QlikView

QlikView Connector for Use with SAP NetWeaver

Installation and Usage Guide

QlikView Connector Version: 5.80 SR4, Oct 2014

www.qlikview.com

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1 About this Document

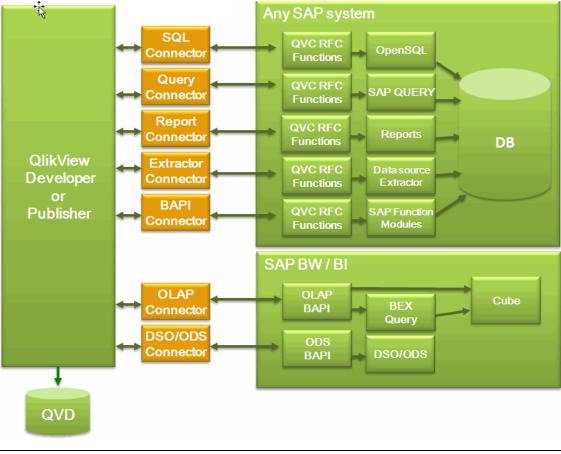
This document describes the installation and use of the QlikView connector for use with SAP NetWeaver. The latest version of this document is available through support@qliktech.com.

2 Introduction

The QlikView components are installed on two different types of computers; the SAP system and the QlikView SAP connector client. The procedures for each of these systems are described in this document.

The connector package consists of seven different connectors:

- SQL connector
- Query connector
- Report connector
- Extractor connector
- BAPI connector
- OLAP connector (can only be used on a SAP BW system).
- DSO/ODS connector (can be used on a SAP BW system).



Note: Not supported with SAP Hana

3 Authorization Concept

3.1 General

3.1.1 Authorization Concept

The Connectors are intended to be used as back-end components, not to be used by endusers. The authorization for end-users should be setup via the normal QlikView procedures, not described in this document.

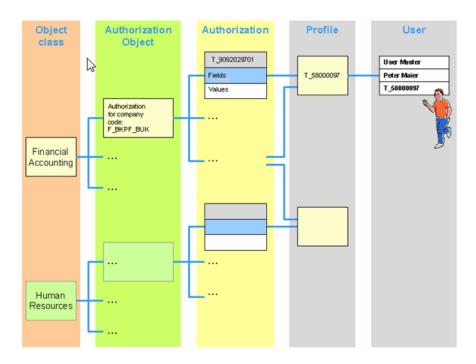
Connector-specific SAP Users should be created and these should not be used for other purposes. This will ensure traceability and better control. The Connector package includes Roles and Profiles, but these should be seen as suggestions to be used in development environments. Parts of the development process of the QlikView applications will be to create the necessary authorization in Production Roles. Changes to the Qlikview supplied Roles in future versions have to be manually added to the Production Roles.

An authorization is a permission to perform a certain action in the SAP system. The action is defined by the values of individual fields in an authorization object. When a user logs on to a client in an SAP system, the user's authorizations are loaded in the user context. The user context is located in the user buffer (in the main memory) of the application server.

Several authorizations may be needed to perform an operation in the SAP system. The resulting contexts can be complex. The SAP authorization concept, based on authorization objects, has been introduced to provide an understandable and simple procedure. Several system elements that are to be protected form an authorization object.

The programmer of a function decides whether, where, and how authorizations are to be checked. The program determines whether the user is authorized to perform an activity by comparing the specified authorization object field values in the program to the authorization values in the user master record.

Authorizations can be collected in authorization profiles in order to reduce the maintenance effort that would be required to enter individual authorizations in the user master record. Access authorization changes affect all users with the profile in their master record.



3.1.2 QlikView Predefined Authorization Roles

One of the SAP transports from QlikView contains some predefined Roles. These Roles are only a proposal and should be adjusted to fit the specific purpose and needs. Remember, if you add authorization objects or change values, you should do so in a new custom Role, to avoid these changes being lost when you import new versions of the Connector transports. The QlikView supplied Roles and their intended usage are listed below.

3.1.2.1 QTQVCACCESS

To be used by SQL, Report, Query and BAPI Connector Back-end user for doing extraction jobs from QlikView.

3.1.2.2 QTQVCADMIN

There are a number of QlikView transactions in the SAP GUI. Most of them require that this role is assigned to the user.

3.1.2.3 QTQVCBWACCESS

To be used by OLAP and DSO/ODS Connectors Back-end user for doing extraction jobs from SAP BI/BW system with QlikView.

3.1.2.4 QTQVCEXTRACTOR

To be used by Extractor Connector Back-end user for doing extraction jobs from QlikView.

3.1.2.5 QTQVCEXTRADM

This role can only be used to activate and generate the extractors in an SAP system. The role is very restricted and can only be used to activate the extractors for later use by the Extractor Connector.

3.1.2.6 QTQVCEXTRSETUP

This role can only be used to create, delete, and verify the setup of the number logical system in an SAP system for later use by the Extractor Connector.

4 QlikView SAP SQL Connector

4.1 SAP System

4.1.1 Prerequisites

• SAP BASIS system 610 or later

4.1.2 Installing Transports

Two transports must be installed in the SAP system. These are copied to the following folder on the computer during the installation of the QlikView SAP connector:

C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector\Transports

A third transport, used with Roles for the OLAP and/or DSO connectors, is also supplied.

4.1.2.1 SAP BASIS System 4.6

For these systems, use version 5.30 of the QlikView SAP connector.

4.1.2.2 SAP BASIS System 6.10 and 6.20

For these systems, the following transports must be installed in the SAP system:

- E6DK900655 (data extraction)
- E6DK900612 (user profile)

Note: For BASIS versions 6.10 and 6.20 version 5.70 of the SAP connector must be used for the Extractor and BAPI connector

4.1.2.3 SAP BASIS System 6.40 - 71x

For these systems, the following transports must be installed in the SAP system:

- E6DK900658 (data extraction)
- E6DK900612 (user profile)

4.1.2.4 SAP BASIS System 7.20 – 7.4x

For these systems, the following transports must be installed in the SAP system:

- E66K900047 (data extraction)
- E66K900036 (user profile)

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

4.1.3 User Configuration for SAP BASIS System 6.10, 6.20, 6.40, and 7

After the transports have been installed in the system, proceed as follows:

Create one or more SAP users that will be used for Back-end jobs from QlikView. These users are not intended for QlikView end-users— only a few SAP users should be created. The reason to create several users might be that you want to give them different authorization or for traceability.

1.

- a. Go to transaction SU01.
- b. Click Create (F8).
- c. Give the user a name and a password.
- d. On the Logon data tab, assign the user to User Type: Service.
- e. On the **Roles** tab, add the role QTQVCACCESS.
- f. Click Save.
- 2. If the installation is an upgrade from a previous version and the role *QTQVCACCESS* has been updated, update all users assigned to the role:
 - a. Go to transaction PFCG.
 - b. Enter the role name QTQVCACCESS and click Change Role.
 - c. On the **User** tab, enter the name of the user(s) created above.
 - d. Click User comparison.
 - e. Click Complete comparison.
 - f. Click Save.

4.1.4 Testing SQL Statements - /QTQVC/SQL

The /QTQVC/SQL transaction allows testing of SQL SELECT statements. After installing the transports and creating a user, proceed as follows to test that everything has been correctly installed:

1. Log on with the newly created user and test transaction /n/QTQVC/SQL.

Testing SQL-Statement	s for QVC		
SQL-Statement			Open Stream
			Fetch Stream
			Close Stream
			all Data
Windows user	BPO		
Windows IP number	STARTED FROM SAP		
Package Size	20.000	Job Number	
Wait for Fetch (internal)	30	Table Name	
Trace	0		
Conversion Routine	0		
Buffer Percentage	10		
Timeout Batch	600		
Target Server			
Job Class			
Check Field Separator	0		
Batch Job Name	/QTQVC/READ_DATA		

- 2. Enter the SQL statement.
- 3. Click Open Stream.
- 4. Click Fetch Stream to display the result.

4.2 Authorisation

The Role QTQVCACCESS should be used by the newly created SAP/QlikView user, this Role, delivered in a Transport gives access to all tables in the SAP system. This Role is only intended to be used in a development environment. In production a copy of this Role should be used, where you have restricted access to only the tables that need to be downloaded.

4.2.1 Table-based Access Control

Proceed as follows to configure the table-based access control:

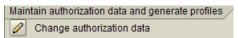
- 1. Go to transaction PFCG and enter the role QTQVCACCESS.
- 2. Click the Change icon, \swarrow .

l <i>⊡</i> <u>R</u> ole	<u>E</u> dit <u>G</u> o	to E <u>n</u> vironmen	t S <u>y</u> stem <u>H</u>	lelp					
S 🖸	cg	Ē	⊴ 📙 😋	🙆 🚷	📮 🕅 🖓 🖇	3 10 40 40	💥 🔁	🔞 🖪	
Role	Mainte	nance							
	💄 🚹	ransactio	ns						
Role		QTQVCACCESS			🖉 🚱 🗋	Create role	Cr	reate comp. role	₩ 🕂
Name		QlikView Connec	tor User profile)					
K Views	1	🗟 🛐 । St	now document	ation					
Favorites				Descrip	tion			Target sys	
Favorites	5			Descrip	/0011			Target sys	

3. Select the Authorizations tab.

Change R	oles				
🖅 🖻 Other ro	ole 🛛 🔿 🛛 🚹				
Role					
Role	QTQVCACCE	SS			
Description	QlikView Co	onnector User profile			
C Descript	ion 📜 🎑 Menu 🖉	Authorizations	User	MiniApps	😼 Personalization
Created by			Last Changed (On/By	
User	LWT		User	HRG	
Date	2010.04.13		Date	2014.03.03	
Time	11:36:54		Time	11:00:03	
Information Ab	out Authorization Pro	ofile			
Profile Name	QTQVCPROF1				
Profile Text	Profile for role QTQ	VCACCESS			
Status	Authorization profile	e is generated			
Maintain Authorization Data and Generate Profiles					
Change Authorization Data					
🕄 Expert Mo	ode for Profile Genera	tion			

4. Click the Change authorization data icon.



5. Expand the tree until the **QlikTech Display>Table name** row is available.

Maint.: 0 Unmai	int. org. levels 0 open fields, Status: Unchanged
QTQVCACCESS	OOL QlikView Connector User profile
- 🕀 🔘 Manually	Cross-application Authorization Objects
- 🗈 🔿 Manually	Basis: Administration
🗖 🖸 🗰 Manually	Basis - Development Environment
🖵 🖸 🔘 Manually	Qlikview
- 🗁 🖬 🔂 🗠	Manually Function Module Manually QlikTech Display
	Manually QlikTech Display
	Manually QlikTech Display
· · · · · · · · · · · · · · · · · · ·	🖉 Table Name *

6. Click the Pencil icon, 2, to change the values.

By default, it has the value *, which means all tables are accessible. Single values or ranges of tables can be entered.

🔄 E6D(1)/8	00 Field values					X
Object	/QTQVC/DIS	QlikTec	h Display			
Field Name	/QTQVC/TAB	Table N	ame			
		Full aut	horization			
Value Intr	/l					
'From'			'To'			
*						
						*
						-
4 F 🗌	##				4 Þ	
				DA		7
					ا تک	2) 💌

4.2.2 Row-based Access Control

In most cases Table-based access restriction is sufficient, but there can be situations where you also want to restrict which rows can be downloaded within a table.

Use the /n/QTQVC/USERCONTROL transaction to define row-based access to specific tables for a user. This transaction is only to be used, if download restriction on row-level is needed. If the tables are empty, the table-based access restriction is used instead (see section 4.2.1). If

there is at least one row in this row-based restriction, it takes precedence over the table-based restriction.

Z+++ (would give access to all tables starting with Z and having 1-4 characters in the name. +++A (would give access to all tables with 4 characters ending with A. ++++ (would give access to all tables with 4 characters or less)

If wildcards are used in Table name, it is not be possible to have any value conditions on the field level in the affected tables. Thus the field name always has to contain a star(*) in connection with wildcard in Table name.

To use this functionality, create an additional Admin user that is allowed to use this transaction. Create the user in the same manner as above, but assign the role QTQVCADMIN instead. The Download users must not have this role assigned.

₽ s	ystem Help								SAP	
	/n/qtqvc/usercontrol	🗈 🔄 📙 I 😋 🚱 📢	9 I 🛛 H H I 🕄 🖱	£ \$	💥 🛃	2 E			A	
M	aintainance of	Authorizations								-
		riction tables					Restriction			_
	TableName	FieldName	Domain			UserName	Domain	Value	Group	
	CABNT		ALL			JEO	ALL	*	1	•
	D010TAB		ALL	— Ħ		JEO	JEO_TEST	'AF'	r	÷
	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	٠
				-					[*
	< >		•	•		٩ Þ			٩)	
_					_					
	l 🖬 🚯 🎦 🕰	Sort Sort			5	4 🖬 🚯	🖺 🚯 Sort			
Γ	Overview	Cop	y User							
1			· · · · · · · · · · · · · · · · · · ·							

In the left-hand table, **Restriction tables**, define the table to download data from:

- If restriction on row-level is not needed, enter * as FieldName and ALL as Domain.
- Any user assigned to a domain with a * in the TableName column has access to all tables.
- To restrict on row-level, enter the **FieldName** for which to make a value-based restriction. The **Domain** field is a free text field. Several field names in different tables can be linked to the same domain (to ease the maintenance of values).

In the right-hand table, **Restriction users**, define per user allowed values per domain:

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

Example:

```
(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 an overview of what has been entered for a specific table or user, click **Overview**. This screen is only used to display the defined access.

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

Filtering can be done on table and/or user.

Table	eName: 🏌					
Use	rName: *					
TableName		sername	FieldName	Value	Group	
T005	BC	USER	*	*	1	
VBAK	BC	USER	SPART	10	1	
VBAK	BC	USER	SPART	20,25,26	2	
T005T	BC	USER	SPRAS	'D'	1	
VBAK	BC	USER	VKORG	1000	1	1 [
VBAK	BC	USER	VKORG	2000	2	
						1
						1
						1
		_				ÌÞ

To ease the maintenance, there is a copy user function. Click **Copy User** to open the dialog below. If the **Copy to** user already exists, the lines of the **Copy from** user are appended to any existing lines.



4.3 QlikView SAP SQL Connector Client

4.3.1 Prerequisites

- QlikView version 10 or later
- If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

4.3.2 Windows Folders

The different parts of the connector are installed in two different places in the Windows folder structure. The first folder is for the program installation, C:\Program Files\Common Files\QlikTech\Custom Data\QVSAPConnector. The second folder is for ScriptBuilder, licenses, and log files. This path differs depending on the Windows version:

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

4.3.3 Installing SAP SQL Connector Client

There is a 32-bit (x86) and a 64-bit (x64) installation package for the Windows part of the connector. Check if the QlikView software is 32-bit or 64-bit and then select the corresponding installation package.

The package includes all the SAP connectors and they are all installed.

Proceed as follows to install the SAP connectors:

- 1. Double-click the installation file.
- 2. Click Next.



3. Choose a region and then click **Next**.



4. Select I accept... and then click Next.

🚏 QlikView Connector for SAP - InstallShield Wizard 🛛 🔀
License Agreement Please read the following license agreement carefully.
IMPORTANT-DO NOT INSTALL OR USE THE SOFTWARE THAT ACCOMPANIES THIS LICENSE UNTIL YOU HAVE READ AND ACCEPTED ALL OF THE LICENSE TERMS BELOW. PERMISSION TO INSTALL AND USE THE SOFTWARE IS CONDITIONAL UPON THE PURCHASER OF THE LICENSE FOR THE SOFTWARE (THE "END USER") AGREEING TO THESE LICENSE TERMS. INSTALLATION OR USE OF THE SOFTWARE BY THE END USER WILL BE DEEMED TO BE ACCEPTANCE OF THESE LICENSE TERMS IF YOU ARE INSTALLING AND USING THIS
I accept the terms in the license agreement Print I do not accept the terms in the license agreement
InstallShield Back Next > Cancel

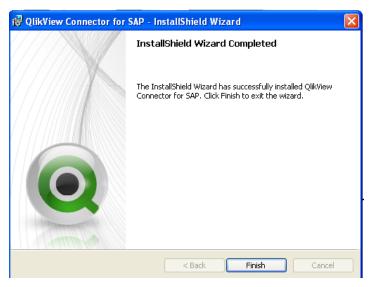
5. Click Next.

🙀 QlikView Connector for SAP - InstallShield Wizard	
Customer Information Please enter your information.	Q
User Name:	
Organization:	
InstallShield	
Sack N	ext > Cancel

6. Click Install to start the installation.

🙀 QlikView Connector for SAP - In	stallShield W	izard		
Ready to Install the Program The wizard is ready to begin installation	I.			0
Click Install to begin the installation.				
If you want to review or change any of exit the wizard.	your installation	settings, click	.Back, Click Ca	ncel to
InstallShield	< Back	Instal		Cancel

7. Click Finish.



4.3.4 Using SAP SQL Connector

Proceed as follows to start using the SAP SQL connector:

- 1. Start QlikView.
- 2. Open the Script Editor.
- 3. Select the **Custom Data** tab.

In QlikView, the Data and Custom Data tabs are combined.



If everything is correctly installed, QvSAPConnector.dll is displayed.

4. Click Connect...

5. Enter the Application Server Host address, Client, and System Number of the target SAP system, or select the Message Server Host option and enter the Message Server Address, Client, System ID, and Group.

SAP Login	X
Destination	
Client System Number	
Username	
Password	
OK Cancel Test Connect	ion

If passing through a message server, an entry may have to be added 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 in the file, add a new line break after the entry.

If passing through an SAP router, paste the router string in the Host address field.

In addition, enter the **Username** and **Password** of the user that is to be used for this specific download. Remember that different users can get different results due to row-based access control.

- 6. Click **Test Connection** to verify that all fields are correctly filled in.
- 7. Finally, click **OK** to get a connection string in the script.

There are a number of parameters that can be added to the connection string, if needed. Normally, the default values for these parameters are sufficient. Separate parameters with *;* (semi-colon) in the connection string:

- ConvRoutine=0/1 (default = 0, on = 1): Indicates that output conversion routines are used. This is commonly used for fields like Material Number (MATNR).
- KeepCasing=0/1 (default/off = 0, but all newly generated connection strings have value 1): Indicates that lowercase characters in the SELECT statement remain

lowercase. In previous versions (530 and below), the complete statement is converted to uppercase, thus preventing the use of lowercase characters in Where clause values.

- CheckSeparator=0/1 (default/off = 0): A specific combination of characters is used as field separator in the connector. This combination may occur in a field in the database and cause an error. If that happens, turn on this parameter to make the connector try alternative character combinations. Since this slows down the performance, it is only to be used when necessary.
- Nulldate=0/1 (default/off = 0, but all newly generated connection strings have value
 1): If on, date type fields with the value '00000000' are returned as NULL to QlikView.
- RemoveAllBlanks=0/1 (default/off = 0): If on, provides the possibility to get the "old" behavior, where all blanks in fields in SAP containing only blank characters are trimmed. The default behavior leaves one blank character in order to differentiate from NULL fields.
- TargetServer=xxxxxx: If specified, forces the background job to be executed on the specified application server. The correct name can be found in transaction SM51. The name is case-sensitive.
- JobClass=A/B/C (default = C): Sets the priority for the background job, which can be useful for small jobs that need to be reloaded often.
- BufferPercentage=nn (default = 10): Defines the amount of the free shared memory buffer that can be used by the job. A higher value increases the speed, but also increases the risk for conflicts with other jobs.

Special value 999 for the Bufferpercentage parameter, can now be used to force the Connector to use 10% of the available shared memory, not only a percentage of free shared memory. This should be used if the Connector starts to show deteriorating performance

- TimeOutBatch=n (default = 600 seconds): The number of seconds that the background job waits for the client side to fetch data.
- TimeOutFetch=n (default = 1200 seconds): The number of seconds spent trying to fetch from SAP without getting any records back.
- TimeOutStartBatch=n (default = 2400 seconds): The number of seconds that the client side waits for the background job to start.
- PacketSize=n (default = 20000): The maximum number of rows that the connector tries to download for each fetch operation. This is re-calculated by the connector and might be reduced automatically, depending of the actual amount of shared memory in the SAP system.
- Log=0/1 (default/off = 0, on = 1): If on, writes a log file in the Windows folder C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\.

- Logpath=xxxx: Places log files in a subfolder named xxxx. The folder is created, if needed. xxxx can be any text string that can be a valid part of a folder name in Windows.
- LogFile=yyyy: Names the log file yyyydatetime-n.txt. yyyy can be any text string that can be a valid part of a filename in Windows.
- Trace=0/1 (default/off = 0, on = 1): Turns on/off the trace functionality in SAP programs. The trace information is written in the table /QTQVC/TRACE.
- BatchJobName=XXX (default = /QTQVC/READ_DATA). BatchJobName is the name of the data extraction batch job.
 BatchJobName can contain up to 32 characters Can be found in Job Overview (transaction SM37).
- RemoveThousandSeparator=0/1 (default/on = 1): If on, removes any kind of thousand separator from the data before sending it to QlikView. Affected data types in SAP are CURR (Currency), QUAN (Quantity) and DEC (Decimal).
- ReplaceNullvalue=0/1 (default/on = 1): If on, replaces all 'null' values with ' (SPACE) in the data before sending it to QlikView.

4.3.5 Data Types in SAP

A field in an SAP database table is assigned to a Data Type. Fields assigned to the following Data Types can not be downloaded by the SQL connector:

LCHR (Long character string, requires preceding INT2 field) LRAW (Long byte string, requires preceding INT2 field) RAWSTRING (Byte String of Variable Length)

4.3.6 ScriptBuilder

ScriptBuilder is a QlikView application that is used to find tables to download from the SAP system and to generate the script code.

You can select **Start>Programs>QlikView** to start ScriptBuilder, but we recommend you copy the complete folder to be able to use this application for several SAP systems.

The application is located in C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QVSAPConnector\ScriptBuilder\.

Start with the ReLoadSAPDD. qvw application, which downloads data from the data dictionary of the SAP system. Since the content of the dictionary differs for different variants and versions of SAP, this is a necessary first step.

ReLoadSAPDD. qvw creates . qvd files that can be loaded to the ScriptBuilder application.

Change the script regarding the connection and language in this application prior to doing a reload.

The Popular Tables and Data Models sheets may refer to tables that do not exist in the version of SAP used.

Detailed usage instructions can be found in the application.

4.3.7 SQL SUBSELECT Syntax

The SQL connector has one addition to the standard SAP OPENSQL syntax, SUBSELECT. This addition has been developed since JOIN or SUBSELECT cannot be done with cluster tables. Quite often this is required for tables like BSEG or KONV in order to do delta loads.

Note that the SUBSELECT method cannot be used, 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 to internal tables, so try to avoid SELECT * - only select the fields necessary.

The syntax of SUBSELECT in the QlikView script is as follows:

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

Only one SUBSELECT is allowed (within the parenthesis).

The SUBSELECT can have condition(s).

One or many comparison fields can be passed.

If the SELECT of the subtable 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 SUBSELECT.

The comparison field or fields has to match between main and SUBSELECT. The field names of the comparison fields do not have to be the same in the main and SUBSELECT, but the corresponding fields (of main and SUBSELECT) must have the same data types.

To achieve 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 subtable. The most important item to provide is the first key field (after client).

If the SUBSELECT fails, the reason can often be found in the log for the 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 OBJECTLAS OBJECTID CHANGENR IN (SELECT OBJECTLAS OBJECTID CHANGENR FROM CDHDR WHERE CHANGENR BETWEEN '0000100000' AND '0000300000');

4.3.8 SAP SQL Connector Log

The SAP SQL Connector Log is a QlikView application that analyzes the usage of the SQL connector and shows the security setup.

Select Start>Programs>QlikView to start the application. It is located in C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QVSAPConnector\SAPConnectorLog\.

Start by adding a connection string to the script and then do a reload from the SAP system.

5 QlikView SAP OLAP Connector

5.1 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.x with Support Pack 6 or higher

5.1.2 Installing Transports

No transports have to be installed.

5.1.3 User Configuration

A transport role, SAP BASIS 6.40 - 7.1X: E6DK900594, SAP BASIS 7.20 - 7.4x: E66K90029, which can be imported, is supplied. It contains a ready-made role named QTQVCBWACCESS with the content listed below.

This is a suggested Role only intended to be used in a Development environment. As part of the development process you should create a more restricted Role to be used in Production environment.

If importing into SAP BW versions below 7.00, errors/warnings regarding missing objects are received, but these can be ignored.

Alternatively, go to transaction PFCG and proceed as follows to manually create a role with the access rights below:

- 1. Add the following authorization objects:
 - S_RFC
 - i. ACTVT: 16
 - ii. RFC_NAME: RFC1, RRT0, RSAB, RSOB, SDIFRUNTIME, SYST,OCSB, SYSU, SRTT
 - iii. RFC_TYPE: FUGR
 - S_TABU_LIN
 - i. ACTVT: Restrict according to customer (* to access all)
 - ii. ORG_CRIT: Restrict according to customer (* to access all)
 - iii. ORG_FIELD1: Restrict according to customer (* to access all)
 - iv. ORG_FIELD2: Restrict according to customer (* to access all)
 - v. ORG_FIELD3: Restrict according to customer (* to access all)

vi. ORG_FIELD4: Restrict according to customer (* to access all)

- vii. ORG_FIELD5: Restrict according to customer (* to access all)
- viii. ORG_FIELD6: Restrict according to customer (* to access all)
- ix. ORG_FIELD7: Restrict according to customer (* to access all)
- x. ORG_FIELD8: Restrict according to customer (* to access all)
- S_RS_AUTH
 - i. BIAUTH: 0BI_ALL
- 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)
- 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)
- 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)
- 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)
- 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)
- 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
- 2. Create one or more download user(s) with the above role. Do not use the same download user as the SQL connector.
 - a. Go to transaction SU01.
 - b. Click Create (F8).
 - c. Give the user a name and a password.
 - d. On the **Logon data** tab, assign the user to **User Type: Service** or **Communications**.
 - e. On the **Roles** tab, add the role just created.
- 3. If download users with different access rights to cubes/queries are needed, copy the role created above and change the second role according to the requirements. Create a new user with the second role assigned.

5.2 QlikView SAP OLAP Connector Client

- 5.2.1 Prerequisites
 - QlikView version 10 or later
 - If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

5.2.2 Installing SAP OLAP Connector Client

The OLAP connector is included in the same installation package as the other connectors. For installation instructions, see section 4.3.3.

5.2.3 Accessing BEX Queries

To access BEX queries through the OLAP interfaces, they need to have the below property set in the BEX Query Designer (differs slightly 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

5.2.4 Using SAP OLAP Connector

Proceed as follows to start using the SAP OLAP connector:

- 1. Start QlikView.
- 2. Open the Script Editor.
- 3. Select the **Custom Data** tab.



If everything is correctly installed, QvSAPOLAPConnector.dll is displayed.

4. Click Connect...

5. Enter the Application Server Host address, Client, and System Number of the target SAP system, or select the Message Server Host option and enter the Message Server Address, Client, System ID, and Group.

Setup SAP Connection	J
Server Information	
Application Server Host	
Message Server Host	
Client	
System Number	
Group	
User Credentials Username	
Password	
Secure Network Settings	
C Activate Secure Network Communication	
SNC Name	
Quality 3 👻	
OK Cancel Test Connection Log	

If passing through a message server, an entry may have to be added 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, add a new line break after the entry.

If passing through an SAP router, paste the router string in the Host address field.

In addition, enter the **Username** and **Password** of the user that is to be used for this specific download.

- 6. Click **Test Connection** to verify that all fields are correctly filled in.
- 7. Finally, click **OK** to get a connection string in the script.

There are a number of parameters that can be added to the connection string, if needed. Normally, the default values for the parameters are sufficient. Separate parameters with *;* (semi-colon) in the connection string:

- Log=0/1 (default/on = 1, off = 0): If on, a log file is created in the Windows folder C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\.
- Logpath=xxxx: Places log files in a subfolder named xxxx. The folder is created, if needed. xxxx can be any text string that can be a valid part of a folder name in Windows.
- LogFile=yyyy: Names the log file yyyydatetime-n.txt. yyyy can be any text string that can be a valid part of a filename in Windows.
- Lang= (EN/DE...): The logon user's default language is used by default. For available languages, see table T005. If texts have to be downloaded in multiple languages, the relevant info objects have to be downloaded with separate connection strings.
- ConsistencyCheck=0/1 (default/on = 1): If on, optimization is done for maximum speed. If this fails due to inconsistent metadata, change this parameter to off and retry.
- PartitionSize=nnnnnn (default = 4000000): Increasing this parameter increases the speed, but also the risk of getting dumps in the SAP system. If many dumps are received, adjust this parameter downwards. In most cases, the download recovers.
- MinMembersInSlicedCharacteristic=nn (default = 10): Automatic slicing only chooses among characteristics that have more members than this value. In odd cases, no other suitable characteristic is available, which means this value might have to be lowered.

5.2.5 Defining Query

Proceed as follows to define a query:

1. Click **Cubes** in the Script Editor.

	Custom Data		6 . III	
Data	Custom Data	Functions	Setting	gs
Custo	om Data Source	s		
Qv	SAPOLAPConne	ector	~	Connect
				Select
				Cubes

2. Select an InfoCube in the Info provider drop-down list.

The drop-down lists all cubes that have at least one query that allows external access (see the restriction above). The first item in the drop-down is *\$INFOCUBE*, which is a top level for all InfoCubes in the system.

Cubes - 10.88.20.43; Client:	: 800;	the lot land half it. Milgon may little.		
Info provider	Query		_	
OCOPA_C03	0COPA_C03/COPA_C03	LWT copa_c03_lwt	Last updated: 04/2	0/12, 14:33:12 Refresh
Characteristics / (Navigational A	Attributes)	Key figures	Variables	
Description	Туре	Description	Description	Туре
Currency Type Customer Country Profit Center Transaction Type Valuation view Version Value type	REGULAR REGULAR REGULAR REGULAR REGULAR REGULAR REGULAR	Revenue Sales quantity	Country	Optional
Display attributes		Include All Values of Characteristic		
				-
				OK Cancel

3. Select a query in the Query drop-down list.

The drop-down lists all queries (that allow external access) built on the selected cube. If *\$INFOCUBE* is selected, all InfoCubes are returned.

4. Select at least one characteristic (or navigational attribute) in the **Characteristics** box to get any rows downloaded. A key figure does not have to be selected.

When selecting a characteristic, the bottom part of the window is populated. If there is more than one hierarchy, select one of them (since only one hierarchy/characteristic can be downloaded). Additional display attributes for the characteristic can also be selected. The default attribute is always downloaded.

Uncheck the **Include All Values of Characteristic** box to display the possible values for the members of the characteristic. Selecting a value generates a slice with that value. If the box is checked, all members of the characteristic are downloaded.

The **Variables** box contains any variables defined for the selected 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 (OCSAL C02/LWT1));
//****
```

Note: If using a big volume cube or a Bex query with numbers key figures the load have to be split in several loads. Start eith seperate the characteristics and the key figure to seperate qvd files and combined them in Qlikview. Other things to optimize look below:

5.2.6 Optimizing Query

If dumps are produced in the SAP system or if the performance is slow, there are a number of performance improvements that can be implemented.

By default, the connector suggests the "D" (direct) parameter in the script. This is only intended for small amounts of data, since no slicing is performed.

```
Select PseudoMDX D (
Dimensions (
[BUD_CTRY] (),
[BUD_LOC] (),
[BUD_PROD] (),
[BUD_SECT] (),
[OCALMONTH] ()),
Measures (
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[05N6UOUENHI2PSWMWNWV0HQS0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[6VMTYSJE733GVSGXA7WME01W0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AN043YDNYQQUUJIIW73G7SLCX],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AYC602WD0MJ1CXERY8AHAKUVC]),
From (ZBUD_CUBE/ZZBUD_LWT));
```

If "D" is removed, automatic slicing is performed. The automatic method primarily uses a time characteristic for slicing. If this fails or is missing, the largest characteristic is used instead. If this fails or is too slow, the connector can be forced to slice on a specific characteristic by using the "S" parameter. Check the connector log file for details when the job has failed.

```
Select PseudoMDX (
Dimensions (
[BUD_CTRY] (),
[BUD_LOC] S (),
[BUD_PROD] (),
[BUD_SECT] (),
[OCALMONTH] ()),
Measures (
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[05N6U0UENHI2PSWMWNWV0HQS0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[6VMTYSJE733GVSGXA7WME01W0],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AN043YDNYQQUUJIIW73G7SLCX],
[3ZAJ9QPTM5D8U5L9A1RCNSWWE].[AYC602WD0MJ1CXERY8AHAKUVC]),
From (ZBUD_CUBE/ZZBUD_LWT));
```

The automatic performance optimizations only work for basic InfoCubes and if the o parameter, PseudoMDX o, is added. In all other cases, it is recommended to download the characteristics and key figures in one load and create separate loads for each characteristic with its attributes and hierarchies. If these separate loads are stored in QVD files, they can be easily merged together using the KEY field of the characteristic:

```
//*** Load Characteristics and Key Figures
LOAD [Country - Country Level 01 (Text)],
[Country - Country Level 01 (Key)],
     [Location - Location Level 01 (Text)],
11
      [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)],
[Organization - Organization Level 01 (Text)],
[Organization - Organization Level 01 (Key)],
11
     [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)],
11
      [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);
```

5.2.7 Delta Loads

A special template, OLAP_delta.gvw, has been produced as an example of how delta loads can be performed. The procedure is described in a separate document, OLAPDeltaLoad.doc. Both can be downloaded from QlikCommunity under SAP User Group>Documents.

Note: If the Infocube have a large amount of data or many dimensions or a lot of restricted/calculated Key Figures a load could timeout.

6 QlikView SAP DSO/ODS Connector

6.1 SAP System

6.1.1 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

6.1.2 Installing Transports

No transports have to be installed.

6.1.3 User Configuration

Use the same role as defined for the OLAP connector (see chapter 5), if manually created you need to add the items below:

• Two additional function groups, RSAB and RSODSO_BAPI

Authorizations Edit Goto Utilities(M) Environment System Help	
◎	
Change role: Authorizations	
🖭 🏲 🛃 🊱 🗊 🛃 Selection criteria 🛃 Manually 🔯 Open 陸 Changed 🔃 Maintained Organizational	levels 📳 🚺 Information
Maint.: 0 Unmaint.org.levels 0 open fields, Status: Unchanged	
COO Manually Cross-application Authorization Objects	
🔤 COO 🔂 🧟 Manually Authorization Check for RFC Access S_	RFC
🖵 🗠 💭 🔂 Manually 🛛 Authorization Check for RFC Access 🔤 🔍 Q	TQVCOLAP200
Activity 16 RFC to be protected RFC1, RRT0, RSAB, RSOB, RSODSO_BAPI, SDI Type of RFC object to be prote FUGR	RUNTIME, SYST RFC_NAME RFC_TYPE

Authorization object S_RS_ODSO with DATA and DEFINITION

Constant Authorization Constant Authorization Constant Authorization Basis: Administration Basis - Central Functions Constant Authorization Basis - Central Functions Susiness Information Warehouse	Objects	AAAB BC_A BC_Z RS	
La COO 🕞 🏖 Manually Data Warehousing Worki	bench - DataStore Object kbench - DataStore Object	S_RS_ODSO QTQVCOLAP200	
Activity Activity InfoArea DataStore Object Subobject for ODS Object	03 * * DATA, DEFINITION		ACTVT RSINFOAREA RSODSOBJ RSODSPART

• Use the same download user as the OLAP connector

6.2 QlikView SAP DSO/ODS Connector Client

6.2.1 Prerequisites

- QlikView version 10 or later
- If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

6.2.2 Installing SAP DSO/ODS Connector Client

The DSO/ODS connector is included in the same installation package as the SQL connector. For installation instructions, see section 4.3.3.

6.2.3 Using SAP DSO/ODS Connector

Proceed as follows to start using the DSO/ODS connector:

- 1. Start QlikView.
- 2. Open the Script Editor.
- 3. Select the **Custom Data** tab.

Data Custom Data Functions Settir	ngs
Custom Data Sources	
QvSAPDS0Connector 🛛 👻	Connect
	Select
	DS0/0DS

If everything is correctly installed, QvSAPDSOConnector.dll is displayed.

4. Click Connect...

5. Enter the Application Server Host address, Client, and System Number of the target SAP system, or select the Message Server Host option and enter the Message Server Address, Client, System ID, and Group.

Setup SAP Con	nection	x
Server Inform	nation	
Application	on Server Host	
Message	Server Host	
Client		
System Number		
Group		
User Credent	tials	
Username		
Password		
	ork Settings Secure Network Communication	
SNC Name		
Quality	3 💌	
ОК	Cancel Test Connection Lo	g

If passing through a message server, an entry may have to be added 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, add a new line break after the entry.

If passing through an SAP router, paste the router string in the Host address field.

In addition, enter the **Username** and **Password** of the user that is to be used for this specific download.

- 6. Click Test Connection to verify that all fields are correctly filled in.
- 7. Finally, click **OK** to get a connection string in the script.

There are a number of parameters that can be added to the connection string, if needed. Normally, the default values for the parameters are sufficient. Separate parameters with *;* (semi-colon) in the connection string:

- ODSMAXROWS: By default, this parameter is 10 000 000 records. This is to avoid huge memory consumption, which is a problem with this BAPI. The connector stops reading data when reaching the maximum number and returns an error message. Be careful when reading very large tables, since memory consumption may get high.
- Log=0/1 (default/on = 1, off = 0): If on, a log file is created in the Windows folder C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\.
- Logpath=xxxx: Places log files in a subfolder named xxxx. The folder is created, if needed. xxxx can be any text string that can be a valid part of a folder name in Windows.
- LogFile=yyyy: Names the log file yyyydatetime-n.txt. yyyy can be any text string that can be a valid part of a filename in Windows.
- Lang= (EN/DE...): The logon user's default language is used by default. For available languages, see table T005. If texts have to be downloaded in multiple languages, the relevant info objects have to be downloaded with separate connection strings.

