# QlikView Connector for SAP Netweaver™

Installation and Usage Guide

English

QV Connector for SAP Version: 5.5 - 2 Sep 2010



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## **1** About this document

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

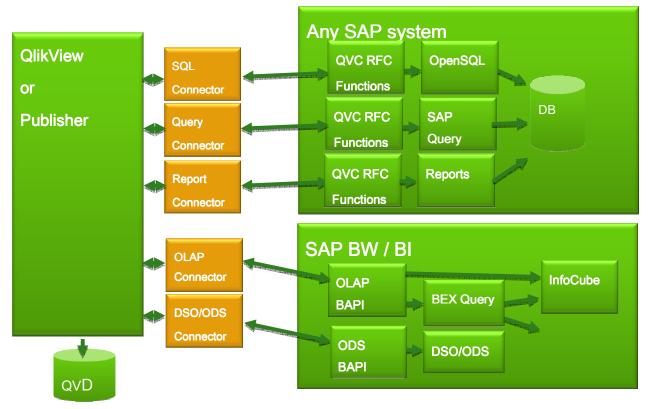
# 2 Introduction

Components of the QlikView Connector for SAP Netweaver<sup>™</sup> 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 five different connectors; the SQL Connector, the Query Connector. The Report 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".

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

#### 3.1.3 SAP BASIS system 4.6

For these systems, please use older 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) E6DK900082 (Data extraction)
- 2) E6DK900086 (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 7.00

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

- 3) E6DK900085 (Data extraction)
- 4) E6DK900086 (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 7.00

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 version and the Role QTQVCACCESS 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

## 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.

Sy	stem <u>H</u> e	lp								
<b>©</b>			1	1 📙	0	😣	<b>-</b> A	<b>\$</b> 1	0.0	81   💥 🏹
Tes	sting S	QL-State	ments	s for	QVC					
s	QL-Statem	ient								
S	elect * 1	from t000							Op	oen Stream
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Pack	age size	50			Handle					
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- o Key in the SQL statement.
- o 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.

	Restriction tables				Restriction	users		
TableName	FieldName	Domain		UserName	Domain	Value	Group	
CABNT	+	ALL		JEO	ALL	*	1	_
D010TAB	*	ALL	•	JEO	JEO_TEST	'AF'	1	
SFLIGHT	CARRID	JEO_TEST		LWT	ALL	*	1	
SPFLI	COUNTRYTO	LAND1		LWT	LAND1	'DE'	1	_
T000	MANDT	MANDT		LWT	LAND1	'EN'	2	_
T005	LAND1	LAND1		LWT	LANDK	'D'	1	_
T005	LANDK	LANDK		LWT	LANDK	'E'	2	_
T005T	•	ALL_T005T		LWT	SPRAS	'EN'	1	_
T005T	SPRAS	SPRAS		QVCUSER	ALL	*	1	_
T100	•	ALL		THR	ALL	*	1	_
				THR	ALL_T005T	*	1	_
				THR	LAND1	'DE'	1	_
				THR	LAND1	'EN'	2	_
				THR	LANDK	'D'	1	_
				THR	LANDK	'E'	2	_
			×					
4 1			< F	• •			4	•

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.

UserN	Name: *				
		1		1-	_
TableName	Username	FieldName	Value	Group	-
F005	BCUSER	*	*	1	
VBAK	BCUSER	SPART	10	1	
VBAK	BCUSER	SPART	20,25,26	2	
T005T	BCUSER	SPRAS	'D'	1	
VBAK	BCUSER	VKORG	1000	1	
VBAK	BCUSER	VKORG	2000	2	
					Ļ
• •					L F

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.

🔄 Maintainance of A	Authorizations 🗵 🖊
Copy from:	Copy to:
Ci c	ору
	op)
<b>aa a</b> u	1051
🗙 CAN	ICEL

#### **Table Based Access control**

Go to transaction PFCG and enter the Role "QTQVCACCESS" then click on the Change icon 2.

