QlikView

Server/Publisher

Version 10, SR5, for Microsoft Windows®
Lund, Sweden, June 2012
Authored by QlikTech International AB

Content

Part 1 QlikView Server/Publisher

1 Introduction

1.1 Before You Begin

This documentation provides the necessary steps to complete the installation of the QlikView Server, test your installation, and share your QlikView documents. The documentation also describes how to configure and monitor QlikView Server through the Management Console, how to connect to QlikView Server and its documents through different clients, and how to set up and maintain document management and distribution through Publisher.

QlikView Server

QlikView Server provides a platform for hosting, and sharing QlikView information over the Internet/Intranet. QlikView Server is tightly integrated with QlikView to deliver a seamless suite of data analysis technology to end users. The server component of QlikView Server is the centerpiece of this technology, supplying a robust, centrally managed, QlikView document community, connecting multiple users, client types, documents, and objects within a secure and safe environment.

QlikView Publisher

QlikView Publisher is a member of the QlikView product family that manages content and access. By presenting your end-users with up-to-date information and letting you manage your QlikView documents in a powerful way, QlikView Publisher is a valuable addition to the QlikView suite.

QlikView Publisher distributes data stored in QlikView documents to users within and outside the organization. By reducing data, each user can be presented with the information that concerns him/her. The QlikView Publisher service and user interface are now fully integrated into QlikView Server and the QlikView Management Console (QMC).

QlikView Clients

There are multiple client types available to connect to QlikView Server. There is the installed Windows client - QlikView. There is an ActiveX Internet Explorer plug-in client which can also be implemented as either a full or object based client (Internet Explorer Client – QVA for IE - and QlikX Objects Client) for analysis in an Internet Explorer browser. There is an AJAX Zero-Footprint Client (ZFC) that provides QlikView Objects support in a standard browser without requiring client side installation. Nothing apart from a standard web browser needs to be installed on the client machine.

In addition to the standard clients, QlikView Server 9 will support mobile clients, including iPhone and iTouch, along with support for many popular smart phones utilizing Java Mobile Edition (Java ME).

With the installed QlikView (exe) clients and the QVA for IE ActiveX plug-in client, whole QlikView documents can be shown with complete sheet layout and more or less 100% fidelity to how the document would look if opened as a local qvw file in QlikView. All clients, except the mobile clients, can be used to create and maintain new sheet objects that can be shared with other users of the document throught QlikView Server.

1.2 QlikTech Support Services

Contact us if you need product support, additional training or consultation concerning application development. Please consult our homepage for current information on how to get in touch with our

support services. You will find us at:

http://www.qlikview.com

QlikTech International Headquarters

QlikTech International Phone: +1 (888)-828-9768

150 N. Radnor Chester Road Fax: 610-975-5987

Suite E220

Radnor, PA 19087

USA

For other locations please visit our home page (see above).

1.3 Conventions

Style coding

In this documentation all menu commands and dialog options are shown in **Arial bold**. All file names and paths are shown in **`Courier Bold`**. Sample code is shown in `Courier` and **`Courier Bold`**.

1.4 About This Manual

This manual describes QlikView Server and QlikView Publisher version 10.0. The content of both the software as well as the manual may change without prior notice.

1.5 What's New in QlikView 10

Ajax client improvements

Apart from the new layout features listed above, a number of Ajax specific features have been added:

Ajax performance

the Ajax client. Most notably the Ajax client's communication with QlikView Server is now asynchronous, just like it is when using QlikView Desktop or the QlikView Plug-in client. This means that you do not have to wait for the entire layout to be updated after a selection, but can continue clicking e.g. in list boxes while heavy charts are still calculating. The result is a perception of considerable performance increase.

UI upgrades

A number of graphical upgrades have been added to the Ajax client, e.g. the sheet tab row.

Extension objects

Via a new simple API it is now possible to write plug-in extension sheet objects for integrated display in QlikView layouts (works in the Ajax client and WebView only). The extensions build on a QlikView chart object and may be written in any modern web language, e.g. Flash, Silverlight, JavaScript etc.

To have Extension objects run in QlikView Server, the Extensions folder, including the Extension objects, need to be manually added. For a standard Windows Vista or Windows 7 installation, this folder must be

put in “C:\ProgramData\QlikTech\QlikViewServer\”. For a standard Windows XP installation, this folder must be put in “C:\Documents and Settings\All Users\Application Data\QlikTech\QlikViewServer\”.

Session disconnect button

A **Close** button has been added in the Ajax client. With this a user can actively disconnect from a session, thereby releasing server resources.

Session recovery

There is now a setting on QlikView Server enabling intelligent session recovery for Ajax and mobile clients. When this setting is used, the current selection state for each user will be saved when a session is ended and re-applied the next time the same user reconnects to the same document. This feature is currently “all or nothing”, meaning that it affects all users and all documents on a server.

Server Components

Management APIs

In order to enable new integration options for enterprise customers and OEM partners, new management APIs for QlikView Server and Publisher have been developed. The long-term ambition is to expose the full management capability. The APIs are exposed via a web service to the new unified management console.

User Management

A new high-level tab in the enterprise management console provides a unified view of all settings, listed by users across your entire QlikView deployment. From this view it is also possible to change the settings for e.g. user CALs, distributions and documents.

Document Administrator

A QlikView administrator can now delegate the responsibility for managing tasks to one or more selected users. The QlikView administrator can also set limitations to where the document administrator is allowed to distribute a document. Read more on See "Document Administrators".

Section Access Management

The QlikView Enterprise Management Console now provides the functionality to create, manage and store tables that can be used to define authorization in Section Access in QlikView documents. This feature consists of three parts:

The creation, management and storing of the actual tables which are all handled by QEMC.

The created tables are accessed from the QlikView load script using a load statement that loads from an http address. A command in the script editor facilitates the creation of a script snippet containing this load statement.

This feature will require a Publisher license. Learn more in the section "Authorization Management".

Improved Document Lists

The QlikView Server will only show documents to which the user has NTFS permissions. In QlikView 10 the document lists will be filtered further: If a document has Section Access, the server will now only show the document to users that also are listed in the Section Access.

Directory Service Provider for Configurable LDAP

A new Directory Service Provider has been added to make it possible to connect to any LDAP directory service. The user is given the possibility to configure the DSP so that it suits the particular LDAP Directory Service. It is important to know, though, that QlikView only provides the functionality to

extract user information from the Directory Service; any authorization needed against it has to be handled separately. Learn more on See "Configurable LDAP".

Directory Service Provider for ODBC

A new Directory Service Provider has been added to make it possible to connect to any database using ODBC instead. Learn more on See "Configurable ODBC".

Multiple Events Trigger

In addition to the existing triggers which operate with OR logic when combined, we have added a new trigger with the possibility to combine the other triggers with AND logic. Read more on See "On Multiple Events Completed" in the QMC and See "On Multiple Events Completed" in the QEMC.

Copy/Paste Tasks and Import Task

In order to improve the usability when having an enterprise environment we have now implemented the possibility to copy and paste tasks and the possibility to import tasks from another Publisher installation. Read more on See "Source Documents" and See "Source Documents".

QlikView Server CPU Throttling

In order to control how much CPU the QlikView Server is using it is possible to set a CPU throttling threshold. If the CPU usage gets above this value the CPU priority is set to lower than normal and when the CPU usage goes back below this value the priority is set to higher than normal. The setting is found on See "CPU Throttle".

Granular Server Objects Permissions

On a document level it is possible to specify if no, all, or a list of selected users should be allowed to create Server objects. Learn more on See "Server Objects".

Browsable Mount Check Box

The browsable mount check box is now respected in Access Point.

For cases where the Access Point should list the documents, but the “Open in Server” in QlikView Desktop or QlikView Plug-in should not, another check box, “Respect browsable mounts”, has been added to the Access Point settings.

Notification E-mail

It is possible to send a notification e-mail after distribution. Please note that there is not yet any way of optimizing the sending: there will be one mail for each task that has the notifi-cation e-mail option set.

Audit logging

Selection of values, sheet activation, usage of bookmarks and reports, clearing of a specific object, clear all and downloads for a specific user can now be logged for the QlikView Server. In QlikView Publisher, all changes to tasks and some changes to the settings can be logged. Read more about Server logging on See "The Audit Log" and Publisher logging on See "Audit Logging".

Minor changes

File modification date is shown in Access Point.

Possibility to sort files in Access Point on file modification date.

“Mobile clients” is now treated as one of several possible clients, which gives the possibility to specify that a document should be e.g. visible only to mobile clients, or invisible to mobile clients.

Possibility to make shared objects visible to anonymous users.

Possibility to connect to the QlikView Distribution Service and to the Directory Services Connector using a user name.

PDF distribution to folder.

Possibility to use bookmarks as reduction rules.

APIs

Version 10 will provide two new documented APIs in addition to the Core COM API. The documentation of these APIs is still a work in progress and not yet available. Documentation updates including samples are scheduled for the Release Candidate version.

COM API

This API will continue to be documented within a QlikView Document.

QlikView Server Management API

The QlikView Server exposes a web service using WSDL. Documentation will be provided in html format.

QlikView JavaScript API

The new JavaScript API is a client-side API for use with the Workbench or the standard QlikView Ajax client. This API is also for use with the development of QlikView Extension objects. Documentation will be provided in html format.

1.6 Migration Considerations

The following considerations apply when migrating QlikView Server from version 9.x to version 10.x, and within 10.x where applicable.

Installation of QlikView Server now requires a reboot of the Operating System for proper operation.

The QlikView AccessPoint is now the default start page for QlikView Server. The legacy sample pages are still available, but AccessPoint is the recommended portal for all access to QlikView documents.

The old Management Consoles for QlikView Server and Publisher have been completely replaced by the new QlikView Management Console. You must start the QMC in order to register a license for the QVS, unless you already have a valid license on the computer running the QVS.

The AJAX client has undergone major restructuring and extension. AJAX pages no longer need to be pre-generated as in previous versions. This also means that the URLs to invoke a document with the AJAX client have changed.

Anti aliasing on fonts is no longer available

QlikView has a common file format for versions 7, 8, 9 and 10.

Windows 2000 is no longer an officially supported host operating system. However, in some cases the QlikView Desktop may still work just fine.

2 Setup

2.1 System Requirements

In order to successfully install and run the QlikView Server/Publisher, the following basic requirements must be met by the system:

Hardware and Software

- 1 GHz (x86 processor) or 1.4 GHz (x64 processor). 2 GHz or faster, with several cores/processors recommended.
- QlikView Server will use the color settings of the Windows server where it runs when sending charts and other graphics to the client. For best results, the color palette on the Windows server should be set to at least 65,536 colors (16 bit).
- a mouse or an equivalent pointing device supported by Microsoft Windows.
- (optional) a DVD drive for DVD-based install media only.
- a hard disk with at least 450 MB of free disk space.
- 1 GB RAM minimum on x86 systems and 4GB minimum on X64 systems. The server's capacity to publish QlikView documents and the number of users who concurrently can connect to it are strongly related to the amount of RAM available.
- An http server for providing AJAX ZFC solutions to end users (e.g. MS Internet Information Services (IIS) or the built-in QVWebServer). Microsoft IIS or the built-in web server is required when using tunneling, external authentication or NT security with the AJAX Zero-Footprint client.
- TCP/IP Network.
- Microsoft .NET 3.5.
- Actual requirements will vary, based on system configurations. It is recommended that you work with your local QlikView representative to configure an appropriate hardware platform for your QlikView Server/Publisher requirements.
- Microsoft Internet Explorer 7 and later or Firefox 3 to use QlikView Management Console.

Supported Operating Systems

- Microsoft® Windows Server 2003 ™ including x64 Edition
- Microsoft® Windows Server 2008 ™ including x64 Edition
- Microsoft® Windows XP™ including x64 Edition*
- Microsoft® Windows Vista™ including x64 Edition*
- Microsoft® Windows 7 including x64 Edition*

*Recommended for development and testing purposes only.

Database requirements and recommendations for QlikView Publisher

The database in QlikView Publisher can be either a Microsoft SQL Server or an XML repository that requires no pre-installed software.

The supported versions of Microsoft SQL Server are SQL Server 2000, SQL 2005 or SQL 2008. If you have a Microsoft SQL Server already set up we recommend using that. The XML repository is sufficient for most installations when it comes to performance.

If you do not have a Microsoft SQL Server available we recommend that you start with an XML repository installation and upgrade to Microsoft SQL Server if the performance is insufficient. It is possible to migrate all data in the database between XML repository and SQL Server.

Client requirements for installed exe clients

- See reference manual for QlikView.

Client requirements for plug-in (QVA for IE)

In addition to the server requirements above, the client must be running a compatible web browser. Client requirements are as follows:

- Microsoft Internet Explorer 6™ or higher.

and

- Microsoft® Windows Server 2003™; or
- Microsoft® Windows Server 2008™; or
- Microsoft® Windows XP™ ; or
- Microsoft® Windows Vista™
- Microsoft® Windows 7™

Client requirements for AJAX Zero-Footprint Clients

In addition to the server requirements above, the client must be running a compatible web browser.

Client requirements are as follows:

- Under MS Windows:
  - Microsoft Internet Explorer 7 or later
  - Firefox 2 or 3, Safari 3, Google Chrome 1
- Under Linux (tested on Ubuntu Linux only):
  - Netscape Navigator 7.2 or later
  - Firefox 1.0.6 or later
- Under MacOS X (tested on v. 10.4 "Tiger" only):
  - Netscape Navigator 7.2 or later
  - Firefox 2 or 3, Safari 3

Other Mozilla-based browsers should work and the QlikView AJAX ZFC will most probably run on many other environments, including various UNIX versions but this has not been verified by QlikTech R&D. As the number of possible combinations of operating system versions and browser versions is very large, QlikTech cannot guarantee correct operation with all possible set-ups. If some specific combination would be found to suffer from problems, we encourage customers to report back, so that better coverage can be achieved in future releases of QlikView.

Note! Running Ajax Zero-Footprint Client on a mobile device is associated with several limitations. We recommend that you use one of the mobile clients for QlikView instead; BlackBerry, iPhone or Java ME.

Client Requirements for Mobile Clients

A web server is needed to serve the mobile downloads for QlikView. In addition to the server requirements stated in the QlikView Server manual, the mobile clients must be running compatible software.

In order to use Microsoft IIS and the QlikView BlackBerry mobile client, you must enable asp pages on the IIS.

Client requirements are as follows:

Apple iPhone / iPod Touch 2G and 3G, iPad:

- ios 3.1.1 or above

- Wi-Fi or 3G recommended

BlackBerry

- OS 4.5 or later

- Wi-Fi or 3G recommended

Java Mobile Devices

- CLDC 1.1, MDIP 2.0 and JSR-172

- Wi-Fi or 3G recommended

Requirements for QlikView Management Console

When accessing the QlikView Management Console through a web browser, the following minimum requirements apply:

- Microsoft Internet Explorer 7 or later

- Firefox 3

2.2 Upgrading QlikView Server

If you are installing QlikView Server for the first time on a server, you may skip this section, and proceed to "Installing QlikView Server" on page 20 for installation instruction. If you already have QlikView Server installed on a server, and would like to upgrade to a more current release, then follow the instructions in this section.

Whether you are upgrading QlikView Server to a new release or a new version, it is helpful to be aware of a few basic practices that will help to insure a successful transition to a new level.

- Always be sure to read the ReadMe documentation, if available, prior to installing an upgrade. This will have the most current information available to help you perform a successful migration.
- Be sure you have backup media of the current software.
- QlikView Server must be stopped to perform an upgrade, so it is best to schedule this procedure for an off time.
- Registration (licensing) information and Settings will be saved by default when the QlikView Server program is removed. They will then be applied to any subsequent install of QlikView Server on that system.

Upgrading to a new release of QlikView Server will generally require an uninstall of the old release and install of the new release.

Note! The installation does not support an upgrade from beta or release candidate versions of QlikView 10.

For the uninstall of QlikView Server, be sure to perform the following steps prior to running a Windows Remove Program procedure:

1. Verify that backup media exists for the current release of QlikView Server and backup all current files associated with QlikView Server (HTML pages, QlikView documents, licensing file, QlikView

Server .share files, etc.)

2. If you are running version 8 of QlikView Server, use the QlikView Management Console **Users** tab to determine if there are any active users linked to QlikView Server. You may wish to send out a broadcast message to notify users that the service will be stopping.
3. Stop the QVS service.
4. Uninstall the QlikView Server from the Windows **Control Panel**.

For client program updates, if applicable, be sure the client computer has no open QlikView Server sessions before applying the update. If QlikView Publisher is running on the same machine, it must be uninstalled manually before installing QlikView Server.

Now you are ready to install the new release of QlikView Server.

Note! If you are upgrading from a previous version and are using Microsoft IIS, you must uppdate the virtual folders in the IIS.

`QVAJAXZfc`, should be uppdated to **`C:\Program Files\QlikView\Server\QlikViewClients\QlikViewAjax`**.

`QvPlugin` should be updated to **`C:\Program Files\QlikView\Server\QlikViewClients\QlikViewPlugin.`**

`QvClients` should be updated to **`C:\Program Files\QlikView\Server\QlikViewClients`**

`QvAnalyzer` should be updated to **`C:\Program Files\QlikView\Server\QlikViewClients\QlikViewDesktop`**

`QvJava` has been removed.

`QvPrint` has been removed.

2.3 Upgrading QlikView Publisher

A fundamental change regarding tasks and jobs was made in version 9. The concept of jobs was removed and replaced by triggers that are added to each task. The jobs you had in version 8.5 that contained more than one task, will be converted to a task chain. The first task in the old job will have a trigger that corresponds to the schedule of the job. The following tasks will have a “on finish of another task” trigger that points to the previous task in the old job. Note that if you in version 8.5 have a disabled task within a job, the task chain will be broken after upgrade if you do not take the appropriate actions during the upgrade process.

One other significant difference in version 9 and 10 is that Active Directory distribution groups no longer are supported as user containers. To add users and groups in QlikView Publisher, you must use Active Directory users or security groups. This change was made to comply with Microsoft’s recommendations.

When upgrading you must run the QlikView Publisher Upgrade Tool. This should be done after the installation of QlikView version 10. The upgrade tool does not support upgrades from Publisher Standard Edition. "Publisher Upgrade Tool" on page 191.

2.4 Installing QlikView Server

The QlikView Server installation can be performed off DVD media or from a disk file. To install QlikView Server, insert the DVD in a drive accessible from the target server hardware.

It is recommended to install QlikView Server after the web server software (if you are not using the QlikView Web Server).

Note! If the required Microsoft .NET 3.5 Framework is not installed, it will be included as part of the QlikView Server installation process and downloaded from the Internet.

TIP: It is recommended to not move folder locations after QVS installation is complete, since many settings are dependent on their initial file location. If you wish to change the location of QVS after it is installed, this should be done through an uninstall/install process.

Note! In order to install the Microsoft IIS support, the IIS Admin Service must be started!

1. If the DVD does not auto-run, or if you are installing from a different media, then execute **`QlikViewServer_x86.exe`** or **`QlikViewServer_x64`** from the installation media. The first dialog welcomes you to the installation.Click **Next**.
2. Select the region for the local location of the server. Click **Next** to continue.
3. Read the license agreement, and continue by selecting **I accept the terms in the license agreement**, and then click **Next**.
4. Enter the user information for QlikView Server. Click **Next** to continue.
5. All files will be installed under the specified folder location. If you would like to change the root folder location of the installed files, click **Change** to specify the preferred location. Continue by clicking **Next**.
6. The **Profile** dialog lets you customize your installation. Select the features you wish to run. To select individual features, click the **Configure** button, then click **Next** to continue.
7. In the **Logon Information** dialog you set the account that the QlikView Server/Publisher services will run under. Click **Next**.

Note! If you use a local administrator account on Windows XP x64 Sp2 that is not part of a domain, the installation program will not be able to resolve the account! You will have to set the account for the services in **Computer Manager** manually.

8. Click **Install** to start the installation.
9. Once the Installation is complete, click **Finish**.

Note! You must restart the operating system in order to enable the functionality of the QlikView Server.

Installation Profiles

With the different installation profiles that you can choose from in the installation, you can choose exactly what you want to run. You can choose from the following profiles:

Single Machine Installation

Choose this alternative if you want to run all components on one single computer. This installs the QlikView Server and examples, the QlikView Distribution Service, the Directory Service Connector, the QlikView Web Server and the QlikView Management Server.

QlikView Server

This alternative is for use in distributed environments and should be used to install the first QlikView Server. This installs the QlikView Server and examples, as well as the Directory Service Connector.

Additional QlikView Server

This alternative is used in clustered environments and only installs a QlikView Server.

Publisher Engine

In a distributed environment, this alternative is used to install reload functionality for the QlikView Server or install a Publisher engine To run a Publisher Engine you need a Publisher license. This installs the QlikView Distribution Service.

