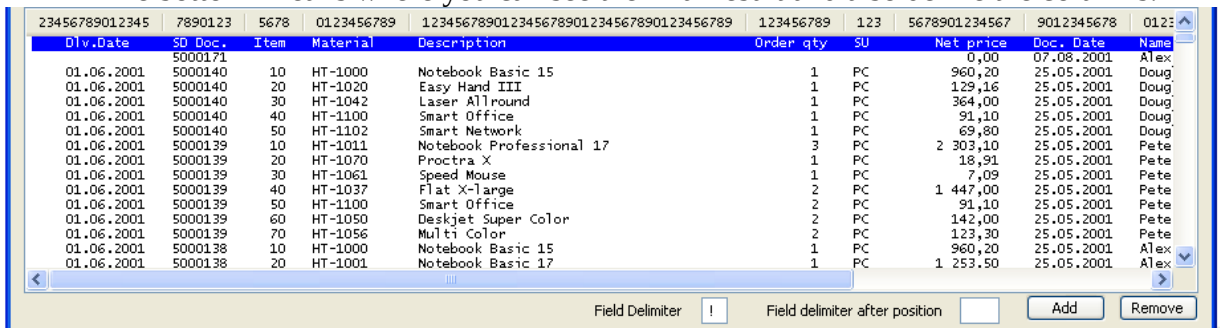
  - The Action column by default shows all lines as Data lines, this you change by selecting a line and using the options below:
  - The Category column can sometimes be used as an identifier for lines that should be treated in the same way (Skipped, Header or Added as Column) , but be sure to scroll

through the whole list to make sure all lines that have the same Category can be treated in the same way.

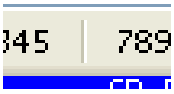
- If you can't use Category, you have to look for Substring values in certain positions that characterizes the type of line.
- The Add as Column can be used when there are Data Values in Header lines that you would like to have in the Table. In the Above example Line 1 contains the Company Name !IDES AG", this probably changes to other Company Names in subsequent pages. By using the "Add as columns" function and the Category 1, these lines will be added as an extra column to the Table.



- The bottom Area is where you can see the final result and also define the columns.



Dlv.Date	SD Doc.	Item	Material	Description	Order qty	SU	Net price	Doc. Date	Name
	5000171						0,00	07.08.2001	Alex
01.06.2001	5000140	10	HT-1000	Notebook Basic 15	1	PC	960,20	25.05.2001	Doug
01.06.2001	5000140	20	HT-1020	Easy Hand III	1	PC	129,16	25.05.2001	Doug
01.06.2001	5000140	30	HT-1042	Laser Allround	1	PC	364,00	25.05.2001	Doug
01.06.2001	5000140	40	HT-1100	Smart Office	1	PC	91,10	25.05.2001	Doug
01.06.2001	5000140	50	HT-1102	Smart Network	1	PC	69,80	25.05.2001	Doug
01.06.2001	5000139	10	HT-1011	Notebook Professional 17	3	PC	2 303,10	25.05.2001	Pete
01.06.2001	5000139	20	HT-1070	Proctra X	1	PC	18,91	25.05.2001	Pete
01.06.2001	5000139	30	HT-1061	Speed Mouse	1	PC	7,09	25.05.2001	Pete
01.06.2001	5000139	40	HT-1037	Flat X-large	2	PC	1 447,00	25.05.2001	Pete
01.06.2001	5000139	50	HT-1100	Smart Office	2	PC	91,10	25.05.2001	Pete
01.06.2001	5000139	60	HT-1050	Deskjet Super Color	2	PC	142,00	25.05.2001	Pete
01.06.2001	5000139	70	HT-1056	Multi Color	2	PC	123,30	25.05.2001	Pete
01.06.2001	5000138	10	HT-1000	Notebook Basic 15	1	PC	960,20	25.05.2001	Alex
01.06.2001	5000138	20	HT-1001	Notebook Basic 17	1	PC	1 253,50	25.05.2001	Alex

- You can use the field delimiter field only if the column position has the same value for **all** rows, usually an "!" character. In the Ruler line it will automatically show that a separator has been found. 

- If a field separator cannot be found, you will have to manually add the positions you want to have the field separators in, by using the "Field delimiter after position" field.
- When you click the OK button you will return to the Script dialog with the generated script.

Since all data comes from the spool file, data types are not known for the Connector and thus it cannot modify fields according to data type as the other Connectors are able to. This implies that negative field values will be shown as in SAP with the minus sign at the end of the field (e.g. 12256-) and date fields will not be recognized by QlikView as dates. You can easily change this with scripting in the Load statement.

- Moving minus sign to the front of the field:

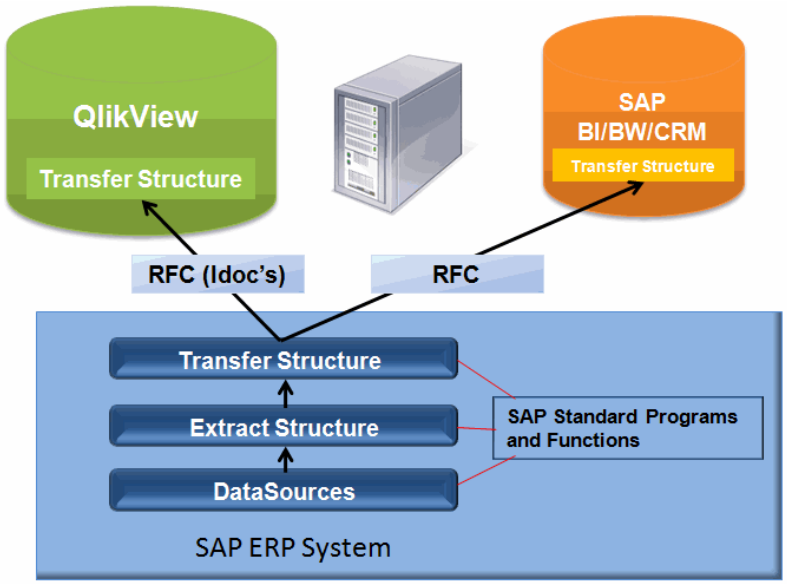
```
if (right([Field1_Amount],1)='-', (left([Field1_Amount],(len([Field1_Amount])-1)))*-1
// else
  , replace([Field1_Amount],',','.'))
// end if
    as Local_Curr,
```

- Make date field recognizable as date:

```
date#([Field2_Doc. Date],'DD.MM.YYYY') as [Field2_Doc. Date],
```

8 The QlikView SAP Extractor Connector

In the SAP ERP system there are pre-defined data sources available to be used for BI systems.
QlikView is using these data sources and the standard SAP extract method. This means that the process for the QlikView interface and the methods used namely Rfc and Idoc's are the standard processes used for BI/BW and other SAP BI products



8.1 The SAP System

8.1.1 Prerequisites

- SAP BASIS system 620 or later(R/3 4.7 or later)
- Data transport (Data extraction)
- Access transport (User profile)
- SAP Basis knowledge (Implementation of transports)
- BW 350 or later
- BW knowledge like SAP education - BW350-BI Data Acquisition

8.1.2 Installation of Transports

See SQL Connector.

8.1.3 User configuration for SAP BASIS system 6.10, 6.20, 6.40 and 7.00

After the transports are in the system, the following steps have to be completed:

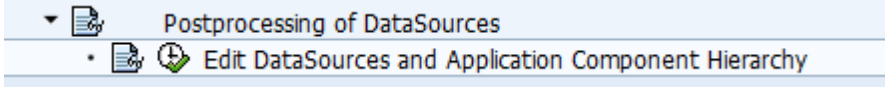
(A new role is created specifically for the Extractor connector – QTQVCEXTRACTOR, QTQVCEXTSETUP and QTQVCEXTRADM)

1) Create one or more Users
   a. Go to transaction SU01
   b. Click Create (F8)
   c. The user can be named and given password according to your own preference
   d. In the tab Logon data, the user has to be assigned User Type: Service
   e. In the tab Roles add the Role QTQVCACCESS.
   f. In the tab roles add the Role QTQVCEXTRACTOR
   g. Click Save
2) If the installation is an upgrade from a previous version and the Roles QTQVCACCESS/QVEXTRACTOR have been updated, you need to update all users assigned to the Role.
   a. Go to transaction PFCG
   b. Enter Role name "QTQVCACCESS" - Click Change Role
   c. In the User tab - Enter the name of the User(s) created above
   d. Click the "User comparison" button
   e. Click the "Complete comparison" button
   f. Click Save

8.1.4 SAP Side Extractor Setup

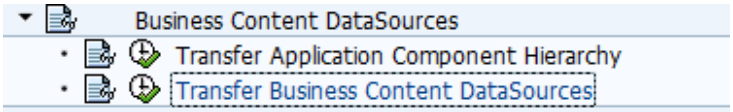
A series of standard extractors are delivered within SAP for data transfer to the SAP Business Information Warehouse. **If BI / BW isn't used you may need to activate a series of process within SAP.**

1. In some cases you have to set it up from the customizing side, which you will reach through transaction SPRO and in the menu 'Activate Business Functions'.
2. Go to transaction SBIW to transfer and activate the BI/BW DataSources