6.2.4 Defining Query

Proceed as follows to define a query:

1. Click **DSO/ODS** in the Script Editor.



2. Select an InfoArea in the **InfoArea** drop-down list or leave it as-is (*<All>*) to display all InfoAreas.

IBBP_PO NODESINOTCONNECTED Purchase Order - Single Documents OACTIVITY DBP_ID 0CA_IO BP: Role Object Customer 0ASSET DBP_DID 0CA_IO Partner: ID Numbers 0ASSET DBP_REL 0CA_IO BP: Relationships 0ASSET DBP_VEND 0CA_IO GP: Role Object Vendor 0ASSET 0ASSET DCDS_DS02 NODESNOTCONNECTED Sales Scheduling Agreement Items 0BBP_ACQ.NO 0BBP_ACQ.NO DCL_KMCA1 0CI Key Mapping Data for Categories (indentical Objects) 0BBP_ACQ.UU 0BBP_ACPQ.UU DICI_KMPA1 0CI Key Mapping Data for Partners (Identical Objects) 0BBP_ASPVOC 0BBP_ASPVOC DGLS_OCH NODESNOTCONNECTED Purchase Order Status 0BBP_CAT_ID 0BBP_CAT_ID DGLS_OCH NODESNOTCONNECTED Purchase Order Status 0BBP_CTITEM 0BBP_CTITEM DMMMEP_ID OCA_IO Partner: ID Numbers 0BBP_CTITEM 0BBP_CTITEM DMMMECAT OCA_IO Partner: ID Numbers 0BBP_CTITEM 0BBP_CTITEM 0BBP_CTITEM DMMMECAT OCA_IO Partner: ID Numbers Personalization Data for the BEX. Open Dialog	All>		Info Object	Select All
ISD_006 0SD Billing: Condition Data View of slices 1	IP_CUST OCA_IO IP_REL OCA_IO IP_REL OCA_IO IP_REL OCA_IO IP_REL OCA_IO IP_VEND OCA_IO IP_VEND OCA_IO IP_CUST NODESNOTCONNECTED DSD_DS02 NODESNOTCONNECTED IL_KMCA1 OCI IL_KMPR1 OCI SL_SIN NODESNOTCONNECTED SL_SIN NODESNOTCONNECTED SL_SOCH NODESNOTCONNECTED SL_SORD NODESNOTCONNECTED SL_SORD NODESNOTCONNECTED SL_SORD NODESNOTCONNECTED SL_SORD NODESNOTCONNECTED SL_SORD NODESNOTCONNECTED MDMBP_ID OCA_IO MDMPRCAT OCA_IO MODESNOTCONNECTED UR_DOS VUR_D001 NODESNOTCONNECTED VUR_O01 NODESNOTCONNECTED VUR_001 NODESNOTCONNECTED VD_001 SD_DLV VD_003 OSD_DLV VD_005 OSD <td>BP: Role Object Customer Partner: ID Numbers BP: Role Object Vendor Sales Scheduling Agreement Items Incoming Orders for Sales Scheduling Agreements Key Mapping Data for Categories (indentical Object) Key Mapping Data for Product (Identical Objects) Key Mapping Data for Product (Identical Objects) Furchase Order Change Purchase Order Status Business Partner Conversion of DataSource Field> InfoObject Partner: ID Numbers Product category data Personalization Data for the BEx Open Dialog Personalization Data for the Replacement of Variab Personalization Data for the Replacement of Variab Personalization Data for Web Template Drildowns Purchase Order Items Order Items Returns Items Order: Order: Condition Data Billing: Condition Data Billing: Condition Data</td> <td>0A5_PRCNT 0A5SET 0A5SET_MAIN 0B8P_ACC_NO 0B8P_ACC_NO 0B8P_ACPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_ESCR 0B8P_FINESCA 0B8P_FINESCA 0B8P_FINESCA 0B8P_FINESCA 0B8P_GRIW 0B8P_GRIW</td> <td></td>	BP: Role Object Customer Partner: ID Numbers BP: Role Object Vendor Sales Scheduling Agreement Items Incoming Orders for Sales Scheduling Agreements Key Mapping Data for Categories (indentical Object) Key Mapping Data for Product (Identical Objects) Key Mapping Data for Product (Identical Objects) Furchase Order Change Purchase Order Status Business Partner Conversion of DataSource Field> InfoObject Partner: ID Numbers Product category data Personalization Data for the BEx Open Dialog Personalization Data for the Replacement of Variab Personalization Data for the Replacement of Variab Personalization Data for Web Template Drildowns Purchase Order Items Order Items Returns Items Order: Order: Condition Data Billing: Condition Data Billing: Condition Data	0A5_PRCNT 0A5SET 0A5SET_MAIN 0B8P_ACC_NO 0B8P_ACC_NO 0B8P_ACPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_ASPOU 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_CTC_ID 0B8P_ESCR 0B8P_FINESCA 0B8P_FINESCA 0B8P_FINESCA 0B8P_FINESCA 0B8P_GRIW 0B8P_GRIW	

- 3. Select a DSO object in the **DSO Object** box.
- 4. Select the fields in the Info Object box.

The script appears in the bottom box.

To reduce the memory need, the slice functionality can be used to slice by column (row slicing is not possible). The generated script stores the result in separate QVD files, which have to be merged later on. All QVD files have a common key field to simplify the merge.

No navigational attributes are available.

5. Using the following syntax, a ${\tt WHERE}$ clause can be added manually:

```
WHERE
ColumnName1 sign option value,
ColumnName2 sign option value1 value2
```