Management Console

In a distributed environment this is used to install only the Management Console. This installs the QlikView Management Service.

Webserver

In a distributed environment this is used to add web server funtionality. This installs the QlikView Web Server or support for Microsoft IIS.

Example Configurations

Simple QlikView Server Cluster

Computer 1: main QlikView Server and management server. Install **Single Machine Install**.
Computer 2: QlikView Server. Install **Additional QlikView Server**.

Distributed QlikView Server Cluster

Computer 1: management server. Install **Management Console**.
Computer 2: main QlikView Server. Install **QlikView Server** and **Publisher Engine**.
Computer 3: extra QlikView Server. Install **Additional QlikView Server**.

Distributed Publisher Environment

Computer 1:management server and QlikView Server. Install **QlikView Server** and **Management Console**.

Computer 2: Publisher engine. Install **Publisher Engine**.

Logging the Installtion

When **`Setup.exe`** is run, a log file is written to the **`temp`** folder. The log file is called **`QlikViewServerx86.wil`** for the x86 version and **`QlikViewServerx64.wil`** for the 64-bit version. Each time the installation is run a new file is generated, over writing the old log file.

Obtaining the MSI package

If you need the msi package for installation you have to extract it from the exe file.

1. Start the installation from the exe file and let the first dialog open.
2. In the **`temp`** folder in **`C:\Documents and Settings\username\Local Settings`**, or **`C:\Users\username\AppData\Local`** depending on you operating system, you will find the msi file under a random name, e.g. **`ed34g.msi`**.
3. Copy the msi file to a location of your choice.
4. Exit the exe installation.
5. Install using the msi (see below for silent installation). See also "Deploying MSI packages with Group policies" on page 267 in Appendix.

Silent Installation

To make a silent installation start the msi file, 32-bit or 64-bit, from the command line with the following parameters for the msi package:

```
msiexec /i QvsSetupRedist.msi MYUSERNAME=domain\username MYPASSWORD=password /l*v
log.txt /qn
```

and for the exe file:

msiexec /i QvsSetupRedist.exe **MYUSERNAME=domain\username MYPASSWORD=password /l*v log.txt /qn**

where **domain\username** is the domain and username of the user you wish the QlikView Server/Publisher services to run as, **password** is the password of that user, **/l*v** creates a log for the installation and **/qn** makes the installation silent.

2.5 Completing the Installation

After successfully installing QlikView Server/Publisher, you must complete the following steps to activate it:

1. Start Services
2. Register

These steps must be completed after the installation using the QlikView Management Console (found in the **Start** menu, under **Programs**, **QlikView**). The topics in the following explain how to use the Management Console.

Start Service

Once QlikView Server/Publisher has been installed as Windows services, it can be started. If the QlikView Server is set for automatic startup, rebooting the operating system will start the QlikView Server service. To manually start the service, go to the Windows **Computer Management**, **Services**.

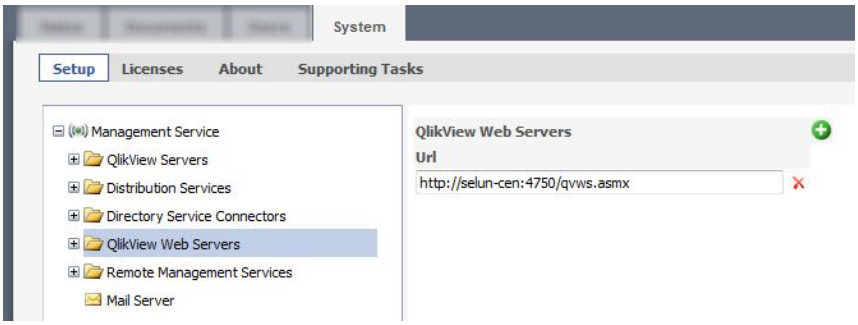
Note! Running real-time anti-virus protection on a Server will degrade performance of QlikView Server/Publisher. It is recommended that the following directories are excluded in the anti-virus, User documents, Source documents and log directories. Note that only read and write operations should be excepted!

Running Microsoft Internet Information Services

If you are using MS IIS as your web server in a Windows Server 2003 or greater environment, be sure to check the following settings to insure proper operation of the QlikView Server sample pages, as well as extended functions (e.g. QVS Tunnel).

On the IIS you must:

- Enable ASP Pages (only necessary if using BlackBerry or Java ME clients)
- Enable ASP.NET
- If your computer is on a domain and you are running IIS 6, you must add the account that is set as **Identity** on the **QlikView IIS** application pool to the IIS_WPG group (Internet Information Service Worker Process Group).
- If you are using Microsoft IIS 6, read the Microsoft knowledge base article 871179 and implement the appropriate resolution.
- Change the path to the file AccessPointSettings.aspx to point to the IIS's virtual folder, for example **http://MyServer/QvAjaxZfc/AccessPointSettings.aspx**, in QEMC under **System - Setup - QlikView Web Servers - Url**.



Change the URL for the AccessPoint settings file

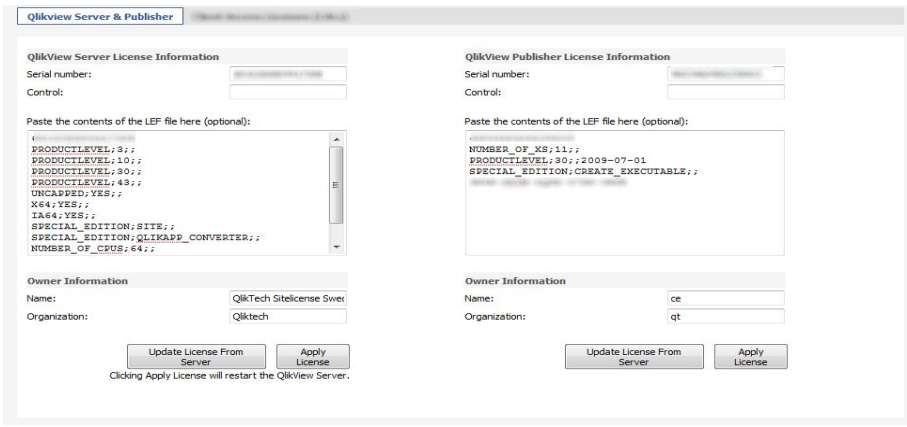
See "For Tunneling on a Windows Server using IIS" on page 162 for setting up tunneling with IIS.

Note! To optimize performance when running Microsoft IIS and Ajax Zero-Footprint you should turn compression on in the web server. Read more on Microsoft TechNet. See http://technet.microsoft.com/en-us/library/cc730629%28WS.10%29.aspx for how to configure IIS 6 and http://technet.microsoft.com/en-us/library/cc782942%28WS.10%29.aspx for IIS 7.

Register

Registration authenticates your copy of QlikView Server and allows it to run on your computer. In order to register, you must have a valid **Serial Number** and **Control Number** issued by your vendor. If you do not have both a Serial Number and a Control Number, contact your vendor.

In the QlikView Management Console (**Licenses**), enter the **Serial Number** and **Control Number** assigned to your copy of QlikView Server/Publisher. You should also enter your **name** and **organization** in the fields provided..



The Licenses page for QlikView Management Console

The License Enabler File (lef.txt) for QlikView Server will be automatically written to **`C:\ProgramData\QlikTech`** on Windows Vista **`and`** later, and to **`C:\Documents and Settings\All Users\Application Data\QlikTech`** in older operating systems. The QlikView Publisher LEF file is saved in **`C:\ProgramData\QlikTech\Publisher\CommandCenter\Publisher LEF`** on Windows Vista and later, and on earlier operating systems it is found under **`C:\Documents and Settings\All Users\Application Data\QlikTech`**.

Use the **Update License from Server** to download a new lef file from QlikTech's Lef server. This is primarily used when updating the number of CALs.

If for any reason, the LEF information cannot be accessed through the Internet from your server, you can obtain this information from your vendor, and copy the entire **`LEF.txt`** file to this location, or paste the LEF data using the corresponding field on the **QlikViewManagement Console**, **License** tab. Contact your vendor for specific instructions.

3 QlikView Web Server

A new feature as of version 9.0 is that the http service, the AccessPoint Service and the AccessPoint Web site have been merged into one single service called QlikView Web Server, QVWS. The QlikView Web Server is used by default, in an Out-of-the-Box installation, thus removing the dependency on IIS that previously existed. The QVWS service is responsible for not just serving web pages and preparing the file list for the AccessPoint, but also in the load balancing of QlikView Servers.

The QVWS is used by the AccessPoint as a Web Server. The pages for the AccessPoint are by default located in the folder **C:\Program Files\QlikView\Web**. The QVWS will also act as the web server for any AJAX pages that the end users access.

The third functionality the QVWS provides is the load balancing of the QVS. Load balancing QlikView Servers is different from load balancing a web server, since the additional work and resource consumption is almost similar for each user, so it does not matter on which server the user ends up.

The default load balancing scheme for a QlikView Web Server is “Random”, where a user is sent to a random QVS, whether the document they seek is loaded there or not. You can also set the QVWS to load balance according to “Loaded Document”. The logic in the QVWS to load balance is based on communication with the QVS. The first question to all QlikView Servers is: “Do you have this document loaded in RAM?” if only one QVS has that particular document loaded then the user will be directed to that QVS. If more than one QVS, or none of the QlikView Servers has the document loaded the second question is “How much free RAM is available?” based on that answer the user will be sent to a certain QVS. The case of a document being loaded on multiple QlikView Servers at the same time is mainly from Preloading which would load a document in RAM on all servers in a cluster.

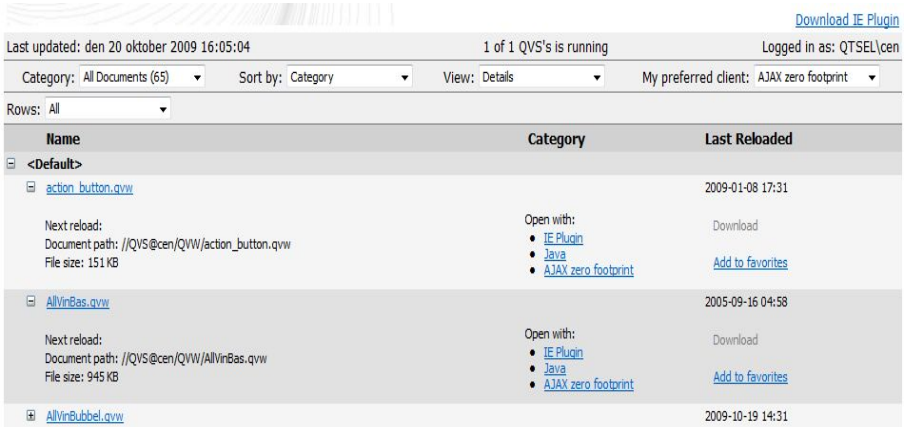
The settings for load balancing are configured in config.xml, see "Configuring the QlikView Web Service" on page 29.

Note! You cannot run the QlikView Web Server in both HTTP and HTTPS mode. Only one port will be used.

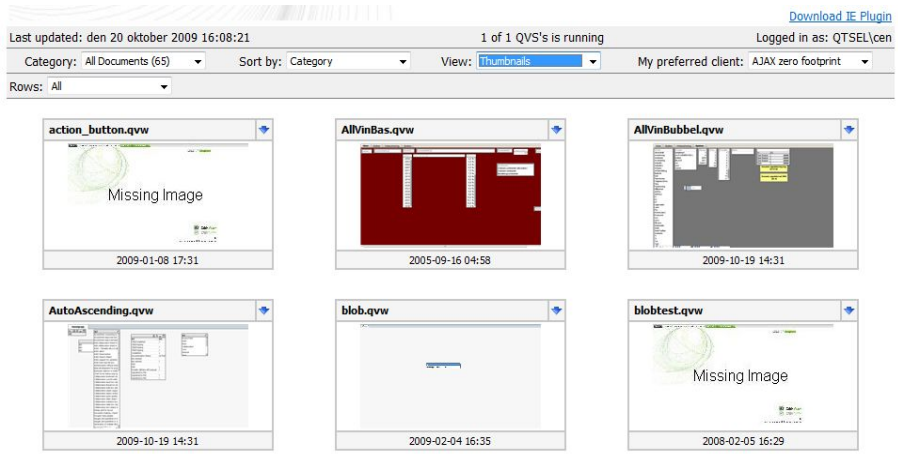
3.1 Qlikview AccessPoint

The AccessPoint is a web portal that lists the documents that each user has access to. It is important to understand that the AccessPoint only links to each document, it does not host the documents themselves, that is done by the QlikView Server.

On the AccessPoint you can either view the documents you are authorized to see in a detailed list or as thumbnails.



The Details view of the AccessPoint



The Thumbnails view of the AccessPoint

The AccessPoint has the following settings:

Category

The category grouping for the document. The document is categorized in the QMC, see "Category" on page 43, or in the QEMC, see "Category" on page 88.

Sort by

Sort the list according to **Name**, **Category**, **File Size**, **Last Reloaded**, **Document Path** and **Last Modified**.

View

Here you set how the documents are displayed, as **Details** or **Thumbnails**.

My Preferred Client

Select the client of your choice to have the documents available for that client underlined as links.

Click on the plus sign to the left of the document name in the **Details** view to see more details about the document.

Next reload

The Next Update timestamp for the document.

Document path

The path to the document.

File size

The size of the document.

Has Image

If there is an image that can be displayed in the **Thumbnails** view.

Open with

Choose which client to open the document with, **IE Plugin**, **AJAX zero footprint** or **Download**. Choose **Download** for offline analysis of the document.

Add to favorites

Click this link to add the document to your favorites. You can view your favorite documents by choosing **Category: Favorites** in the AccessPoint.

3.2 Starting the QlikView built-in web server

The built-in web server is installed as a Windows service during a default **Complete** installation of QlikView Server. To start the server, use the Windows Services dialog. In the Services dialog, scroll down to find the **QlikViewWebServer** entry and start it.

3.3 Configuring the QlikView Web Service

You may configure the web server either through the user interface, "System" on page 107, or by editing the configuration file, **config.xml**, located in the following location:

```
C:\ProgramData\QlikTech\QvWebServer
```

The **config.xml** file contains a commented out section to simplify the usage of common but non-default options.

```
<Config>
<DefaultUrl>http://_/</DefaultUrl>
<DefaultQvs>local</DefaultQvs>
<ConfigUrl>http://_:4750/qvws.asmx</ConfigUrl>
<TunnelUrl>/scripts/QVSTunnel.dll</TunnelUrl>
<QvsStatusUrl>/QvAjaxZfc/QvsStatus.aspx</QvsStatusUrl>
<LogLevel>Information</LogLevel>
<UseCompression>True</UseCompression>
<InstallationPath>C:\Program Files\QlikView\Server\Web Server</InstallationPath>
<QvsTimeout>60</QvsTimeout>
<QvsAuthenticationProt>Negotiate</QvsAuthenticationProt>
<QvpPort>-1</QvpPort>
<AddCluster>
<Name>local</Name>
<LoadBalancing>Random</LoadBalancing>
<AlwaysTunnel>False</AlwaysTunnel>
<AddQvs>
<Machine>localhost</Machine>
<Port>4747</Port>
<LinkMachineName>RD-CENTEST1</LinkMachineName>
<Weight>1</Weight>
<Username />
<Password>Encrypted=DxdCGMWfOwU=</Password>
```

```
</AddQvs>
</AddCluster>
<AddDSCCluster>
<CustomUserPort>-1</CustomUserPort>
<DirectoryServiceConnectorSettings>
<ID>17da91ee-c4a6-4cdb-a2fb-ab472ece659f</ID>
<Url>http://rd-centest1:4730/qtds.asmx</Url>
<Name>Default DSC</Name>
<Username>DxdCGMWfOwU=</Username>
<Password>DxdCGMWfOwU=</Password>
<LogLevel>Normal</LogLevel>
</DirectoryServiceConnectorSettings>
</AddDSCCluster>
<Authentication>
<AuthenticationLevel>Always</AuthenticationLevel>
<LoginAddress>/qlikview/login.htm</LoginAddress>
<LogoutAddress>logout.htm</LogoutAddress>
<GetTicket url="/QvAjaxZfc/GetTicket.aspx" />
<HttpAuthentication url="https://_/scripts/GetTicket.asp" scheme="Basic" />
<HttpAuthentication url="/QvAJAXZfc/Authenticate.aspx" scheme="Ntlm" />
</Authentication>
<AccessPoint>
<Path>/QvAJAXZfc/AccessPoint.aspx</Path>
<AjaxClientPath>/QvAJAXZfc/opendoc.htm</AjaxClientPath>
<PluginClientPath>/QvPlugin/opendoc.htm</PluginClientPath>
<DefaultPreferedClient>Ajax</DefaultPreferedClient>
<DefaultView>Thumbnails</DefaultView>
<DefaultPagesizeDetails>40</DefaultPagesizeDetails>
<DefaultPagesizeThumbnails>4</DefaultPagesizeThumbnails>
<HighlightNotExecutedJobs>False</HighlightNotExecutedJobs>
<HighlightThresholdMinutes>60</HighlightThresholdMinutes>
<AllowCmdUrl>False</AllowCmdUrl>
<Target />
<RespectBrowsable>True</RespectBrowsable>
</AccessPoint>
<Ajax>
<Path>/QvAJAXZfc/QvsViewClient.aspx</Path>
<Path>/QvAJAXZfc/QvsViewClient.asp</Path>
<NoCrypto>False</NoCrypto>
<ProhibitMachineId>False</ProhibitMachineId>
<Recording>False</Recording>
<AllowCmdUrl>True</AllowCmdUrl>
</Ajax>
<Web>
<Folders>
<Folder>
<Name>QlikView</Name>
<Path>C:\Program Files\QlikView\Web</Path>
</Folder>
<Folder>
<Name>QvClients</Name>
<Path>C:\ProgramFiles\QlikView\Server\QvClients</Path>
</Folder>
<Folder>
<Name>QvAJAXZfc</Name>
<Path>C:\ProgramFiles\QlikView\Server\QvClients\QvAjaxZfc</Path>
</Folder>
<Folder>
<Name>QvDesktop</Name>
<Path>C:\Program Files\QlikView\Server\QlikViewClients\QlikViewDesktop</Path>
<Folder>
<Folder>
<Name>QvPlugin</Name>
<Path>C:\Program Files\QlikView\Server\QvClients\QvPlugin</Path>
```

```
</Folder>
</Folders>
<Types>
<Type>
<Extension>.css</Extension>
<Content>text/css</Content>
</Type>
<Type>
<Extension>.htm</Extension>
<Content>text/html</Content>
</Type>
<Type>
<Extension>.html</Extension>
<Content>text/html</Content>
</Type>
<Type>
<Extension>.jpg</Extension>
<Content>image/jpg</Content>
</Type>
<Type>
<Extension>.gif</Extension>
<Content>image/gif</Content>
</Type>
<Type>
<Extension>.jar</Extension>
<Content>application/octet-stream</Content>
</Type>
<Type>
<Extension>.png</Extension>
<Content>image/png</Content>
</Type>
<Type>
<Extension>.exe</Extension>
<Content>application/octet-stream</Content>
</Type>
<Type>
<Extension>.msi</Extension>
</Type>
<Type>
<Extension>.htc</Extension>
<Content>text/xml</Content>
</Type>
<Type>
<Extension>.js</Extension>
<Content>text/javascript</Content>
</Type>
<Type>
<Extension>.xslt</Extension>
<Content>text/xml</Content>
</Type>
<Type>
<Extension>.xml</Extension>
<Content>text/xml</Content>
</Type>
<Type>
<Extension>.xls</Extension>
<Content>application/vnd.ms-excel</Content>
</Type>
<Type>
<Extension>.csv</Extension>
<Content>application/octet-stream</Content>
</Type>
<Type>
<Extension>.pdf</Extension>
```

```
<Content>application/pdf</Content>
</Type>
</Types>
</Web>
</Config>
```

The tags have the following meaning:

DefaultURL

The url of the QlikView Server.

ConfigUrl

This is the url the QMC and QEMC use to communicate with the QlikView Web Server.

TunnelUrl

The url used for tunneling.

QvsStatusUrl

The url to the status page for the QlikView Server.

LogLevel

Sets the level of logging. Possible settings are **Information** (High), **Warning** (Medium) and **Error** (Low).

UseCompression

Set whether the information sent should be compressed.

InstallationPath

The installation path of the QlikView Web Server.

QvsTimeout

The timeout in secons of the QlikView Server.

QvsAuthenticationProt

How the QlikView Server Authenticates. Set to **Negotiate**, **Kerberos** or **NTLM**.

AddCluster - Name

The name of the cluster.