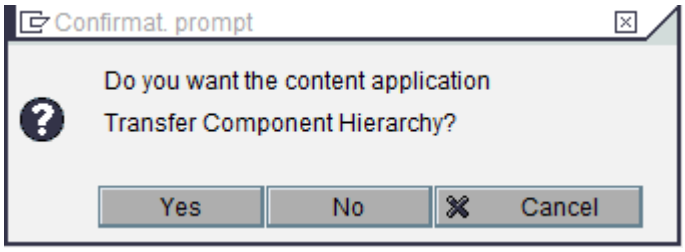


Check if you have the tree hierarchy and data sources activated

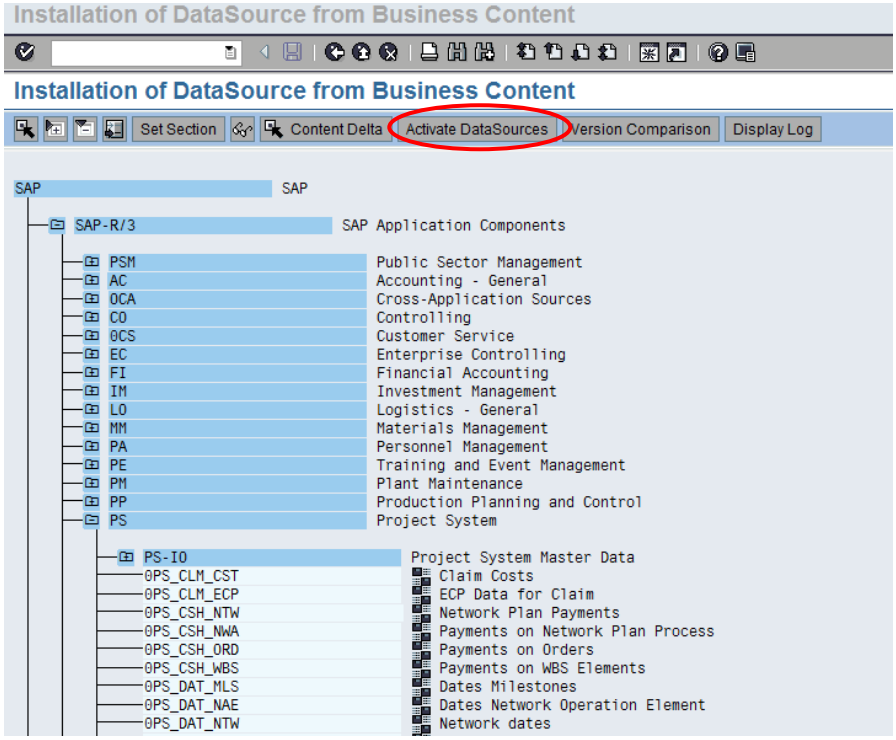
3. If this isn't the case, you have to first transfer the Application Component Hierarchy and then transfer the Business Content Data Sources.



- Transfer Application Component Hierarchy



- Transfer Business Content
  - You'll start by activating the tree hierarchy and then you activate each data source to be used.

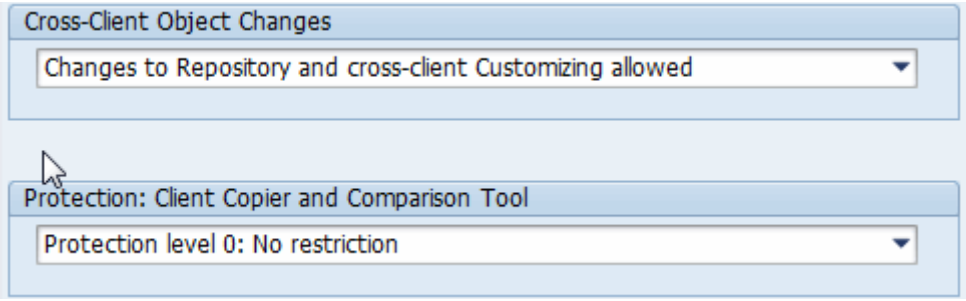


8.1.5 QlikView SAP Extractor Setup

Configuration changes to the clients are required to execute the processes involved the QlikView Extractor (QTQVC/EXTRACTOR_ADM). The SAP Client is required to have "changes to repository and cross-client customising allowed".

The SAP Client must be set to “Open” when processing the administration set-up.

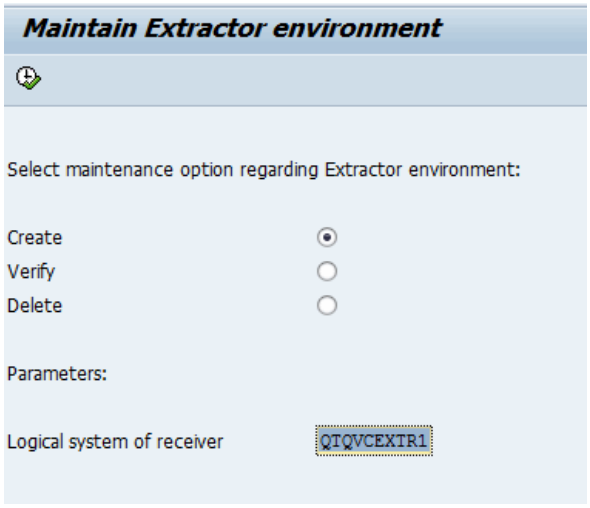
1. Go to transaction SCC4 and select client and change the system to reflect the options below



8.1.6 QlikView Extractor Administration Set-up

To initiate the capabilities of the QlikView Extractor Connector a one-time task is required to create a logical system to receive the generated Idocs/RFC used in the extractor process.

1. Go to transaction /n/QTQVC/EXTRACTOR_ADM



- Option Create:
  Creates Logical system of receiver. See transaction SALE.
  - Creates RFC-Connection (same name as Logical system)..
  - Creates Partner profile of type LS (same name as Logical system).
  - Creates Basic IDoc type for data transfer. The name is hardcoded like ZSQAQTQVCEXTR1.

- Option Verify:
  - Verifies that all necessary components of the Extractor environment are configured.

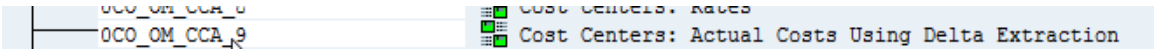
- Option Delete:
  Deletion of all components of the Extractor environment.

Don't forget to close SAP client after this set-up.

8.1.7 Activate/Generate Data Sources/Extractors

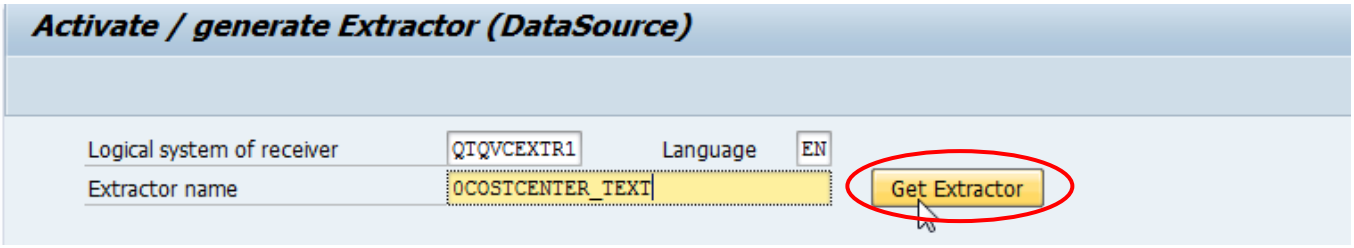
Once the setup is complete and the Extractors are activated on the SAP system you will need to activate the extractors for use with the QlikView Extractor connector.

1. Go to transaction RSA6 and select a DataSource/Extractor in transaction by marking it and copy the technical name (Ctrl+Y). You can of course write it manually as well