No display attributes or key characteristics are allowed as columns in the $\tt WHERE$ 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 OSAL_DS01
where ODIVISION I EQ 01;
```

or

WHERE OCREATEDON I BT 20100101 20101231

7 QlikView SAP Query Connector

7.1 SAP System

7.1.1 Prerequisites

See section 4.1.1.

7.1.2 Installing Transports

See section 4.1.2.

7.1.3 User Configuration

Use the same user as defined for the SQL connector.

In addition to this; go to transaction SQ03 and provide the user with access to the relevant SAP query user groups. All queries in the user groups assigned are available via the query connector. For some queries, additional authorization may be needed. This is then to be added to an additional role (for example, QTQVCACCESS_CUSTOM). In most cases, the connector log reveals the missing authorization. If not, the Infoset definition and/or logical database definition have to be checked.

Proceed as follows to configure the query connector:

- 1. Go to transaction SQ03.
- 2. Enter the user ID in the User field.

l⊆r Usergroup E	Edit <u>G</u> oto <u>S</u> ettings Environment System <u>H</u> elp
Ø	a 4 9 6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
User Grou	ips: Initial Screen
	Additional functions
Query area	Global Area (Cross-client)
User group	Change Create
	🐼 Display 🛃 Description
	Assign users and InfoSets
User group assig	
User InfoSet	Change

- 3. Click Change.
- 4. Check all the User group boxes that the download user is to have access to.

e L	lser group <u>E</u> dit	<u>G</u> oto <u>S</u> ettings En <u>v</u> ironment Syst	em <u>H</u> elp	
0		E 🔍 📙 I 😋 😧 I	🗅 🖁 🖧 환 한 유 환 🛒 🖉 🔮 🖪	
Us	ser Group:	Assign User LWT to Us	er Groups	
Ûs	er	LWT		
100				
Use	er groups and char	nge authorizations for queries		
	User group	Long text	Change authorization	
	/SAPQUERY/AB	Agency Business		
	/SAPQUERY/AE	Accrual Engine		
	/SAPQUERY/AM	ASSET MANAGER		
	/SAPQUERY/AU	Audit		
	/SAPQUERY/BP	SAP Business Partner		
	/SAPQUERY/CR	MSS Crystal Reports Examples		
	/SAPQUERY/DL	Service		
	/SAPQUERY/ES	HCM Employee Self Services		
	/SAPQUERY/FB	FI document evaluations		

5. Click Save.

7.2 QlikView SAP Query Connector Client

- 7.2.1 Prerequisites
 - QlikView version 10 or later
 - If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

7.2.2 Installing SAP Query Connector Client

The query connector is included in the same installation package as the SQL connector. For installation instructions, see section 4.3.3.

7.2.3 Using SAP Query Connector

It is strongly recommended to test the query in transaction SQ01 prior to testing it via QlikView. If the query prompts for variable input, create a variant of the query with pre-defined values for the variables.

Proceed as follows to start using the query connector:

- 1. Start QlikView.
- 2. Open the Script Editor.

3. Select the **Custom Data** tab.

Data	Custom Data	Functions Setti	ings
Cust	om Data Source	s	
Qv	SAPQueryConne	ector 🗸 🗸 🗸	Connect
			Select
			Queries
			Queries
			Queries

If everything is correctly installed, QvSAPQueryConnector.dll is displayed.

- 4. Click Connect...
- 5. Enter the Application Server Host address, Client, and System Number of the target SAP system, or select the Message Server Host option and enter the Message Server Address, Client, System ID, and Group.

Setup SAP Connection
Server Information O Application Server Host Message Server Host
Client
System Number Group
User Credentials
Username Password
Secure Network Settings
Activate Secure Network Communication SNC Name
Quality 3 🔫
OK Cancel Test Connection Log

If passing through a message server, an entry may have to be added 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, add a new line break after the entry.

If passing through an SAP router, paste the router string in the Host address field.

In addition, enter the **Username** and **Password** of the user that is to be used for this specific download.

- 6. Click Test Connection to verify that all fields are correctly filled in.
- 7. Finally, click **OK** to get a connection string in the script.

There are a number of parameters that can be added to the connection string, if needed. Normally, the default values for the parameters are sufficient. Separate parameters with *;* (semi-colon) in the connection string:

- Log=0/1 (default/on = 1, off = 0): If on, a log file is created in the Windows folder C:\Documents and Settings\All Users\Application Data\QlikTech\Custom Data\QvSAPConnector\Log\.
- Logpath=xxxx: Places log files in a subfolder named xxxx. The folder is created, if needed. xxxx can be any text string that can be a valid part of a folder name in Windows.
- LogFile=yyyy: Names the log file yyyydatetime-n.txt. yyyy can be any text string that can be a valid part of a filename in Windows.
- Lang= (EN/DE...): The logon user's default language is used by default. For available languages, see table T005. If texts have to be downloaded in multiple languages, the relevant info objects have to be downloaded with separate connection strings.

7.2.4 Defining Query

Proceed as follows to define a query:

1. Click Queries in the Script Editor.

Data Custom Data Functions Set	ttings
Custom Data Sources	
QvSAPQueryConnector	Connect
	Select
	Queries

Enter the search criteria (query name and/or query description) in the Search for field.
 To re-sort the list, click the header of the field to sort on.

SAPQueries and !	SAPQuery descriptions					
SAPQuery	SAPQueryDescription	UserGroup	InfoSet	Variant	Variant Descr	Workspace
ZBSEG	Finacial Document	Qlkview	Financial Documents	TEST_DATATYP01	TEST_DATATYP01	Global
ZBSEG	Finacial Document	Qlikview	Financial Documents			Global
ZFTPT_CAR	ZFTPT_CAR	Qlikview	FTPT_CAR	TEST_INT_1_2	TEST_INT_1_2	Global
KALC	KALC	Qikview	KALC	TEST_KALC	TEST_KALC	Global
LIPS	LIPS RAW - FLTP	Qikview	LIPS Delivery: Item d	TEST_RAW	TEST_RAW	Global
MAKT	Material Tesx	Qlikview	Material Text	TEST_LANGU_01	TEST_LANGU_01	Global
PCL1	ZPCL1 HR Cluster 1	Qlikview	PCL1 HR Cluster 1	TEST_LRAW	TEST_LRAW	Global
ZPCL1	ZPCL1 HR Cluster 1	Qlikview	PCL1 HR Cluster 1			Global

- 3. Select a query and click **Preview** or **Add to Script**.
- 4. It's also possible to choose select options button to do a variant

BSEG							Preview
(BSEG							Freview
Name	Kind	Sign	Option	Low	High	Description	
%TEXT	Р					Word processing	
%TVIEW	Р					Display as table	
%XINT	Р					Additional functions	
%XINTK	Р					Function	
BR_BELNR	S						
BR_BLART	S						
BR_BUKRS	S	Include	=	1000			
BR_GJAHR	S						=
SP\$00001	S					Posting Date in the Docum	1
SP\$00002	S					Settlement period	
SP\$00003	S					Number of days for penalt	
•							•
Edit Selected	SAP Que	ry Option					
Name:	Kind:	Sign:	Option:	Low:	High:	Description:	
BR_BUKRS	S	Include	▼ =	▼ 1000			
🔽 Edit	Uţ	odate	Reset]			

5. Click **OK** to return to the Script Editor with the generated script.

8 QlikView SAP Report Connector

8.1 SAP System

8.1.1 Prerequisites

See section 4.1.1.

8.1.2 Installing Transports

See section 4.1.2.

8.1.3 User Configuration

Use the same user as defined for the SQL connector.

Each Report can check any number of authorization objects and it is not obvious which objects are used.

The pre-defined role for the QlikView connector, QTQVCACCESS, does not cover the authorization objects that could be used by the reports to be executed. These should be added to an additional role (for example, QTQVCACCESS_CUSTOM), to avoid being over-written when installing new versions of the QlikView supplied transport.

If wide authorization roles are not to be added to the download user, an authorization trace on each report to be used has to be performed.

Proceed as follows to configure the report connector:

- 1. Go to transaction ST01.
- 2. Start an authorization trace.

I⊂ Traceditoto Systemelp
「「「「「「」」、「「」」、「「」」、「「」、「」、「」、「」、「」、「」、「」
System Trace
🛐 📑 Trace on 👜 Trace off 🛛 🚍 💽 🖗 Analysis 🗣 Save 🗍 🔹 🖬 Online Documentation
Trace Status: Trace switched off (main switch off)
Trace Components Last Change
Trace Components Last Change Authorization check Image: Component
Kernel Functions
General Kernel
DB Access (SQL Trace)
Table Buffer Trace
RFC Calls
Lock Operations
General Filters

3. Run the report with a user that has sufficient access.

The results show the authorization objects used.

- 4. Add the authorization objects used to the download user.
- 5. Go to transaction SU03.
- 6. Perform a Where Used analysis.

If existing roles are added to the download user instead, do a Where Used analysis on the objects to figure out appropriate roles to add. In addition, change the **User Type** from **Service** to **Communication** to avoid the user from being used to log on with SAPGui.

8.2 QlikView SAP Report Connector Client

- 8.2.1 Prerequisites
 - QlikView version 10 or later
 - If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

8.2.2 Installing SAP Report Connector Client

See section 4.3.3.

8.2.3 Preparing SAP Report

Some reports in the SAP system cannot be handled by the QlikView SAP report connector:

- Reports where the layout is too complex
- Reports that are too large (the maximum width is 1000 characters)
- Reports that do not create a spool file (which is the output format that the connector retrieves). To check this, chose **Execute and Print** or **Execute in Background** when running the report and inspect the spool queue afterwards.

 Programditoto	S <u>v</u> stem <u>H</u> elp		
Customer Sales Customer selection Customer secount Company code	Cr <u>e</u> ate Session En <u>d</u> Session <u>U</u> ser Profile Serv <u>i</u> ces Utilities Lis <u>t</u> Se <u>r</u> vices for Object	6 6 6	
Selection using search hel;		•	
Search help ID Search String Search Help	O <u>w</u> n Jobs Short <u>M</u> essage <u>S</u> tatus Log off		

If only the transaction code, but not the report program name, is known, the name can be found by clicking the system icon at the bottom of the SAPGui window, which shows the program name in the highlighted line.

✔ System	E5D (4) (800)	
• <u>oy</u> stern	E3D (4) (000)	
<u>C</u> lient	800	
<u>U</u> ser	LWT	
<u>P</u> rogram	REDUMLOO	
Tr <u>a</u> nsaction	S_ALR_87012186	
<u>R</u> esponse Time	9484 ms	
Interpretation Time	9 31 ms	
 Round <u>T</u> rips/Flush	es 1/0	
	V ESD (4) (800) 🖻	SAPDERP50LD

The report can sometimes run without a variant, but in most cases a variant is needed to pre-fill mandatory variables, since these cannot be added through the report connector.

If the report is long-running, it is recommended to create a variant with a limited amount of pages to use during development.

 Program	oto System <u>H</u> elp	0				
Ø	⊻ariants		• <u>G</u> e	t	Shift+F5	8 🖪
Customer S	User Variables		Dis	:pl <u>a</u> y		
	Selection Screen	<u>H</u> elp Shift	.10 -	lete		
	<u>B</u> ack		F3 Sar	/e as Variant	Ctrl+S	
Customer selection	/					
Customer account		(4	e) to		-	
Company code			to		=	
Selection using searcl	n help /					
Search help ID						
Search String						
🗢 Search Help						
Further selections		01	to	16		
Reporting Periods Sales for account		01		10		1
						1
Output control						
Corporate Group	Version					
🗌 Display Totals On	ly					
Fiscal Year		2010				
🗌 Display one-time	account data					
🗌 Accounts w/o sale	s					
Additional Header						
List Separation						
📃 Print Microfiche Li	ne					
🗌 Translate into out	put currency					
Currency/Exch.rate ty	/pe/Date	M 08	.02.2010			
Output List		Layout				
Detail List				Configure		
Details List: One-Tin						

Create a variant when the desired variable values have been entered.

It is strongly recommended to test the report in SAPGui prior to testing it via QlikView.

8.2.4 Using SAP Report Connector

Proceed as follows to start using the report connector:

- 1. Start QlikView.
- 2. Open the Script Editor.
- 3. Select the **Custom Data** tab.

Data	Custom Data	Functions	Settir	ngs
Custo	m Data Source	s		
Qvs	APReportConn	iector	~	Connect
				Select
				Reports

If everything is correctly installed, QvSAPReportConnector.dll is displayed.

- 4. Click Connect...
- 5. Enter the Application Server Host address, Client, and System Number of the target SAP system, or select the Message Server Host option and enter the Message Server Address, Client, System ID, and Group.

Setup SAP Con	nection	x
Server Infor	mation	
Application	on Server Host	
Message	Server Host	
Client		
System Number		
Group		
User Creden	tials	
Username		
Password		
Secure Netw	ork Settings	
Activate	Secure Network Communication	
SNC Name		
Quality	3 🔻	
ОК	Cancel Test Connection Log	

If passing through a message server, an entry may have to be added 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, add a new line break after the entry.

If passing through an SAP router, paste the router string in the **Host** address field.

In addition, enter the **Username** and **Password** of the user that is to be used for this specific download.

- 6. Click Test Connection to verify that all fields are correctly filled in.
- 7. Finally, click **OK** to get a connection string in the script.

There are a number of parameters that can be added to the connection string, if needed. Normally, the default values for the parameters are sufficient. Separate parameters with *;* (semi-colon) in the connection string:

- Log=0/1 (default/on = 1, off = 0): If on, a log file is created in the Windows folder
 C:\Documents and Settings\All Users\Application
 Data\QlikTech\Custom Data\QvSAPConnector\Log\.
- Logpath=xxxx: Places log files in a subfolder named xxxx. The folder is created, if needed. xxxx can be any text string that can be a valid part of a folder name in Windows.
- LogFile=yyyy: Names the log file yyyydatetime-n.txt. yyyy can be any text string that can be a valid part of a filename in Windows.
- Lang= (EN/DE...): The logon user's default language is used by default. For available languages, see table T005. If texts have to be downloaded in multiple languages, the relevant info objects have to be downloaded with separate connection strings.

8.2.5 Defining Report

The report connector tries to retrieve a table that can be imported to QlikView from the spool file. Since reports can have different looks, QlikView Developer has to assist the connector by defining how to interpret the spool file.

Proceed as follows to define the report:

1. Click **Reports** in the Script Editor.

Data	Custom Data	Functions	Setting	gs
Custo	om Data Source	\$		
Qv	6APReportConn	iector	*	Connect
				Select
				Reports

2. Enter the report program name in the **Report** field and, optionally, a variant in the **Variant** field.

It is not possible to search, so the name of the report must be known, and it is recommended to test the report in SAPGui prior to testing it via QlikView.

SAP	leports - 10.88.20.53; Client: 800;	
Repor	Variant Get Select Options	
Acti	n Category Original Data	

3. Click Get/Select Options.

If no variants have been created for the report, it's possible to use **Select Option** to do a selecttion when running the Qlikview report. Do this by highlighting a field name and then tick the **Edit** box, add the required value and click **Update**.

The report is executed and shown in the two major areas of the window. The top area is used to define the rows to skip or consider as data lines or header lines. Sub-header lines can be defined to be added as columns in the major table.

leport		Variant					_							
RFDOPO 1	10	CUST	1032			Ge	t Sele	ct Options)				
ction	Category	Original D	ata		-	Se	elect Report C	ptions				6		
ata ata	1	IDES AG Frankfurt				1	Report RFDOPO 10							
ata ata	2 3 2	! Assig	nment		Pstng	D								
ata ata	4	!Customer !	1032	? Co	Code	L	Name AKONTO	Kind S	Sign	Option	Low	High	Description Line item reconciliation acct	
ata ata ata	5 5 5	1				Ŀ.	AKONTOS CESSKZ	S S					Master record recon. account Accts recble pledging ind.	
ata	5	1					DD_AKONT	S						
it Selec	ted Report	Ontion												
ame:	Kind:		c	Option:		Low	:	High:		Description	n:			
D_BUKR	RS S	Include	•	=	-	100	0			?(DD_B	UKRS)			
C Edi	+	Jpdate		Reset										

By default, the **Action** column shows all lines as data lines. This can be changed by selecting a line and using the options below:

- The Category column can sometimes be used as an identifier for lines that are to be treated in the same way (skipped, header, or added as column), but scroll through the entire list to make sure all lines that have the same category can be treated in the same way.
- If the category cannot be used, look for substring values in certain positions that characterize the type of line.
- Added as Columns can be used when there are data values in header lines that are to go into the table. In the example above, Line 1 contains the company name, "IDES AG", which probably changes to other company names in subsequent pages. By using the "add as columns" function and category 1, these lines are added as an extra column to the table.

Rows per record	Selected Row Selec	on
-----------------	--	----

4. Auto detect column width

There is a new functionality for the Report connector which will 'Auto detect column width'. It will be possible to use this functionality for 'dynamic' reports (using optimized column width) and also for some other reports. However for many reports, the old way of working still has to be used. The connector will find out if it is possible to use the new functionality and enable the option in that case. Then select the option 'Auto Detect Column Width' and press the 'OK' button.



3456789012345	7890123	5678	0123456789	123456789012345678901234567890123456789	123456789	123	5678901234567	9012345678	0123
Dlv.Date	SD Doc.	Item	Material	Description	Order gty	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	ī	PC	960,20	25.05.2001	Alex
01.06.2001	5000138	20	HT-1001	Notebook Basic 17	ī	PC	1 253,50	25.05.2001	Alex
									>
				Field Delimiter	Field delimit	0		Add	Remove

The bottom area shows the final result and also defines the columns.

The field delimiter can only be used if the column position has the same value for all rows (usually an "!" character). The ruler line automatically shows that a separator has been found.



If a field separator cannot be found, the positions for the field separators have to be added manually using the **Field delimiter after position** field.

5. Click OK to return to the Script Editor with the generated script.

Since all data comes from the spool file, the data types are not known to the connector, which means it cannot modify fields according to data type as the other connectors can. This means that negative field values are shown as in SAP with the minus sign at the end of the field (for example, 12256-) and that date fields are not recognized by QlikView as dates. This can be handled using scripting in the load statement.

• Move the 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 a date field recognizable as a date:

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

9 QlikView SAP Extractor Connector

The Extractor connector contains two different options.

Idoc method

IDoc (Intermediate Document) is a standard SAP document format. IDocs enable the connection of different application systems using a message-based interface. The use of IDocs has three main aims:

- Structured exchange and automatic posting of application documents.
- Reduction of the varying complex structures of different application systems to one simple structure. For example, the structure of an SAP application document and the structure of the corresponding EDI message according to the UN/EDIFACT standard.
- Detailed error handling before the data is posted in the application.

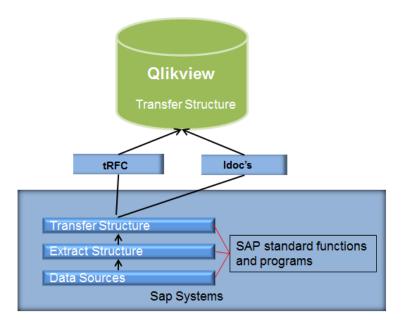
Transactional RFC (tRFC) method

Transactional RFC(tRFC, previously known as asynchronous RFC) is an asynchronous communication method that executes the called function module just once in the RFC server. The remote system does not need to be available at the time when the RFC client program is executing a tRFC. The tRFC component stores the called RFC function, together with the corresponding data, in the SAP database under a unique transaction ID (TID). If a call is sent, and the receiving system is down, the call remains in the local queue. The calling dialog program can proceed without waiting to see whether the remote call was successful. If the receiving system does not become active within a certain amount of time, the call is scheduled to run in batch.

tRFC is always used if a function is executed as a Logical Unit of Work (LUW). Within a LUW, all calls

- are executed in the order in which they are called
- are executed in the same program context in the target system
- run as a single transaction: they are either committed or rolled back as a unit.

In the SAP ERP system, there are pre-defined data sources available to use for transferring data to SAP BI systems.



The Extractor Connector uses these data sources and the standard SAP extract method (IDOC) available from version 5.60 and the extract method tRFC available from version 5.80.

9.1 SAP System

9.1.1 Prerequisites

- SAP BASIS system 640 or later (ECC5 or later / BW 350 or later)
- Data transport (data extraction)
- Access transport (user profile)
- BW knowledge like SAP education BW350-BI Data Acquisition

9.1.2 Installing Transports

See section 4.1.2.

Store the attached Server.exe file or QVSAPService on one server. Prefeering into the same catalouge as the sap connectors (C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector).

9.1.3 User Configuration for SAP BASIS System 6.40, and 7.00 or later

After the transports have been installed in the system, proceed as follows to create new User for the extractor connector (QTQVCEXTRACTOR)

Administrative Roles QTQVCEXTRADM can be added to existing Admin users of the SAP system.

- 1. Create one or more users:
 - a. Go to transaction SU01.
 - b. Click Create (F8).
 - c. Give the user a name and a password.
 - d. On the Logon data tab, assign the user to User Type: Service.

- e. On the **Roles** tab, add the role QTQVCEXTRACTOR.
- f. Click Save.
- If the installation is an upgrade from a previous version and the roles QTQVCACCESS/QVEXTRACTOR have been updated, update all users assigned to the role:
 - a. Go to transaction PFCG.
 - b. Enter the role name QTQVCEXTRACTOR.
 - c. Click Change Role.
 - d. On the User tab, enter the name of the user(s) created above.
 - e. Click User comparison.
 - f. Click Complete comparison.
 - g. Click Save.

9.1.4 Setting up SAP Side Extractor

A series of standard extractors are delivered within SAP for data transfer to the SAP Business Information Warehouse. If BI/BW is not used, proceed as follows to activate a series of processes within SAP:

- 1. In some cases, it has to be set up from the customizing side, which is reached through the SPRO transaction and the **Activate Business Functions** menu.
- 2. Go to transaction SBIW to transfer and activate the BI/BW DataSources.

Postprocessing of DataSources
 B Destprocessing of DataSources
 Edit DataSources and Application Component Hierarchy

- 3. Check that the tree hierarchy and data sources are activated.
- 4. If this is not the case, transfer the **Application Component Hierarchy** and then the **Business Content DataSources**.

▼ 🛃	Business Content DataSources
• 🗟	🕀 Transfer Application Component Hierarchy
• 🗟	Transfer Business Content DataSources

Transfer Application Component Hierarchy:

[₽Co	nfirmat. prompt			\boxtimes
0	Do you want the Transfer Comp			
	Yes	No	×	Cancel

 Transfer Business Content DataSources: Start by activating the tree hierarchy and then activate each data source to be used.

		1	C C C			0 🖪
stallat	ion	of DataSour	rce from	Business Cont	ent	
		Pat Paction & D	Contant De	Ita Activate DataSauros	Version Comparison	Display Log
		Set Section 03.14	Content De	na Activate DataSource	version compansion	Unspilay Lug
			SAP			
- CEI SAP	-R/3		SAF	Application Compone	ents	
_	-					
	PSM			Public Sector Manag Accounting - Genera		
	OCA			Cross-Application S		
	CO			Controlling		
	OCS			Customer Service		
	EC			Enterprise Controll		
	FI			Financial Accountin		
	IM			Investment Manageme Logistics - General		
	MM			Materials Managemen		
	PA			Personnel Managemen		
	PE			Training and Event	Management	
	PM			Plant Maintenance		
	PP PS			Production Planning Project System	and Control	
	ro			Fioject System		
- I - F		PS-10		Project System	Master Data	
		OPS_CLM_CST		Claim Costs		
		-OPS_CLM_ECP		ECP Data for		
		OPS_CSH_NTW		Network Plan		
		OPS_CSH_NWA		E Daumante en	Network Plan Process Orders	,
		OPS CSH WBS		B Paymonte on	LIDC Elemente	
		OPS_DAT_MLS		Dates niles	tones	
		OPS_DAT_NAE		Dates Netwo	rk Operation Element	
	_	OPS_DAT_NTW		Network date	es	

9.1.5 Setting up QlikView SAP Extractor

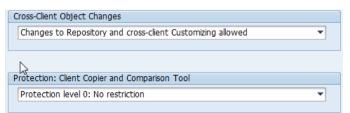
Configuration changes to the clients are required to execute the processes involved in the QlikView extractor (QTQVC/EXTRACTOR_ADM). The SAP client is required to have "changes to repository and cross-client customizing allowed".

Note: The SAP client must be set to "Open" when processing the administration setup.

Proceed as follows to set up the extractor connector:

- 1. Go to transaction SCC4.
- 2. Select Client.

3. Change the system to reflect the options below.



- 4. Go to transaction SE03. Double-click 'Set System Change Option' under 'Administration'.
- 5. Check that the following options are set to Modifiable:
 - a. Global Setting
 - b. Local Developments (No Automatic Transport)
 - c. Customer Name Range

9.1.6 Setting up QlikView Extractor Administration

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.

Go to transaction /n/QTQVC/EXTRACTOR_ADM and perform the setup:

Maintain Extractor environment					
(b)					
Select maintenance option regardin	g Extractor environment:				
Create	۲				
Verify	0				
Delete	0				
Parameters:					
Logical system of receiver	QTQVCEXTR1				

- Create: Creates the logical system of the receiver. See the SALE transaction.
 - Creates the RFC connection (same name as the logical system).
 - Creates the partner profile of type LS (same name as the logical system).
 - Creates the Basic Idoc type for data transfer. The name is hard-coded like "ZSQAQTQVCEXTR1".
- **Verify**: Verifies that all necessary components of the extractor environment are configured.
- Delete: Deletes all components in the extractor environment.

Note: When selecting a logical system name it has to be one word like **QTQVCEXTR1** and not **QTQVC_EXTR1**. To prevent miss-match fill out the whole field with 10 characters

Note: Close the SAP client after the setup.

9.1.7 Activating/Generating Data Sources/Extractors

Once the setup is complete and the extractors have been activated in the SAP system, proceed as follows to activate the extractors for use with the QlikView extractor connector:

- 1. Go to transaction RSA6.
- 2. Select a DataSource/Extractor in the transaction by high-lighting it and copying the technical name (using **Ctrl+Y** on the keyboard). This can also be done manually.

UCU_UM_UCA_U	=	CUBL	CENTERS.	Naves				
0C0 0M CCA 9		Cost	Centers:	Actual	Costs	Using	Delta	Extraction

It's also possible to look-up in the dropdown list with filter

3. Go to transaction /n/QTQVC/Activate.

- 4. Paste the selected extractor in the **Extractor name** field or select an extractor from the dropdown box.
- 5. Click **Get Extractor**.

Activate / generate Extractor (DataSource)						
Logical system of receiver	QTQVCEXTR1	Language	EN			
Extractor name	OCOSTCENTER_T	EXT		Get Extractor		

Example select from dropdown list

Activate / generate Extractor (DataSource)								
Logical system of receiver Extractor name	QTQVCEXTR1 Lang	uage EN Transfer Method Get Extractor	FC II					
ß	🖻 DataSource (1) 135 Ent	ries found						
Activate Extractor	Restrictions							
FIELDNAME		v						
	DataSource	Medium Description						
	0CO_OM_ABC_5	Processes: Stratification						
	0CO_OM_ABC_6	Processes: Variance						
	0CO_OM_ABC_7	Processes: Actual Costs from Delta Extr.						
	0CO_OM_CCA_1	Cost centers: Costs and allocations						
	000 OH 001 10	Contractions Committee and Street						

- 6. Select the field to activate (X) or select all fields.
- 7. Coose update method tRFC or Idoc
- 8. Click Activate Extractor.

Activate / generate Extractor (DataSource)								
Activate / generate Extra	ctor (DataSource)							
Logical system of receiver	QTQVCEXTR1 Lang	uage EN Transfer Method 💿 t	RFC R					
Extractor name	¥	Get Extractor						
La	(
- 0	🔄 DataSource (1) 135 Ent	ries found						
	Restrictions							
Activate Extractor	Rescrictions							
		V						
FIELDNAME								
	DataSource	Medium Description						
	0CO_OM_ABC_5	Processes: Stratification						
	0CO_OM_ABC_6	Processes: Variance						
	0CO_OM_ABC_7	Processes: Actual Costs from Delta Extr.						
	0CO_OM_CCA_1	Cost centers: Costs and allocations						

9.2 QlikView SAP Extractor Connector Client

9.2.1 Prerequisites

- QlikView version 10 or later
- If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

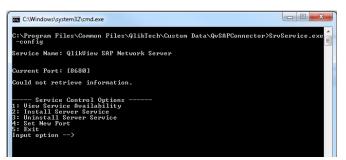
9.2.2 Installing SAP Extractor Connector Client

See section 4.3.3.

To cater for the option to execute parallel loads an additional service has been introduced in the installation packaged stored in (C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector).

Server.exe	2013-05-15 12:48	Application	417 KB
SrvService.exe	2013-05-15 12:48	Application	424 KB
SrvService_Console.bat	2013-05-15 12:48	Windows Batch File	1 KB

To install the service click on the SrvService_Consule.bat. Run as administrator

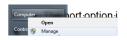


• To install the service select input option 2.

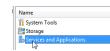
• The port option is set to 8680 by default, but can be changed using input option 4.

Start the service with the following steps:

1. Right click on the Computer Icon and select Manage



2. Select Service and Application and then Services



3. Look for QlikView SAP Network server and start it

QlikView SAP Network Server This Service... Started Autor

Note: It's only possible to have one service running to avoid mismatch

Note: The service has to be stopped during an upgrade of the connectors

9.2.3 Using SAP Extractor Connector

Proceed as follows to start using the extractor connector:

- 1. Open the QlikView application.
- 2. Edit the QlikView script.

Setup SAP Connection	
Server Information Application Server Host Message Server Host Client System Number Group	Insert the address of the SAP system
User Credentials Username Password Network Server Host and Port	
Host Port	Insert the address of the installed exe/service file
Secure Network Settings Activate Secure Network Communication SNC Name Quality 3 OK Cance Test Connection Log	

3. Look for "SAPEXTRConnector" and click Connect...

This generates a connection string in the QlikView system.

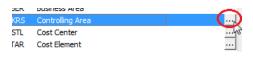
Main	1	
アアアアアアアアア	<pre>SET DousandSep=' '; SET DousandSep=','; SET MoorphenasdSep=','; SET MoorphenasdSep=','; SET MoorphenasdSep=','; SET DateFormat*'hHMMOO'; SET DateFormat*'hHMMOO'; SET DateFormat*'HMMOO'; SET DateFormat*'MMOO'; SET Moorhhmmo='maisticsentroits;10;90'; 10; SET Moorhhmmo='maisticsentroits;10;90'; 11;</pre>	prokrymowydar"; MSDSJT=SAFQER#6010;%MMM#=860;68078-QTE80;CLIENT=600;5878057=0,80,25,25;5877087=6600;TSERIP=10.80.4.20;MD#r16=cobaDBBOFLC5;NP#seword=GBBOQYBBJbaXT11;;";
0)ata Functions Variab	Settings
	Database ————	
	QvSAPEXTRConnecto	64) Connect
	Force 32 Bit	Select
		Extractor1. Select a system in the LogicalSystem drop-down list.

- 2. Select a language in the Language drop-down list.
- 3. Click **Search** to get the activated extractors.

- 4. Select an extractor in the Activated Extractors box (A) and then click Get Fields (B).
 - It's possible to see in the left the column, if the extractor is activated as Idoc or tRFC method

Select System ogical System:	QTQVCEXTR1	✓ Langua	ge: English		•	Current statement [2LIS 13 VDITM]:
						LOAD
		Search				[AEDAT] as [AEDAT.Changed On], [AKTNR] as [AKTNR.Promotion],
						[ANZFKPOS] as [ANZFKPOS.Number of bill
Activated Extra	ctors					[AUBEL] as [AUBEL.Sales Document], [AUPOS] as [AUPOS.Sales Document Item
Show Extractor	ors 💿 Show Hiera	rchies				[BONBA] as [BONBA.Rebate basis 1],
						[BONUS] as [BONUS.Volume rebate group] [BRGEW] as [BRGEW.Gross weight],
Method Name	2	Description		Delta	Di 🔶	[BRTWR] as [BRTWR.Gross value of the b
	PP_REC_51	Payroll Posting		NEWE	o	[BUKRS] as [BUKRS.Company Code],
	ACCOUNT_TEXT	G/L Account Number			D	[BWAPPLNM] as [BWAPPLNM.Application ([BWVORG] as [BWVORG.SAP BW transact
-	ACCOUNT_T011_H	G/L account number	<u> </u>		Di	[BZIRK] as [BZIRK.Sales district],
	ACCOUNT_ATTR	G/L Account Number		A	AI	[CHARG] as [CHARG.Batch Number],
-	13_VDITM	Billing Document Item Da	ata A	ABR	0	[EAN11] as [EAN11.International Article N [ERDAT] as [ERDAT.Date on Which Record
HRFC OSTO	CKCAT_TEXT	Stock Category			D +	[FAREG] as [FAREG.Rule in billing plan/inv
•					•	[FBUDA] as [FBUDA.Date on which service [FKART] as [FKART.Billing Type],
						[FKDAT] as [FKDAT.Billing date for billing ir
		Get Fields	B			[FKIMG] as [FKIMG.Actual Invoiced Quant
						[FKLMG] as [FKLMG.Billing quantity in stoch [FKTYP] as [FKTYP.Billing category],
Fields						[GEWEI] as [GEWEI.Weight Unit],
Name	Description		Conditions		*	[HWAER] as [HWAER.Local Currency], [KDGRP] as [KDGRP.Customer group],
AEDAT	Changed On					[KNUMA_AG] as [KNUMA_AG.Sales deal],
AKTNR	Promotion					[KOKRS] as [KOKRS.Controlling Area], [KOSTL] as [KOSTL.Cost Center],
ANZFKPOS	Number of billing	items				[KUNAG] as [KUNAG.Sold-to party],
AUBEL	Sales Document					[KUNRG] as [KUNRG.Payer], [KURRF] as [KURRF.Exchange rate for FI
AUPOS	Sales Document	Item				[KURKF] as [KURKF.Exchange rate for F1 [KURSK] as [KURSK.Exchange Rate for Pri
BONBA	Rebate basis 1			_		[KURSK_DAT] as [KURSK_DAT.Translation
DONDA	Volume rebate g	oup				4
BONUS		Add to Script				Clear Scri
	add condition					
BONUS	add condition					

5. To edit the selection to add filters, click the edit button (not all fields are editable).



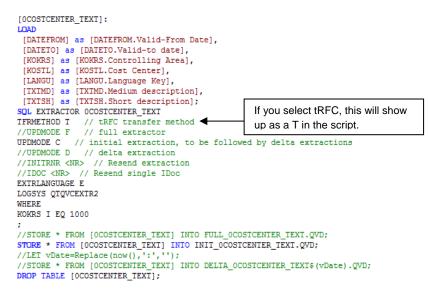
6. Click Add in the pop-up window.

Fi	eld Condi	tions	\geq		X
	Edit condit	ions for fie	ld KOK	RS	
				Add	Remove
	Sign	Option	Low	High	
	I	EQ	1000		
	I	▼ EQ	•	1000	
				ОК	Cancel

7. Click Add to Script to add the selection to the script.

	CCTR_IBV CORRTYPE			 -	REFBT, REFBZ,	
	* Mandatory to	add condition	Add to Script			

A predefined script is added to the QlikView application:



The standard script is a proposal and the functionality to activate has to be uncommented.

In the example above, the selection is initially loaded from the logical system QTQVCEXTR2 and only for KOKRS (controlling area) 1000. The QVD is stored in the qvd/init/ folder and the name of the QVD file is INIT OCOSTCENTER TEXT.QVD.

Note: When change to tRFC you have to Deactivate old sources and activate again. It's possible to do a mass-activation in /n/QTQVC/DEACTIVATION

Note: You have to create a new connection and script even if the Idoc methode is to be keept.

9.2.4 Deactivate old source

Transaction /N/QTQVC/DEACTIVATE

Deactivate previously activated Extractors. Enter Logical system name and Transfer Method and press the 'Get Extractors' button. Select Extractor(s) to deactivate and press button 'Deactivate Extractors'

₽					
Logical system of receiver Get Extractors	E	Transfer Method	⊙tRFC	⊖ IDoc	
Deactivate Extractors					
EXTRACTOR	DESCRIPTIO	N		SELECT	
					4
• • • • • • • • • • • • • • • • • • •				4 1	

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.

<u>TimeoutSAP</u>

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 or tRFC packages containing the extraction data. The second part is the RFC transfer of the IDoc:s or tRFC packages 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 14400 seconds (240 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).

• <u>TimeoutActivity</u>

This timeout is used in the Windows part of the Connector. It decides the maximum time Windows should wait to receive data 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 7200 seconds (120 minutes).

<u>TimeoutData</u>

This timeout is used in the Windows part of the Connector. It decides the maximum time Windows should wait between the receiving of each data IDoc/tRFC data package. If the timeout is exceeded, the QlikView job is aborted and the status value in corresponding record in the SAP status table is set to 'aborted'. The default value is 3600 seconds (60 minutes).

9.2.5 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, proceed as follows:

1. Uncomment the required UPMODE statement in the script:

UPMODE C - initial extraction followed by delta load

This creates a QVD file with all of the data through the extractor and also tells SAP that a delta load process is required in the future.

2. Modify the extractor script:

UPMODE D – delta extraction

3. Concatenate the QVD to the output.

Note: When using the delta loads use the same template and the same logical system used for the initialization.

- 4. To do a new initial extraction (UPMODE C) on an existing initial extraction load, delete the data source in this transaction (/N/QTQVC/DELETE_INIT) before the new load starts. Fill in the logical system and then the data source/extractor to delete.
- 5. Same procedure as nr 4 has to be performed, when shifting between methods.

1	Delete Delta Init	
۵	•	
	Delete Delta Init for:	
	Logical system of receiver Extractor	QTQVCEXTR1 OMATERIAL_ATTR

Deactivate (/N/QTQVC/DEACTIVATE) the source and then activate (/N/QTQVC/ACTIVATE) it again.

9.2.6 Hierarchy Properties

9.2.6.1 Definition

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

9.2.6.2 Use

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

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

9.2.6.3 Load Hierarchies to QlikView

Unlike all other data sources in SAP, hierarchies do not have to be activated. When loading a hierarchy, proceed as follows to change the screen view in the pop-up window:

- 1. Select the **Show Hierarchies** radio button.
- 2. Select the logical system in the Logical System drop-down list.
- 3. Click Search.

4. Select a hierarchy in the Hierarchies box (A) and click Get Hierarchies (B).

All available options for the selected hierarchy are displayed.

	ystem: QTQVCEXTR1	<	 Language: English Search 	•	[0GLACCEXT_T011_HIER]: HIERARCHY(NODEID,PARENTID,NODEN LOAD NODEID, INFOOBJECT.
Hierard	hies				NODENAME,
Show	Extractors () Sho	w Hierarchies			TLEVEL, LINK,
-					PARENTID, CHILDID,
Name		Description			NEXTID,
	CEXT_T011_HIER		tatement Item		DATEFROM,
_	CCOUNT_T011_HIER	G/L accou			DATETO, INTERVL
_	RANT_HIER	Grant Gro			;
	PNCL_HIER		Class Groups		SQL EXTRACTOR 0GLACCEXT_T011_HIE
_	PNPG_HIER		Program Groups		UPDMODE H // Hierarchy extractor HIERARCHY INT
OGRC_	CATIDC_GRCH_HIER		ity Category Hierarchy SD		HIERLANGUAGE E
OGRC_	CATID_GRCH_HIER	GRC Activ	ity Category Hierarchy	-	HIERTABLE E 1RSHND
OGRC_	CATID_GRCH_HIER			τ.	HIERTABLE E IRSHND LOGSYS QTQVCEXTR1
OGRC_	CATID_GRCH_HIER			*	HIERTABLE E 1RSHND
0000	CATID_GRCH_HIER			Ŧ	HIERTABLE E IRSHND LOGSYS QTQVCEXTR1 ; STORE * FROM [OGLACCEXT_T011_HIER DROP TABLE [OGLACCEXT_T011_HIER];
Nodes		B	Get Hierarchies	•	HIERTABLE EIRS-ND LOGSYS QTQVCEXTR1 ; STORE * FROM [0GLACCEXT_T011_HIER DROP TABLE [0GLACCEXT_T011_HIER]; ///Uncomment this part to get text info //[0GLACCEXT_T011_HIER_TEXT];
Nodes	Class		Get Hierarchies		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 ; STORE * FROM [0GLACCEXT_T011_HIER DROP TABLE [0GLACCEXT_T011_HIER]; //// Uncomment this part to get text info
Nodes Name INTF	Class T011	B	Get Hierarchies		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 'STORE = #ROM [0GLACCEXT_T011_HIER DROP TABLE [0GLACCEXT_T011_HIER]; ////Uncomment this part to get text info //[OGLACCEXT_T011_HIER_TEXT]: //LOGLACCEXT_T011_HIER_TEXT]; //INFOOBJECT, //NOODBJECT,
Nodes Name INTF INTA	Class T011 T011	B	Get Hierarchies Description Cost of Sales Accoun INTA		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 ; ; TORE * FROM [OGLACCEXT_T011_HIER]; DROP TABLE [OGLACCEXT_T011_HIER]; ///Uncomment this part to get text info //OGLACCEXT_T011_HIER_TEXT]; //LOAD //INFOOBJECT, //NOCENAME, //NTSH
Nodes Name INTF INTA INT1	Class T011 T011 T011	B	Get Hierarchies Description Cost of Sales Accoun INTA Commercial balance s		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 ; ; ; ; ; ; ; ; ; ; ; ; ;
Nodes	Class T011 T011	B	Get Hierarchies Description Cost of Sales Accoun INTA		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 STORE # FROM [0GLACCEXT_T011_HIER]; ////Uncomment this part to get text info //[OGLACCEXT_T011_HIER_TEXT]; //LOAD //INFOOBJECT, //NOOBJECT, //NCOBJECT, //XTSH //; //SQL EXTRACTOR 0GLACCEXT_T011_H //PGDDEH //Hierarchy extractor
Nodes Name INTF INTA INT1 INT	Class T011 T011 T011 T011	B	Cet Hierarchies Description Cost of Sales Accoun INTA Commercial balance s Commercial balance s		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 ; ; DROP TABLE [OGLACCEXT_T011_HIER]; ///Uncomment this part to get text info //IOGLACCEXT_T011_HIER_TEXT]; //LOAD //INFOOBJECT, //NOCENAME, //NTGH //; //SQL EXTRACTOR OGLACCEXT_T011_H //JEGMADDE H // Hierarchy extractor // HIERARCHY INT
Nodes Name INTF INTA INT1 INT IKR	Class T011 T011 T011 T011 T011	B	Get Herarchies Description Cost of Sales Accoun INTA Commercial balance s Commercial balance s		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 STORE # FROM [0GLACCEXT_T011_HIER]; ////Uncomment this part to get text info //[OGLACCEXT_T011_HIER_TEXT]; //LOAD //INFOOBJECT, //NOOBJECT, //NCOBJECT, //XTSH //; //SQL EXTRACTOR 0GLACCEXT_T011_H //PGDDEH //Hierarchy extractor
Nodes Name INTF INTA INT1 INT IKR IAS1	Class Tol1 Tol1 Tol1 Tol1 Tol1 Tol1 Tol1 Tol1	B	Get Hierarchies Get Sales Accoun INTA Cost of Sales Accoun INTA Commercial balance s Commercial balance s Commercial balance s Commercial balance s		HIERTABLE EIRSHND LOGSYS QTQVCEXTR1 ; STORE # FROM [GGLACCEXT_T011_HIER]; M// Uncomment this part to get text info // [GGLACCEXT_T011_HIER_TEXT]; //LOAD // INPEODECT, //NOEDBLECT, //NOEDBLECT, //NCTSH //; //SQL EXTRACTOR 0GLACCEXT_T011_H // HIERARCH1 INT // HIERARCH1 INT

- 5. Select an option in the **Nodes** box.
- 6. Click Add to Script.

As a result, two statements are added to the QlikView script for the hierarchy load.

• First statement:

[0GLACCEXT_T011_HIER]: HIERARCHY(NODEID,PARENTID,NODENAME,,NODENAME,HIERARCHY)
LOAD
NODEID,
NODENAME, TLEVEL.
LINK.
PARENTID,
CHILDID,
NEXTID,
DATEFROM,
DATETO, INTERVL
INTERVE .
SQL EXTRACTOR 0GLACCEXT_T011_HIER
UPDMODE H // Hierarchy extractor
HIERARCHY INT
HIERLANGUAGE E
HIERTABLE E1RSHND LOGSYS OTOVCEXTR1
LOGSYS QIQVCEXIR1
, STORE * FROM [0GLACCEXT_T011_HIER] INTO HIER_0GLACCEXT_T011_HIER.QVD; DROP TABLE [0GLACCEXT_T011_HIER];

• Second statement:

```
//// Uncomment this part to get text information for the hierarchy
//[0GLACCEXT_T011_HIER_TEXT]:
//LOAD
//INFOOBJECT,
//NODENAME,
I/TXTSH
11:
//SQL EXTRACTOR 0GLACCEXT_T011_HIER
//UPDMODE H // Hierarchy extractor
//HIERARCHY INT
//HIERLANGUAGE E
//HIERTABLE E1RSHFT
//LOGSYS QTQVCEXTR1
11;
//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 requires different manipulation to perform the join operation.

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

9.2.7 Overview of Logs and Processes

There are a number of transactions in SAP to monitor the processes involved with the extractor connector:

• To display the processed Idocs, use transaction code WE02:

Selected IDocs										
IDoc Number	Segm	Sta	Sta	Partner	Basic type	Date creat.	Time	Messg	Direction	Port
000000008646	3	53	000	LS/ /QTQVCEX	RSREQUST	16.05.2011	09:17:15	RSRQST	Inbox	TRFC
000000008646	1	03	000	LS/ /QTQVCEX	RSINFO	16.05.2011	09:18:18	RSINFO	Outbox	A0000000
0000000008646	1	03	000	LS/ /QTQVCEX	RSINFO	16.05.2011	09:18:18	RSINFO	Outbox	A0000000
0000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:26	RSSEND	Outbox	A0000000
000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:35	RSSEND	Outbox	A0000000
000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:41	RSSEND	Outbox	A0000000
0000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:48	RSSEND	Outbox	A0000000
000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:55	RSSEND	Outbox	A0000000
000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:18:59	RSSEND	Outbox	A0000000
0000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:19:04	RSSEND	Outbox	A0000000
0000000008646	20001	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:19:10	RSSEND	Outbox	A0000000
0000000008646	1477	03	000	LS/ /QTQVCEX	ZSQAQTQ	16.05.2011	09:19:11	RSSEND	Outbox	A0000000
0000000008646	10	03	000	LS/ /QTQVCEX	RSINFO	16.05.2011	09:19:11	RSINFO	Outbox	A0000000
000000008646	1	03	000	LS/ /QTQVCEX	RSINFO	16.05.2011	09:19:11	RSINFO	Outbox	A0000000

			Vervie												
3	٩	29	r 🎯 🖉	🗛 💆] 🖪		•	5 🔽	👌 📝					
3	No.	Туре	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
	13	RGD	2826	Waiting		Voc	2								

• To follow the process in SAP, use transaction code SM50:

• To monitor the initialized extractors in an ERP system, use transaction code RSA7: In a BW system you have to use transaction SE16 and Table: ROOSPRMSC to retriev the same information.

BW Delta Queue Maintenance							
1 🔍	1						
St	DataSource	BW System	Total	Stat.			
000	2LIS_11_VAHDR	B3TCLNT800	10				
000	OEC_PCA_3	B3TCLNT800	3	<u>₿</u> .			
000	OFI_AP_3	B3TCLNT800	1				
000	1_CO_PA_CO_1000	B3TCLNT800	1	<u></u> Ε. Ρ.			
000	OFI_GL_4	QTQVCEXTR1	1				
000	ZVBAK_VBRP	QTQVCEXTR2	0	<u></u> Ε. Ρ.			
000	1_CO_PA800IDEA_SD	B3TCLNT800	0				
000	OPROFIT_CTR_ATTR	QTQVCEXTR1	0				
000	OMATERIAL_TEXT	QTQVCEXTR1	0				
000	OMATERIAL_ATTR	B3TCLNT800	0				
000	OGL_ACCOUNT_ATTR	QTQVCEXTR1	0				
000	OGL_ACCOUNT_ATTR	B3TCLNT800	0				
000	OFI_GL_4	B3TCLNT800	0				
000	OFI_AR_6	B3TCLNT800	0				
000	OCUSTOMER_ATTR	B3TCLNT800	0				
000	0CO_0M_CCA_9	QTQVCEXTR1	0				

• The QlikView log is stored in C:\ProgramData\QlikTech\Custom

Data\QvSAPConnector\Log:

2013-02-20 12:25:46	Progress Connected to SAP with C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector\QvSAPEXTRConnector.dll 5.7
SR1, 10958	
2013-02-20 12:25:46	Progress Log: 1
2013-02-20 12:25:46	Progress Logpath:
2013-02-20 12:25:46	Progress LogFile: QvSAPEXTRConnector
2013-02-20 12:25:46	Progress TimeoutlDoc: 7200 seconds
2013-02-20 12:25:46	Progress TimeoutSap: 14400 seconds
2013-02-20 12:25:46	Progress TimeoutInit: 900 seconds
2013-02-20 12:25:46	Progress TimeoutActivity: 3600 seconds
2013-02-20 12:25:46	Progress Creation of function /QTQVC/CHECK_RELEASE returned after 00:00:00
2013-02-20 12:25:46	Progress SAP Transport information: version: E6DK900375; date: 20121018; time: 083205; SAP basis: 700;
2013-02-20 12:25:46	Progress Connected
2013-02-20 12:25:46	Progress Statement is: EXTRACTOR ICOSTCENTER_TEXT UPDMODE F EXTRLANGUAGE E LOGSYS QTQVCEXTR1 WHERE KOKRS I
EQ 1000	
2013-02-20 12:25:46	Progress EXTRACTOR = 0COSTCENTER_TEXT
2013-02-20 12:25:46	Progress UPDMODE = F
2013-02-20 12:25:46	Progress LOGSYS = QTQVCEXTR1
2013-02-20 12:25:46	Progress EXTRLANGUAGE = E
2013-02-20 12:25:46	Progress Criteria = KOKRS EQ 1000
2013-02-20 12:25:48	Progress Creation of function RFC_GET_SYSTEM_INFO returned after 00:00:01
2013-02-20 12:25:48	Progress Successfully registered at GWSERV=sapgw07;GWHOST=10.88.20.44;PROGRAM_ID=QTQVCEXTR1
2013-02-20 12:25:53	Progress Creation of function /QTQVC/GET_ACTIVATED_EXTRACTOR returned after 00:00:00
2013-02-20 12:25:57	Progress Creation of function /QTQVC/CREATE_REQUEST_IDOC returned after 00:00:00
2013-02-20 12:27:07	Progress INITRNR=REQU QTQVCEXTR1 20130220122606
2013-02-20 12:27:08	Progress Init successful
2013-02-20 12:27:31	Progress Checking TID 0A58142C0E345124B31D001D
2013-02-20 12:27:31	Progress Executing TID 0A58142C0E345124B31D001D
2013-02-20 12:27:31	Progress Processing IDoc 00000000856016
2013-02-20 12:27:31	Progress MESTYP=RSINFO;SEGNAM=E2RSHIN;SDATA=REQU QTQVCEXTR1 20130220122606 2 201302201227171 0
2013-02-20 12:27:31	Progress RQSTATE=1: Data selection started
2013-02-20 12:27:31	Progress Committing TID 0A58142C0E345124B31D001D
2013-02-20 12:27:31	Progress Confirming TID 0A58142C0E345124B31D001D
2013-02-20 12:27:31	Progress Checking if all data has been received
2013-02-20 12:27:31	Progress Not all data has been received
2013-02-20 12:27:31	Progress Checking TID 0A58142C0E2C5124B32C002A
2013-02-20 12:27:31	Progress Executing TID 0A58142C0E2C5124B32C002A
2013-02-20 12:27:31	Progress Processing IDoc 000000000856017
2013-02-20 12:27:31	Progress MESTYP=RSINFO;SEGNAM=E2RSHIN;SDATA=REQU QTQVCEXTR1 20130220122606 1 201302201227170 0
2013-02-20 12:27:31	Progress RQSTATE=0: Data request received
2013-02-20 12:27:31	Progress Committing TID 0A58142C0E2C5124B32C002A

The QlikView log provides information on which Idocs or TID nr (tRFC) have been created for the request and if the load has been successful.