AddCluster - LoadBalancing

How the load balance should be calculated. Possible values are Random, where the client is directed to a QVS at random, or LoadedDocument, where the client is directed to the QVS where the document the client requests already is loaded.

AddCluster - AddQvs - AlwaysTunnel

Set to **true** to anlways tunnel the communication to the QlikView Server.

AddCluster - AddQvs - Machine

The name of the computer where the QlikView Server is running.

AddCluster - AddQvs - Port

The port the QlikView Server listens to.

AddCluster - AddQvs - LinkMachineName

The external name of the QlikView Server, used by the QlikView Plugin clients.

AddCluster - AddQvs - Weight

Set a higher value if you wish the QlikView Server to be elected more frequently when using random load balancing.

AddCluster - AddQvs - Username

Enter a user name if needed to connect to the QlikView Server.

AddCluster - AddQvs - Password

Enter a password if needed to connect to the QlikView Server.

AddDSCCluster - CustomUserPort

The port for the custom user DSC.

AddDSCCluster - DirectoryServiceConnectorSettings - Url

The location of the Directory Service Connector.

AddDSCCluster - DirectoryServiceConnectorSettings - Name

The name of the cluster.

AddDSCCluster - DirectoryServiceConnectorSettings - Username

Enter a user name if needed to connect to the Directory Service Connector.

AddDSCCluster - DirectoryServiceConnectorSettings - Password

Enter a password if needed to connect to the Directory Service Connector.

Authentication - AuthenticationLevel

Sets how the client should access the AccessPoint. Possible values are **Always**, **Login** and **Never**.

Authentication - LoginAddress

The path to an alternative login page used for custom users.

Authentication - LogoutAddress

The path to an alternative logout page used for custom users.

Authentication - GetTicket

The url and authentication used to get a ticket from the Server for a client.

Authentication - HttpAuthentication

The url and authentication used go get a ticket from the Server for a client if using SSL.

AccessPoint - Path

The path where the Access Point is installed.

AccessPoint - AjaxClientPath

The relative path to the Ajax client.

AccessPoint - PluginClientPath

The relative path to the IE plugin client.

AccessPoint - DefaultPreferredClient

Sets which client should be set as preferred client for a user's first visit to the AccessPoint for clients.

AccessPoint - DefaultView

The default view of documents on the AccessPoint, details or thumbnails.

AccessPoint - DefaultPagesizeDetails

The number of rows on the AccessPoint when using the view Details.

AccessPoint - DefaultPagesizeThumbnails

The number of rows on the AccessPoint when using the view Thumbnails.

AccessPoint - RespectBrowsable

When set to True only those mounts in the QVS that are set as Browsable will be displayed on the AccessPoint.

Ajax - Path

The path to QvsViewClient.aspx. The path may be changed, but the file name must remain unchanged for the installation to work.

Ajax - NoCrypto

Prohibit the use of encryption between the QlikView Web Server and the QlikView Server.

Ajax - ProhibitMachineID

Prohibit sending machine ID. This will effectively exclude the usage of anonymous bookmarks.

Ajax - Recording

When set to True, the qvpx calls for the AJAX zero footprint client are logged.

Web - Folders

The path to the different virtual folders in the QlikView Web Server. Change the name and path if the files are installed to folders other than the default.

Web - Types

Specify what file extensions the clients are allowed to download from the Access Point/QlikView Web Server.

3.4 The QlikView Server Status Page

Included in the QlikView Web Server is an aspx page that displays the status of the QlikView Server, **http://servername/QvAjaxZfc/QvsStatus.aspx**. The page displays the status of the Server defined in the config.xml for the QlikView Web Server, but you can also query for a specific Server or the Servers in a cluster by adding the name of the Server or cluster to the URL: **http://servername/QvAjaxZfc/QvsStatus.aspx?server=myserver(or mycluster).** If the Server or the cluster do not exist, the status **NotRegistered** will be returned.

AServer that is down will return the statuscode **HTTP/1.1 503**. If all Servers are up and running the status code **http/1.1 200 OK** is returned.

The status page will also display codes such as **RestartNeeded** and **OffDuty**:

Name	Host	Status	Reason
QVS@selun-mjn	selun-mjn	RestartNeeded	Folders changed

Part 2 QlikView Management Console

4 Introduction

QlikView Management Console (QMC)

The QlikView Management Console is completely built around modern AJAX technology, it will run in a browser and without reliance on e.g. Microsoft IIS. The number of available settings is reduced, thereby producing a cleaner, more intuitive interface more suited for those content with most default settings.

Even without the Publisher Module, the QMC will feature a page for basic reload scheduling. If the Publisher Module is installed this will be expanded to a wizard style interface for setting up Publisher tasks.

The QMC handles only one instance of QlikView Server and one execution instance of the Publisher.

To open the Management Console go to Windows **Start** menu, **QlikView** and choose **QlikView Management Console** or open a web browser and enter the url **`http://servername:4780/qmc/default.htm`**.

QlikView Enterprise Management Console (QEMC)

The QEMC gives you full access to all possible settings for QlikView Server and the Publisher Module. It also lets you control multiple instances of QlikView Server and multiple Publisher execution instances from a single management console, by means of an integrated tree-control.

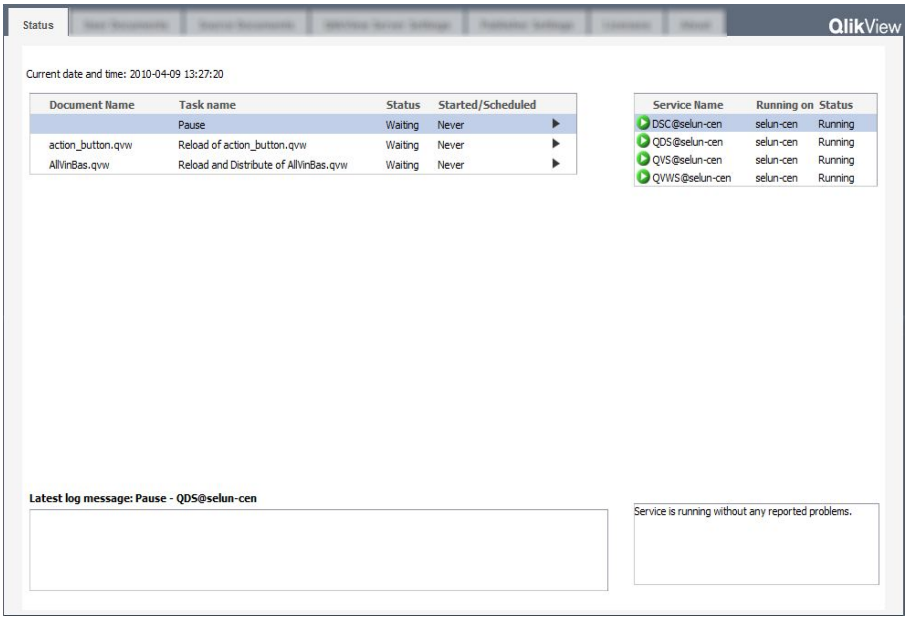
Just as the QMC the QEMC is built around AJAX technology and will run in a browser. Also here extensive usability studies have been done prior to implementation.

To open the Enterprise Management Console go to Windows **Start** menu, **QlikView** and choose **QlikView Enterprise Management Console** or open a web browser and enter the url **`http://servername:4780/qemc/default.htm`**. See "Introduction" on page 72 for details.

4.1 Repository

The QlikView Management Console will create an XML repository for Qlikview Publisher located in **`C:\ProgramData\QlikTech\Publisher\CommandCenter\QVPR`** on Windows Vista and later, and on older operating systems on **`C:\Documents and Settings\All Users\Application Data\QlikTech\Publisher\CommandCenter\QVPR`**. For use of SQL or change the location of the repository, the QlikView Enterprise Management Console is required.

5 Status



The Status tab in the QMC

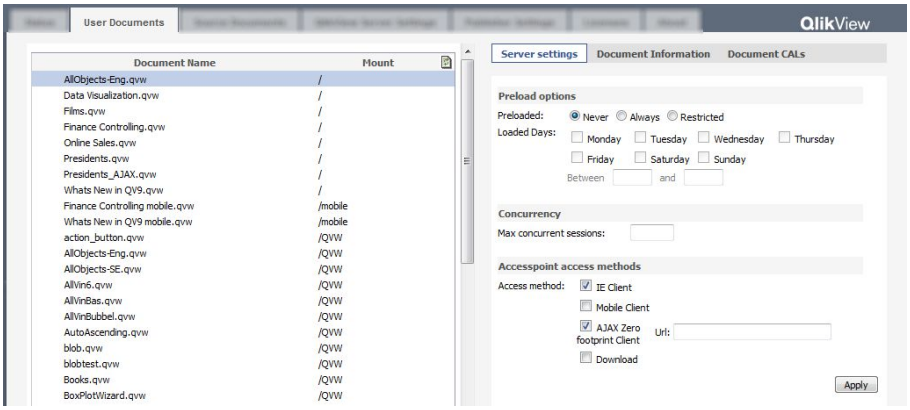
The **Status** tab displays the status of the Server/Publisher, the **User Documents** and the **Source Documents** that have been scheduled with a task are displayed, together with their current status.

The documents are preceded by a symbol showing the status of the task. A task can be Running , Aborting or Failed . A task is aborted if you click **stop,** when it is running. Look in the log file (see below) for the task for more information as to why a task has been aborted or has failed.

The different Windows services are displayed with their status and the name of the server on which they run.

At the bottom of the page a part of the lastest log message for the highlighted task is displayed. The complete log is found in **`C:\ProgramData\QlikTech\Publisher\Qlikview Distribution Service\1\Log`**.

6 User Documents



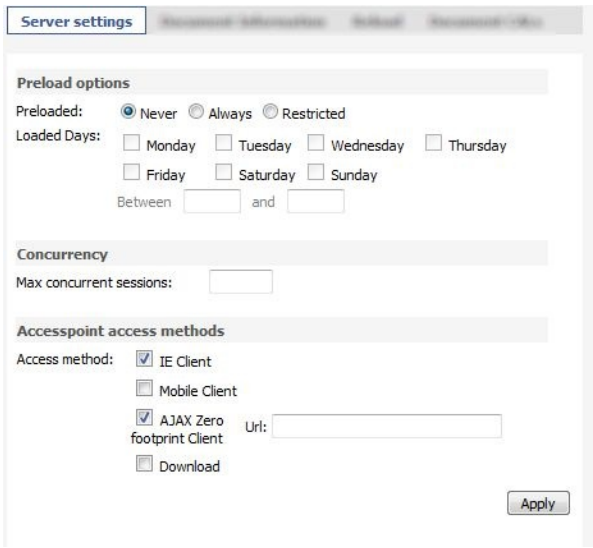
The User Documents tab in the QMC

Here all documents that are availabe in the server are displayed. The **Root Folder**, set on the **QlikView Server Settings** tab will be shown as /, any additional folders will be displayed with the **Name** they were given. The menu on the right contains all the possible settings for the selected document.

Note! All time specifications must be in 24-hour format.

6.1 Server Settings

Here you specify how the user documents should behave on the Server.



The Server Settings page in the QMC

Availability limitations

Here you set if the highlighted document should be loaded on the QlikView Server.

This setting is only available if your QlikView Server license limits the number of documents you may load concurrently.

Preload Options

Here you may set the preload options for the document. A preloaded document is loaded into the server's primary memory to ensure quick access at all times. It will however, use up memory even when no user is accessing the document.

Choose one of the options for **Preloaded** as follows:

Never

The document will never be loaded automatically. Standard loading techniques, based on user requests and **Document Timeout** settings will apply.

Always

The document will always be loaded into server memory.

Restricted

The document will be loaded automatically, based on specific day of the week and time restrictions.

If **Preloaded** is set to **Restricted** is selected, you may choose specific days of the week to automatically load the document and the times of the day to load and unload. All times are server local times (in 24 hour format). The server time zone is set during installation of the operating system. See the **Windows Control Panel - Date and Time** for more details.

Concurrency

Max concurrent sessions

Sets the number of concurrent sessions for the document.

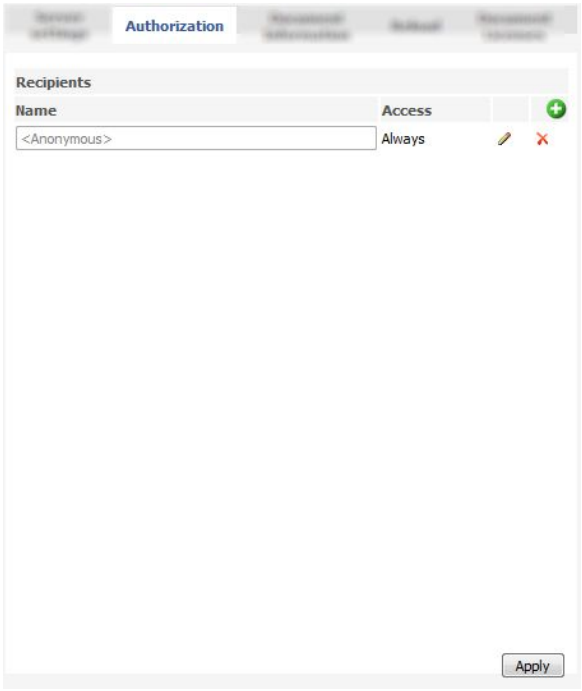
Accesspoint Access Methods

Mark the checkboxes for which flavors of QlikView clients that should be allowed on the AccessPoint.

Url

Enter a URL if you want to use your own html pages, instead of the default, for displaying the AJAX pages.

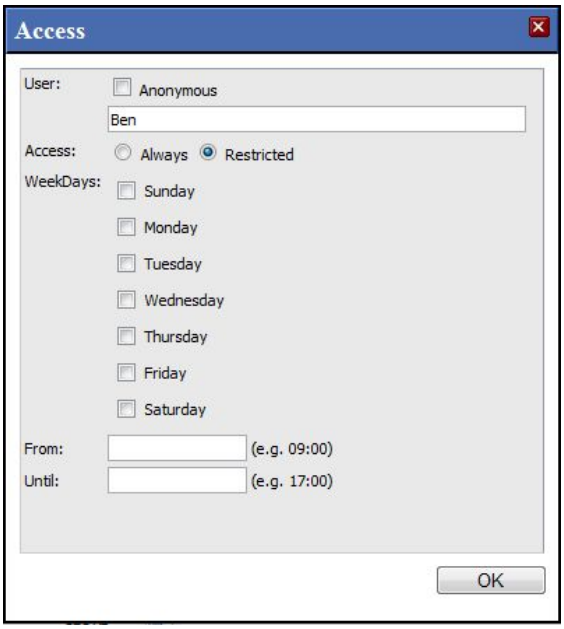
6.2 Authorization



The Authorization page in the QMC

This tab is used to configure document authorization settings for the selected QlikView document. This tab is only available if **DMS Authorization** is selected as the authorization method for this server. Only users specified in this configuration will be allowed access to the document once **DMS Authorization** is selected. **DMS Authorization** is set in **QlikView Server Settings**, **Security**, see "DMS Authorization" on page 64.

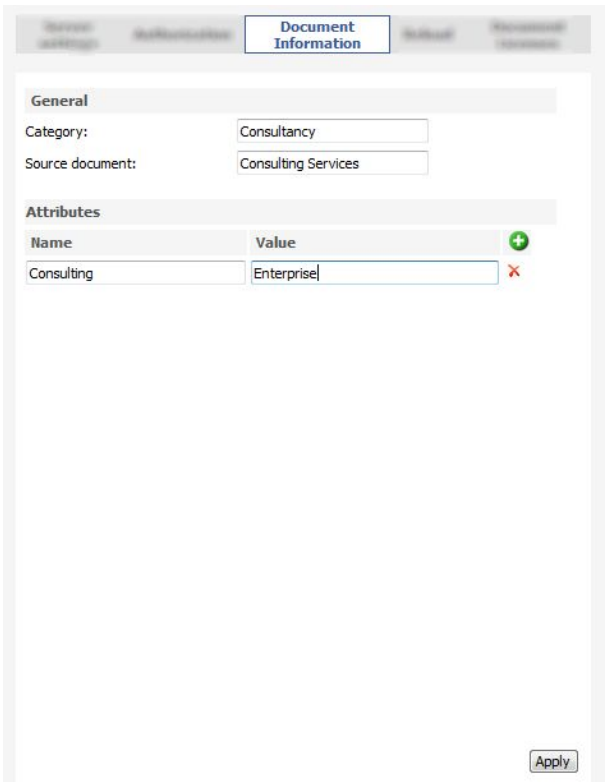
To add an authorized user/group, click on the **Add** button. To remove an existing authorized user/group, click on the X icon. The User/Group can be either **Anonymous** or named. Group names may be used, but access to the QlikView Directory Services Connector (DSC) will be required to resolve the group. Click the properties icon to set the access restrictions for the user/group.



The Access dialog in the QMC

Access can be granted to all users, **Anonymous**, or to named users/groups. You can set the **Access** to **Always** for no time restrictions, or **Restricted** to limit access to this document to specific days of the week as well as times. All times are server local times (in 24 hour format).

6.3 Document Information



Document Information page in the QMC

Category

This setting lets the administrator create, edit and delete categories. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category. Clicking in the field will display a popup with previously used categories.

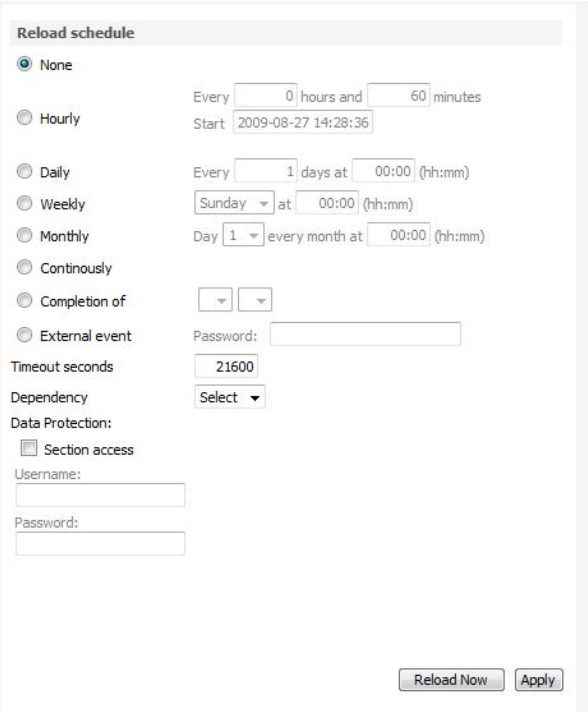
Source Document

The name of the source document. This setting is only relevant if it is run through a QlikView Publisher task. The name is not changed by a QlikView Server reload.

Attributes

In this group you may set your own meta data attributes, with names and values, for the document. These attributes can be read from the database. The attributes will not be saved together with the document but in the metadata of the Server.

6.4 Reload



The Reload page in the QMC

This tab is available when running only QlikView Server. On this tab the schedule for reloading a document is configured. The schedule can be set to **None**, **Hourly**, **Daily**, **Weekly**, **Monthly**, **Continuously**, **Completion of**, or **External event**.

On event of another task

Set this if the reload should be set off by another reload of a certain document.

External event

Set if an external event should set off the reload. Fill in the **Password** for the external event.

Timeout seconds

Set a time limit for the reload. If the document is not reloaded within the timeout the process will be terminated and the old data is kept in the document.

Dependency

When a reload that has a dependency is about to be executed, it will check the status of the dependency and if that status is failed, the current reload will not be executed.

Data Protection

This setting allows you to select the **username** and **password** the Distribution Service should use when opening this document. The default configuration is for the QlikView Distribution service to use the Windows credentials that are set for the service itself in the Windows Computer Management Console. Read more about section access on "Section Access" on page 207.

6.5 Document CALs

In order to connect to a QlikView Server each client needs a Client Access License (CAL). Read more about the different types of CALs and how they work in "Licensing" on page 173. This tab is only available if the Server license contain Document CALs.

The Document CALs page in the QMC

Summary

These lines show the number of Document CALs that the license contains, the number of Document CALs that not yet are allocated to any document, the number of Document CALs allocated to this specific document, the number of Document CALs within this document that are assigned to users, and the number of CALS embedded in this document respectively.

Document CALs

Number of CALs allocated to this Document

Enter the number of Document CALs that should be allocated to this document. Initally the number will be zero.

Allow Dynamic CAL Assignment

Mark this check box if you want the QlikView Server to assigne CALs to any user that opens the document.

Assigned Named CALs

The current assignment of CALs is displayed. Document CALs can be either automatically or manually assigned to users by clicking on the **Assign CAL** button if there is a Document CAL. Note that the allocation of a CALs does not imply security.