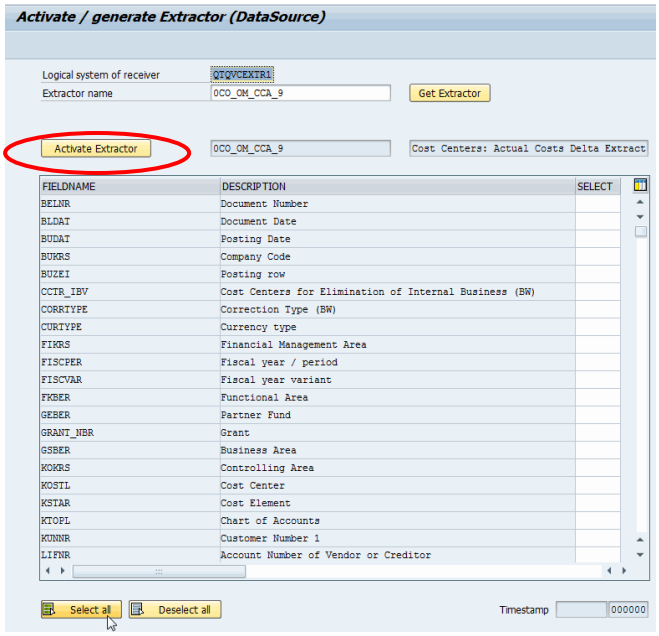


2. Go to transaction /n/QTQVC/Activate

3. Paste your selected extractor in the extractor field 'Extractor name' and execute by clicking on "Get Extractor".



4. Select which field you would like to activate (X) or select all fields



5. Then activate the extractor

8.2 The Qlikview SAP Extractor Connector Client

8.2.1 Prerequisites

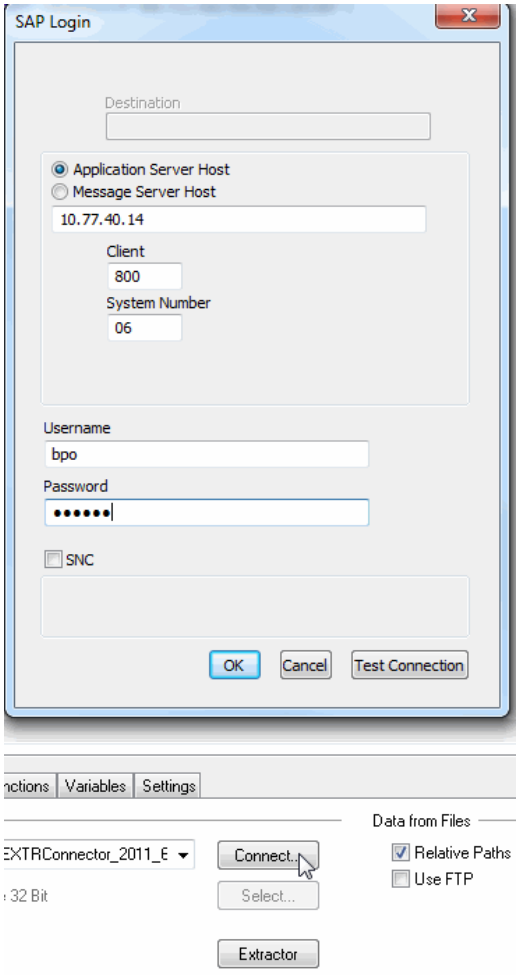
- QlikView version 8.50 build 6206 or later.
- .NET Framework 2.0 SP1 (now a general requirement for QV 8.50 and Connector 5.x in combination)
- If a Firewall exists between Connector and SAP system; port 33nn has to be open, where nn = System Number of the SAP system.

8.2.2 Installation of the SAP Extractor Connector Client

See installation of the SAP SQL Connector.

8.2.3 Using the SAP Extractor Connector

- Open the QlikView application and Edit Qlikview Script
- Look for SAPEXTRConnector and click on Connect



This will generate a connection string in your QV system

Timeouts

There are a few Timeout parameters that can be set in the QlikView script in the connection string. If not set in the connection string each Timeout has a default value. All Timeout values are given in seconds.

TimeoutSAP

This timeout is used in the SAP part of the Connector. When trying to start a new Extractor job in SAP there is a check to see that no other Extractor job is already started for the given Logical system. An Extractor job in SAP consists of two parts. The first part is an Extraction batch job which creates all IDoc:s containing the Extraction data. The second part is the RFC transfer of the IDoc:s to QlikView. Sometimes there can be interruptions in the RFC transfer. A number of retries to send the data is then performed. The value in the TimeoutSAP parameter decides how long time SAP should wait to start a new job if there is an ongoing RFC transfer of a previous job. When the number of seconds in the timeout is exceeded, it is likely that there is a permanent error in the previous RFC transfer. The previous job is then regarded as failed (the corresponding record in the SAP status table is set to 'aborted') and the new job is allowed to start.
The default value is 900 seconds (15 minutes).

TimeoutInit

This timeout is used in the Windows part of the Connector. It decides the maximum time Windows should wait to receive data from SAP about the activated Extractors and Hierarchies possible to use. If the timeout is exceeded, the QlikView job is aborted.
The default value is 900 seconds (15 minutes).

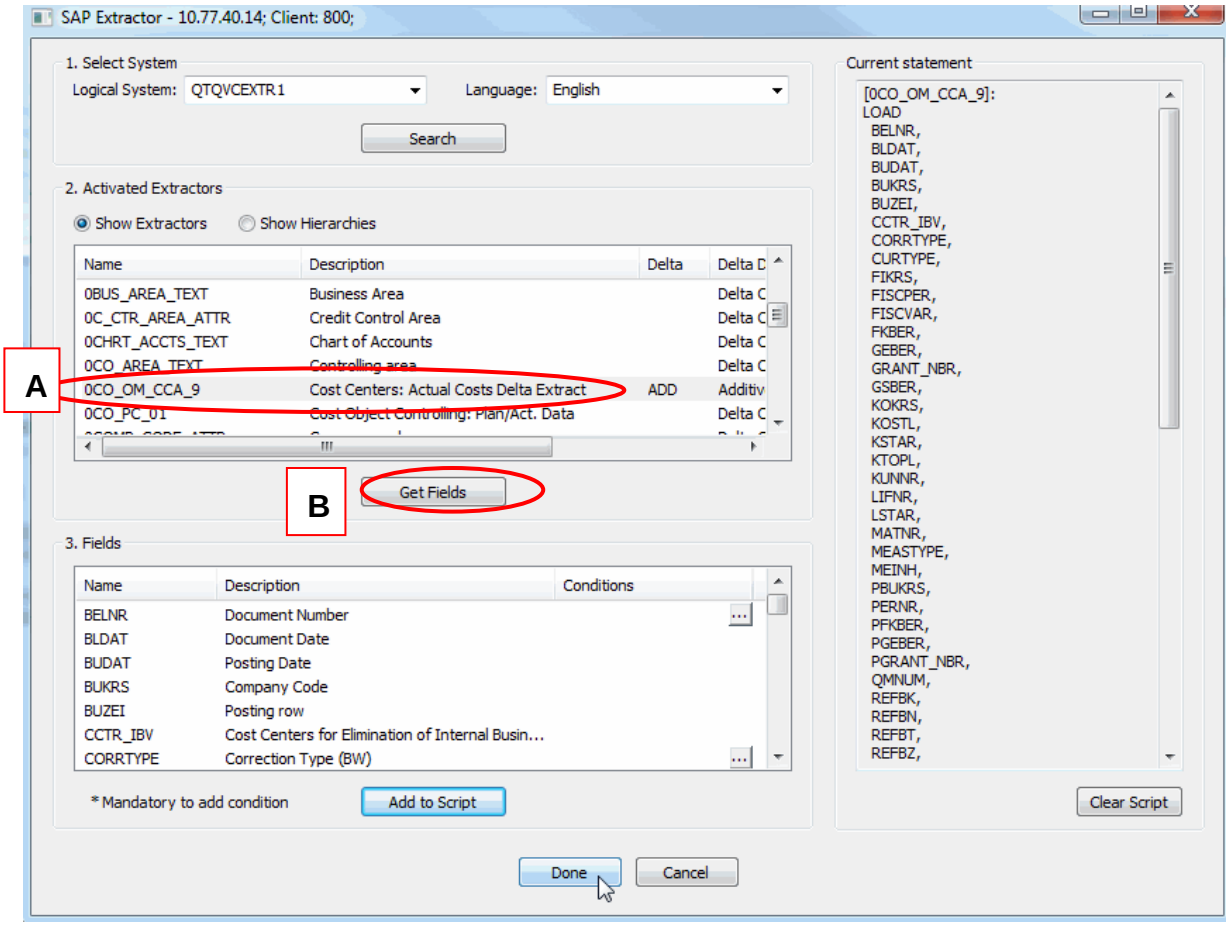
TimeoutActivity

This timeout is used in the Windows part of the Connector. It decides the maximum time Windows should wait to receive the first IDoc from SAP created by the Extraction job. If the timeout is exceeded, the QlikView job is aborted and the status value in the corresponding record in the SAP status table is set to 'aborted'.
The default value is 3600 seconds (60 minutes).

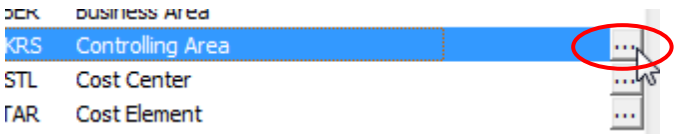
TimeoutIdoc

This timeout is used in the Windows part of the Connector. It decides the maximum time Windows should wait between the receiving of each IDoc. If the timeout is exceeded, the QlikView job is aborted and the status value in the corresponding record in the SAP status table is set to 'aborted'.
The default value is 900 seconds (15 minutes).