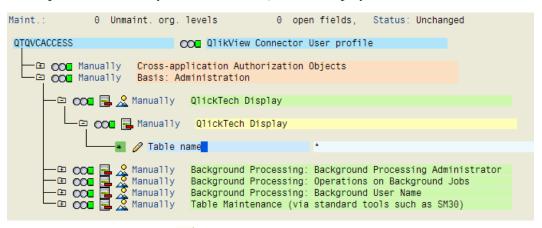
L <del>iz</del> <u>R</u> ole <u>E</u>	dit <u>G</u> oto E <u>n</u> vironment S <u>y</u> stem <u>F</u>	<u>H</u> elp			
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Role M	Role Maintenance				
	🛓 📘 🚭 Transactions				
Role	QTQVCACCESS	🖉 🚱 🗋 Create role 🗋	Create comp. role 🛛 🐺 🚅		
Name	QlikView Connector User profil	e			
Views 🗄	)   🍞 🐼 🛐   Show documen	tation			
Favorites		Description	Target sys		

Then click on the Authorizations tab

Change Ro	les				
💅 🖷 Other rol	le   🛶   🚹				
Role	QTQVCACCE	SS			
Description	QlikView Co	nnector User profile			
🕄 Descript	ion 🖌 🏹 Menu	Authorizations	MiniAp	ops 🛛 🗖 User	in Ope
Created by		1	Last chang	ed on/by	
User	R3ADMIN		User	BCUSER	
Date	15.11.2006		Date	05.10.2007	
Time	12:15:40		Time	14:31:09	
	out authorization prof	ile			
Profile name	QTQVCAUTH_				
Profile text	Profil zur Rolle QT	QVCACCESS			
Status	Profile generated.	You cannot choose if	using the m	enu	
	· · · · · · · · · · · · · · · · · · ·				
	ization data and gen	erate profiles			
Change a	authorization data				
Expert mo	ode for profile genera	ition			

		tain authorization data and generate profiles
Then click on the "Change authorization data" icon	Ø	Change authorization data
88		

Expand the list until you can see the "QlikTech Display"  $\rightarrow$  "Table name" row



Click on the Pencil icon 2, 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.

🔄 Maintain Fi	eld Values	
/QTQVC/DIS	QlickTech Display	
ZQVCTAB	Table name	
	Full authorization	
'From'	'To'	
	Ð	
		<b>_</b>

## 3.2 The QlikView SAP SQL Connector Client

#### 3.2.1 Prerequisites

• QlikView version 8.20 build 5415 or later.

• If using QlikView version 8.50 or later; the .Net Framework 2.0 SP1 or higher is necessary.

• 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\

```
•
```

#### 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 the SQL Connector, the Query Connector, the Report Connector, the OLAP Connector and the DSO/ODS Connector, all will be installed.

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

	Welcome to the InstallShield Wizard for QlikView Connector for SAP
	The InstallShield(R) Wizard will install QlikView Connector for SAP on your computer. To continue, click Next.
0	WARNING: This program is protected by copyright law and international treaties.
Al arms 13	< Back Next > Cancel

- Click on the Next button.

🛃 QlikView Connector for SAP - InstallShield Wizar	d 🛛 🛛
Select region	Q
Austria Belgium Canada Denmark Finland France Germany Ireland Japan Luxembourg Netherlands Norway Spain Sweden Switzerland United Kingdom United States Other	Please select the region that corresponds to your current location.
InstallShield < Back	Next > Cancel

- Choose a Region.