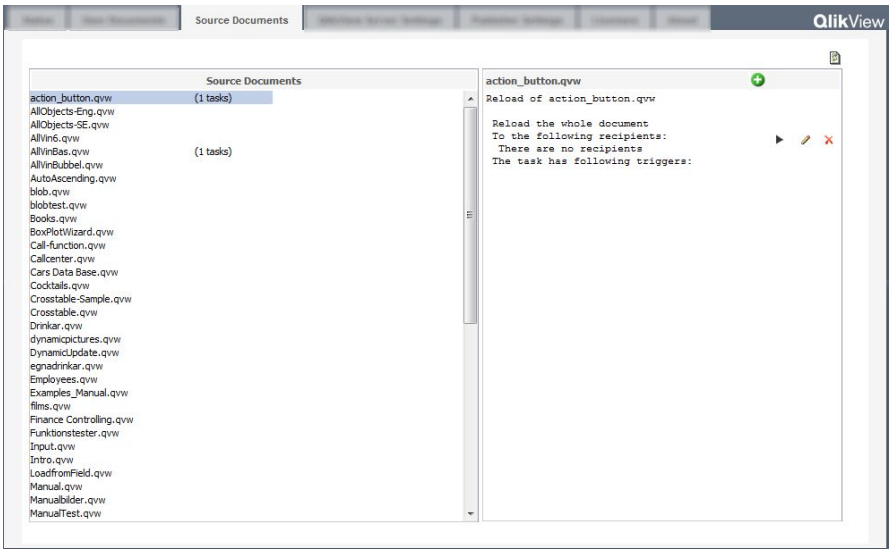
If the **Allow Dynamic CAL assignment** is checked, a new Document CAL will automatically be granted to a user connecting to this QlikView Server for the first time, as long as there are available Document CALs to assign.

The page has a list showing the names of all users currently holding a Document CAL on the document. You can also see the time of the respective user's last activity on the server. A name can be an authenticated user name or a machine name (including MAC address).

To delete an assigned user, thus freeing a Document CAL, click on the **Delete** button ( ). If the CAL has not been in use for the last 24 hours, it will be deleted immediately. If the CAL is currently being used or has recently been used, it will be marked for deletion, and not allow new sessions for user access through this CAL, but will still occupy an allocated CAL until the Quarantine time ends. During this period, you may undelete by clicking the **Restore** button ( ). After the quarantine period, you may delete the entry manually (by clicking on the **Delete** button), or restart the QVS service.

7 Source documents

On this tab all the registered source documents are displayed. A source document is a QlikView document that contains data that is to be made accessible to end-users in the form of User Documents. This tab requires a QlikView Publisher license.



The Source document tab in the QMC

Select a document and click on the green plus sign in the upper right corner to start the **Create Task** wizard.

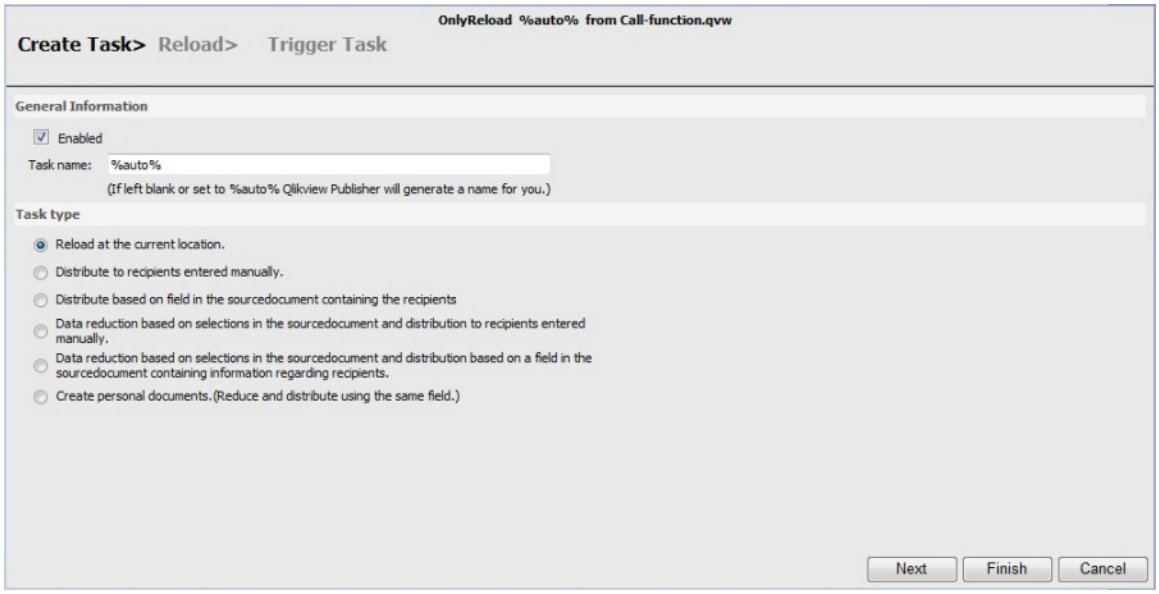
When a task is set up you can see the status of the task, and start and stop a task with the play icon.

You can create task chains, where one task triggers another. For example, Document 1 is reloaded every hour and upon successful execution a distribution task is run for Document 2 and if that is successful a distribution is run for Document 3 and so on.

Note! If you disable a trigger for one of the tasks in the chain, the chain will be broken. If you disable one of the tasks in the chain, the chain will continue, but the disabled task will simply not execute.

Note! The name of a task must be unique in the repository!

7.1 Create Task



The Create Task wizard in the QMC

Enabled

Mark this check box to enable the task.

Task name

Enter a name for the task. If the field is left blank or `%auto%` is entered, QlikView Publisher will automatically generate a name for the task.

Task Type

The following tasks exist:

Reload

Reloads and refreshes the data in a Source Document.

Distribution

A **distribution** produces one or many User Document, a distributed version of a Source Document. There are two types of distributions, **Static Distribution** (Distribute to recipients entered manually) and **Dynamic Distribution** (Distribute based on field in the source document containing the recipients**)**.

Data Reduction

Selected values and all associated fields and values form the content of the User Document. There are two types of Data Reduction, **Static Distribution with Reduction** (Data Reduction based on selections in the source document and distribution to recipients entered manually) and **Dynamic Distribution with Reduction** (Data Reduction based on selections in the source document and distribution based on a field in the source document containing information regarding recipients).

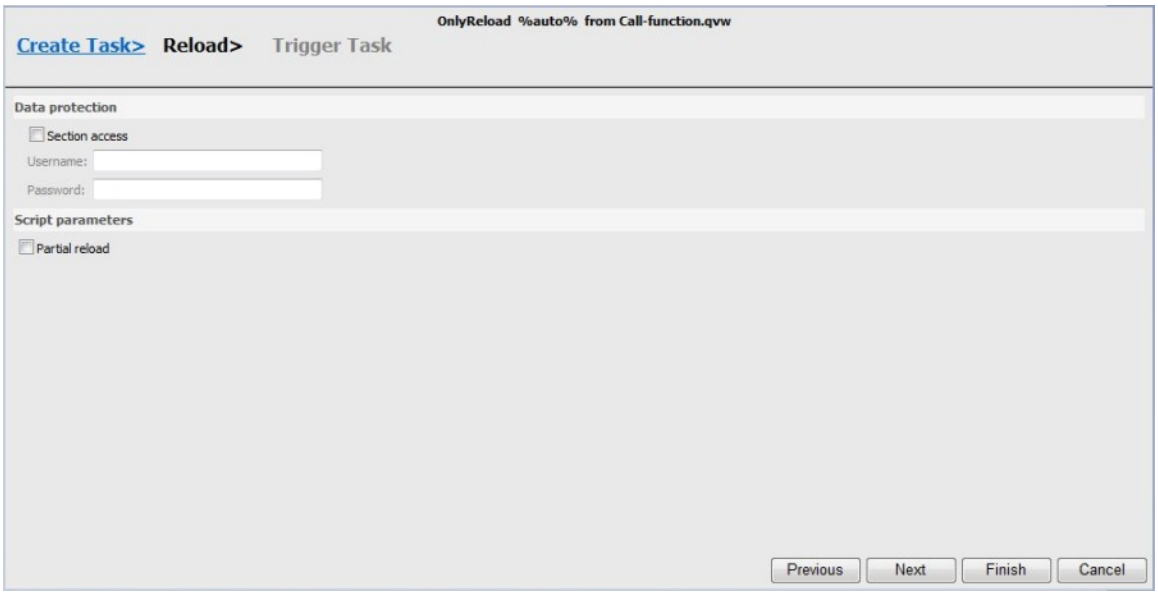
Personal Documents

This setting makes it possible to reduce and distribute using the same field.

7.2 Reload

Setting up a reload takes you through the following steps, **Reload** and **Trigger Task**.

Reload



Create Task - Reload

Section Access

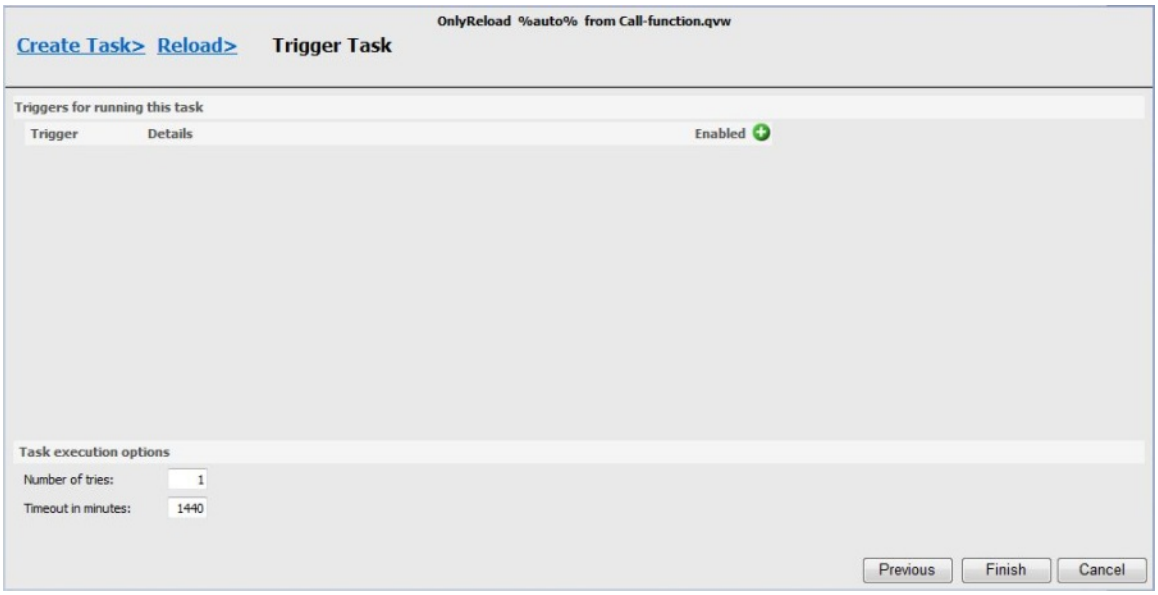
This setting allows you to select the **username** and **password** the Distribution Service should use when opening QlikView documents. The default configuration is for the QlikView Distribution service to use the Windows credentials that are set for the service itself in the Windows Computer Management Console. Read more about section access in "Section Access" on page 207.

Partial reload

This allows you to use the partial reload functionality of QlikView.

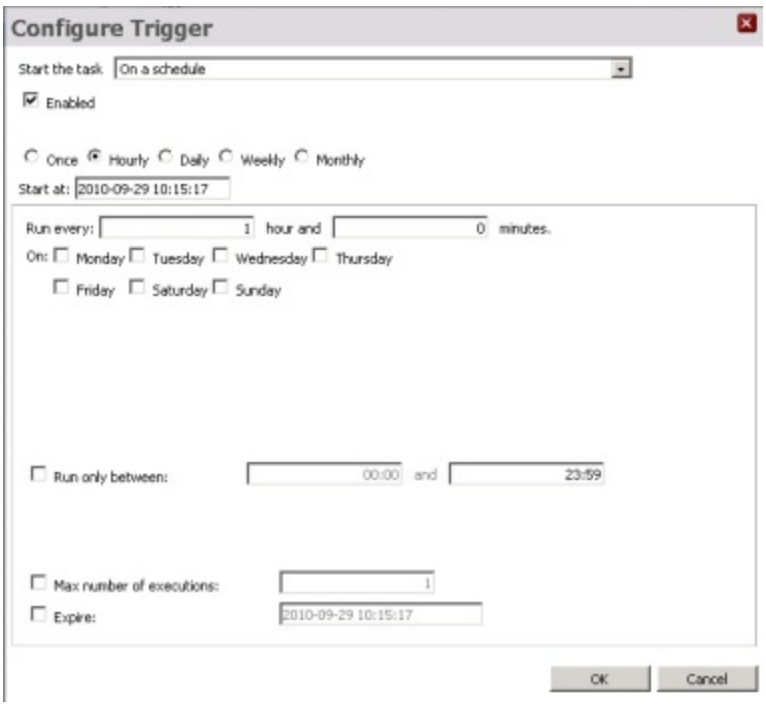
Trigger Task

A trigger is what sets off a task. A task can have multiple triggers, creating a workflow of tasks.



Create task - Trigger

All tasks can be triggered by the following:



Configure trigger - On a schedule

On a Schedule

Set the schedule for the task. You may set it to run **Once**, **Hourly**, **Daily**, **Weekly** or **Monthly**.

Note! All time specifications must be in 24-hour format.

Enabled

Mark this check box to enable the schedule.

Start at

Set the date and time for the first execution of the task.

Run Only Between

Set what times the task is allowed to run between.

Run Only on

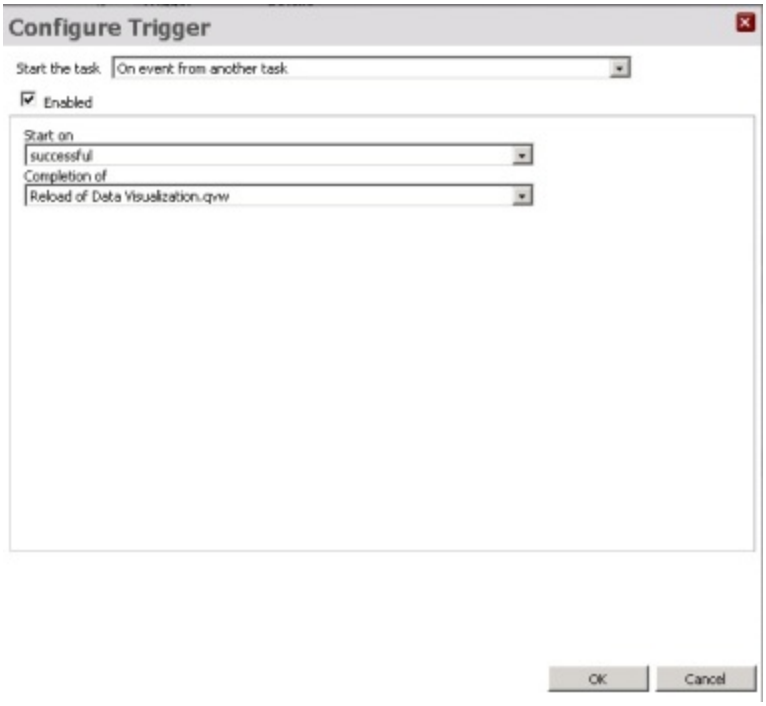
Restrict what days the task is allowed to run on.

Max Number of Executions

Set how many times the task is allowed to run.

Expire

Mark this check box and enter a date and time in the field to the right to set how long the task schedule is valid.



Configure trigger - On event from another task

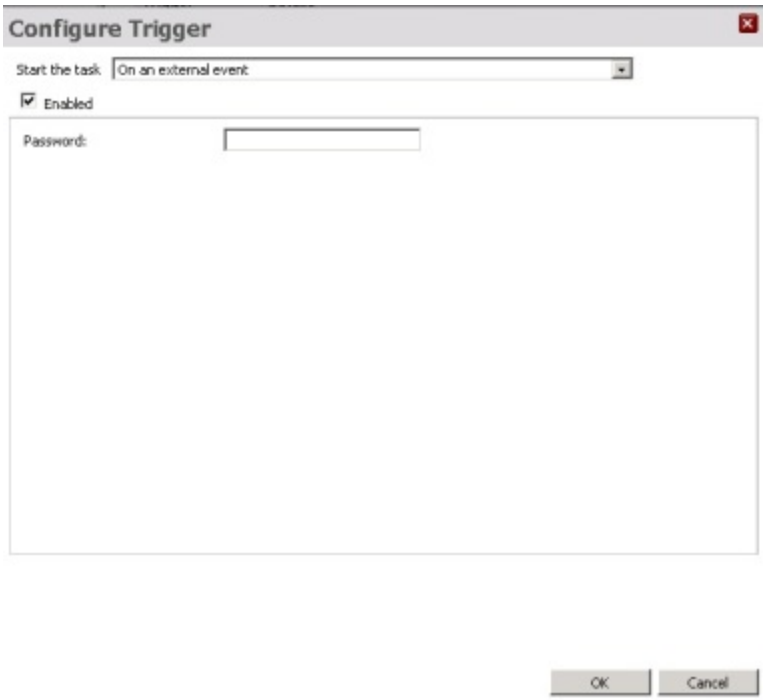
On Event from another task

Enabled

Mark this check box to enable the trigger.

Start on

Set if the task should start on the successful or failed completion of another task.



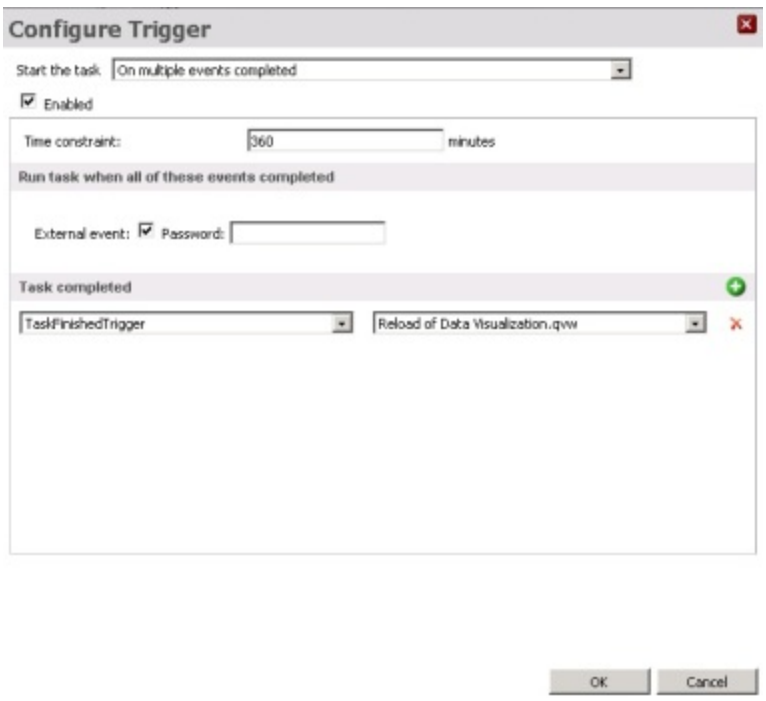
Configure trigger - On an external event

On an External Event

This allows an outside component to make a http call (post) and trigger the task. You may enter a password if needed for the external event.

Enabled

Mark this check box to enable the trigger.



Configure trigger - On multiple events completed

On Multiple Events Completed

This type of trigger will only be executed if all other events have been completed within a certain time.

Enabled

Mark this check box to enable the trigger.

Time Constraint

Set the time limit for all events to complete. Default value is ten hours. The time is set in minutes.

Run task when all of these events completed

Here you add all the tasks and events that must be completed before the current task is run. You can include both external events and several other tasks.

Task Execution Options

Number of Tries

Set how many times QlikView Publisher should try to execute the task before failing, the default is 1.

Timeout in minutes

Set how many minutes QlikView Publisher should wait before giving up trying to execute the task.