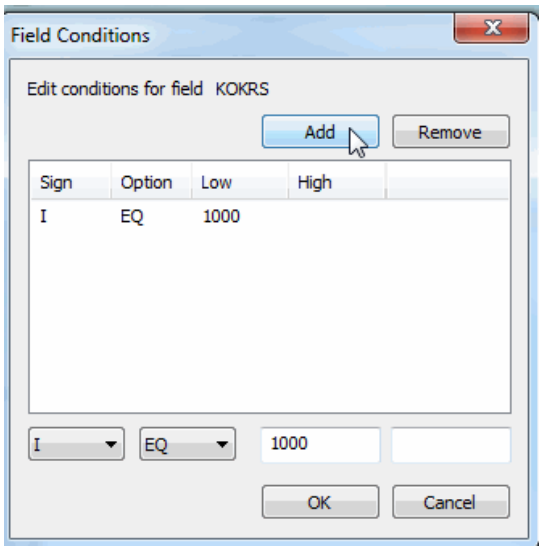
1. Select Locical system in the drop down box
2. Select Language and then click on the search button to get activated extractors.
3. Select an extractor from the list (A) and click on Get Fields (B)



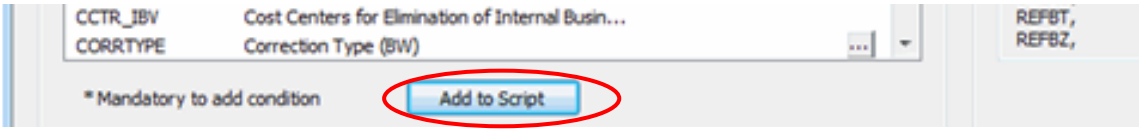
4. If you would like to edit your selection to add in filters click on the edit button (Not all fields are editable)



5. In the popup screen add your selection to the script



6. Then add your selection to the script by clicking on the button 'Add to Script'.



7. You'll get a predefined script in your QV application.

```
[0COSTCENTER_TEXT]:
LOAD
  DATEFROM,
  DATETO,
  KOKRS,
  KOSTL,
  LANGU,
  TXTMD,
  TXTSH;
SQL EXTRACTOR 0COSTCENTER_TEXT
//UPDMODE F   // full extractor
UPDMODE C   // initial extraction, to be followed by delta extractions
//UPDMODE D   // delta extraction
//INITRNR <NR>  // Resend extraction
EXTRLANGUAGE E
LOGSYS QTQVCEXTR1
WHERE
KOKRS I EQ 1000
;
//STORE * FROM [0COSTCENTER_TEXT] INTO FULL_0COSTCENTER_TEXT.QVD;
STORE * FROM [0COSTCENTER_TEXT] INTO INIT_0COSTCENTER_TEXT.QVD;
//LET vDate=Replace(now(),':','');
//STORE * FROM [0COSTCENTER_TEXT] INTO DELTA_0COSTCENTER_TEXT$(vDate).QVD;
DROP TABLE [0COSTCENTER_TEXT];
```

The standard script is a proposal and you have to uncomment your choice.
In the example above the selection is Initial load from the logical system QTQVCEXTR1 and only for KOKRS (controlling Area) 1000. The QVD will be stored in folder qvd/init/ and the name of the qvd file will be INIT_0COSTCENTER_TEXT.QVD

8.2.4 Delta loads

One of the major advantages of the Extractor Connector is the ability to use delta load capabilities (if allowable in the extractor itself)

To execute a delta load uncomment the required UPMODE statement in the script

UPMODE C - initial extraction followed by delta load

this will create a QVD file with all of the data through the extractor and also tell SAP a delta load process will be required in the future.

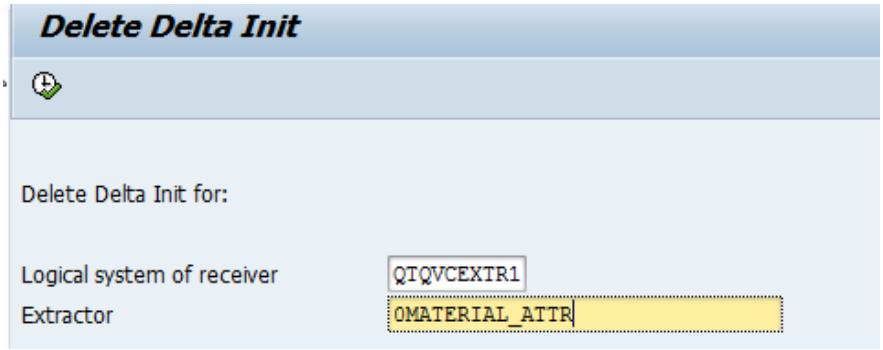
Following this modify the extractor script to

UPMODE D - delta extraction

and concatenate the QVD to the output.

When using the delta loads you have to use the same template and the same logical system as have been used for the initialization.

If you want to do a new initial extraction (UPMODE C) on an existing initial extraction load you have to delete the data source first in this transaction (/N/QTQVC/DELETE_INIT), before new load starts.



Fill in the Logical system and then the data source/extractor you want to delete.

8.2.5 Hierarchies

Hierarchy Properties

8.2.5.1Definition

Properties of all hierarchies for a hierarchy basic characteristic, delivered by SAP and freely-definable according to the needs of the customer.

8.2.5.2Use

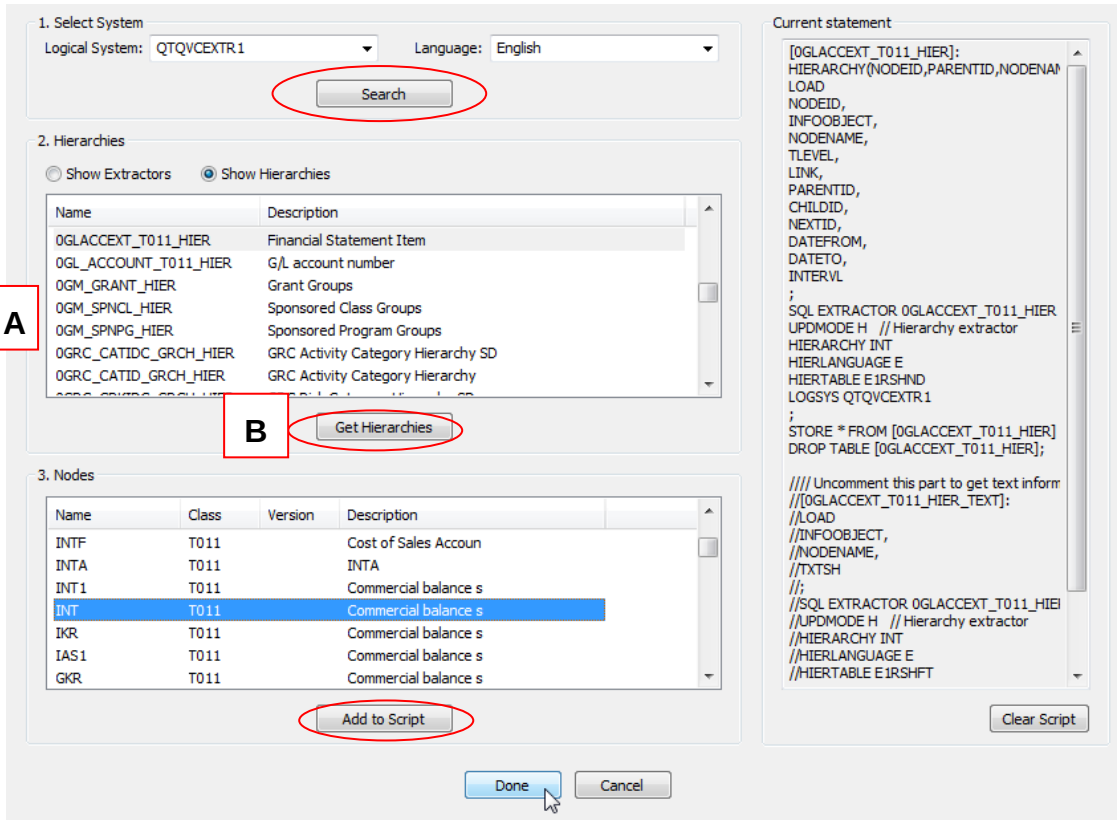
Hierarchy properties are fixed in InfoObject maintenance for a characteristic and are valid for all hierarchies that have been created for this characteristic.

In hierarchy maintenance, you can set hierarchy attributes and, as a result, influence the display and processing of hierarchies in reporting.

8.2.5.3How to load Hierarchies to QlikView

The hierarchies don't have to be activated as all other data sources in SAP. When loading a hierarchy you just change the screen view in the pop-up window to Show Hierarchies.