<ul> <li>Click or</li> </ul>	the	Next	button.
------------------------------	-----	------	---------

License Agreement Please read the following license agreement carefully.	O
IMPORTANT-DO NOT INSTALL OR USE THE SOFTWAR ACCOMPANIES THIS LICENSE UNTIL YOU HAVE READ AND ACCE OF THE LICENSE TERMS BELOW.	10
PERMISSION TO INSTALL AND USE THE SOFTWARE IS CONDITION THE FURCHASER OF THE LICENSE FOR THE SOFTWARE (THE "EN AGREEING TO THESE LICENSE TERMS. INSTALLATION OR USE SOFTWARE BY THE END USER WILL BE DEEMED TO BE ACCEPT THESE LICENSE TERMS. IF YOU ARE INSTALLING AND USE	ID USER") 3 OF THE ANCE OF
I accept the terms in the license agreement     I do not accept the terms in the license agreement	Print
stallShield	Cancel

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

Server And Address Proceeding to a Ref. Social Relation of Server S	
🔀 QlikView Connector for SAP - InstallShield Wizard	X
Customer Information	
Please enter your information.	Q
User Name:	
Organization:	
•	
InstallShield.	
< Back Ne	ext > Cancel

- Click on the Next button.

🛱 QlikView Connector for SAP - InstallShield Wizard 🛛 🛛 🔀
Ready to Install the Program       The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield < Back Install Cancel

- 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.

Data Custom Data Functions Setti	ngs
Custom Data Sources	
QvSAPConnector.dll	Connect
	Select
	Script Builder

The QvSAPConnector.dll should be visible if everything is installed correctly. Click on the Connect... button

SAP Login	×
Destination     One of the second secon	
Client System Number	
Username Password	
OK Cancel Test Connection	

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. 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.
- 6. 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.
- 7. 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.
- 8. TimeOutBatch=n (default 600 seconds) how long the background job will wait for the Client side to fetch data.
- 9. TimeOutFetch=n (default 1200 seconds) number of seconds of trying to fetch from SAP without getting any records back.
- 10. TimeOutStartBatch=n (default 2400 seconds) how long the Client side will wait for the Background job to get started.
- 11. 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.
- 12. 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\".
- 13. 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.
- 14. 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.

15. Trace=0/1 (default 0 =off, 1 =on). Turns on/off trace-function in SAP-programs. Writes trace-information into table "/QTQVC/TRACE".

2010-09-14

#### 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 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 E6DK00090. 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, RSOB, SDIFRUNTIME, SYST, OCSB, SYSU, SRTT
  - iii. RFC\_TYPE: FUGR
- b. S\_RS\_AUTH
  - i. BIAUTH: 0BI\_ALL
- c. S\_RS\_COMP
  - i. ACTVT:16
  - 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.

• .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.

#### 4.2.2 Installation of the SAP OLAP Connector Client

The OLAP Connector is included in the same installation package as the SQL Connector, 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)

Properties
zbud_lwt2 (Query)
💯 🔒   🔩 •
Rows/Columns   Value Display   Planning
General Variable Sequence Display Extended
Enterprise ID
53WR70BX13TFCP93TBFIANDH9
Release for OLE DB for OLAP
Allow External Access to this Query
I I

#### 4.2.4 Using the SAP OLAP Connector

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

Custom Data Sources           QvSAP0LAPConnector         Connect           Select         Cubes	Data	Custom Data	Functions	Settin	gs
Select	Custo	om Data Source:	s		
	Qv	SAPOLAPConne	ector	*	Connect
Cubes					Select
					Cubes

The QvSAPOLAPConnector.dll should be visible if everything is installed correctly. Click on the Connect... button

SAP Login	×
Destination     Application Server Host     Message Server Host	
Client System Number	
Username	
Password	
SNC	
OK Cancel Test Connection	]

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=nnnnnn (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

Data	Custom Data	Functions Setti	ings
Cust	om Data Source	8	
Qv	SAPOLAPConne	ector 🗸 🗸	Connect
			Select
			Cubes

• 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.