9.2.8 Error Handling

There are a number of methods to monitor the jobs of the extractor connector.

9.2.8.1 Status Table

The download for every extractor can be followed in the status table, /QTQVC/STATUS, which is available in transaction SE16. Possible values for 'Job Status':

	8 😹 🛞
Job Status	Short Desc
R	Released
8	Started
F	Finished
A	Aborted
С	Job cancel
к	Кеер

For the IDoc transfer method: only a single extraction job at a time can run in a logical system. QlikView returns an error message if you try to run multiple extractors on the same logical system simultaneously.

For the tRFC transfer method: many extraction jobs can run in parallel in a logical system, however the same Extractor cannot run in parallel. QlikView returns an error message if that happens.

In the event of an extractor job not being able to finalize correctly, the status record contains an "S" for started. See below how to cancel such a job from the connector or from the SAP GUI.

9.2.8.2 Canceling a job from the Extractor connector

Proceed as follows to cancel a failed extraction job:

1. In the Extractor window, select a Logical System and press the button 'Display Status Table' at the bottom of the window.

			Current statement	
QTQVCEXTR1	Language: English Search	•		
rs 🔘 Show Hier	Description	Delta Delta		
	Get Fields			
Description	Conditio	ns		
		Search tors rs Solver Herarchies Description Get Fields	Search tors rs Show Hierarchies Description Delta Delta Delta Get Fields	Search tors rs Show Herarchies Description Delta Delta Get Fields

2. Select the records you want to update.

Ipdate	Connector	Job Date	Job Time	Job Status	Object	Update Mode	User Name	Win User		
7	QTQVCEXTR1	20140311	145338	S	OPLANT_ATTR	F	TSL	ext_tsl		
/	QTQVCEXTR1	20140311	145409	S	OPLANT_ATTR	F	TSL	ext_tsl		
1	QTQVCEXTR1	20140311	145441	S	OPLANT_ATTR	F	TSL	ext_tsl		
1	QTQVCEXTR1	20140311	145511	S	OPLANT_ATTR	F	TSL	ext_tsl		
7	QTQVCEXTR1	20140311	145543	s	OPLANT_ATTR	F	TSL	ext_tsl		
/	QTQVCEXTR1	20140311	145614	S	OPLANT_ATTR	F	TSL	ext_tsl		
/	QTQVCEXTR1	20140311	145646	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	145719	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	145750	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	145823	S	OPLANT_ATTR	F	TSL	ext_tsl		
7	QTQVCEXTR1	20140311	145854	S	OPLANT_ATTR	F	TSL	ext_tsl		
7	QTQVCEXTR1	20140311	145926	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	145958	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150028	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150059	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150131	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150202	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150233	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150305	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150337	S	OPLANT_ATTR	F	TSL	ext_tsl		
	QTQVCEXTR1	20140311	150409	S	OPLANT_ATTR	F	TSL	ext_tsl		
			Sub	mit Selected Ite	ms					
	[Set Job Status A' ▼] Submit									

- 3. Select 'Set Job Status to 'A" (aborted) or 'Delete Record(s)' in the button below the list.
- 4. Press the 'Submit' button to perform the changes in the SAP system.

Note: Take caution not to end an active and relevant job that is running.

9.2.8.3 Canceling a job from the SAP GUI

Proceed as follows to cancel a failed extraction job:

- 1. In the status table, get the job time and date and then go to transaction /N/QTQVC/delete.
- 2. Select /QTQVC/STATUS in the Delete single record from table section.
- 3. Enter the correct CONNECTOR, JOBDATE and JOBTIME.
- 4. Run the job in **Simulate Deletion** mode.
- 5. Run the job in **Delete Records** mode.

Delete single record from table	e:	
/QTQVC/STATUS CONNECTOR JOBDATE JOBTIME	۲	QTQVCEXTR1 16.05.2011 15:36:28
Simulate Deletion Delete Records	•	

Note: Take caution not to end an active and relevant job that is running.

9.2.8.4 Re-send Idocs

If a communication error has occurred for a delta or full load and the Idocs have been produced in the ERP system, the Idocs can be re-sent to QlikView. A new initialization is not needed.

Proceed as follows to re-send the Idocs:

1. Get the INITENE from the QlikView log file:

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

- 2. Open the script builder.
- 3. Select the extractor with the appropriate delta load.
- 4. Uncomment the INITRNR row.
- 5. Replace <NR> with the actual INITRNR, and reload:

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

Re-send single Idocs:

It's also possible to re-send a single Idoc. Then use the update mode IDOC and replace the <NR> with the single Idoc number

```
//UPDMODE F // full extractor
//UPDMODE C // initial extraction, to be followed by delta extractions
//UPDMODE D // delta extraction
//INITRNR <NR>// Resend extraction
IDOC <NR> // Resend single IDoc
```

9.2.8.5 Communication Error

If the logical system is correctly set up and the SAP system can be contacted when connecting, the standard setting for tRFC in the logical system setup may have to be changed. This is done in transaction SM59 and TCP/IP connections.

	Edit	<u>G</u> oto	Extr <u>a</u> s	<u>U</u> tilities				
٦	<u>t</u> RF	C Optio	ns S	Shift+F9				
	<u>M</u> Q	S Optio	ns Sh	Shift+F12				
Ż	S <u>N</u> (C Optior	ns					
	Can	cel		F12				

The figure below shows the default settings.

RFC Destination QTQVCEXTR1	×
Suppress background job if conn.error	
Connection attempts up to task 15	
Time betw. 2 tries [mins] 1	
	1

9.3 QlikView SAP Extractor Connector in BW System

The SAP extractor connector can be used against a SAP BW system. The structure of the BW system differs to that of an SAP ERP system, but the principle is the same.

9.3.1 Prerequisites BW

See section 9.1.1.

9.3.2 Installing Transports

See section 4.1.2.

Store the attached Server.exe file on one server. Prefeering into the same catalouge as the sap connectors (C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector).

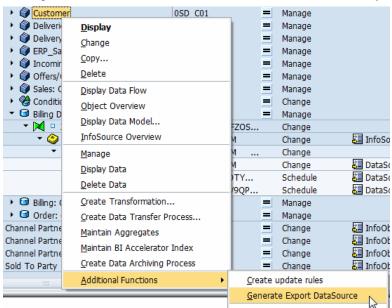
9.3.3 User Configuration for SAP BASIS System 6.40 and Later - BW

See section 9.1.3.

9.3.4 Setting up SAP BW Side Extractor

Proceed as follows to set up the SAP BW side extractor:

- 1. Make sure the source to be used is generated as an export data source:
 - a. Go to transaction RSA1.
 - b. Select Cube or DSO/ODS.
 - c. Right-click and select Additional Functions>Generate Export DataSource.



2. Replicate the internal BW setup:

Choose the BI system from Modeling>Source System.

Modeling	Source Systems					
• 💣 InfoProvider	🝷 🔂 BI					
• All InfoObjects	• 🔛 B7T-IDES NW BI & SEM					
	• 👰 E6D Client 800					
• 🥸 InfoSources	• 👰 IDES APO Client 800					
 B DataSources 	• 🖄 IDES ECC/MDM Client 811					
• 🔀 Source System	• 😰 IDES NW XI Client 800					
	► C SAP					

3. Open Modeling>DataSources.

The internal BI sources are available. In BW, this is referred to as "data marts".

4. Replicate the whole tree or just the data source needed:

Right-click and select Replicate Metadata.

PataSources for B3TCLNT800 B7T-IDES NW B	Tech. Name	м	Execute Func	Display Tree	0	Object Infor
Data Marts	DM		Replicate Meta	💶 InfoSources		
🕨 🧐 Di 🛛 <u>R</u> eplicate Metadata	DM-IO		Replicate Meta	InfoSources		
• 🚱 🖬 800_P0_C01 😪	80D_PU_C01		Change			B3TCLNT800
IP BORSTT_001	80RSTT_001		Change			B3TCLNT800
▶ 🚱 □ 8BZ_CSO1G	8BZ_CSO1G		Change			B3TCLNT800
▶ 😰 □ 8BZ_CSO1H	8BZ_CSO1H		Change			B3TCLNT800

After replicating the data marts, the data sources show up as selectable and can be activated for the QlikView extractor connector process.

5. Go to transaction code RSA6 and use it as in the ERP system.

The tree differs slightly from the one in ERP. This is because no pre-defined extractors are used. In BW, the actual data sources are used.

🖻 BW		Bus	iness Information Warehouse
—œ	SAP_COMP		SAP Components
	DM		Data Marts
	TCT		Technical Content
	QUEUE		Delta Queue
	OBCT_CB		Content Browser

The available sources to be used can be found here. Normally, the technical name starts with "8" followed by "0" for standard ODSs and cubes. The end of the name uses "O" for ODS and "C" for cubes.

Example:

80FIAP_C03	FIAP: Line Item	Cube
80FIAP_003	FIAP: Line item	ODS

6. The technical name can now be activated using the same method as for the ERP system described previously.

9.4 QlikView SAP Extractor Connector in BW System – Client

9.4.1 Prerequisites

See section 9.2.1.

9.4.2 Installing SAP Extractor Connector Client

See section 9.2.2.

9.4.3 Using SAP Extractor Connector

See section 9.2.3.

Note: The Extractor connector is mainly a tool for retrievning data from an ERP system, however it's also usefull for a BW system, but can face the same issue with timeouts as the

OLAP connector, when try to load from an InfoCube. Load from a DSO/ODS don't have this restriction as it's a transparent table in a BW system

9.5 Important Issues

9.5.1 SAP Services File

If there is no SAP GUI installed on the machine where the connector is to be installed, the SAP system gateway port has to be written manually in the folder C:\Windows\System32\drivers\etc\services.

Add the following information at the end of the file:

```
sapgw01 - sapgw99 3301/tcp - 3399/tcp #SAP System Gateway Port
sapdp01 - sapdp99 3201/tcp - 3299/tcp #SAP Dialog Service (dispatcher port)
Example:
Sapgw01 3301/tcp #SAP System Gateway Port
Sapdp01 3201/tcp #SAP Dialog Service Port
SAPgw02 3302/tcp # SAP System Gateway Port
Sapdp02 3202/tcp #SAP Dialog Service Port
```

If passing through a message server, an entry may have to be added 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 in the file, add a new line break after the entry.

If there is a firewall between the connector and the SAP system, port 33nn has to be open (where nn = system number of the SAP system).

9.5.2 Multiple Loads

If several data sources/extractors have to be loaded at the same time, set up multiple logical systems. Make sure to use the same logical system when loading the deltas.

9.5.3 Restriction Idoc Length

The total length of an Idoc is 1000 characters. The normal length of an extractor is between 250 and 700, but when using a BW or CRM system with many text fields, the length of the extractor could end up above this. If so, exclude some fields in order to be able to use the extractor. The total length of an activated extractor can be checked using transaction WE30.

Note: The tRFC method does not have the restrictions mentioned in 9.5.2 and 9.5.3

9.5.4 Language Dependencies

All standard datasources/extractors are maintained in every language. A customized data source is only activated in the log on language, if no action is taken. This has to be taken into consideration when activating a data source in the SAP system.

9.5.5 Finding Activated Data Sources

The relevant activated data sources are found in the SAP system:

- In transaction SE16 in the SAP ERP, the extractors are found in table ROOSOURCE.
- In BW, the table name is RSOLTPSOURCE.

Use transaction WE30 and check the Basic Idoc Type to see which segment that has been activated.

9.5.6 Logistics Data Sources

In logistics, activities have to be carried out in several areas in order to use the extractors within the SAP Business Information Warehouse.

Start by going to transaction SBIW.

9.5.6.1 Managing Extract Structures

This section is used for customization of extract structures in movement data for logistics. The old LIS technique 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 LIS and BW are to be used in parallel.

9.5.6.2 Initialization

The initialization must be prepared by OLTP. A setup completes the setup tables, which are then read during the initialization.

To enable the setup to be reset after a termination, assign a name to each background run for the setup. Then, if a setup terminates or a setup from the archive documents is interrupted, the status of the setup at the point of termination can be stored under the assigned name. When restarting the setup using the assigned name, the processing can continue from the point of termination without having to go through the entire process again. Once the run has completed successfully, the in-between status stored in the memory is deleted.

The setup must run in the background.

9.5.6.3 Filling the Setup Table

Completing the setup tables is a critical action that must be carried out with caution. For large amounts of data, this can take more than a night and may have to be done over a weekend.

The setup log (transaction NPRT) contains information on setups that have already been carried out.

9.5.6.4 Application-Specific Setup of Statistical Data

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

Example: SD-Sales Orders - perform setup

- Standard settings: In this activity, selected sales orders are called and the statistical update of the BW extraction structures for sales orders is triggered. The statistical update used here corresponds to the one chosen in the customizing cockpit.
- Requirements: Before this activity can be carried out, at least one extraction structure per application must have been activated. For more information, see Logistics Extract Structures Customizing Cockpit.

Statistical Setup from Old Documents: Orders			
🕒 🔁 🚹			
Document data restriction			
Archiving Session	D	P	
Sales Organization		to	=
Company code		to	_
SD document		to	
Control of the setup run			
Name of run	ſ⊻		
✓ New run			
Termination Date	20.05.2011		
Termination Time	12:07:58		
Block all orders?			
No. tolerated faulty documents			
Extraction structures BW			
Simulation extr. str. BW			

9.6 Authorizing SAP Extractor Connector in SAP Systems

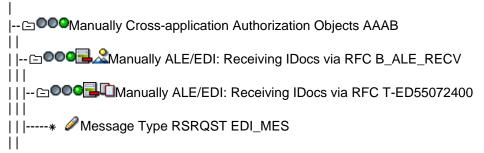
A QlikView user needs to have certain access rights within the SAP ERP and BW systems to use the extractor connectors.

The minimum authorization level needed is defined below.

9.6.1 Authorization Profile in SAP ERP

Maint.: O Unmaint. org. levels O open fields, Status: Unchanged

QTQVCEXTRACTOR



ː⊇♥♥♥■■ Manually Authorization Check for RFC Access S_RFC
│
<pre> * @ Activity 16 ACTVT * @ Name of RFC to be protected * RFC_NAME * @ Type of RFC object to be prote FUGR RFC_TYPE</pre>
│ │ │ │ ː⊇●●●●■■▲Manually Transaction Code Check at Transaction Start S_TCODE
□ □ ⊡●●●■■□Manually Transaction Code Check at Transaction Start T-ED55072400
│ ∗
I ⊆ ●●●●Manually Basis: Administration BC_A
│
⊡●●●SIIIIManually System Authorizations T-ED55072400
<pre> * System administration function NADM S_ADMI_FCD</pre>
II ౯ ●●●●■ Anually Background Processing: Operations on Background Jobs S_BTCH_JOB
III ⊡●●●■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■
│
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
III ⊡●●●■■■■Manually Administration Functions in Change and Transport System T- ED55072400
<pre> * Administration Tasks for Chang TABL CTS_ADMFCT</pre>
│
│
│
 ౯∋●●●■■▲Anually Table Maintenance (via standard tools such as SM30) S_TABU_DIS

||-- 🗁 OOC Manually Table Maintenance (via standard tools such as SM30) T-ED55072400

||-----* Activity 03 ACTVT |-----* Authorization Group * DICBERCLS |-- 🗁 🔎 🖳 🧟 Manually ABAP Workbench S DEVELOP ||-- 🗁 🔊 🖳 🖓 Manually ABAP Workbench T-ED55072400 ||-----* Activity 03, 16 ACTVT ||-----* / Package /QTQVC/QTDEV, SRFC DEVCLASS ||-----*
Object name * OBJNAME ||-----* / Object type * OBJTYPE |-----* Authorization group ABAP/4 pro * P GROUP |-- 🗁 OOO 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-ED55072400 ||-----* Activity 01, 02, 03 ACTVT |-----* PExtension * EDI_CIM | |-----∗
@Basic type RSSEND, ZSQ* EDI_DOC ||-----* Transaction Code WE02, WE30 EDI TCD I-- 🗁 🔍 🖳 🖳 Manually Remote Content Activation of SAPI DataSources from a BW S RO BCTRA ||-- 🗁 🔍 🖳 Manually Remote Content Activation of SAPI DataSources from a BW T-ED55072400 ||-----* Activity 07 ACTVT |-- 🗁 🔍 🖳 🖳 Manually SAP DataSource Authorizations S_RO_OSOA I-- ⊡ ●●●■■□Manually SAP DataSource Authorizations T-ED55072400 -----* Activity 03 ACTVT |-----* / DataSource * OLTPSOURCE

*	DataSource Application Compone * OSOAAPCO
*	Subobject for DataSource DATA OSOAPART

9.6.2 Authorization Profile in SAP BW System

In BW, the following objects have to be added:

🗆 🦳 Manually Busine	ss Information Warehouse	RS
 Manually	Data Warehousing Workbench - C	Dbjects S_RS_ADMWB
Manually	Data Warehousing Workbench - O	bjects T-BT99020800
	03, 16, 63, 66 ousing Workbench Obj APPLCOMP DOC_HIER, DOC_MAST<> RSAD	
 Manually	BI Analysis Authorizations in Role	S_RS_AUTH
Manually	BI Analysis Authorizations in Role	T-BT99020800
□ □ - Bl 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
□□ - InfoCube	*	RSINFOCUBE
□□ - Name (ID)	of a reporting compo *	RSZCOMPID
□ □ - Type of a re	eporting component *	RSZCOMPTP
I I Manually Owner S_RS_COMP1	Business Explorer - Components:	Enhancements to the
Owner T-BT99020800	Business Explorer - Components: I	Enhancements to the
C C Activity	02, 03, 16, 22	ACTVT
□ □ □ Name (ID)		RSZCOMPID

|----- D - Type of a reporting component * RSZCOMPTP |----- Owner (Person Responsible) for * **RSZOWNER** The role used to run the setup of the logical system needed is called QTQVCEXTRSETUP. QTQVCEXTRSETUP ©©©SETUP EXTRACTOR -- C O Manually Cross-application Authorization Objects AAAB ||-- 🗁 🔍 Manually Administration for RFC Destination S_RFC_ADM |||-- 🖃 OOManually Administration for RFC Destination T-ED55072500 | | |----- Activity 01, 02, 03, 06, 36 ACTVT |||----- & Internet Communication Framewo * ICF_VALUE |||----- Se Logical Destination (Specified * RFCDEST |||----- W Type of Entry in RFCDES 3, T RFCTYPE ||-- 🗁 🔎 🔍 Manually Transaction Code Check at Transaction Start S_TCODE ||-- 🗁 OOO Manually Transaction Code Check at Transaction Start T-ED55072500 ||------ Transaction Code /QTQVC/EXTRACTOR ADM, SM59, SU53 TCD I-- 🗁 OOO Manually Basis: Administration BC A ||-- 🗁 🔍 Manually Maintaining QVC-Authorisations /QTQVC/AUT ||-- 🗁 OOO Manually Maintaining QVC-Authorisations T-ED55072500 | |----- 😚 * ADMIN |-- ⊡ OOOManually Basis - Central Functions BC_Z I-- 🗁 🔍 Manually WFEDI: S_IDOCDEFT - Access to IDoc Development S_IDOCDEFT -- DOCDEFT - Access to IDoc Development T-ED55072500 |----- 4 Activity 01, 02, 03, 06 ACTVT |----- & Extension * EDI_CIM |----- Basic type RSSEND, ZSQ* EDI_DOC |----- W Transaction Code WE30 EDI TCD

To activate and generate the extractors, use the QTQVCEXTRADM role.