1. Select Show Hierarchies radio button
2. Put in the Logical System and click on Search.
3. Select a hierarchy from the list (A) and click on Get Hierarchies (B)



4. All possible options for the selected hierarchy will be displayed, select one and click Add to Script

5. Two statements are added to the Qlikview script for the hierarchy load:

```
[0GLACCEXT_T011_HIER]:
HIERARCHY(NODEID,PARENTID,NODENAME,,NODENAME,HIERARCHY)
LOAD
NODEID,
INFOOBJECT,
NODENAME,
TLEVEL,
LINK,
PARENTID,
CHILDID,
NEXTID,
DATEFROM,
DATETO,
INTERVL
;
SQL EXTRACTOR 0GLACCEXT_T011_HIER
UPDMODE H   // Hierarchy extractor
HIERARCHY INT
HIERLANGUAGE E
HIERTABLE E1RSHND
LOGSYS QTQVCEXTR1
;
STORE * FROM [0GLACCEXT_T011_HIER] INTO HIER_0GLACCEXT_T011_HIER.QVD;
DROP TABLE [0GLACCEXT_T011_HIER];

//// Uncomment this part to get text information for the hierarchy
//[0GLACCEXT_T011_HIER_TEXT]:
//LOAD
//INFOOBJECT,
//NODENAME,
//TXTSH
//;
//SQL EXTRACTOR 0GLACCEXT_T011_HIER
//UPDMODE H   // Hierarchy extractor
//HIERARCHY INT
//HIERLANGUAGE E
//HIERTABLE E1RSHFT
//LOGSYS QTQVCEXTR1
//;
//STORE * FROM [0GLACCEXT_T011_HIER_TEXT] INTO HIER_0GLACCEXT_T011_HIER_TEXT.QVD;
//DROP TABLE [0GLACCEXT_T011_HIER_TEXT];

//*****
```

The first statement uses the QlikView HIERARCHY function to create nodes for each level, to link the hierarchy table to other standard extractors a function can be deployed to NODENAME for example:

```
Mid(NODENAME,5,13) as  [SAKNR],
```

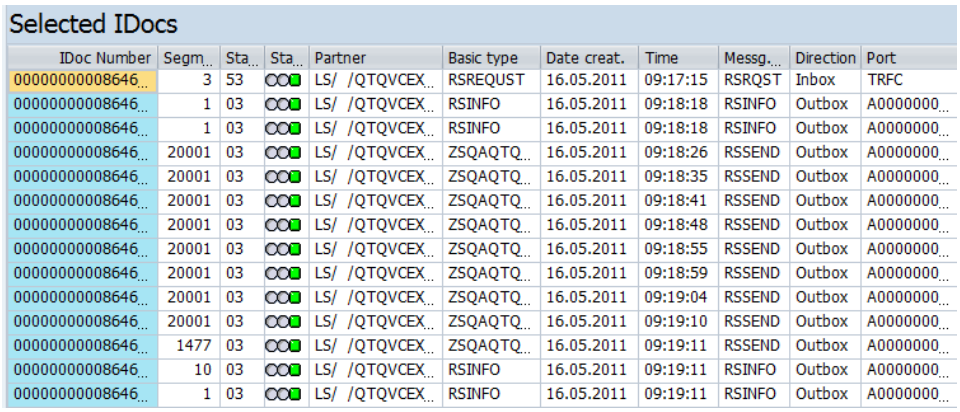
Each hierarchy will require different manipulation to achieve the join.

The second load statement provides the option for descriptions of the various levels in the hierarchy.

8.2.6 Logs and Process overview

A number of transactions exist within SAP to monitor the various processes involved with the Extractor Connector:

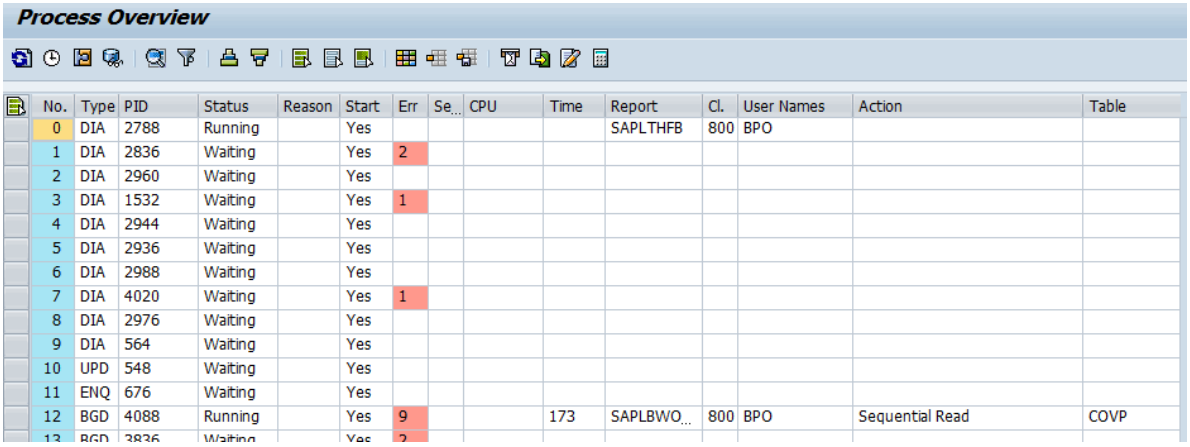
- To look at the processed Idoc's, use transaction code WE02



Selected IDocs

IDoc Number	Segm...	Sta...	Sta...	Partner	Basic type	Date creat.	Time	Messg...	Direction	Port
00000000008646...	3	53		LS/ /QTQVCEX...	RSREQUST	16.05.2011	09:17:15	RSRQST	Inbox	TRFC
00000000008646...	1	03		LS/ /QTQVCEX...	RSINFO	16.05.2011	09:18:18	RSINFO	Outbox	A0000000...
00000000008646...	1	03		LS/ /QTQVCEX...	RSINFO	16.05.2011	09:18:18	RSINFO	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:26	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:35	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:41	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:48	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:55	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:18:59	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:19:04	RSSEND	Outbox	A0000000...
00000000008646...	20001	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:19:10	RSSEND	Outbox	A0000000...
00000000008646...	1477	03		LS/ /QTQVCEX...	ZSQAQTQ...	16.05.2011	09:19:11	RSSEND	Outbox	A0000000...
00000000008646...	10	03		LS/ /QTQVCEX...	RSINFO	16.05.2011	09:19:11	RSINFO	Outbox	A0000000...
00000000008646...	1	03		LS/ /QTQVCEX...	RSINFO	16.05.2011	09:19:11	RSINFO	Outbox	A0000000...

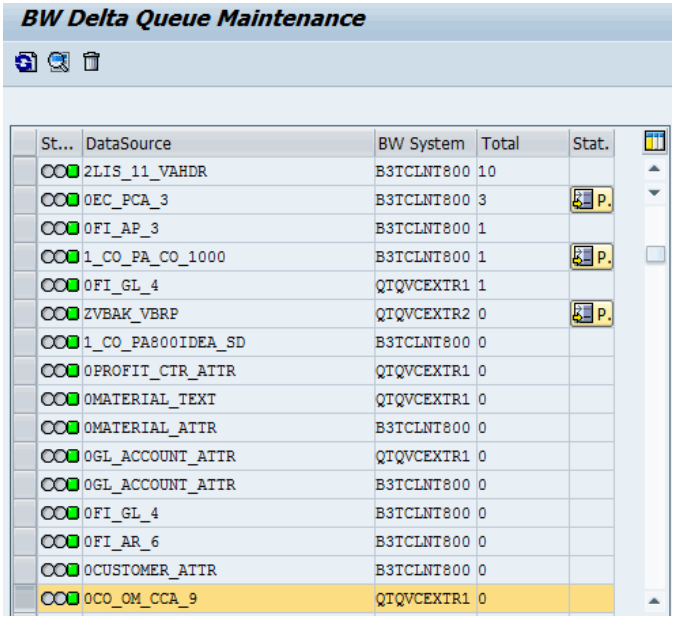
- To follow the process in SAP, use transaction code SM50



Process Overview

No.	Type	PID	Status	Reason	Start	Err	Se...	CPU	Time	Report	Cl.	User Names	Action	Table
0	DIA	2788	Running		Yes					SAPLTHFB	800	BPO		
1	DIA	2836	Waiting		Yes	2								
2	DIA	2960	Waiting		Yes									
3	DIA	1532	Waiting		Yes	1								
4	DIA	2944	Waiting		Yes									
5	DIA	2936	Waiting		Yes									
6	DIA	2988	Waiting		Yes									
7	DIA	4020	Waiting		Yes	1								
8	DIA	2976	Waiting		Yes									
9	DIA	564	Waiting		Yes									
10	UPD	548	Waiting		Yes									
11	ENQ	676	Waiting		Yes									
12	BGD	4088	Running		Yes	9			173	SAPLBWO...	800	BPO	Sequential Read	COVP