fo provider	Query		
INFOCUBE	\$0CP_SLSC1 Sales	and Sales Deals	~
aracteristics / (Navigatio	onal Attributes)	Key figures	Variables
aracteristics / (Navigatii ustomer istribution Channel ivision laterial lant ales Organization ales Organization alendar Poar/Month al. Year/Month al. Year/Moek alendar Year/Week alendar Year alendar Year ales Unit	nal Attributes) REGULAR REGULAR REGULAR REGULAR REGULAR REGULAR REGULAR TIME TIME TIME TIME TIME REGULAR REGULAR REGULAR REGULAR REGULAR	Key figures Absolute Sales / Cost Value Absolute Sales / SUn Absolute Sales / SUn Absolute Sales/RUn Absolute Sales/RUn Absolute Sales/Retail Value Credit Memo / Cost Value Credit Memo / Sun Credit Memo / SUn Credit Memo Third-Party / BUn Credit Memo Third-Party / SUn Credit Memo Third-Party / SUn Credit Memo Third-Party / SUn Credit Memo Third-Party Order / Number of Items Credit Memo Third-Party Order / Rtl Credit Memo from Internal Settlement SUn Credit Memo from Internal Settlement/ Retail Value Credit Memo/ Retail Value	Variables
		✓ Include All Values of Characteristic	
Hierarchy Display attributes		Include All Values of Characteristic	

- 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 (
[OAPO_PROD] (),
[OCUSTOMER] (),
[OMATERIAL] (),
[OCALWEEK] ()),
Measures (
[64381YV80FHCMZ26ZQQD1003D].[7A9LKMEDKUB9T6IKWEQ73C3PV], //Base Sales Quantity
  [64381YV80FHCMZ26ZQQD1003D].[CD68DKVB8003MAL0SAICC8R6F], //Cost of Sales
  [64381YV80FHCMZ26ZQQD1003D].[AEAIWV0IF06I466U6IDWVT3D8], //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 Automatic performance optimization 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.