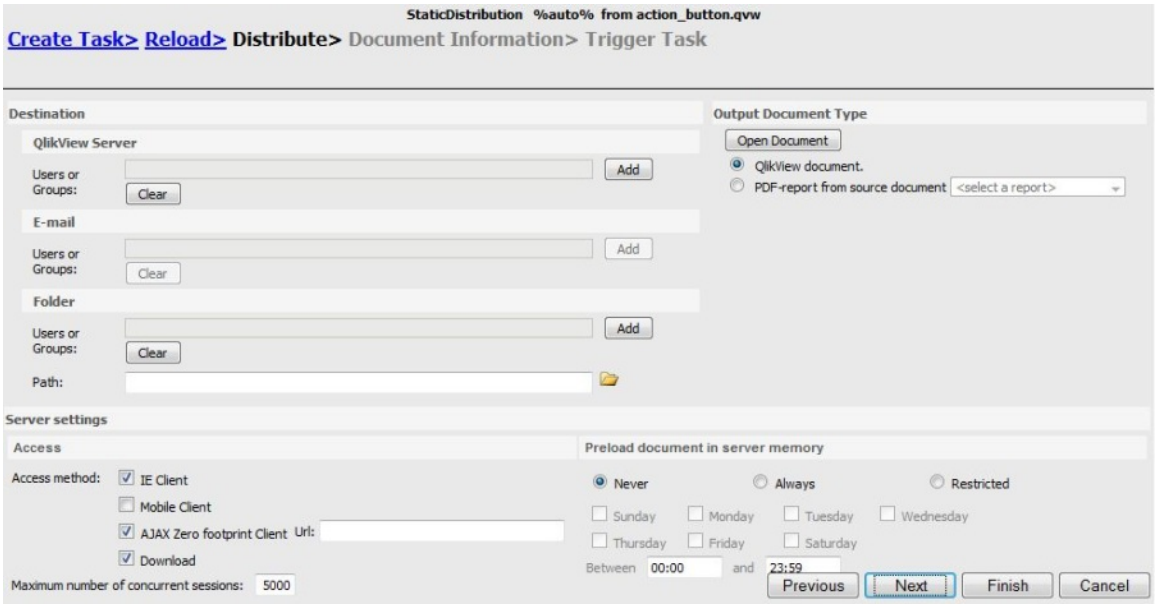
7.3 Static Distribution

To set up a static distribution you go through the following steps, **Reload**, **Distribute**, **Document Information** and **Trigger Task**.

Reload

Fill in the **Reload** page as describe on "Reload" on page 49 above.

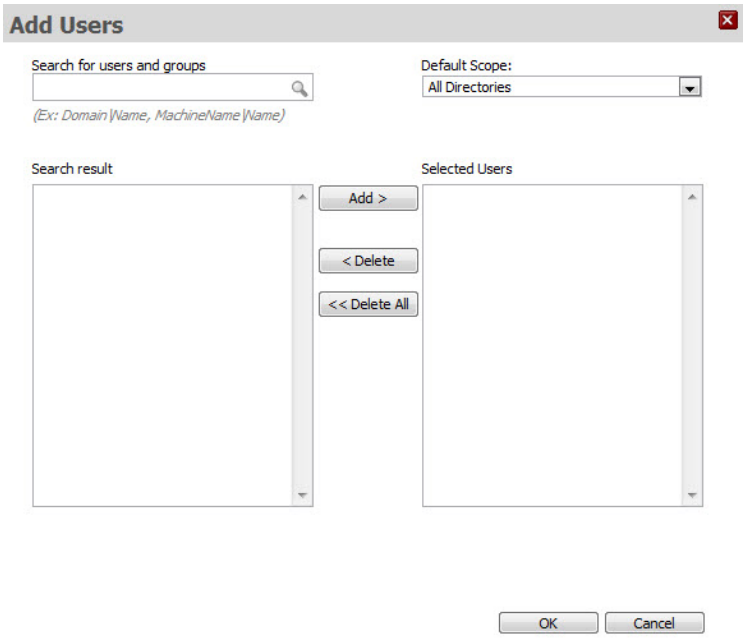
Distribute



Create task - Static Distribution

Destination

Set how the document should be distributed to the recipients, via **QlikView Server**, **e-mail** or to a **Folder**. Pressing **Add** opens the **Setup Recipients** dialog.



The Setup Recipients page in the QMC

Type the search criteria in the topmost field, then select where to search for the user and press **Add** to add the highlighted recipients. The names will be resolved by the Directory Service Connector.

Output Document Type

Set if the distribution should result in a QlikView document or in a PDF report. In order to choose a report as basis for the PDF report you must click **Open Document**.

Server Settings

Access

Mark the check boxes for the type of clients that should be able to connect to the QlikView Server and open the document. Enter a URL if you want to use your own html pages for displaying the AJAX pages.

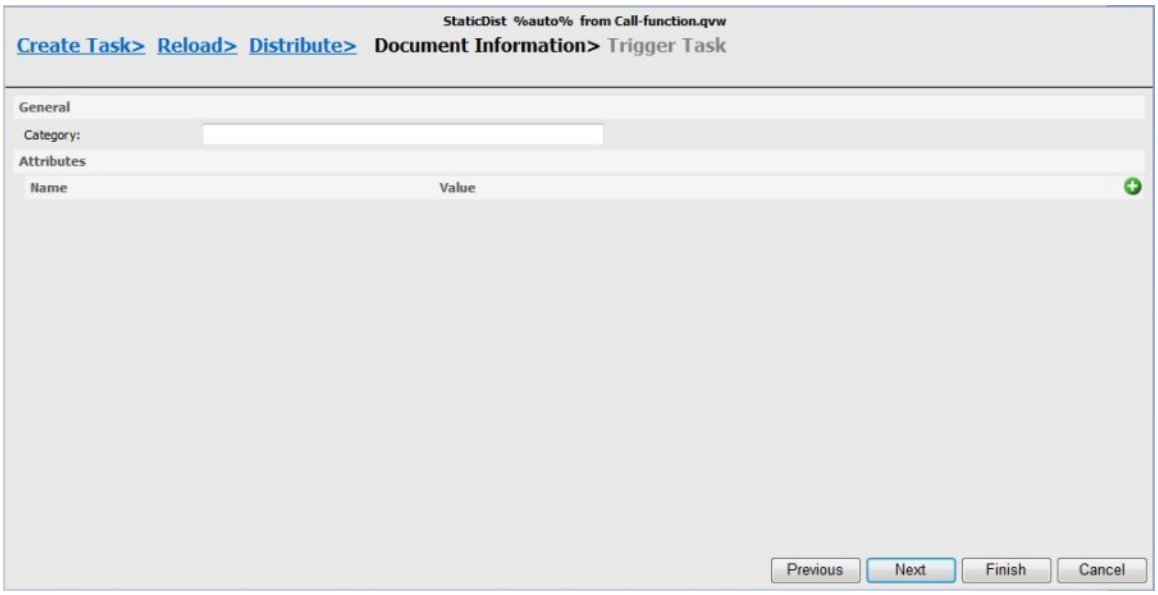
Maximum number of concurrent sessions

Set the number of user that may access the distributed document simultaneously. This setting is not related to CALs.

Preload document in server memory

Set how the document should be preloaded in QlikView Server.

Document Information



Create task - Document Information

Category

This setting lets the administrator create, edit and delete categories. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category.

Attributes

Enter a **name** and **value** for meta data attributes that can later be read from the database. These attributes are not saved in the document, but in the meta file. See "Document Metadata Service (DMS)" on page 181 for more information.

Trigger Task

Set up triggers for the task as described on "Create task - Trigger " on page 50 above.

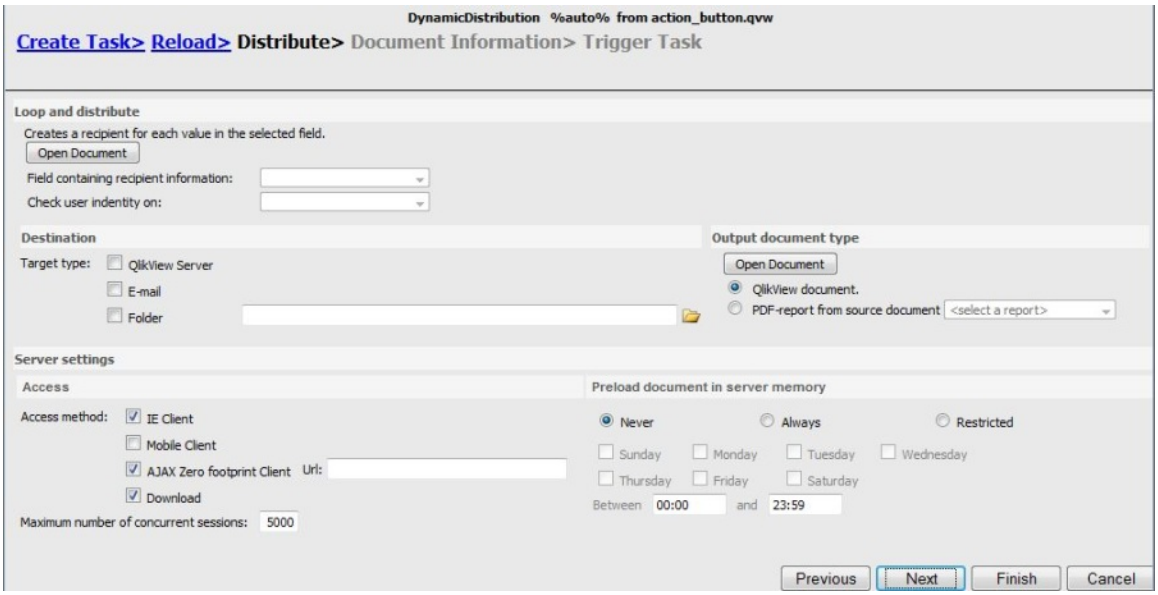
7.4 Dynamic Distribution

To set up a dynamic distribution, a distribution that is based on a field in the source document containing the recipients, you must go through the following steps, **Reload**, **Distribute**, **Document Information** and **Trigger Task**.

Reload

Fill in the **Reload** page as describe on "Reload" on page 49 above.

Distribute



Create task - Dynamic Distribution

Loop and Distribute

Open Document

Click this button to have QlikView Publisher open the document you wish to distribute. Opening the document will allow you to select a field that contains information about the recipients in **Field containing recipient information** and the type of **Check user identity on.** Possible values are the following directory service attributes, **SecurityIdentifier, DisplayName, SAMAccountName, E-mailAddress** and **UserPrincipalName**. The names of the attributes correspond to attributes in Microsoft Active Directory. If you use another directory service provider, the attributes in this setting correspond as closely as possible to attributes with a similar meaning in that provider. Learn the definitions of these attributes in Active Directory on "Glossary" on page 275.

Destination

Target Type

Set how the document should be distributed, via **QlikView Server**, **e-mail** or to a **Folder**.

Output Document Type

Set if the distribution should result in a QlikView document or in a PDF report. In order to choose a report as basis for the PDF report you must click **Open Document**.

Server Settings

Access Method

Mark the check boxes for the type of clients that should be able to connect to the QlikView Server and open the document.

Maximum Number of Concurrent Sessions

Set the number of user that may access the document simultaneously.

Preload Document in Server Memory

Set the restrictions for preloading the document.

Document Information

Categorize the document as described on "Create task - Document Information " on page 55 above.

Trigger Task

Set up triggers for the task as described on "Create task - Trigger " on page 50 above.

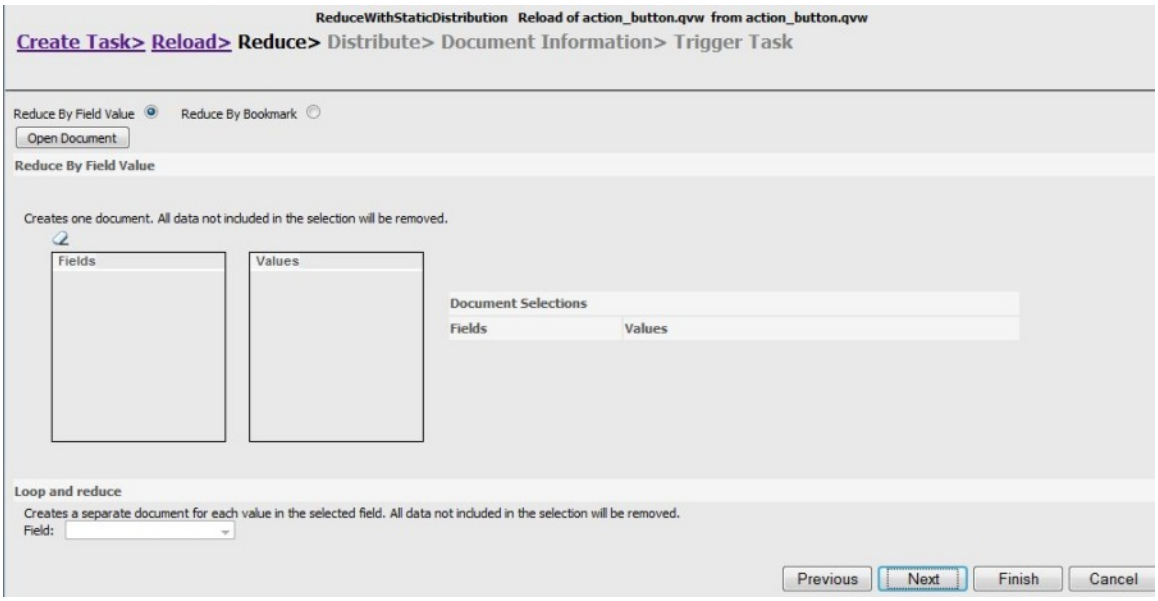
7.5 Static Distribution with Reduction

To set up a static distribution with reduction you must go through the following steps, **Reload**, **Reduce**, **Distribute**, **Document Information** and **Trigger Task**.

Reload

Fill in the **Reload** page as describe on "Reload" on page 49 above.

Reduce



Reduce task - reduce page

Reduce by Field Value

Click **Open Document** to populate the **Fields** and **Values** boxes. Then choose what fields and values should be part of the distributed document.

Reduce by Bookmark

Click **Open Document** and then choose the bookmark you want the document to be reduced by in the drop down.

Open Document

Click this button to populate the **Fields** and **Values** boxes for a **Simple Reduce**. Then choose what fields and values should be part of the reduced document.

Loop and Reduce

Choose **Field** or **Bookmark** in this group if you want each value to become a document unto it self.

Distribute

Fill in the page as described on "Create task - Static Distribution " on page 53 above.

Document Information

Categorize the document as described on "Create task - Document Information " on page 55 above.

Trigger Task

Create triggers for the task as described on "Create task - Trigger " on page 50 above.

7.6 Dynamic Distribution with Reduction

To set up a dynamic distribution with reduction you must go through the following steps, **Reload**, **Reduce**, **Distribute**, **Document Information** and **Trigger Task**.

Reload

Fill in the **Reload** page as describe on "Reload" on page 49 above.

Reduce

Fill in the **Reduce** page as described under "Reduce task - reduce page " on page 57 above.

Distribute

Fill in the **Distribute** page as described under "Create task - Dynamic Distribution " on page 56 above**.**

Document Information

Categorize the document as described on "Create task - Document Information " on page 55 above.

Trigger Task

Create triggers for the task as described on "Create task - Trigger " on page 50 above.

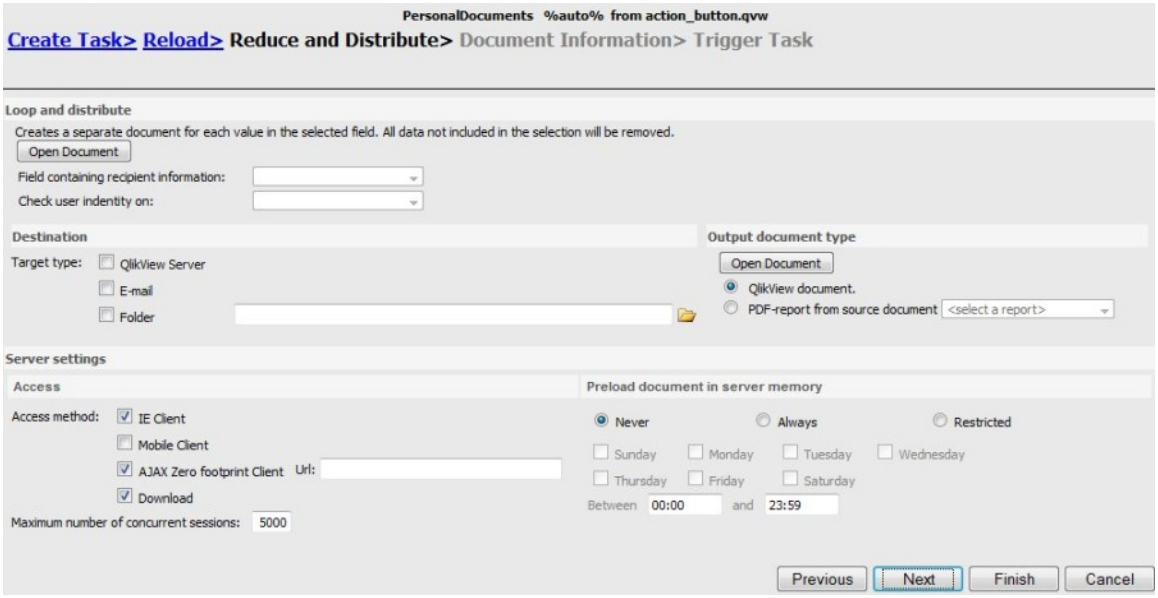
7.7 Personal documents

To set up personal documents, you must go through the following steps, **Reload**, **Reduce** and **Distribute**, **Document Information** and **Trigger Task**.

Reload

Fill in the **Reload** page as describe on "Create Task - Reload " on page 49 above.

Reduce and Distribute



Create task - Personal documents

Loop and Distribute

Open Document

Create a separate document for each value by selecting a field that contains information about the recipients in **Field containing recipient information** and the type of **Check user identity on.** Possible values are the Active Directory attributes **SecurityIdentifier, DisplayName, SAMAccountName, E-mailAddress** and **UserPrincipalName**.

Destination

Target Type

Choose distribution mode, **QlikView Server**, **E-mail** or **Folder**.

Output Document type

Set if the distribution should result in a QlikView document or in a PDF report. In order to choose a report as basis for the PDF report you must click **Open Document**.

Server Settings

Access Method

Mark the check boxes for the type of clients that should be able to connect to the QlikView Server and open the document.

Maximum Number of Concurrent Sessions

Set the number of user that may access the distributed document simultaneously.

Preload Document in Server Memory

Set the restrictions for preloading the document.

Document Information

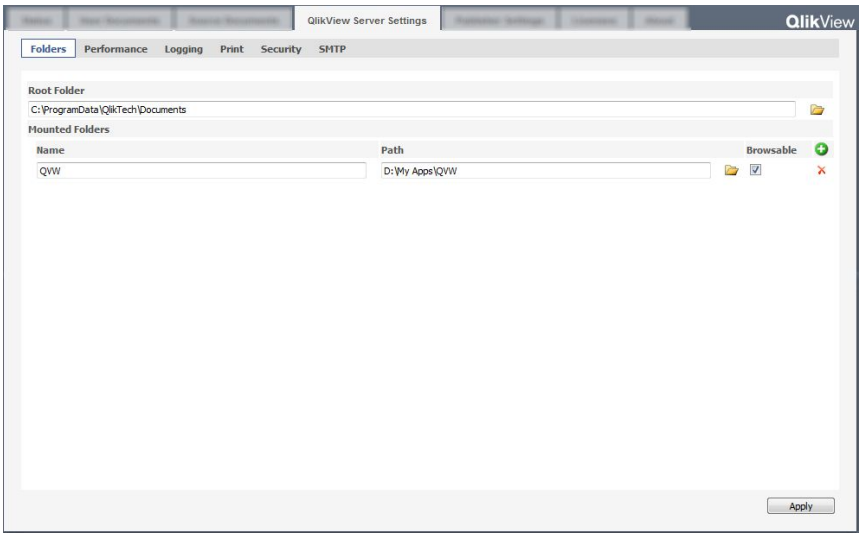
Categorize the document as described on "Create task - Document Information " on page 55 above.

Trigger Task

Create triggers for the task as described on "Create task - Trigger " on page 50 above.

8 QlikView Server Settings

8.1 Folders



The Folders tab

Root Folder

Enter the path to the QlikView documents that are to be accessed via the Server. This path will typically reflect the default document location. Documents may also reside in subfolders to this folder. Windows file security applies for all access by a client to document folders and files, unless DMS Authorization mode is used. Read more about DMS in "Document Metadata Service (DMS)" on page 181. The default location of the Document folder may differ depending on operating system. Windows Vista and later will install the document folder to **`C:\ProgramData\QlikTech\Documents`**, while older Windows operating systems, such as Windows XP, install to **`C:\Documents and Settings\All Users\Application Data\QlikTech\Documents`** as default.

It is also possible to specify other mounted folders. A folder set here may contain subfolders to any level. Click the green plus sign to add other folders.

Mounted Folders

Name

Logical name of the mounted folder as seen from QlikView Server. The name set here will be part of the path shown in the **User Documents** tab.