- To monitor initialized extractors use transaction code RSA7

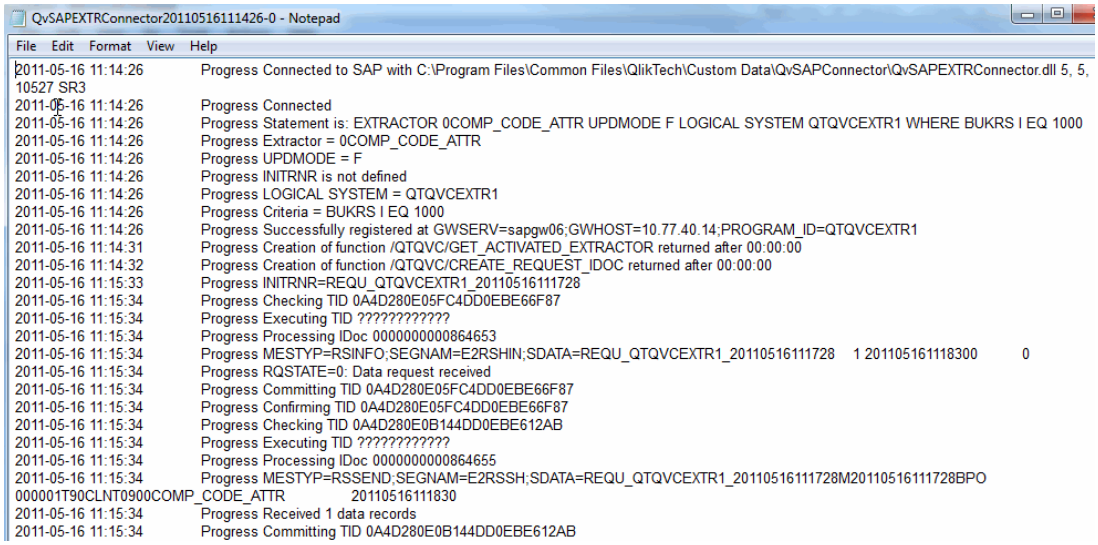


St...	DataSource	BW System	Total	Stat.
	2LIS_11_VAHDR	B3TCLNT800	10	
	0EC_PCA_3	B3TCLNT800	3	P.
	0FI_AP_3	B3TCLNT800	1	
	1_CO_PA_CO_1000	B3TCLNT800	1	P.
	0FI_GL_4	QTQVCEXTR1	1	
	ZVBAK_VBRP	QTQVCEXTR2	0	P.
	1_CO_PA800IDEA_SD	B3TCLNT800	0	
	0PROFIT_CTR_ATTR	QTQVCEXTR1	0	
	0MATERIAL_TEXT	QTQVCEXTR1	0	
	0MATERIAL_ATTR	B3TCLNT800	0	
	0GL_ACCOUNT_ATTR	QTQVCEXTR1	0	
	0GL_ACCOUNT_ATTR	B3TCLNT800	0	
	0FI_GL_4	B3TCLNT800	0	
	0FI_AR_6	B3TCLNT800	0	
	0CUSTOMER_ATTR	B3TCLNT800	0	
	0CO_OM_CCA_9	QTQVCEXTR1	0	

- Qlikview log

  - You'll find the QlikView log in:

C:\ProgramData\QlikTech\Custom Data\QvSAPConnector\Log



The QlikView log gives you information about which Idocs have been created for your request and if the load has been successful.

8.2.7 Error Handling

A number of methods exists to monitor processes of the Extractor connector:

- **Status table**

You can follow the download for every extractor in the new status table (/QTQVC/STATUS).

- Go to transaction SE16 and look in table /QTQVC/STATUS.
- Status Values:

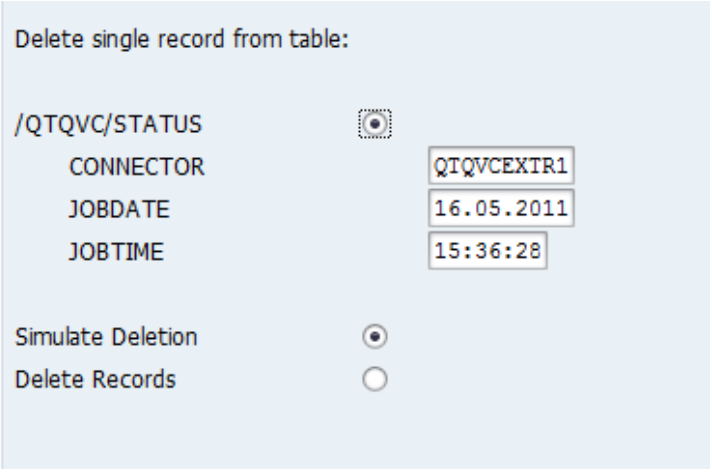
Job Status	Short Desc
R	Released
S	Started
F	Finished
A	Aborted
C	Job cancel
K	Keep

You can only run a single extraction at a time in a logical system. QlikView will return an error message if multiple extractors are ran on the same logical system.

In the event of an extractor Job not being able to be initialised the status table will show **S** as started and a process to cancel the job will be required through transaction /N/QTQVC/delete

- **How to do it:**

1. In the status table get the job time and the go to /N/QTQVC/delete.
2. Select /QTQVC/STATUS with the "Delete single record from table" section
3. Put in the job time and then run it first in "Simulate Deletion" mode and then in "Delete Records mode."



Caution must be taken not to end an active and relevant job that's running.

- **Re-Send Idoc's**

If a communication error has occurred for a Delta or Full load and the Idoc's have been produced in the ERP system you can re-send the Idoc's to QlikView.**You don't have to do a new initialization.**

Get the INITRNR from the QlikView log file and use this in the extraction script:

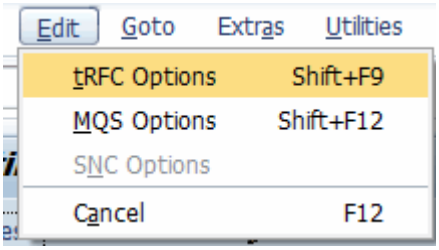
```
2011-05-16 11:12:58          Progress Invoked /QTQVC/EXTRACTION_STATUS with MODE=R, JOBNAME=BIREQI
JOBDATE=20110516, JOBTIME=111447, INITRNR=REQU_QTQVCEXTR1_20110516111447, returned STATUS=S
```

Open your script builder and select the Extractor with the appropriate delta load and uncomment the INITRNR row and replace <NR> with the actual INITRNR and reload.

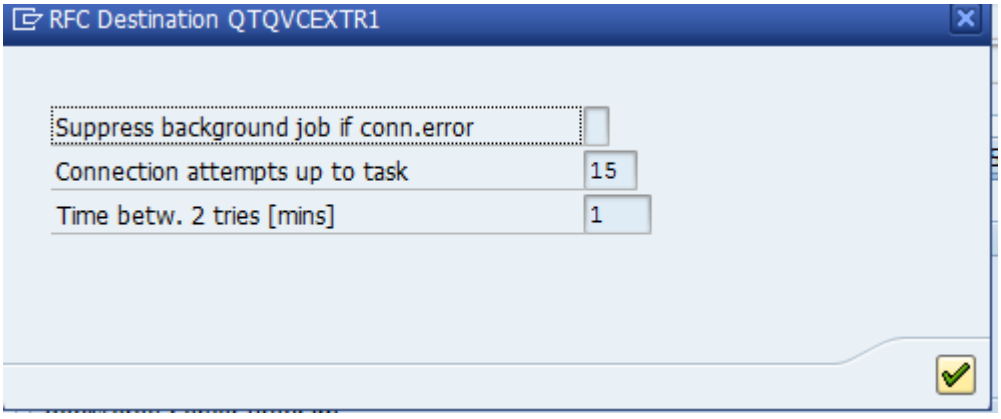
```
//INITRNR <NR>  // Resend extraction
```

- **Communication Error**

If the logical system is correct set-up and you are able to contact the SAP system when connect, you maybe have to change the standard setting for tRfc in your logical system set-up. This you'll do in transaction SM59 and TCP/IP connections



Default settings as below:



8.3 The Qlikview SAP Extractor Connector in BW system

It's also possible to use the SAP Extractor Connector against a SAP BW system. The structure in the BW system has some differences to a SAP ERP system, but the principal is the same.

8.3.1 Prerequisites BW:

See SAP ERP Extractor prerequisites

8.3.2 Installation of Transports

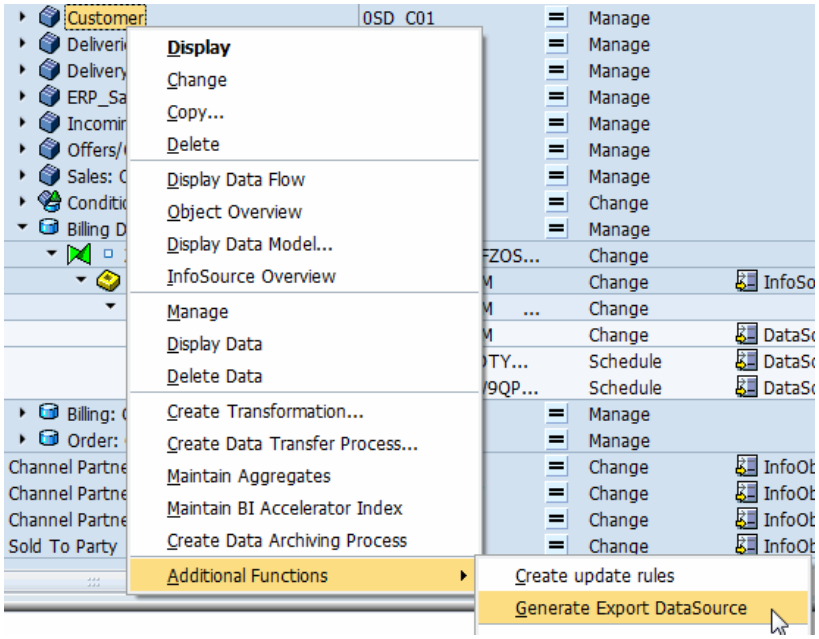
See SQL Connector.