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 - [20NIIMDAY]
"Calendar Year/Month - Calendar Year/Month Level 01 - [20NUMWDAY]"
FROM D:\Testing\5.2\olap\ZBUD_CUBE_0CALMONTH.gvd (gvd);
```

#### 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  $\rightarrow$  User groups  $\rightarrow$ Technical groups  $\rightarrow$ SAP  $\rightarrow$ Media Section.

# 5 The QlikView SAP DSO/ODS Connector

#### 5.1 The SAP System

#### 5.1.1 Prerequisites

SAP BW / Netweaver BI

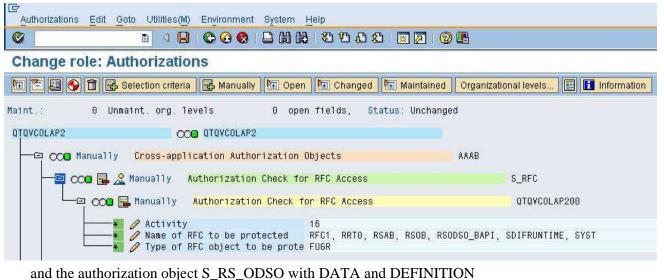
- 3.0B with Support Pack 30 or higher
- 3.1 with Support Pack 24 or higher
- 3.5 with Support Pack 16 or higher
- 7.0 with Support Pack 6 or higher

#### 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.
- 2 additional function groups : RSAB and RSODSO\_BAPI



Constant Administration     Constant Administration     Constant Administration     Constant Administration     Basis: Administration     Basis - Central Functions     Constant Administration     Basis - Central Functions     Business Information Warehouse		AAAB BC_A BC_Z RS
🖵 🖂 🔂 🔚 🔀 Manually 🛛 Data Warehousing Workb	ench - DataStore Object	S_RS_ODSO
└──宫 ○○■ 🖳 Manually 🛛 Data Warehousing Work	bench - DataStore Object	QTQVCOLAP200
🗕 🥐 Activity	03	
🗕 🥐 InfoArea	*	
🗕 🥐 DataStore Object	*	
🗕 🦗 🥜 Subobject for ODS Object	DATA, 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.

• .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.

## 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.

Data	Custom Data	Functions Setti	ngs
Custo	om Data Source	\$	
Qv	SAPDSOConne	etor 😽 😽	Connect
			Select
			DS0/0DS

The QvSAPDSOConnector.dll should be visible if everything is installed correctly. Click on the Connect... button

SAP Login			
Oestination			
Client System Numb	er		
Username			
Password			
SNC SNC			
	ОК	Cancel	Test Connection

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.

- 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

Data	Custom Data	Functions	Settin	gs
Custo	om Data Source:	s		
Qv	SAPDSOConnec	otor	*	Connect
				Select
				DS0/0DS

• 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.

	41>
) Object	0 Object
	P PO
ID         OCA_IO         Partner: ID Numbers           JPEL         OCA_IO         BP: Relationships           VEND         OCA_IO         BP: Relationships           SJ_DS02         NODESNOTCONNECTED         Sales Scheduling Agreement Items           Incoming Orders for Sales Scheduling Agreements         KMCAI         OCI           KMPA1         OCI         Key Mapping Data for Partners (Identical Object)           JSD902         ODESNOTCONNECTED         Incoming Orders for Sales Scheduling Agreements           KMPA1         OCI         Key Mapping Data for Partners (Identical Object)           JDS19         ODF_MAT         Good Movements           S_INW         NODESNOTCONNECTED         Invoice Documents           S_OCH         NODESNOTCONNECTED         Purchase Order Change           S_ORD         NODESNOTCONNECTED         Purchase Order Status           I_BP         OG         Business Partner: ID Numbers           VEND         OCA_IO         Partner: ID Numbers           MPR JD         OCA_IO         Partner: ID Numbers           MPR JD         OCA_IO         Partner: ID Numbers           MPR JD         OCA_IO         Partner: ID Numbers           S_SBOD         OBWTCT_PERS         Personalization Data for the Ex: Open Dialog <td>9_CUST 9_TD 9_TD 9_REL 9_VEND 95_D502 95_D503 15_D503 15_D503 15_D503 15_D503 15_D503 15_D503 15_D503 16_D</td>	9_CUST 9_TD 9_TD 9_REL 9_VEND 95_D502 95_D503 15_D503 15_D503 15_D503 15_D503 15_D503 15_D503 15_D503 16_D

- 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;

## 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.

C User group Edit Goto Settings Environment System Help
S ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
User Groups: Initial Screen
🕼 🕅 🖨 Additional functions
Query area Global Area (Cross-client)
User group Change Create
ୟିନ Display 🛃 Description
Assign users and InfoSets