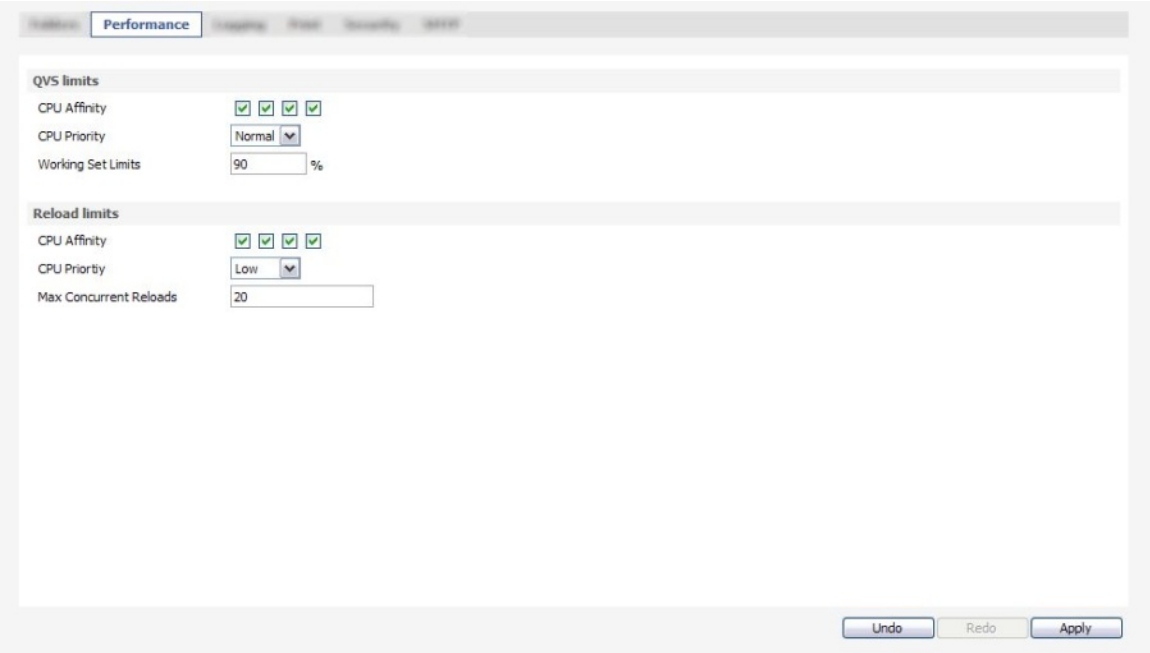
Path

The path to the folder.

Browsable

Mark this check box if the mounted folder and its contents should be browsable from the **Open in Server** dialog in QlikView.

8.2 Performance



The Performance tab

QVS limits

CPU Affinity

You may deselect the use of specific processors on the computer running QlikView Server. QlikView Server will automatically select the processors to use and this setting needs to be changed only when you wish to override that choice.

Working Set Limits

This control sets the maximum of the physical amount of RAM that can be used by an application. This way it is possible to control if an application can be swapped out of physical memory or not. However, there are no guarantees that the operating system can serve the process with the amount of memory set here.

Using too high settings will degrade the performance of other processes on the computer, this may however be desirable if the computer is dedicated for QlikView Server.

Reload limits

CPU Affinity

You may deselect the use of specific processors on the computer running QlikView Server. The reload process will normally automatically select the processors to use and this setting needs to be changed only when you wish to override that choice.

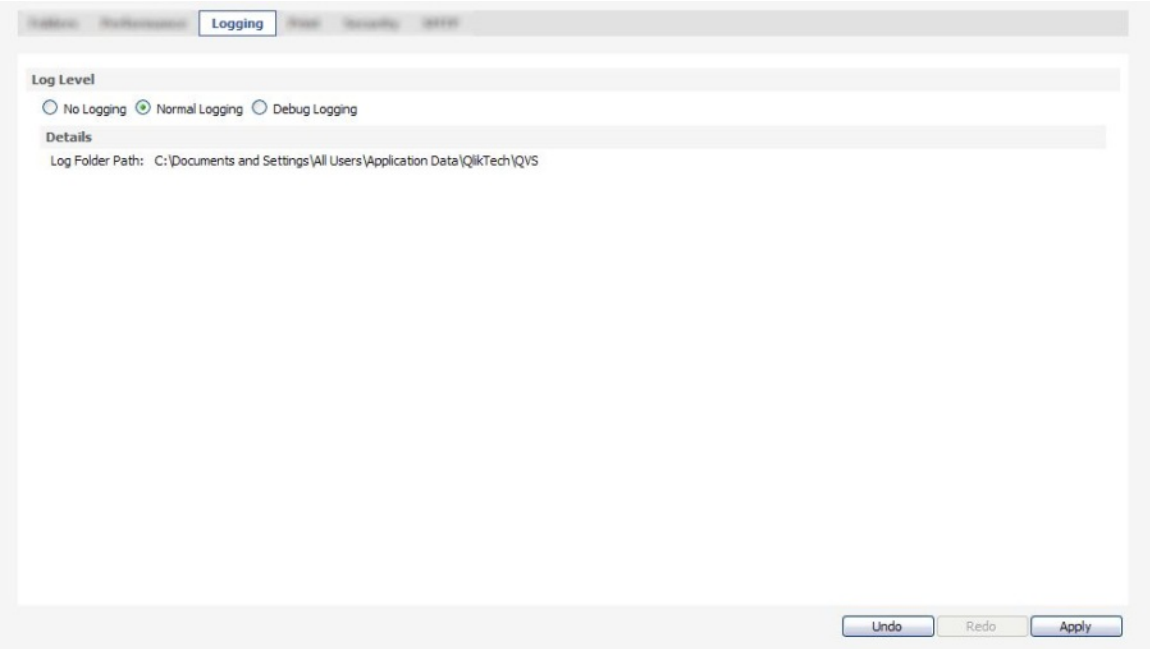
CPU Priority

Sets the priority of the reload process for the kernel. Processes with a higher priority execute more quickly than processes with lower priority. The priority can be set to **High**, **Normal** or **Low**. Low priority is the default. Use caution when changing this setting. Read more about setting CPU priority on **`http://msdn.microsoft.com`**.

Max Concurrent Reloads

Sets how many documents may be reloaded at any one time. Be careful not to set too many reloads simultaneously as it may degrade overall performance of the computer.

8.3 Logging

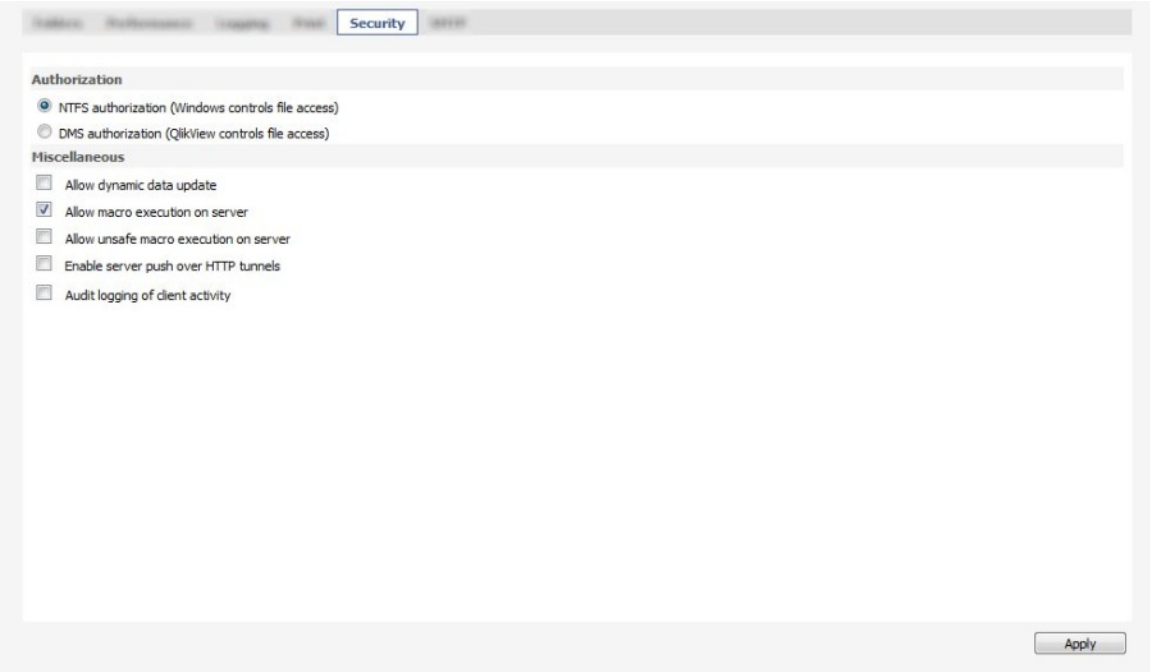


The Logging tab

Set the level of logging to **No Logging**, **Normal Logging** och **Debug Logging.** Choose **Normal Logging** or **Debug Logging** to view the log path. The path can only be changed using QEMC.

8.4 Security

On this tab you can make settings concerning the security of the QlikView Server.



The Security tab

Authorization

NTFS Authorization

Windows controls the file access for all users. Security is set in the operating system.

DMS Authorization

DMS is used to enable QlikView Server authentication. Read more about DMS on "Document Metadata Service (DMS)" on page 181.

Miscellaneous

Allow Dynamic Data Update

Mark the check box if the Server should allow dynamic updates in a document. This setting is by default off. This setting requires a special license. Learn more about dynamic update in the QlikView API Guide.

Allow Macro Execution on Server

Mark this check box if macros should be allowed to execute on the Server. This setting is by default on.

Allow Unsafe Macro Execution on Server

Mark this check box if unsafe macros should be allowed to execute on the Server. This setting is by default off.

Enable Server Push over HTTP Tunnels

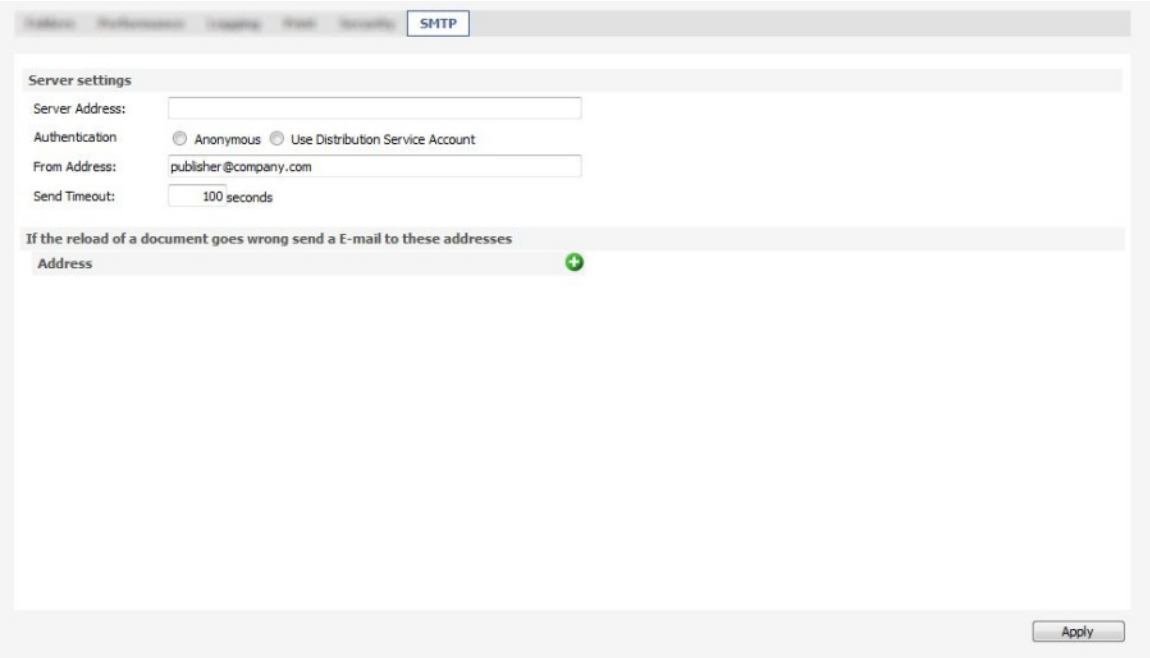
Mark this check box to allow graceful document refresh over HTTP tunnels. This setting is by default off.

Audit Logging of Client Activity

This setting enables logging of user selection. Read more about the audit logs on "The Audit Log" on page 171.

8.5 SMTP

On this tab the settings for e-mail alerts are set. An e-mail is sent to the entered addresses if a reload fails.



The SMTP tab

Server Settings

E-mail Server

The IP address or the fully qualified domain name of the e-mail server. If you use another port than the default, which is port 25, you must specify this, e. g. smtp.mydomain.com:1124.

Authentication

Set how the user should authenticate itself when sending an e-mail, **Anonymous** or **Use Distribution Service Account**.

From Address

The e-mail address the error messages should come from.

Send Timeout

How long QlikView Server should try to send the message before giving up if the SMTP server does not respond.

Send Test E-mail to

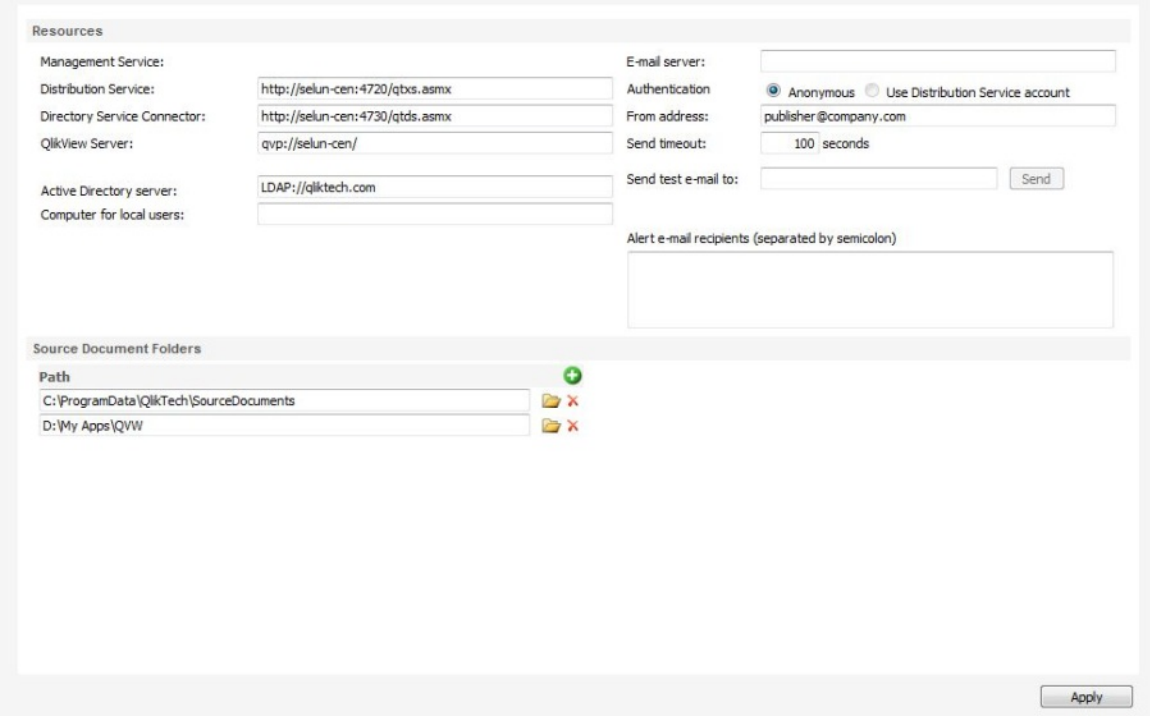
Enter an e-mail address and click the button to test your settings.

Alert E-mail Recipients (separated by semicolon)

Enter the e-mail addresses for those who should receive alert e-mails from the QDS, use semicolon as separator.

9 QlikView Publisher Settings

This tab is only available with a QlikView Publisher license.



The QlikView Publisher Settings tab

Resources

The QlikView Management Console sets up a number of resources, that are then used by the QlikView Publisher to prepare and distribute the QlikView documents. Change the addresses of the different resources if they are installed on different computers.

Distribution Service

Default address is **`http://localhost:4720/qtxs.asmx`**.

Directory Service Connector

Default address: **`http://localhost:4730/qtds.asmx.`**

QlikView Server

The address to the QlikView Server that is managed by this console.

Active Directory Server

The active directory, usually a domain controller, contains the users and computers of the domain. The address to the domain controller, e.g. **`LDAP://company.com`**.

Computer for Local Users

If the documents should be distributed to a specific computer and use the local accounts of that computer you must enter the computer name here.

E-mail Server

This is used for both distributing QlikView files to users and sending alert e-mails.

Authentication

Set how the user should authenticate itself when sending an e-mail, **Anonymous**, or **Use Distribution Service Account**.

From Address

Set the e-mail address that should be used as sender.

Send Timeout

Set the timeout in seconds for how long the service should try to sent the message.

Send Test E-mail to

Enter an address and click the button to test your settings.

Alert e-mail recipients (Separated by semicolon)

Enter the e-mail addresses for those who should receive alert e-mails from the QDS, use semicolon as separator.

Source Document Folders

Source Documents are QlikView documents that contain data that is to be made accessible to end-users in the form of User Documents. The default path to the source documents are in Windows Vista and later **`C:\ProgramData\QlikTech\Publisher\Sourcedocuments`**, on older operating systmes the path is **`C:\Documents and Settings\All Users\Application Data\QlikTech\Publisher\Sourcedocument`**. Click the green plus sign to add Source Document Folders. The documents in that folder are made available to the Publisher.

10 Licenses

"Register" on page 24 for details about the **QlikView Server & Publisher** page.

Client Access Licenses (CALs)

Identification

In the **Identify user by** group you decide whether named users should be identified via identified **User Name** or via **Machine Name** (actually machine name + MAC address). It is possible to change this setting at any time but it is strongly recommended to use one mode consistently with a given QlikView Server. If changed during operation, the same user can take up two CALs, one based on user name and one on machine name.

The usage by type of CAL and number of CALs defined in the LEF is displayed. Read more about CALs on "Licensing" on page 173.

Usage CALs are allocated in full upon license initiation. Then, 1/28th of your total number of usage CALs are replenished daily up to the amount of the total licensed usage CALs available. For example, if you license 56 usage CALs, you should see 2 additional usage CALs allocated daily, minus any used, not exceeding 56.

Allow License Lease (Named User CALs)

Mark this check box if you want users to be able to “borrow” a license for use off-line for a period of 30 days.

Allow Dynamic CAL Assignment (Named User CALs)

Mark this check box if you wish to add CALs dynamically.

In the **Identify by** group you decide whether named users should be identified via identified **User Name** or via **Machine Name** (actually machine name + MAC address). It is possible to change this setting at any time but it is strongly recommended to use one mode consistently with a given QlikView Server. If changed during operation, the same user can take up two CALs, one based on user name and one on machine name.

License Lease History

This section lists current information about leased license activity. A leased license is used by clients who connect to QlikView Server and are allowed to borrow a license to open the downloaded server document for 30 days.

Assigned Users

The current assignment of CALs is displayed. Document CALs can be either automatically or manually assigned to users by clicking on the **Assign CAL** button, if there is a Document CAL. Note that the allocation of a CALs does not imply security

If the **Allow Dynamic CAL assignment** is checked, a new Document CAL will automatically be granted to a user connecting to this QlikView Server for the first time, as long as there are available Document CALs to assign.

The page has a list showing the names of all users currently holding a Document CAL on the document. You can also see the time of the respective user's last activity on the server. A name can be an authenticated user name or a machine name (including MAC address).

To delete an assigned user, thus freeing a Document CAL, click on the **Delete** button ( ). If the CAL has not been in use for the last 24 hours, it will be deleted immediately. If the CAL is currently being used or has recently been used, it will be marked for deletion, and not allow new sessions for user access through this CAL, but will still occupy an allocated CAL until the Quarantined until time. During this period, you may undelete by clicking the **Restore** button ( ). After the quarantine period, you may delete the entry manually (by clicking on the **Delete** button), or restart the QVS service.

Note! Maintenance of Named CALs does not require a restart of the QlikView Server service.

Part 3 QlikView Enterprise Management Console

11 Introduction

QlikView Enterprise Management Console (QEMC)

The QlikView Management Console is completely built around modern AJAX technology, it will run in a browser and without reliance on e.g. Microsoft IIS. Extensive usability studies have been done prior to implementation.

The QEMC gives you full access to all possible settings for QlikView Server and the Publisher Module. It also lets you control multiple instances of QlikView Server and multiple Publisher execution instances from a single management console, by means of an integrated tree-control.

To open the Enterprise Management Console go to Windows **Start** menu, **QlikView** and choose **QlikView Enterprise Management Console** or open a web browser and enter the url **`http://servername:4780/qemc/default.htm`**.

QlikView Management Console (QMC)

Just as the QEMC the QMC is built around AJAX technology and will run in a browser. The number of available settings is reduced, thereby producing a cleaner, more intuitive interface more suited for those content with most default settings.