8.3.3 BW - User configuration for SAP BASIS system 6.40 and later.

See SAP ERP user configuration

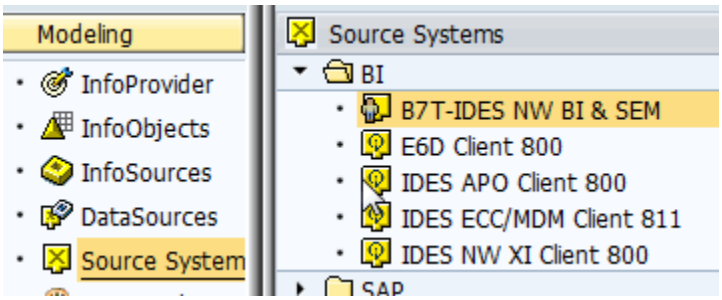
8.3.4 SAP BW Side Extractor Setup

1. First you need to make sure the source you are about to use is generated as an export data source. This is done by selecting the ODS or Cube and generating it as an export data source in transaction RSA1.

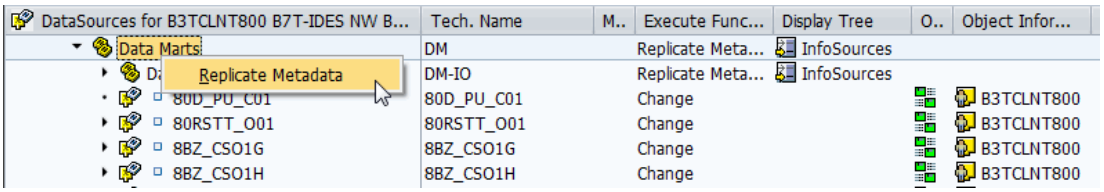


Select the Cube or DSO/ODS and right click on the mouse and select Additional Functions\Generate Export DataSource.

2. Replicate your internal BW set-up. Choose the BI system from the menu Modeling – Source System

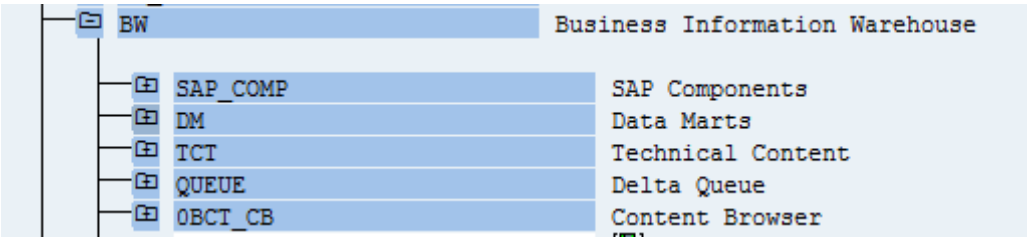


3. Open "Data sources" from the Modeling menu and you will now have your internal BI sources. In BW this is called Data Marts. Replicate the whole tree or just the one you need. By right clicking your mouse and select the Replicate Metadata option from the drop-down menu.



After replicating the Data Marts the Data sources will show up as selectable and are now possible to activate for the qlikview extractor connector process.

4. Use transaction code RSA6 as in the ERP system and you'll find the tree slightly different from the one in ERP and this is because we are not using any pre-defined extractors. In BW we use the actual data sources.



In here you'll find the available Sources to be used. Normally the technical name starts with 8 and then followed by a 0 for standard ODS and Cubes. The end of the name denotes O for ODS and C for Cubes

For example:

5. Now you can take this technical name and activate it using the same method for the the ERP system described previously,

8.4 The Qlikview SAP Extractor Connector in BW system – Client

8.4.1 Prerequisites

See SAP ERP Extractor prerequisites.

8.4.2 Installation of the SAP Extractor Connector Client

See SAP ERP Extractor prerequisites.

8.4.3 Using the SAP Extractor Connector

See SAP ERP Extractor prerequisites.

8.5 Other important issues

8.5.1 Services file

If there is no SAP GUI installed on the machine where the connector is to be installed you have to manually write the SAP system gateway port in catalog *C:\Windows\System32\drivers\etc\services.*

Put the following information at the end of the file:

sapgw01 – sapgw99	3301/tcp - 3399/tcp	#SAP System Gateway Port

8.5.2 Multiple loads

If you need to load several of data sources / extractors during the same timeline, you need to set up multiple logical systems. You have to be careful and make sure you use the same logical system when loading the deltas.

8.5.3 Idoc Length

The total length of an idoc is 1000 character. Normal length of an extractor is between 250 – 700, but if you use a BW or CRM system with a lot of text fields you could end up above this. Then you have to exclude some fields to be able to use the extractor. It's possible to check the total length of an activated extractor in transaction WE30.

8.5.4 Segment Type Length

The Segment type length is limited to 27 characters include mandatory prefix as /BIC/. This means that the total length of a data source (extractor) name can't be more than 20 characters.

8.5.5 Where to find activated data sources

In the SAP system you can find the relevant activated datasources. In SAP ERP you can go to transaction SE16 and in table ROOSOURCE you find all your extractors. In BW the table name is SOLTPSOURCE. You can also use transaction WE30 and look at the Basic Idoc Type and which segment thats been activated.

8.5.6 Logistics Data Sources

In Logistics, you need to carry out additional activities in several areas in order to use the extractors within the SAP Business Information Warehouse .

Go to transaction SBIW

8.5.6.1 Managing Extract Structures

This section describes Customizing of extract structures in movement data for Logistics. The old LIS technique described below for the transfer information structures has some disadvantages compared to the new technique and is no longer necessary. There are, however, some overlaps between the two techniques, particularly if you wish to use LIS and BW in parallel.

8.5.6.2 Initialization

Initialization must be prepared by OLTP. A setup completes setup tables, which are then read during initialization.
To enable the setup to be reset after a termination, assign a name to each background run for a setup. Then, if a setup terminates or a setup from the archive documents is interrupted, the status of the setup at this point can be stored under this name. When you restart using this name, you can continue processing from here, without needing to go through the whole process again. Once the run has been completed successfully, the inbetween status that was stored in the memory is deleted.
The setup must run in the background.

8.5.6.3 Filling in the Setup Table

Completing setup tables is a critical action, that should be carried out with caution. For large data amounts, this can take longer than one night and may have to be done at the weekend.
In the setup log (transaction NPRT) you can see more information on setups that have already been carried out.

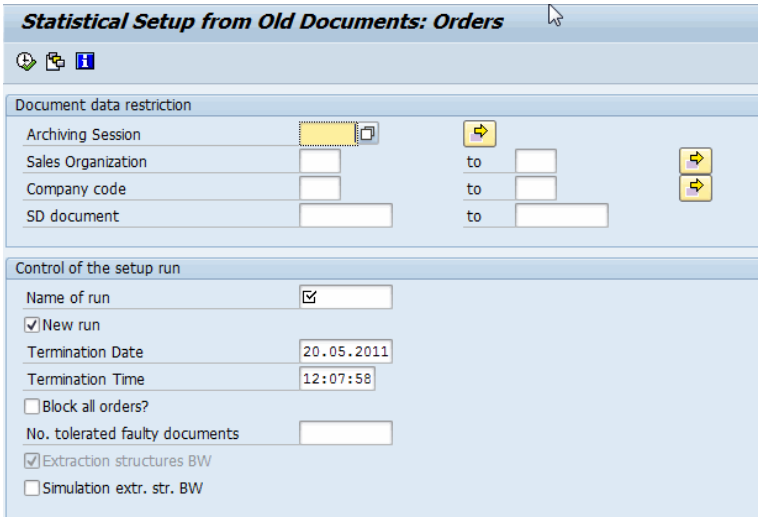
8.5.6.4 Application-Specific Setup of Statistical Data

This section describes the relevant, application-specific features for applications that can carry out statistical setups.

8.5.6.5 Example

SD-Sales Orders - Perform Setup

- **Standard settings**
  - In this activity, you call up selected sales orders and trigger the statistical update for the BW extraction structures for sales orders. The statistical update used here corresponds to the one you chose in the Customizing Cockpit.
- **Requirements**
  - **Before you can carry out this activity, you must have activated at least one extraction structure per application. For more information, see Logistics Extract Structures Customizing Cockpit.**



8.6 Authorization SAP Extractor Connector in SAP systems

A qlikview user needs to have certain access rights within the SAP ERP and BW systems to be able to use the extractor connectors

.

Below you'll find the minimum authorization level needed.