User group assignment
User Change
InfoSet 🥢 Change

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

e l	Jser group	Edit	Goto Settings	Environment	System	Help	
Ø			0	800	😢 i 🗅		2   🕜 🖪
U	ser Gro	up: /	Assign Us	er LWT to	User	Groups	
Us	ser		LWT				
							_
Us	er groups ar	nd chan	ge authorizations	s for queries			
	User group	)	Long text			Change authorization	
	/SAPQUER'	(/AB	Agency Busine	ess		<b>v</b>	
	/SAPQUER	(/AE	Accrual Engine	9		✓	
	/SAPQUER	(7.8M	ASSET MANAG	ER		✓	
	/SAPQUER	//AU	Audit			✓	
	/SAPQUER	//BP	SAP Business	Partner		<b>V</b>	
	/SAPQUER'	//CR	MSS Crystal R	eports Example	s	✓	
	/SAPQUER'	//DL	Service			✓	
	/SAPQUER	//ES	HCM Employe	e Self Services		✓	
	/SAPQUER'	//FB	FI document e	valuations			

## 6.2 The QlikView SAP Query Connector Client

#### 6.2.1 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.

#### 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.

Custom Data Sources	
QvSAPQueryConnector 🛛 🗸 🗸	Connect
	Select
	Queries

The QvSAPQueryConnector.dll should be visible if everything is installed correctly. Click on the Connect... button

SAP Login	×
Oestination	
Message Server Host	
Client System Number	
Username	
Password	
OK Cancel Test Connection	n)

In the Login window enter the Host-address, Client and System number of the target SAP system of 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

t
s

• 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.

SAPQuery	SAPQueryDescription	UserGroup	InfoSet	Variant	Workspace	^
D0-DEBITOREN D1 D1 D1 D1 D1 D1 D1 D1 D2 D2 D2 D2 D2 D2 D2 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3 D3	Debitorenliste gemäß Unexcused Tardiness Meldungsstatistik list of employees Personnel area statistic Inventory list Inventory list Standard list Hire Date Real estate and similar Real estate and similar Statistic for Plant Motor pool Vehicles Leasing Leasing Test QIH Sample for Address Da Cost Center Compens Ordinary depreciation Headcount per Compa Depreciation	HR Malaysia AC900 Übungsbereich Time Management Servicemanagement Personnel Development Personnel Administration Asset manager Asset MaNAGER Personnel Administration Asset manager ASSET MANAGER Personnel Administration Asset manager ASSET MANAGER EIS Data Transfer ASSET MANAGER Personnel Administration Asset manager EIS Data Transfer ASSET MANAGER Personnel Administration Data Transfer ASSET MANAGER	HR Personnel administr FI Accounts Receivabl FI Accounts Receivabl Servicemanagement: S Personnel Master Data HR-PA: Infotypes 000 FIAA - Inventurangaben FIAA - Inventurangaben FIAA - Inventory infor HR-PA: Infotypes 000 FIAA - Grundstücke FIAA - Grundstücke FIAA - Grundstücke FIAA - Fuhrpark FIAA - Fuhrpark FIAA - Leasing FIAA - Leasing FIAA - LEASING Personnel Master Data FIAA - Abschreibungen HR-PA: Infotypes 000 FIAA - DEPRECIATION HR-PA: Infotypes 000	SAP&KOSTL	Global Global Local Local Local Local Local Local Cocal Local Global Local Global Local Global Local Global Local Local Local Local Local Local Local Local Local Local	×
rrent Statement					Add to Script	Preview

- 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:

<u>Trace Edit Goto System H</u> elp
System Trace
🛐 📑 Trace on 💭 Trace off 🛛 🔜 🗔 🧔 Analysis 🖓 Save 🛛 🐺 Trace off 🖉 🗐
Trace Status: Trace switched off (main switch off)
Trace Components         Last Change           Authorization check         L
Kernel Functions
General Kernel
📕 Settings 😂 Settings
DB Access (SQL Trace) 🗌 🔗
Table Buffer Trace
RFC Calls
Lock Operations
General Filters

- 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.

• .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.

#### 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:

⊡ <u>P</u> rogram <u>E</u> dit <u>G</u> oto :	Bystem <u>H</u> elp		
<b>©</b>	Cr <u>e</u> ate Session		3 8 8 1 8 9 6
Customer Sales	Eng Session User Profile Services Utilities List Services for Object My Objects	•	to
Selection using search help Search help ID Search String Search Help	Own Spool Requests Own Jobs Short Message Status Log off		