Even without the Publisher Module, the QMC will feature a page for basic reload scheduling. If the Publisher Module is installed this will be expanded to a wizard style interface for setting up Publisher tasks.

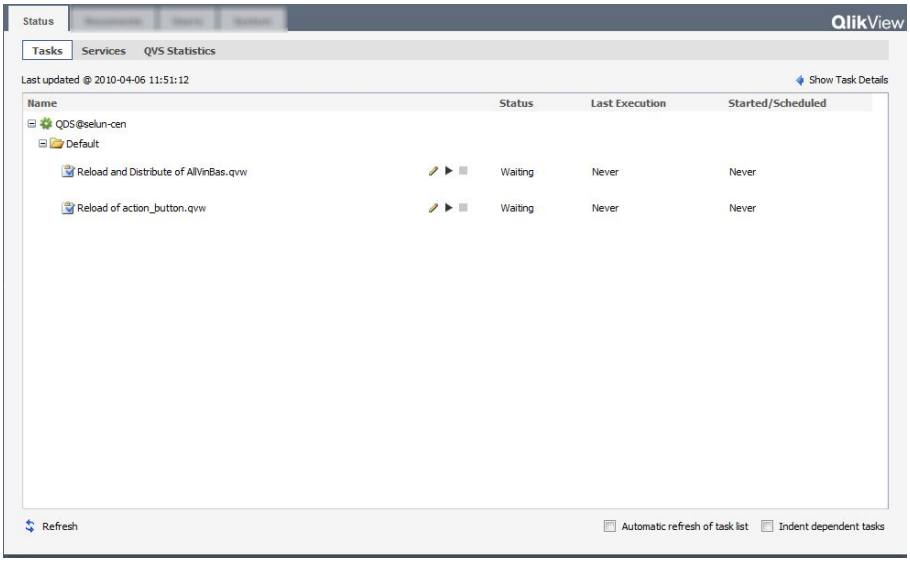
The QMC handles only one instance of QlikView Server and one execution instance of the Publisher.

To open the Management Console go to Windows **Start** menu, **QlikView** and choose **QlikView Management Console** or open a web browser and enter the url **`http://servername:4780/qmc/default.htm`**. See "QlikView Management Console" on page 35 for details.

12 Status

The Status tab contains the **Tasks**, **Services** and **QVS Statistics** pages.

12.1 Tasks



The Tasks page

The **Tasks** page gives you an overview of scheduled tasks. The tasks are presented in a tree view, with the tasks sorted according to QlikView Servers and document categories. If no category has been set in the **Category** field when configuring the task, the documents are put in the **Default** folder.

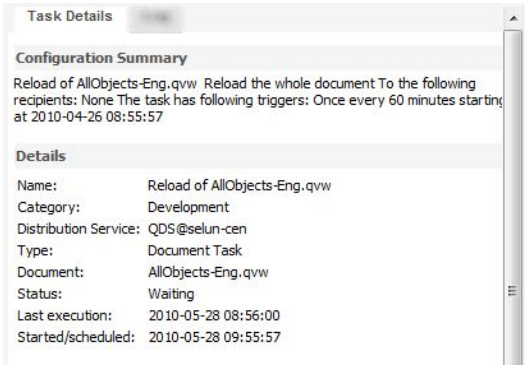
Press the **Play** icon to run the task immediately and the **Stop** icon to stop a running task. Here you also see the **Status**, the **Last Execution** and when the task was **Started/Scheduled**. The **Status** of a task can be **Waiting**, **Running**, **Failed** or **Aborting**. Click on **Show Task Details** to view the log file for the task.

The page has an automatic refresh of the task list. Disable the check box if you wish to refresh it manually. In order to make your change of the refresh state persistent, you must allow cookies in your browser.

Enable **Indent Dependent Tasks** to have the tasks that are dependent on others displayed with an indent.

Show Task Details

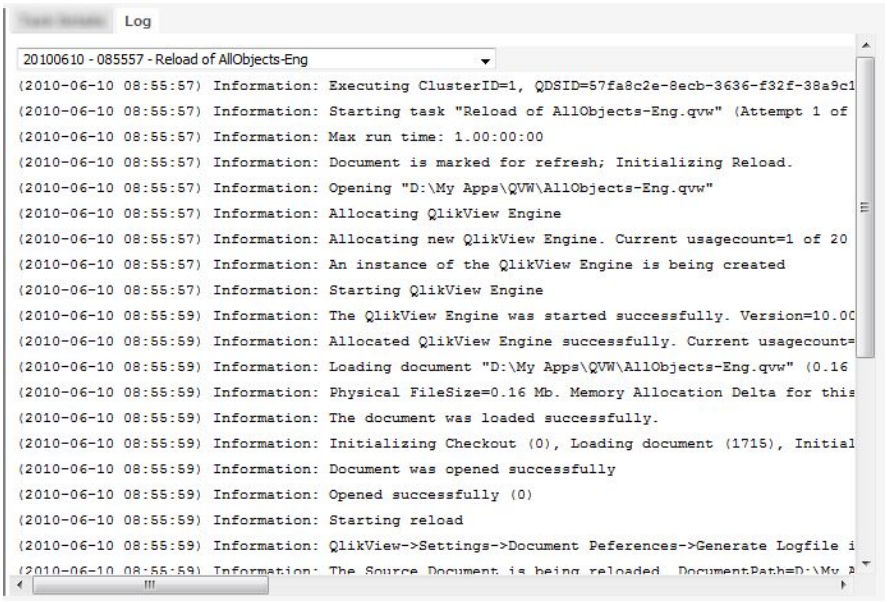
Task Details



The Task Details tab

On this tab you see a **Configuration Summary** of the task and the details of its execution. A task with a multiple event trigger lists all events that must be completed.

Log



The Log tab

On this tab you can view the log files for the task. The drop-down menu at the top contains the 50 latest logs.

12.2 Services

The Services tab

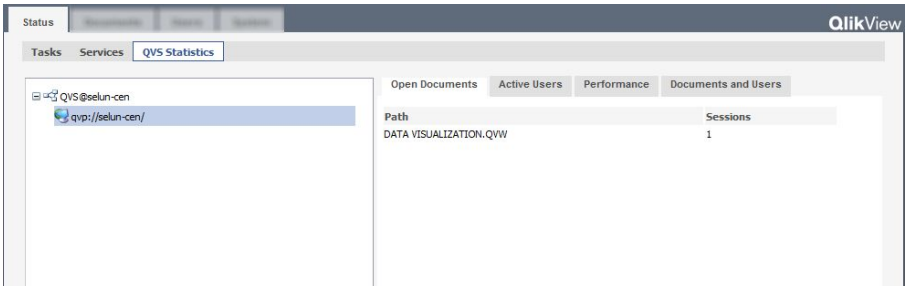
The different Windows services are displayed with their status and the name of the server on which they run. Highlight a service to display status messages.

When running a QlikView Server only the following services will be displayed, QMC (QlikView Management Service), DSC, (Directory Service Connector), QDS (Distribution Server), QVS(QlikView Server) and QVWS (QlikView Web Server).

12.3 QVS Statistics

On these pages you can see statistics on all the QlikView Servers that are managed by this QEMC. There are several pages:

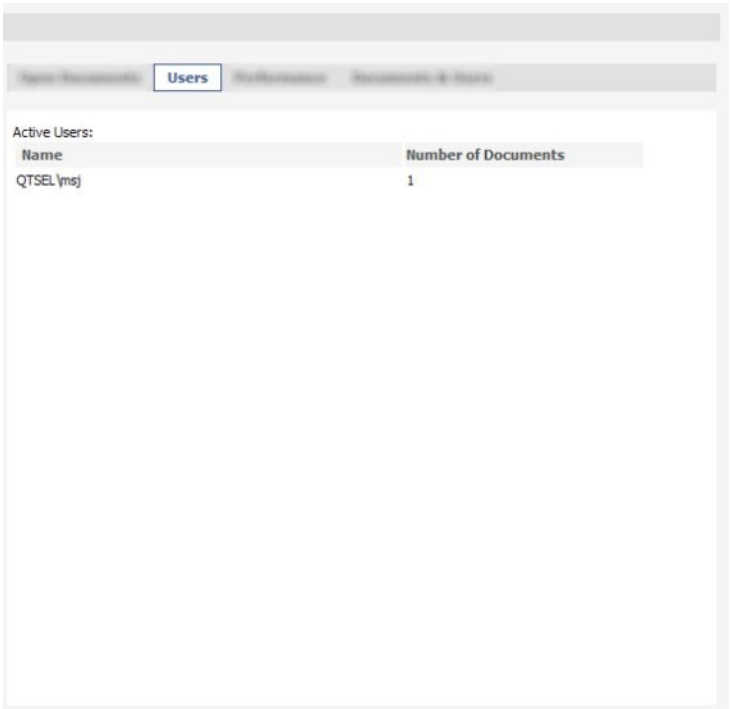
Open Documents



The Open Documents tab of QVS Statistics

The **Open Documents** page displays the documents and the number of session that are open.

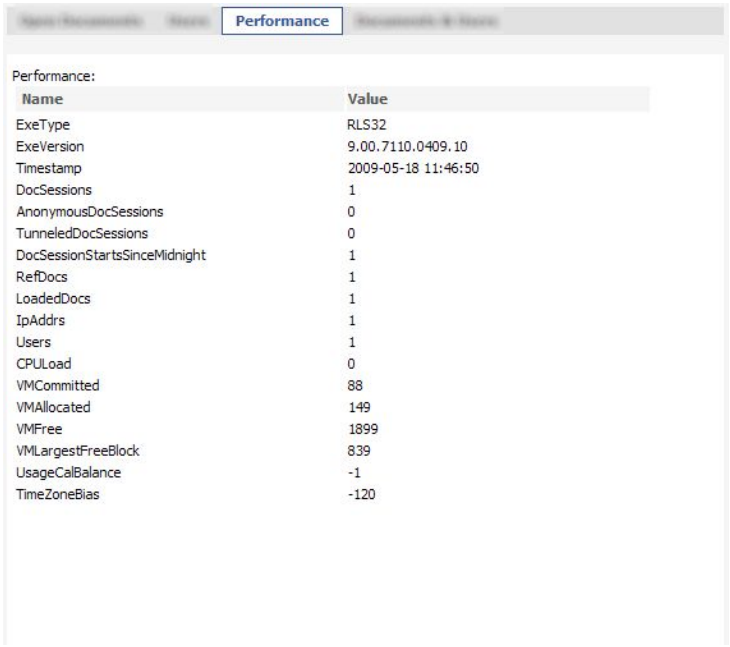
Users



The Users tab of QVS Statistics

This page displays the active users and the number of documents they have open.

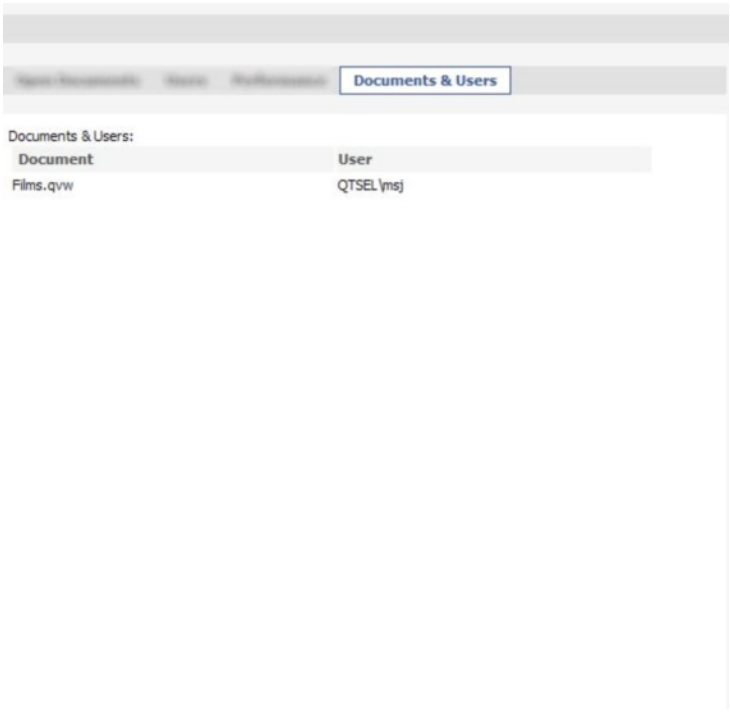
Performance



The Performance tab of the QVS Statistics tab

The **Performance** page displays information about the Server's performance.

Documents & Users



The Documents and Users page of the QVS Statistics tab

The page displays the documents and the users that are using them.

13 Documents

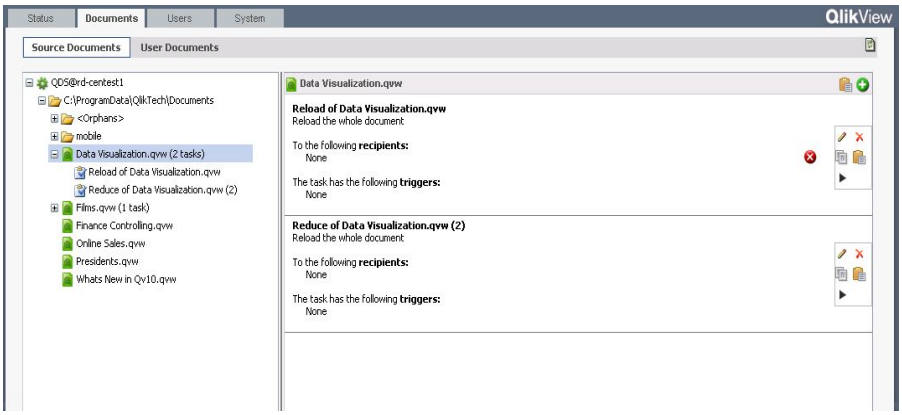
On this tab you can manipulate your tasks for your **Source Documents** and your **User Documents**.

You can create task chains, where one task triggers another. For example, Document 1 is reloaded every hour and upon successful execution a distribution task is run for Document 2 and if that is successful a distribution is run for Document 3 and so on.

Note! If you disable a trigger for one of the tasks in the chain, the chain will be broken. If you disable one of the tasks in the chain, the chain will continue, but the disabled task will simply not execute.

13.1 Source Documents

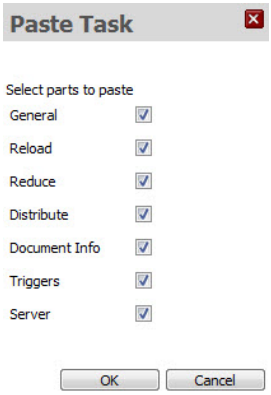
This tab is only available if you have a QlikView Publisher license.



The Source Document page

This page lists all your source documents and the tasks they have been assigned in a tree view to the left, and to the right you have the settings for the tasks. Click the green plus sign to the right to add a task or click on the task in the list to the left to reconfigure it. Right-click on a task to view the context menu, from which you can manipulate your tasks.

When a task is set up you can see the status of the task, copy the task to the clipboard using the icon or by right-clicking on the task in the tree view to the left and select **Copy**, start and stop a task with the play icon, edit the task by clicking on the icon and delete the task with the icon. To paste a copied task to a specific document, you either right-click on the document you want to paste the task to and select **Paste**, or you can highlight the document and in the pane to the right click the paste icon . When you paste the task, you may choose what parts of the task to paste into the document.

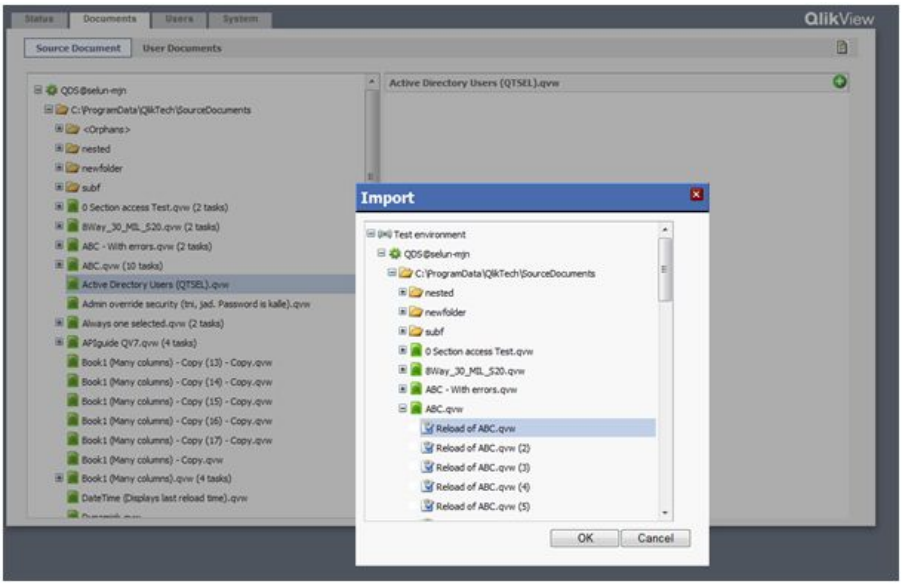


The Paste Task dialog

Select which components of the task you want to duplicate to the document and click **OK**. Pasting a task will create a new task.

The command **Paste Special** will merge the task from the copied task with the task it is pasted into. You can merge a copied task with several tasks simultaneously by multi-selecting all the tasks you with to merge it with in the tree view.

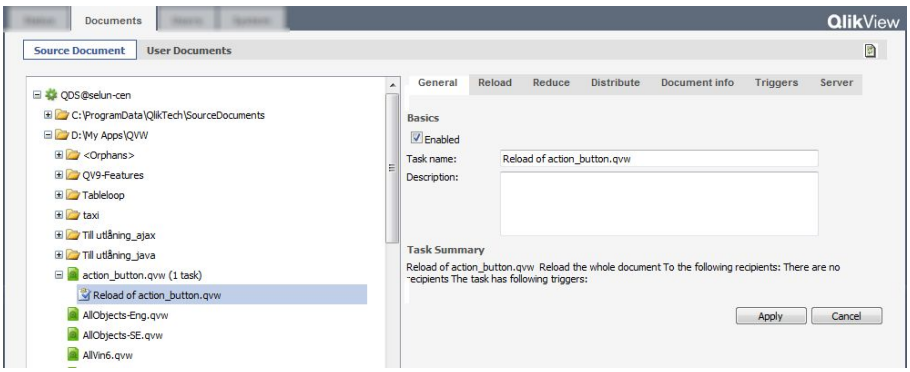
Right-click a document and select **Import Task**, if you want to import a task from another installation (see "System" on page 107 for how to set up the remote system). This will bring up the remote system and you can choose which task you want to import. If you already have a task in that document with the same name, a new name will be generated.



Importing tasks

To import all tasks from a remote system, you right-click the **Distribution Service** and choose **Import Tasks**. The **Import** dialog opens and you can choose a **Distribution Service** from a remote system.

General



The General tab

Basics

Enabled

Mark this check box to activate the task.

Task Name

Set the name of the task.

Description

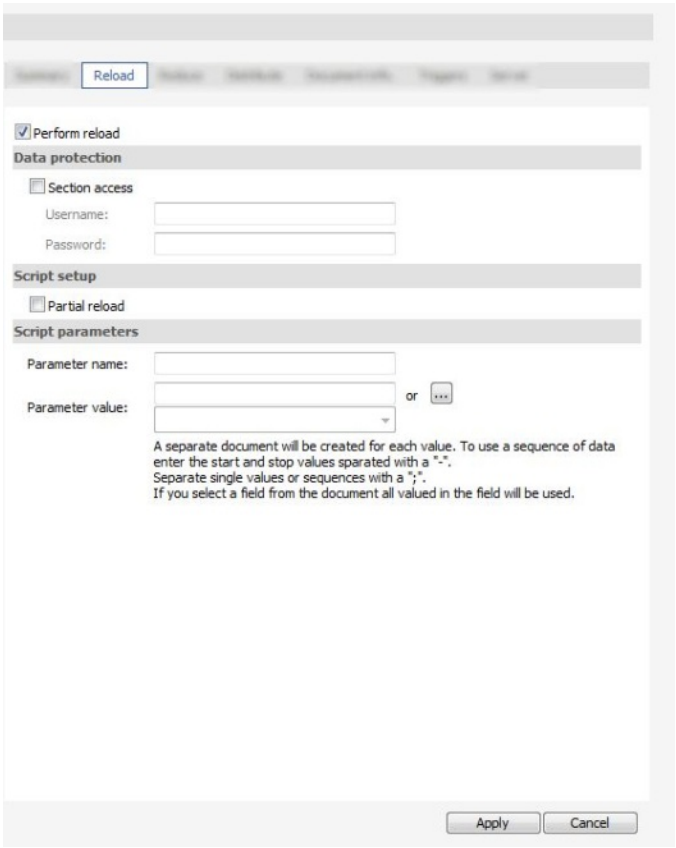
The description written here will be visible in the summary of the task.