QTQVCEXTRADM OOOEXTRACTOR ADM I-- C |-- 🗁 🔍 Manually Transaction Code Check at Transaction Start S TCODE | |-- □ ● ● ● ● Manually Transaction Code Check at Transaction Start T-ED55072600 QTQVC/DELETE_INIT, RS<...> TCD I-- 🗁 OOO Manually Basis: Administration BC A ||-- 🗁 🔎 🔍 Manually Table Maintenance (via standard tools such as SM30) S_TABU_DIS ||-- 🗁 OOO Manually Table Maintenance (via standard tools such as SM30) T-ED55072600 | |----- & Activity 02, 03 ACTVT | |----- & Authorization Group * DICBERCLS |-- 🗁 OOO Manually Basis - Central Functions BC Z |-- 🗁 🔎 🔍 Manually WFEDI: S_IDOCDEFT - Access to IDoc Development S_IDOCDEFT |-- 🗁 OOO Manually WFEDI: S IDOCDEFT - Access to IDoc Development T-ED55072600 | |----- 6 Activity 01, 02, 03 ACTVT | |----- & Extension * EDI_CIM | |----- We Basic type RSSEND, ZSQ* EDI_DOC | |----- We Transaction Code WE30 EDI TCD I-- C Manually Authorizations: BW Service API RO I-- 🗁 🔍 Manually Remote Content Activation of SAPI DataSources from a BW S RO BCTRA ||-- 🗁 OOO Manually Remote Content Activation of SAPI DataSources from a BW T-ED55072600 | |----- Activity 07 ACTVT

□ ː⊐♥♥♥♀♀☆Manually SAP DataSource Authorizations S_RO_OSOA
⊡ ●●●●Manually SAP DataSource Authorizations T-ED55072600
⁶ Activity 03 ACTVT
Se DataSource * OLTPSOURCE
Source Application Compone * OSOAAPCO
& Subobject for DataSource DATA OSOAPART
The three roles can be combined to complete the different purposes of the user.

9.7 Migrate Extractor environment

First create the Extractor Environment in the unlocked Source system with the existing transaction /N/QTQVC/EXTRACTOR_ADM.

Then check the database table RSBASIDOC in the Source system with transaction SE16. Enter the name of the Extractor Environment Logical System and press 'Execute':

Data Browser: Table RSBASIDOC: Selection Screen		
🕀 🚸 🔜 🚺 Number of Entries		
SLOGSYS		to
RLOGSYS	QTQVCEXT51	to

Table RSBASIDOC Display					
Check Table	Check Table				
SLOGSYS	T90CLNT090				
RLOGSYS	QTQVCEXT51				
OBJSTAT	ACT				
BIDOCTYP	ZSQEQTQVCEXT51				
TSIDOC3X	0				
TSPREFIX	QE				
SRCTYPE	3				
SAPREL	700				
TSTPNM	HRG				
TIMESTMP	20.140.806.084.201				
SBWBCRL	710				
RBWBCRL	30B				

Then enter the name of the 'TSPREFIX' (Transfer structure prefix) from the Source system in the same table in the **TARGET** system like below and press 'Execute':

Data Browser: Table RSBA	SIDOC: Selectio	on Screen
🕒 🍪 🚍 🚺 Number of Entries		
SLOGSYS		to
RLOGSYS		to
OBJSTAT		to
BIDOCTYP		to
TSIDOC3X		to
TSPREFIX	QE	to
SRCTYPE		to
SAPREL		to
TSTPNM		to
TIMESTMP		to
SBWBCRL		to
RBWBCRL		to
Width of Output List	250	
Maximum No. of Hits	200	

If a record is found with the same TSPREFIX in the Target system, the transport function cannot be used (a workaround is to create a new Extractor Environment in the Source system to get another TSPREFIX that is not already used in the Target system).

If the prerequisite above is fulfilled, then execute the transaction /N/QTQVC/MIGRATE_ENV in the Source system to put the Extractor Environment into a transport.

Then migrate and import the transport into the correct client in the Target system.

After the import, execute the transaction /N/QTQVC/CONNECT_ENV in the Target system. Enter Logical system of receiver, User name and Transfer structure prefix (found above in the Source system) and press 'Execute':

Store a Connection to QV	
•	
Logical system of receiver	QTQVCEXT51
User name	HRG
Transfer structure prefix	QE

Then go to transaction WE21 (under Transactional RFC) in the Target system and generate a new Port name and save it. RFC destination should contain the Extractor Environment Logical System name:

Port	A00000068		
Description	QlikView generated		
Version			
○ IDoc rec.types SAP Release 3.0/3.1			
 IDoc record types SAP Release 4.x 			
RFC destination QTQVCEXT51			

Then go to transaction WE20 and find the partner profile for the Partner Type 'LS' and the Extractor Environment Logical System name.

Partner profiles							
0%4013	ኬ ቶ 🚺 🖻	1]				
Partner	Description		Partner No.	QTQVCEXT51	QlikView generated		
• MDM55 • MDM_001	MDM MDM	÷	Partn.Type	LS	Logical system		
 MDM_002 MDM_003 MDM_004 	MDM MDM		Post proce	ssing: permitted	agent Classification		
 MDM_004 MDM_005 MDM_006 	MDM MDM MDM		Ty.	US	👍 User		
• MDM_007	MDM		Agent	HRG	Håkan Rönningberg		
 MDM_008 MDM_009 	MDM MDM		Lang.	EN	English		
 MDM_010 MDM_MIGRAT 	MDM MDM						
 MDS_00_800 OMOCLNT800 	Master Data Ma						
• P13CLNT800	P13 Client 800		Outbound parmt	trs.			
 PFS_ID_M PFS_ID_T 	Logical System Productive syst PS_02_200 QlikView gener QlikView gener		Logical System Logical System		Partner Role	Message Type	Message va Me
 PRODUCTION PS 02 200 				RSINFO			
• <u>QTQVCEXT51</u>		QlikView gener			RSSEND		
QTQVCEXT77 OTOVCEXT88							
QTQVCEXTR1	QlikView gener		* <				
QTQVCEXTR2 QWBCLNT705	QlikView gener QWBCLNT705		Q D F F				
 REC_00_800 RPMCLNT800 	DMJ Client 800	•					
 RPM_00_800 SALES 	Sales system (c		Inbound parmtrs	Message Type	Message va Me		
 SAPQ30800 	Q30 800			RSRQST	Message va Me		
 SEMCLNT800 							

Double click the Message type RSINFO:

Partner profiles	: Outbound	parameters	
°V			
Partner No.	QTQVCEXT51	QlikView generated	
Partn.Type	LS	Logical system	
Partner Role			
至 Message Type Message code Message function	RSINFO	Test	I
Outbound Options	Message Control	Post Processing: P	er!
Receiver port Pack. Size Queue Processing	A00000068	Transactional RFC	

Assign the Port name which was generated above to 'Receiver port', press Enter and Save.

Do the same for the Message Type RSSEND.

The Extractor Environment is ready to use!

9.8 Migrate activated Extractors

In the first system in the SAP system landscape, put the activated Extractors that should be migrated into the database table /QTQVC/EXTRACT.

Use the transaction /QTQVC/MIGRATE_PREP:

Logical system of receiver	QTQVCEXTR1 Language EN Transfer Met	thod ⊙t	RFC
Get Extractors	Put selected Extractors into migration table in:		
	Foreground or Background		
EXTRACTOR	DESCRIPTION	SELECT	
/QTQVC/VBAK_VBRP	Billing	х	*
OARTICLE_ATTR	Article		-
OBILL_CAT_TEXT	Billing Category	х	
OBILL_TYPE_TEXT	Billing Type		
0COMP_CODE_ATTR	Company code	х	
0COMP_CODE_TEXT	Company Code		
0CO_AREA_ATTR	Controlling Area	х	
0CO_PC_ACT_02	Ending Inventory Material Valuation Rec.	х	
0CO_PC_ACT_05	Material Valuation Record Prices	х	
OCURTYPE_TEXT	Currency Type		
OCUSTOMER_TEXT	Customer		
OCUST_GROUP_TEXT	Customer Group		
OCUST_SALES_TEXT	Customer	х	
ODISTR_CHAN_TEXT	Distribution Channel	х	
ODIVISION_TEXT	Division	х	
0DOC_CATEG_TEXT	Document cat.	х	
0EC_PCA_1	Profit Center: Account Transaction Data		
0EC_PCA_3	Profit Center: Actual Line Items	х	
OFI_AP_3	Vendors: Line Items	х	
OFI_AR_3	Customers: Line Items	Х	•
▲ ►		4 1	

Then in the same system in the SAP system landscape, create a Transport request containing activated Extractors for the specific Logical system used above. Perform step 1 in the transaction /QTQVC/MIGRATE_EXTR:

Migrate Activated Ext	ractors	
Step 1. Create Transport Request Transport Request if there alrea	· · · · · · · · · · · · · · · · · · ·	
Logical system of receiver	QTQVCEXTR1	
Transport Owner	HRG	
Target System	E6V	
Create Transport Request Step 2. Migrate Transport Reques Step 3. Check that Extractor envi		
created in this system. In SAP E	3W systems the Extractor so	ource needs to be generated as
Export DataSource, before activ	vated.	
Step 4. Execute this transaction in	the same system and press	s the button below:
Upload and activate Extractors	For Logical system	K
Step 5. Repeat step 2 to step 4 f		

Then perform step 2 and step 3 described in this transaction.

After doing that, execute the same transaction /QTQVC/MIGRATE_EXTR in the SAP system where step 2 and step 3 were performed. Perform step 4:

Migrate Activated Extractors					
Step 1. Create Transport Request i Transport Request if there alread	in first system in landscape. Do not create a new dy is one which is not migrated.				
Logical system of receiver					
Transport Owner	HRG				
Target System					
Create Transport Request	Customizing Request:				
Step 2. Migrate Transport Request and import in correct client in next system in landscape. Step 3. Check that Extractor environment with the Logical system name used in step 1 is created in this system. In SAP BW systems the Extractor source needs to be generated as Export DataSource, before activated. Step 4. Execute this transaction in the same system and press the button below:					
Upload and activate Extractors	For Logical system QTQVCEXTR1				
Step 5. Repeat step 2 to step 4 for each subsequent system in landscape.					

Then perform step 5 in each system in the SAP system landscape.

Some general rules:

The database table /QTQVC/EXTRACT will contain the activated Extractors from the latest execution of the transaction /QTQVC/MIGRATE_PREP, that is the transaction overwrites the previous content in the table for a Logical system. Therefore it is important to execute the transaction /QTQVC/MIGRATE_PREP before executing the transaction /QTQVC/MIGRATE_PREP before executing the transaction /QTQVC/MIGRATE_EXTR which creates the Transport request. When the Transport request is created it is not allowed to change the content of the database table /QTQVC/EXTRACT until the Transport request has been migrated. No new transport request should be created until the last one has been used in all systems in the landscape.

However the database table /QTQVC/EXTRACT is using Logical system as key, so it is possible to put activated Extractors for a different Logical system in the table and to create a separate Transport request in parallel for that Logical system.

When the Extractors are uploaded and activated in the next system in the landscape there is a check that an Extractor is not already activated. If so, there will be a warning in the log file, the activation of the Extractor is skipped and the program continues with the next Extractor from the Transport request. If the user wants to change the fields of an activated Extractor by using

this functionality, the Extractor has to be manually deactivated in each system before uploading and activation takes place.

9.9 Tips and Recommendations

9.9.1 Delta Mechanism

The big advantage of using the SAP Extractor Connector is the delta mechanism, which is built-into some of the standard extractors.

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

9.9.2 Load Time

A time lag is experienced during the initialization of the connector whilst the SAP processes run.

The amount of time to load from an ERP system is similar to that of the SQL connector. To get good loading performance from a BI/BW system, use the connector against a DSO/ODS source.

9.9.3 Null Value

No null value is alowed in any Objects as the extractor is looking for an empty row to know when to finish loading

9.9.4 Qlikview Trim function

When loading from an InfoCube, the positive values of a key figure can end-up as a text in Qlikview. To avoid this use the Qlikview Trim function in the script as below:

Trim([CREDIT_DC]) as [CREDIT_DC.Credit amount in foreign currency], Trim([CREDIT_LC]) as [CREDIT_LC.Credit amount in local currency],

9.9.5 Sample Extractors

The following sample extractors are available for use:

- 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

- OCO_PC_01 Cost Object Controlling: Plan/Actual Data
- 0EC_PCA_3 Profit Center: Actual Line Items
- PA Personnel Management

...and so on.

9.9.6 Transaction Codes

The following transaction codes are available for use:

- 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
- SM37 Background Job
- RSA6 Post process Data Sources and Hierarchy
- RSA7 BW Delta queue Maintenance
- SMGW Gateway Monitor
- SM58 Transactional RFC
- SMQ1 qRFC Monitor (Outbound Queue)
- WE02 Idoc List
- WE30 Idoc Types
- 9.9.7 Service File

Store the attached Server.exe file **on one server**. Prefeering into the same catalouge as the sap connectors (C:\Program Files\Common Files\QlikTech\Custom Data\QvSAPConnector).

.Note: It's only possible to have one Server.exe running

10 BAPI Connector

The BAPI connector enables QlikView to call Function Modules or BAPIs (Business Application Programming Interface) in SAP systems. QA method of a BAPI is implemented as Function module, so the connector makes no distinction of these.

The Function Module has to be Remote-enabled to be used from the Connector.

10.1 SAP System

10.1.1 Prerequisites

• SAP BASIS system 640 or later (R/3 4.7 or later)

10.1.2 Installing Transports

See section 4.1.2.

10.1.3 User Configuration for SAP BASIS System 6.40, and 7.00 and later.

When the transports have been installed in the system, proceed as follows:

- 1. Create one or more users:
 - a. Go to transaction SU01.
 - b. Click Create (F8).
 - c. Give the user a name and a password.
 - d. On the Logon data tab, assign the user to User Type: Service.
 - e. On the **Roles** tab, add the role QTQVCACCESS.
 - f. Click Save.
- 2. If the installation is an upgrade from a previous version and the role QTQVCACCESS has been updated, update all users assigned to the role:
 - a. Go to transaction PFCG.
 - b. Enter the role name QTQVCACCESS.
 - c. Click Change Role.
 - d. On the User tab, enter the name of the user(s) created above.
 - e. Click User comparison.
 - f. Click Complete comparison.
 - g. Click Save.

To run an authorization-related object in a BAPI, the authorization object has to be adjusted in the QTQVCACCESS role. Alternatively, create a complemented role for those running the BAPI connector.

The QlikView log indicates if something is missing in the authorization:

2012-02-27 09:53:23 Error Returned: TYPE='E', ID='M7', NUMBER='120', MESSAGE='You have no authorization for this transaction in plant 3000', LOG_MSG_NO='000000', MESSAGE_V1='3000', ROW='0', SYSTEM='T90CLNT090' Returned: TYPE='E', ID='M7', NUMBER='121', MESSAGE='You have no authorization for this transaction with movement type 501', LOG_MSG_NO='000000', MESSAGE_V1='501', ROW='0', SYSTEM='T90CLNT090'

10.1.4 Function modules in the SAP System

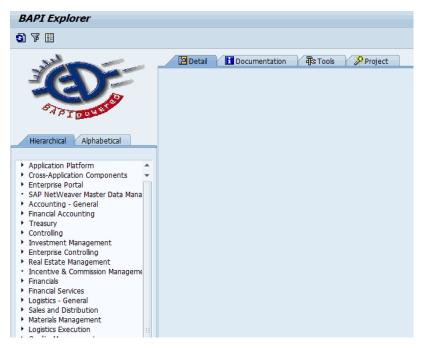
You can find and test Function Modules in SAP in at least two ways:

Use transaction SE37, but difficult to use as a search tool

or

use transaction code BAPI to look for available BAPI functions in the SAP system, proceed as follows:

1. The transaction provides an overview of the different areas in the SAP system and the BAPIs that can be used.



2. Select an area and a specific BAPI function for test.



3. Click Single Test to go to the test of the function screen.

Test Function Module	: Initial Screen
🕀 🕀 Debugging 🔄 Test da	ata directory
Test for function group Function module Uppercase/Lowercase	3033 BAPI_CUSTMATINFO_GETLIST
RFC target sys:	
Tables	Value
SALESORGRANGE DISTRCHANRANGE CUSTOMERRANGE MATERIALRANGE CUSMATRANGE CUSMATRANGE CUSMATRANGE CUSTOMERMATERIALINFO CUSTOMERMATERIALINFODETAIL RETURN	0 Entries 0 Entries

4. Enter the values needed to run the function.

-	Str	uctu	ire I	d	itor	: Change	SALES	ORGRA	NGE fro	m Entry
ē	1	™	∢	۲	M	🚛 Column	Entry	📑 🛃	New Line	Double Li
		0 1	Intri	es						
s	OP	LOW	HIGH	I						
E	EQ	1000	1000	1						