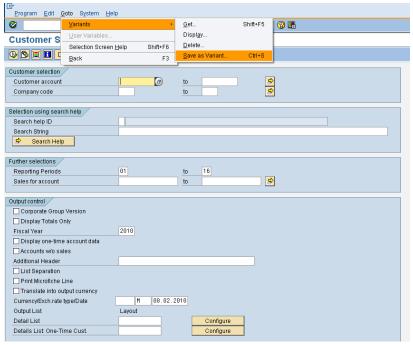
If you don't know the Report program name, only the Transaction Code, you can find this by clicking System Icon at bottom line of the SAPGui Window according to below which will show the Program name in the highlighted line.

✓ System	E5D (4) (800)
<u>C</u> lient	800
<u>U</u> ser	LWT
<u>P</u> rogram	RFDUML00
Tr <u>a</u> nsaction	S_ALR_87012186
<u>R</u> esponse Time	9484 ms
Interpretation Time	9 31 ms
Round Trips/Flush	ies 1/0
L	V E9D (4) (800) 🖸
	(

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.

Data	Custom Data	Functions	Settin	gs
Custo	om Data Source	s		
Qv	6APReportConn	iector	*	Connect
				Select
				Reports

The QvSAPQueryConnector.dll should be visible if everything is installed correctly. Click on the Connect... button

P Login					×
	Destination				
	ication Server I				
Mess	age Server Ho	ist			
	Client System Numbe	er			
Usernam	e				
Password	ł				
SNC					
		ОК	Cancel	Test Connec	tion

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.

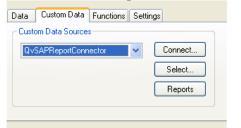
- Log=0/1 (default 1=on, 0=off) ,
  - If On a log-file will be created in Windows directory "C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\".
- Logpath=xxxx, will place logfiles in subfolder named "xxxx". The folder will be created if necessary. "xxxx" can 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.

#### 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.

SAP Reports - 10.77.	1.17; Client: 800;	
Report	Variant Get	
Action Cate 0	riginal Data	

• 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.

Report		Variant						
rfbila00		1001		Get				
Action	Cate	Original D	lata					
Data	1	IDES AG		н	andelsbilanz		Zeit 14:14:15	Da
Data	2	Frankfurt					RFBILA00/QVCUSER	Se
Data	3							
Data	4		eis 1000 Geschäftsl				Beträge in EUR	
Data	5			444444444444444444444444444444444444444			444444444944444444444444444444444444444	
Data	6	5V5Buch5Ge:			5 Ber	.Zeitraum 5 Vergl.	Zeitraum 5 absolu	ite
Data	7	5S5krs.5be					-16.1997) 5 Abweichu	
Data	5	64:4444:444	44:44444444444444444	444444444444444444444444444444444444444	444444444444444	14444444444 : 44444444	4444444444 : 44444444444444444	444
Data	8	555	5ΑΚΤΙΥΑ		5	5	5	
Data	9	555	5= = = = = =		5	5	5	
Data	9	555	5Anlagevermoegen		5	5	5	
Data	9	55 5	5		5	5	5	
Data	9	55 5	5Sachanlagen		5	5	5	
Data	9	555	5		5	5	5	
				and a state of the second s				

- 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.

D 1 0 0 0			-	-	-	_
Rows per record	Selected Row	<ul> <li>will be Skipped</li> <li>will be Added as Columns or is a Header Row</li> <li>is a Data Row</li> </ul>	Dther Rows with the same $\bigcirc$ Ca	ategory bstring at Position		Apply

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

23456789012345	7890123	5678	0123456789	123456789012345678901234567890123456789	123456789	123	5678901234567	9012345678	0123
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 ≚
<									>
				Field Delimiter !	Field delimi	er after:	position	Add	Remove

• 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



- 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 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 <a href="http://help.sap.com/saphelp\_nw04/helpdata/EN/69/b0bbd6dde71141bee8806586144796/frameset.htm">http://help.sap.com/saphelp\_nw04/helpdata/EN/69/b0bbd6dde71141bee8806586144796/frameset.htm</a>.

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.

Environment Var	iables 🔹 💽
User variables for	lwt
Variable	Value
INCLUDE	C:\Program Files (x86)\Microsoft Visual
LIB	C:\Program Files (x86)\Microsoft Visual
TEMP	%USERPROFILE%\Local Settings\Temp
TMP	%USERPROFILE%\Local Settings\Temp
	New Edit Delete
System variables	Value
PROCESSOR LE	6
PROCESSOR_R.	
SNC_LIB	D:\SNC_Test\gx64ntlm.dll
TEMP	C:\WINDOWS\TEMP
TMP	C:\WINDOWS\TEMP
	New Edit Delete
	OK Cancel

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.

	Destin	ation		 	
	plication essage S				
	Client	_			
	Syste	m Numb	er		
Userna					
	ame				
Userna	ame				
	ame				
	ame				
Passw	ame ord	Name			