QTQVCEXTRACTOR:

8.6.1 Authorization profile in SAP ERP

QTQVCEXTRACTOR QVEXTRACTOR

|

|--Manually Cross-application Authorization Objects AAAB

| |

| |--Manually ALE/EDI: Receiving IDocs via RFC **B_ALE_RECV**

| | |

| | |--Manually ALE/EDI: Receiving IDocs via RFC T-ED55072200

| | |

| | |-----Message Type **RSRQST** EDI_MES

| |

| |--Manually Authorization Check for RFC Access **S_RFC**

| |

| |--Manually Authorization Check for RFC Access T-ED55072200

| |

| |-----Activity **16** ACTVT

| |-----Name of RFC to be protected ***** RFC_NAME

| |-----Type of RFC object to be prote **FUGR** RFC_TYPE

|

|--Manually Basis: Administration BC_A

| |

| |--Manually Background Processing: Operations on Background Jobs **S_BTCH_JOB**

| | |

| | |--Manually Background Processing: Operations on Background Jobs T-ED55072200

| | |

| | |-----Job operations **RELE** JOBACTION

| | |-----Summary of jobs for a group ***** JOBGROUP

| |

| |--Manually Administration Functions in Change and Transport System **S_CTS_ADMI**

| | |

| | |--Manually Administration Functions in Change and Transport System T-ED55072200

| | |

| | |-----Administration Tasks for Chang **TABL** CTS_ADMFCT

| |

| |--Manually Table Maintenance (via standard tools such as SM30) **S_TABU_DIS**

| |

| |--Manually Table Maintenance (via standard tools such as SM30) T-ED55072200

| |

| |-----Activity **03** ACTVT

| |-----Authorization Group ***** DICBERCLS

|

|--Manually Basis - Central Functions BC_Z

| |

| |--Manually WFEDI: S_IDOCDEFT - Access to IDoc Development **S_IDOCDEFT**

| |

| |--Manually WFEDI: S_IDOCDEFT - Access to IDoc Development T-ED55072200

| |
| |-----Activity **01, 03** ACTVT
| |-----Extension ***** EDI_CIM
| |-----Basic type **RSSEND, ZSQ*** EDI_DOC
| |-----Transaction Code **WE30** EDI_TCD
|

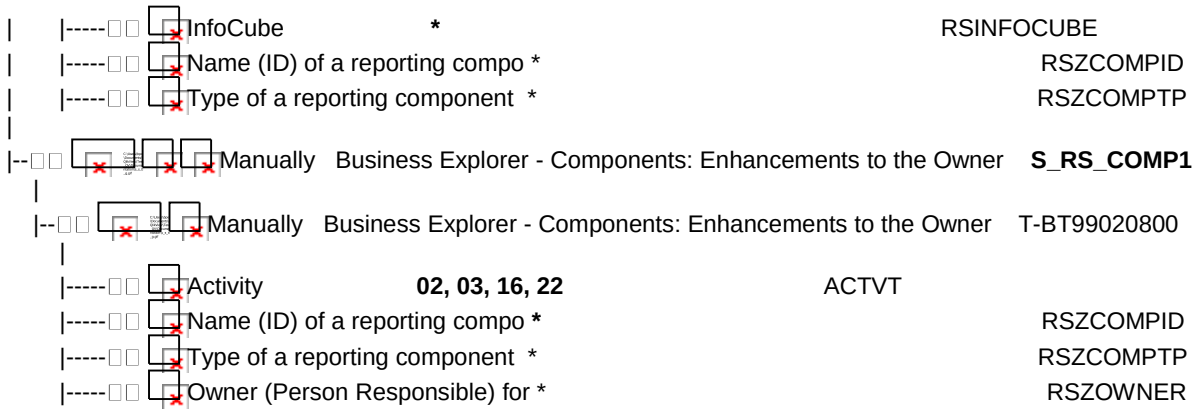
Below, BW service RO object do not exists in version before enterprise 6.0

|--Manually Authorizations: BW Service API RO
|
|--Manually Remote Content Activation of SAPI DataSources from a BW **S_RO_BCTRA**
| |
| |--Manually Remote Content Activation of SAPI DataSources from a BW T-ED55072200
| |
| |-----Activity **07** ACTVT
|
|--Manually SAP DataSource Authorizations **S_RO_OSOA**
|
|--Manually SAP DataSource Authorizations T-ED55072200
|
|-----Activity **03** ACTVT
|-----DataSource ***** OLTPSOURCE
|-----DataSource Application Compone ***** OSOAAPCO
|-----Subobject for DataSource **DATA** OSOAPART

8.6.2 **Authorization profile in SAP BW System**

In BW the below objects have to be added:

|--Manually Business Information Warehouse RS
| |
| |--Manually Data Warehousing Workbench - Objects **S_RS_ADMWB**
| | |
| | |--Manually Data Warehousing Workbench - Objects T-BT99020800
| | |
| | |-----Activity **03, 16, 63, 66** ACTVT
| | |-----
Data Warehousing Workbench Obj APPLCOMP, CNG_RUN, CONT_ACT, CONT_ADMIN, DOC_ADMIN, DOC_HIER, DOC_MAST<...> RSADMWBOBJ
| |
| |--Manually BI Analysis Authorizations in Role **S_RS_AUTH**
| | |
| | |--Manually BI Analysis Authorizations in Role T-BT99020800
| | |
| | |-----BI Analysis Authorizations: Na 0BI_ALL BIAUTH
| |
| |--Manually Business Explorer - Components **S_RS_COMP**
| | |
| | |--Manually Business Explorer - Components T-BT99020800
| | |
| | |-----Activity **01, 03, 16, 22** ACTVT
| | |-----InfoArea ***** RSINFOAREA



To be able to run the Set up of logical system needed there is a role for this called: QTQVCEXTRSETUP.

To be able to Activate and Generate the extractors the following role has to be used: QTQVCEXTRADM.

The three roles can be combined to complete the different purpose of the user.

8.7 Recommendations and tips

8.7.1 **Advantage**

The big advantage to use this connector is the delta mechanism which is built-in to some of the standard extractors.

It's also easier to use a pre-defined data source from SAP as no knowledge is required of the complex table structures in SAP systems. Most of the data sources and extractors are self explained.

8.7.2 **Load Time**

A time lag will be experienced on the initialisation of the connector whilst the SAP processes run.

The amount of time to load from a ERP system is similar to the SQL connector.Load from a BI/BW system have also a good performance if using the connector against a DSO/ODS source.

8.7.3 **Sample Extractors**

0FI_GL_4 - General Ledger: Line Items with Delta Extraction

0FI_AP_4 - Vendors: Line Items with Delta Extraction

0FI_AR_4 - Customers: Line Items with Delta Extraction

CO_OM_CCA_9 - Cost Centers: Actual Costs Using Delta Extraction

0CO_PC_ACT_02 - Material Valuation: Per. Ending Inventory

0CO_PC_01 - Cost Object Controlling: Plan/Actual Data

0EC_PCA_3 - Profit Center: Actual Line Items

PA - Personnel Management

Etc.

8.7.4 Transactions codes to be used:

QTQVC/ACTIVATE	Activate an Extractor (datasource)
/QTQVC/DELETE	Delete Database Table Records
/QTQVC/DELETE_INIT	Delete Initialization
/QTQVC/DEACTIVATE	Deactivate Extractor
SE 16	Data Browser

- /QTQVC/Status
- /QTQVC/Convert
- RORQSTPRMS (Protocol table Request)
- ROOSPRMSC (Control Parameter Per Data Source Channel)
- ROOSGEN (Generated Objects for OLTP Source)

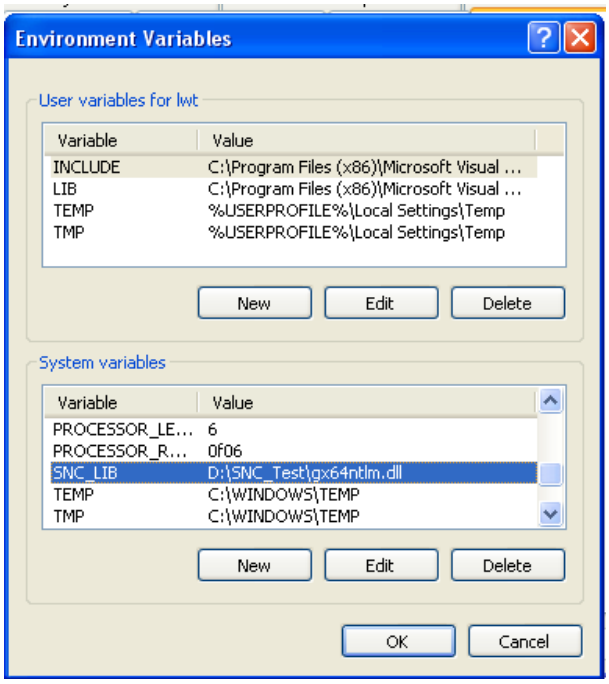
SM50	Process Overview
RSA6	Post process Data Sources and Hierarhy
RSA7	BW Delta queue Maintenance
SMGW	Gateway Monitor
SM58	Transactional RFC
SMQ1	qRFC Monitor (Outbound Queue)

9 SNC Support

SNC (Secure Network Communication) is SAP's technology to get a safer communication between SAP components. If the Customer have SNC installed you can also use this for the RFC communication between the Connector (both SQL and OLAP) and the SAP system.

A cryptographic library have to be installed on the Connector machine, this is not supplied by QlikTech. The technology used is between SAP components only and for technical details we recommend reading http://help.sap.com/saphelp_nw04/helpdata/EN/69/b0bbd6dde71141bee8806586144796/frameset.htm.

First you must create a System Variable (Control Panel, System, Advanced tab); that holds the path to the local crypto library. The variable name must be: SNC_LIB.



In the Connection dialog you must specify the SNC name: "p:CN=*sncname*". You must also specify the quality of protection; the possible values are specific for the library used.