5. Run the function and wait for the result.

		unction	Module: Initial .	Jereen				
R (De	ebugging 🤤	Test data directory					
			Courte.	0 LHOLICS				
CUST	OME	ERMATERIALI		0 Entries				
		1		24 Entries				
CUSI	OME	ERMATERIALI		0 Entries				
		1	Result:	24 Entries				
Sti	ис	ture Edite	or: Display CUS	TOMERMAT	TERIALINF	-ODETAI	L from Entry 1	
ã I	•	< ► ► ₩ ₽	Column 🛛 🛃 Entry	Metadata				
	24	4 Entries						
		1	1					
SALE	DI	CUSTOMER	MATERIAL	CREATED BY	CREAT DATE	SORT FLD	MAT NR CUS	CUS
SALE	DI	CUSTOMER	MATERIAL	CREATED_BY	CREAT_DATE	SORT_FLD	MAT_NR_CUS	CUS
	_	CUSTOMER	MATERIAL T-FQ199	CREATED_BY	CREAT_DATE 23.12.2002	SORT_FLD	MAT_NR_CUS T-FQ399	
1020	22			_	_	SORT_FLD		Far
1 <mark>020</mark> 1020	22 22	7778	T-FQ199	HENEKAA	23.12.2002	SORT_FLD	T-FQ399	Far
1020 1020 3000	22 22 10	7778 7779	T-FQ199 T-FQ199	HENEKAA HENEKAA	23.12.2002 23.12.2002	SORT_FLD	T-FQ399 T-FQ399	CUS Far Far
1020 1020 3000 3000	22 22 10 10	7778 7779 3894	T-FQ199 T-FQ199 31-M-40	HENEKAA HENEKAA C5055253	23.12.2002 23.12.2002 04.08.2006	SORT_FLD	 T-FQ399 T-FQ399 M-40	Far
1020 1020 3000 3000 3000	22 22 10 10	7778 7779 3894 4130	T-FQ199 T-FQ199 31-M-40 35-M-40	HENEKAA HENEKAA C5055253 C5055253	23.12.2002 23.12.2002 04.08.2006 04.08.2006	SORT_FLD	 T-FQ399 T-FQ399 M-40	Far
1020 1020 3000 3000 3000 3000	22 22 10 10 10 10	7778 7779 3894 4130 4130 4130	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01	HENEKAA HENEKAA C5055253 C5055253 ROSEMANNM	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999	SORT_FLD	 T-FQ399 T-FQ399 M-40	Far
1020 1020 3000 3000 3000 3000 3000	22 22 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10	HENEKAA HENEKAA C5055253 C5055253 ROSEMANNM ROSEMANNM	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40	Far
1020 1020 3000 3000 3000 3000 3000 3000	22 22 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT	HENEKAA HENEKAA C5055253 C5055253 ROSEMANNM ROSEMANNM ROSEMANNM	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT	Far
1020 1020 3000 3000 3000 3000 3000 3000	22 22 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM CMDS_OEM2	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT	HENEKAA HENEKAA C5055253 C5055253 ROSEMANNM ROSEMANNM TOMB	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_0EM_MAT CMDS_0EM_MAT	Fai
1020 1020 3000 3000 3000 3000 3000 3000	22 22 10 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMD5_OEM CMD5_OEM 2RFID_CUST	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1	HENEKAA HENEKAA C5055253 C505253 ROSEMANNM ROSEMANNM TOMB TOMB	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT CMDS_OEM_MAT AII_MAT1	Fai
1020 1020 3000 3000 3000 3000 3000 3000	22 22 10 10 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM CMDS_OEM CMDS_OEM2 RFID_CUST RFID_CUST	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1 AII_MAT2	HENEKAA HENEKAA C5055253 C505253 ROSEMANNM ROSEMANNM TOMB TOMB I012639	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003 06.04.2006	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT AII_MAT1 AII_MAT2	Fai
1020 1020 3000 3000 3000 3000 3000 3000	222 222 10 10 10 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM CMDS_OEM CMDS_OEM2 RFID_CUST RFID_CUST	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1 AII_MAT2 RFID_CASE1	HENEKAA HENEKAA C5055253 C5055253 ROSEMANIM ROSEMANIM ROSEMANIM TOMB TOMB TOMB T012639 I012639 I012639	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003 06.04.2006 06.04.2006	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT CMDS_OEM_MAT AII_MAT1 AII_MAT2 RFID_CASE1	Fai
1020 3000 3000 3000 3000 3000 3000 3000	222 222 10 10 10 10 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM CMDS_OEM2 RFID_CUST RFID_CUST RFID_CUST	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1 AII_MAT2 RFID_CASE1 RFID_PALLET1	HENEKAA HENEKAA C5055253 C5055253 ROSEMANIM ROSEMANIM ROSEMANIM TOMB TOMB T012639 I012639 I012639 I012639 I012639	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003 06.04.2006 06.04.2006 06.04.2006	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT CMDS_OEM_MAT AII_MAT1 AII_MAT2 RFID_CASE1 RFID_PALLET1	Fai
1020 1020 3000 3000 3000 3000 3000 3000	222 222 10 10 10 10 10 10 10 10 10 10 10	7778 7779 3894 4130 4130 4130 4130 CMDS_OEM CMDS_OEM2 RFID_CUST RFID_CUST RFID_CUST RFID_CUST US-CUS9	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1 AII_MAT2 RFID_CASE1 RFID_CASE1 RFID_CASE1 RFID_CASE1 US-FG1-16G	HENEKAA HENEKAA C5055253 C5055253 ROSEMANIM ROSEMANIM ROSEMANIM TOMB TOMB TOMB TOMB TOMB 1012639 1012639 1012639 I012639 GRAUENHORST	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003 06.04.2006 06.04.2006 06.04.2006 17.09.2003	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT CMDS_OEM_MAT AII_MAT1 AII_MAT1 AII_MAT2 RFID_CASE1 RFID_CASE1 RFID_PALLET1 US-RAW1	Fai
1020 1020 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000	222 222 10 10 10 10 10 10 10 10 10 10 10 30	7778 7779 3894 4130 4130 4130 CMDS_OEM CMDS_OEM CMDS_OEM2 RFID_CUST RFID_CUST RFID_CUST US-CUS9 LA0001	T-FQ199 T-FQ199 31-M-40 35-M-40 M-01 M-08 M-10 CMDS_SUP_MAT CMDS_SUP_MAT AII_MAT1 AII_MAT2 RFID_CASE1 RFID_PALLET1	HENEKAA HENEKAA C5055253 C5055253 ROSEMANIM ROSEMANIM ROSEMANIM TOMB TOMB T012639 I012639 I012639 I012639 I012639	23.12.2002 23.12.2002 04.08.2006 04.08.2006 23.02.1999 23.02.1999 23.02.1999 15.09.2003 15.09.2003 06.04.2006 06.04.2006 06.04.2006	SORT_FLD	T-FQ399 T-FQ399 M-40 M-40 CMDS_OEM_MAT CMDS_OEM_MAT AII_MAT1 AII_MAT2 RFID_CASE1 RFID_PALLET1	Far

If the result is satisfactory, it can be used in the QlikView script to retrieve the same result.

10.2 Using SAP BAPI Connector

10.2.1 BAPI Function in QlikView

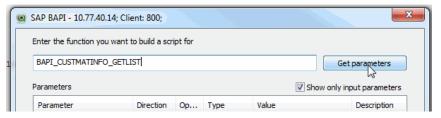
1. In the QlikView script editor, select the BAPI connector and connect to the SAP system.

Data	Functions	Variables	Settings	
Databa	ase			
Qv	5APBAPICor	nnector.dll (64) 🔻	Connect
F	orce 32 Bit			Select
				BAPI

2. Click **BAPI** to select a function.

Da	ta	Functions	Variables	Settings	
Da	ataba	ase ——			
	Qv9	SAPBAPICor	nnector.dll (64) 🔻	Connect
	F	orce 32 Bit			Select
					BAPI

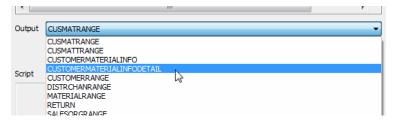
3. In the pop-up dialog, enter the name of the BAPI function found in the SAP system. Then click **Get parameters**.



4. Enter the parameters needed to run the function.

BAPI_	CUSTMATINFO_GET	.IST				[Get parameters
arame	eters					Show	only input parameters
Paran	neter	Direction	Op	Туре	Value		Description '
III CI	JSMATTRANGE	tables	Yes	TABLE			Customer n
III CI	JSTOMERMATERIA	tables	Yes	TABLE			Customer-r
III CI	JSTOMERMATERIA	tables	Yes	TABLE			Detailed inf
III CI	JSTOMERRANGE	tables	Yes	TABLE			Customer n
# DI	STRCHANRANGE	tables	Yes	TABLE			Intervals -
III M	ATERIALRANGE	tables	Yes	TABLE			Material nu
III RE	TURN	tables	Yes	TABLE			Return cod
	ALESORGRANGE	tables	Yes	TABLE			Intervals -
1	Edit parameter t	able	- 10-		-		×
ut	Table						

5. Some Functions return more than one table, but QlikView can only handle one for each statement. Select the output table you want and then click **Add call to script**.



11 BW Process Chain Status and QlikView tasks

11.1 Background

Today it's a problem to know when a BW process chain has finished loading data and QlikView can start loading their part. Below is an example of how you can use the BAPI connector to check the status of a Process chain and start the QlikView load when ready.

11.2 BW Process Chain Overview

Process chains are a robust graphical scheduling & monitoring tool to maintain automation, visualization & monitoring of tasks/processes. Typically this is used to update DSOs and InfoCubes

11.3 How to do it

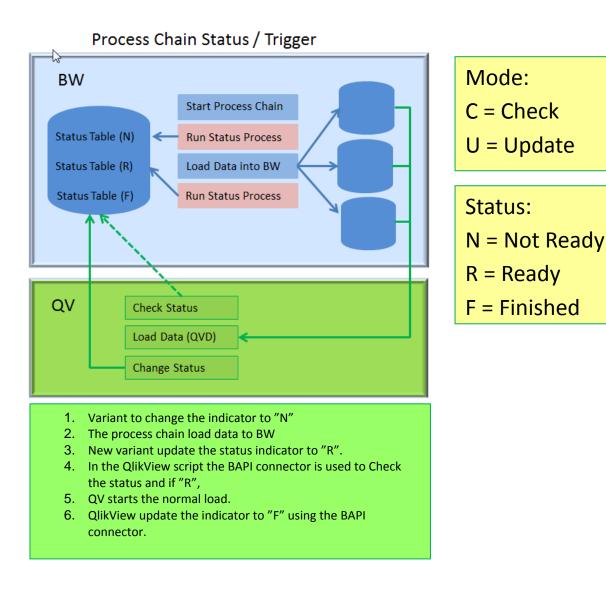
The Connector transports include a Report program named /QTQVC/PROCESS_STATUS.

Two variants should be created of the program for each process chain, to be used in the beginning and end of the process chain setting the status of the process. The QlikView script has to be updated with a loop to be able to check the status and finally change the status.

Variant 1 of the Report program sets the indicator to "N" = Not Ready and

Variant 2 sets the indicator to "R" = Ready. When calling the report program the status is stored in our table /QTQVC/Status.

In the QlikView Script we utilize the BAPI connector to check when there is a "R" in the table, then proceed with normal load, and finally set the status to "F" = Finish when the load is completed. The BAPI connector calls a function module named /QTQVC/PROCESS_STATUS, which in turn calls the report program /QTQVC/PROCESS_STATUS.



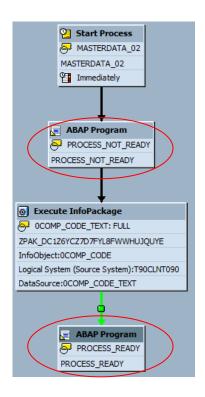
11.4 Setup in SAP BW system

You need to be skilled in creating Report variants and maintaining Process chains to do the below tasks:

Create two variants (N and R) of the program /QTQVC/PROCESS_STATUS, for each process chain.

Set or check process	chain status
⊕ b	
Connector	PRCHAIN_01
Task ID	MASTERDATA_01

In the process chain, add this ABAP program with variant at the start and at the end of the chain. The Task ID has to be unique for each process chain.



11.5 Setup in QlikView

You need to schedule the QlikView task to start when the Process chains normally ends.

Script Example:

Add a loop in the beginning of the script, using the BAPI connector to check the Status of the Process chain.

The script will leave the loop when status changes to ``R'' (Ready) and continue with the normal load of BW data.

When that is finished it should set the status to ``F'' (Finished) to avoid the same data being loaded twice.

CUSTOM CONNECT TO

```
"Provider=QvSAPBAPIConnector.dll;ASHOST=10.88.20.43;SYSNR=10;CLIENT=800;XUserI
d=QCWJORBOPLTA;XPassword=OUZKbYRNJbaATYMX;";
```

```
"function":"\/QTQVC\/PROCESS STATUS",
            "output":"STATUS OUT",
            "parameters":
            Γ
              { "direction":"out", "length":1, "name":"STATUS OUT",
"optional":false, "type":"CHAR", "value":" " },
              { "direction":"in", "length":10, "name":"CONNECTOR",
"optional":false, "type":"CHAR", "value":"PRCHAIN_02" },
              { "direction":"in", "length":1, "name":"MODE",
"optional":false, "type":"CHAR", "value":"C" },
              { "direction":"in", "length":1, "name":"STATUS IN",
"optional":true, "type":"CHAR", "value":" " },
              { "direction":"in", "length":40, "name":"TASK ID",
"optional":false, "type":"CHAR", "value":"DATA 01" }
            ]
          };
          Let Status1=peek('STATUS OUT' ,-1,'Out');
          exit do when Status1='R';
          trace 'Waiting for BW process to finalize';
          sleep 10000;
1000
//Load Data
CUSTOM CONNECT TO
"Provider=QvSAPEXTRConnector.dll;ASHOST=10.88.20.43;SYSNR=10;CLIENT=800;XUserI
d=MXMDKRBOPDAB;XPassword=cHNLSYRNJbaATYcc;";
[80COMP CODET]:
LOAD
 [COMP CODE],
 [LANGU],
 [TXTMD];
SQL EXTRACTOR 80COMP CODET
UPDMODE F // full extractor
EXTRLANGUAGE E
LOGSYS QTQVCEXTR1
WHERE
LANGU I EQ E
;
//STORE * FROM [80COMP CODET] INTO FULL 80COMP CODET.QVD;
//DROP TABLE [80COMP CODET];
CUSTOM CONNECT TO
"Provider=QvSAPBAPIConnector.dll;ASHOST=10.88.20.43;SYSNR=10;CLIENT=800;XUserI
d=QCWJORBOPLTA;XPassword=OUZKbYRNJbaATYMX;";
//UPDATE STATUS
drop table Out;
Out:
```

```
LOAD *;
SOL {
 "function":"\/QTQVC\/PROCESS STATUS",
 "output":"STATUS OUT",
 "parameters":
 [
   { "direction":"out", "length":1, "name":"STATUS_OUT", "optional":false,
"type":"CHAR", "value":" " },
   { "direction":"in", "length":10, "name":"CONNECTOR", "optional":false,
"type":"CHAR", "value":"PRCHAIN_02" },
   { "direction":"in", "length":1, "name":"MODE", "optional":false,
"type":"CHAR", "value":"U" },
   { "direction":"in", "length":1, "name":"STATUS_IN", "optional":true,
"type":"CHAR", "value":"F" },
   { "direction":"in", "length":40, "name":"TASK ID", "optional":false,
"type":"CHAR", "value":"DATA 01" }
 ]
};
```

12 Important General Information All Connectors

12.1 Transports / Mismatch

The data transport has to be istalled in the main client, normally client 000. but the authorization transports is client dependent.

From the realese of 5.70 SR1 there is a control function to avoid mismatch between the transport and the dll used. Before this release you need to make sure that the dll matches the transport.

12.2 Delete Function

Use transaction /N/QTQVC/DELETE.

Delete Database Table Records					
⊕					
Delete records fr /QTQVC/CON /QTQVC/JOB /QTQVC/TRAG /QTQVC/STA	TROL SQL CE	Delete records from year			
 /QTQVC/STA' Key for single red CONNECTOR JOBDATE JOBTIME 	TUS Single record tord: 2012.04.03 10:57:12				
 ● Simulate Delet ○ Delete Record 					

With this transaction it is possible to delete records from the /QTQVC/ tables or a single record from the table /QTQVC/STATUS. For the first four options all records from the specified table and year are deleted at one time. The option 'Simulate deletion' can be used to see how many records will be deleted (no deletion takes place). To delete the records, select the option 'Delete records'.

Press the 'execute' button when the appropriate options have been selected.

The tables /QTQVC/CONTROL and /QTQVC/JOB_SQL contains information about SQL connector jobs. Do not delete records from the current year. Deletion of records older than current year can take place at any time. Although it is not necessary to keep the older records they can be useful for statistical reasons.

The table /QTQVC/TRACE is used to store trace information for the SQL connector. Records are written when the parameter 'Trace=1' is part of the connection string in the QlikView script. The records can be deleted at any time if there is not any trouble shooting taking place.

The table /QTQVC/STATUS contains information about jobs started for the SQL and Extractor connectors. It is also used for Process chain handling. Do not delete records from the current year.

12.3 Update Function

Use transaction Transaction /N/QTQVC/UPDATE

Update Database Table Records				
•				
Update single recor	d from table:			
O/QTQVC/CONTROL				
Key for single record:				
JOBNUMBER	20120101090000			
Change value of JOBSTATUS	field below to:			
●/QTQVC/STATU	●/QTQVC/STATUS			
Key for single record:				
CONNECTOR	QTQVCEXTR1			
JOBDATE	2012.04.03			
JOBTIME	12:51:01			
Change value of JOBSTATUS	field below to:			

With this transaction it is possible to update single records from the tables /QTQVC/CONTROL and /QTQVC/STATUS. To update a record, select the wanted table, enter the key for the record, enter a new value in JOBSTATUS and press the 'execute' button.

13 Secure Network Communication

Secure Network Communication (SNC) is the SAP technology used for safe communication between SAP components. If the customer has SNC installed, this can also be used for the RFC communication between the connector and the SAP system.

A cryptographic library must be installed on the connector machine. This is not supplied by QlikTech. The technology is used between SAP components only. For technical details, see http://help.sap.com/saphelp_nw04/helpdata/EN/69/b0bbd6dde71141bee8806586144796/frame_set.htm.

Proceed as follows to set up SNC

- 1. Open Control Panel > System>Advanced
- 2. Create a system Variable, SNC_Lib to hold the path to local crypto library

em Properties	ardware Advanced Remote			
vironment Variables				
User variables fo	r Administrator	_		
Variable	Value			
SECUDIR	C:\sapcrypto\nt-x86_64\sec			
SNC_LIB	C:\sapcrypto\nt-x86_64\sec\sapcrypto.dll			
TEMP	%USERPROFILE%\AppData\Local\Temp			
TMP	%USERPROFILE%\AppData\Local\Temp			
	New Edit Delete			
∟ ⊂System variables				

3. Specify the SNC name in the connection dialog, p:C=sncname. In addition, specify the quality of the protection - the available values are specific to the library used.

Setup SAP Co	nnection	8	
Server Information Application Server Host Message Server Host			Tabs Main 🔹 😋 .
10.88.20.	56		
Client 800			
System Number	09		kr';
Group			ss[.fff]'; n;jul;aug;sep;okt;nov;dec';
User Creder	itials		
Username	bpo		RConnector.dll;ASH0ST=10.88.20
Password	•••••	Test Conr	nection 💌
Network Server Host and Port		i	Connection tested successfully!
Port	8680		OK
Secure Network Settings CACtivate Secure Network Communication SNC Name p:CN=E65, OU=SAP, O=Qlikview, C=DE Quality 3		SE	Data from Files
			Relative Paths Table Files Use FTP QlikView File
ОК	Cancel Test Connection	Log	Web Files Field Data