Note! The **Task Name** must be unique within the repository!

Task Summary

A short summary of the task(s) set for the document, including recipients and schedule.

Reload



The Reload tab

Perform Reload

Mark the check box **Enabled** if the document should be reloaded.

Data Protection

Section Access

Mark the check box if other credentials than the default should be used. This setting allows you to select the **username** and **password** the Distribution Service should use when opening QlikView documents. The default configuration is for the service to use the Windows credentials that are set for the service itself in the Windows Computer Management Console.

Script Setup

Mark the check box **Partial Reload** to use the partial reload functionality of QlikView.

Script Parameters

This replaces the function of the repeat task in previous versions.

Parameter Name

The variable created in the QlikView script that will be used in the script execution of the document.

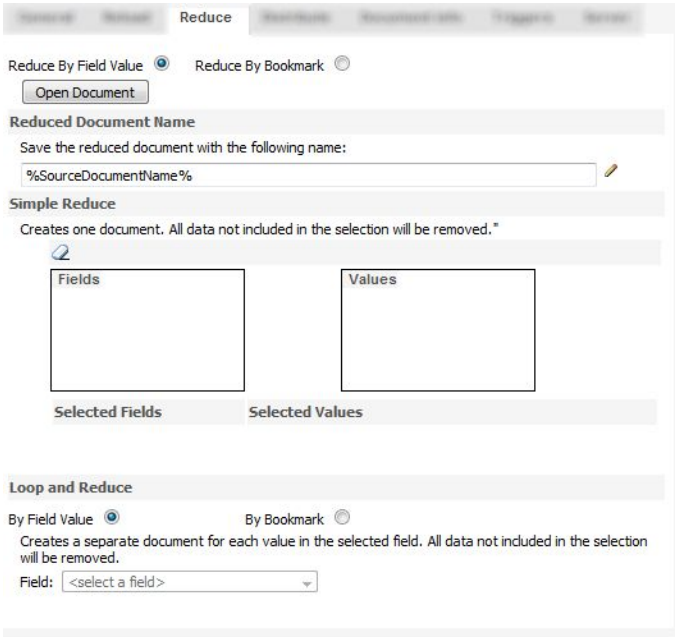
Parameter Value

The values that will be assigned to the variable. This value or values will be used to create the document. Enter a list of values separated by semicolons (;) or use dash (-) to enter a sequence of data. A separate document will be created for each value.

Or

In this field you can select a field in the document and a separate document will be created for each value in that field. Those values present at the start of the execution will be used. If field values change during the execution the change is not reflected.

Reduce



The Reduce tab

Open Document

Click this button to populate the **Fields** and **Values** boxes for a **Simple Reduce**. Then choose what fields and values should be part of the reduced document.

Reduce by Field Value

Click **Open document** to populate the **Fields** and **Values** boxes. Then choose what fields and values should be part of the distributed document.

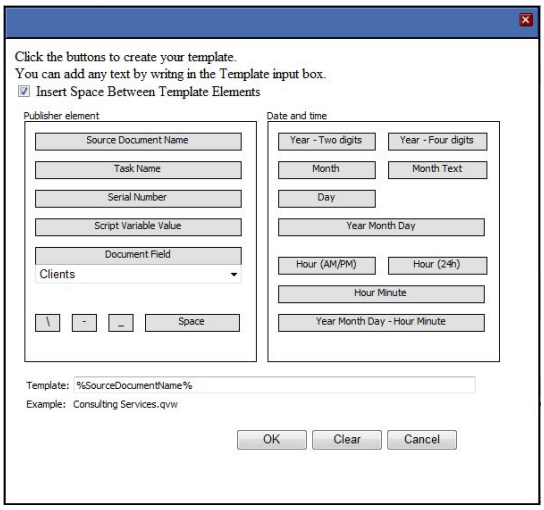
Reduce by Bookmark

Click **Open document** and then choose which bookmark the document should be reduced by in the drop down.

Reduced Document Name

Save the Reduced Document with the Following Name

Enter a name for the user document. Click the icon on the right to open a dialog for creating a name template for reduced documents.



Create a document name template

Click on the buttons to insert the different Publisher elements and date and time in the template for the document. You can enter any text in the **Template** field.

Simple Reduce

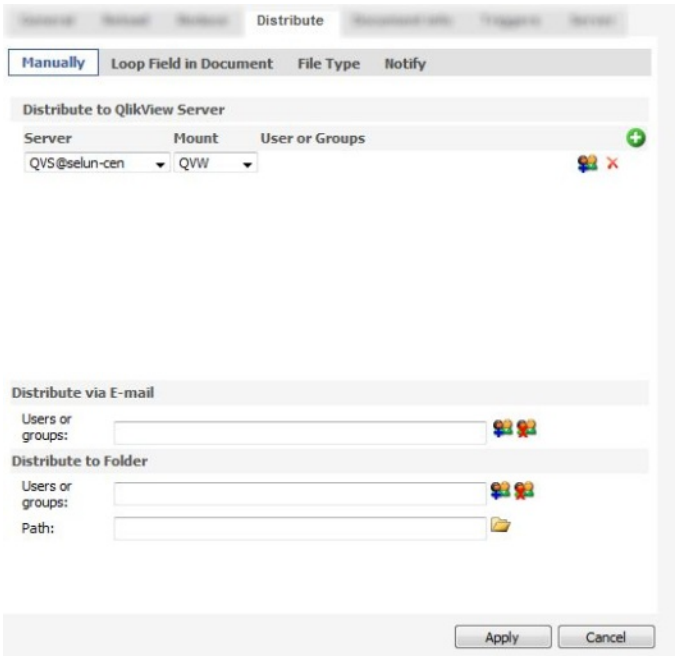
Displays the **Fields** and **Values** or the different bookmarks available in the document.

Loop and Reduce

Choose **By Field** or **By Bookmark** in this group if you want each value to be a document unto it self. All data not included in the selection will be removed.

Distribute

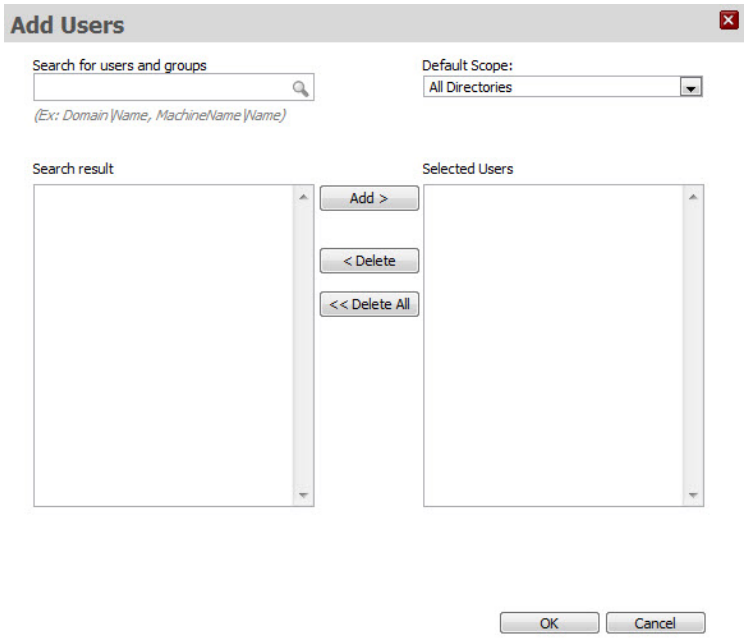
Manually



The Distribute tab (manually)

Set how the document should be distributed to the recipients, via **QlikView Server**, **e-mail** or to a **Folder**. Press the add users icon to add recipients on that resource. The names will be resolved by the Directory Service Connector.

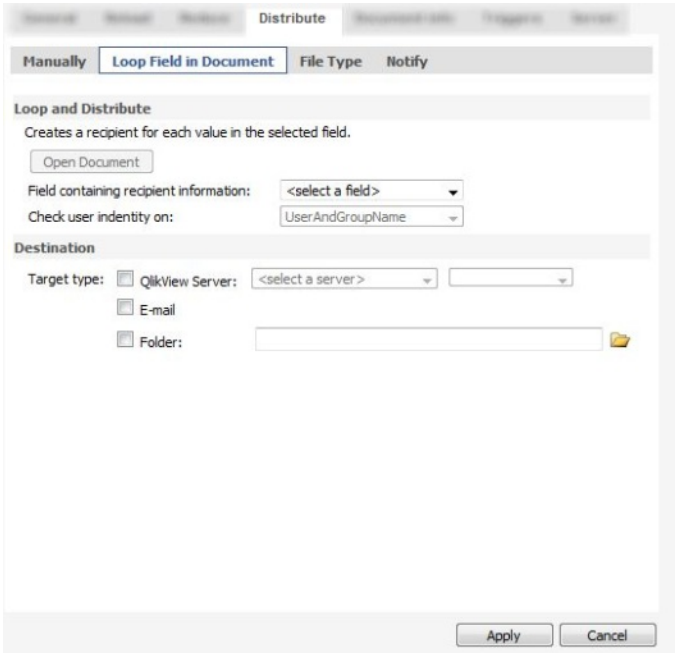
Add Recipients



The QlikView Server Add Recipents dialog

Add the users from the QlikView Server, either **Anonymous**, **All authenticated users** or **Named users**. Choose **Named users** to search for users and groups in the domain or on a computer to add as recipents.

Loop Field in Document



The Distribute tab (loop and distribute)

Loop and Distribute

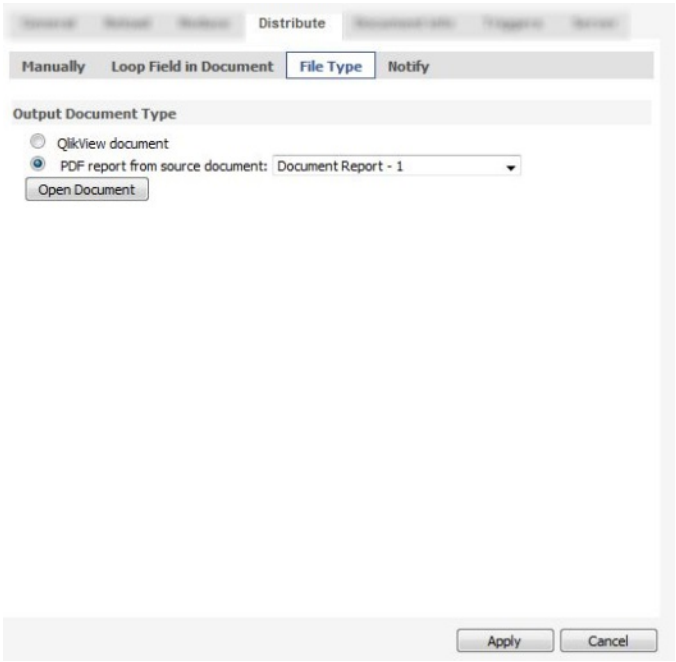
Open Document

Click this button to have QlikView Publisher open the document you wish to distribute. Opening the document will allow you to select a field that contains information about the recipients in **Field containing recipient information** and the type of **Check user identity on.** Possible values are the following directory service attributes, **SecurityIdentifier, DisplayName, SAMAccountName, E-mailAddress** and **UserPrincipalName**. The names of the attributes correspond to attributes in Microsoft Active Directory. If you use another directory service provider, the attributes in this setting correspond as closely as possible to attributes with a similar meaning in that provider. Learn the definitions of these attributes in Active Directory on "Active Directory Attributes" on page 261.

Destination

Choose how to distribute the document(s): on a **QlikView Server**, via **E-mail** or via a **Folder**.

File type

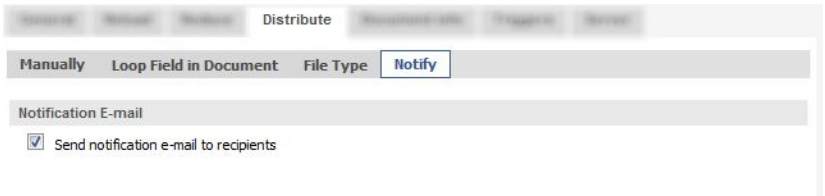


The File type tab

Output Document Type

Distribute the document as a **QlikView document** or choose a QlikView report in the drop-down menu to distribute it as a **PDF-report from source document**. In order to choose a report as basis for the PDF report you must click **Open Document**. To distribute the document as PDF requires a special license.

Notify

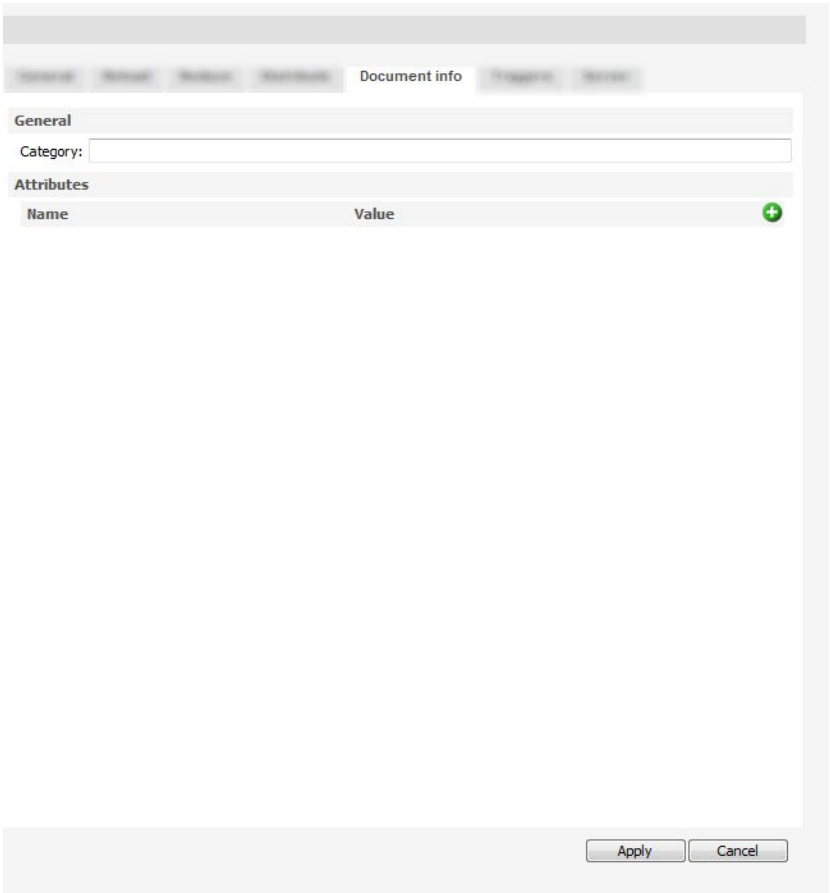


The Notify tab

Send notification email to recipients

With this option checked, all recipents that are part of the distribution will receive a notification email. Recipients that are part of email distribution will however not receive an email.

Document Info



The Document Info tab

General

Category

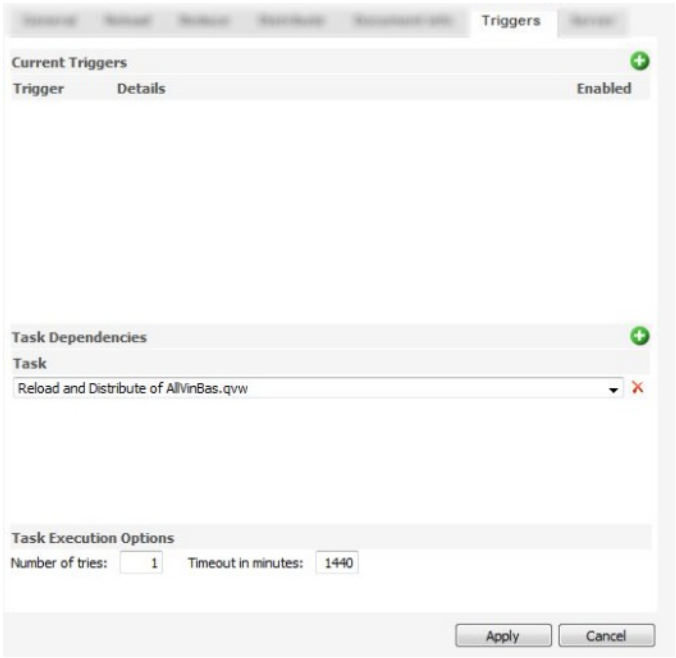
This setting lets the administrator create, edit and delete categories. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category. Clicking in the field will display a popup with previously used categories.

Attributes

Enter **Name** and **Value** for meta data attributes that can later be read from the database. These attributes are not saved in the document, but in the meta file. A third party application can then extract the attributes using the qvpx protocol.

Triggers

A trigger is what sets of a task. A task can have multiple triggers, creating a workflow of tasks.



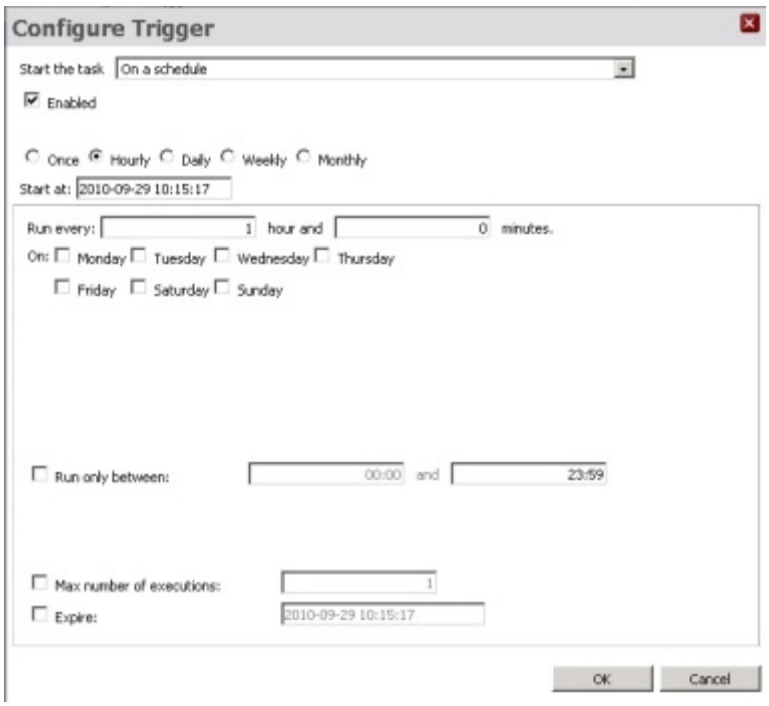
The Triggers tab

Current Triggers

Click the green plus sign to add a trigger. All tasks can be triggered by a **schedule**, by the **event of another task**, by an **external event** or by **multiple events**.

On a Schedule

On a Schedule



Configure trigger - On a schedule

Set the schedule for the task. You may set it to run **Once**, **Hourly**, **Daily**, **Weekly** or **Monthly**.

Note! All time specifications must be in 24-hour format.

Enabled

Mark this check box to enable the schedule.

Start at

Set the date and time for the first execution of the task.

Run Every

Set how often the task should be run and on what days, or what months.

Run Only Between

Set what times the task is allowed to run between.

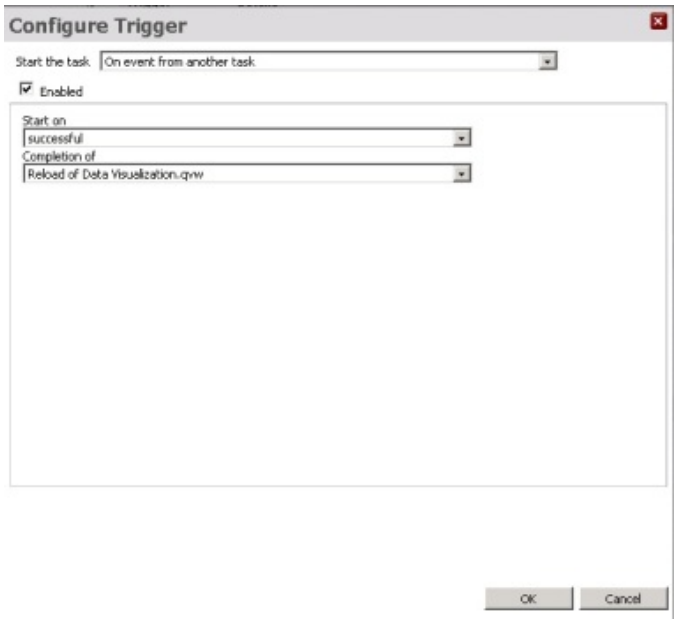
Max Number of Executions

Set how many times the task is allowed to run.

Expire

Mark this check box and enter a date and time in the field to the right to set how long the task is valid.

On Event from another task



Configure Trigger - On event from another task

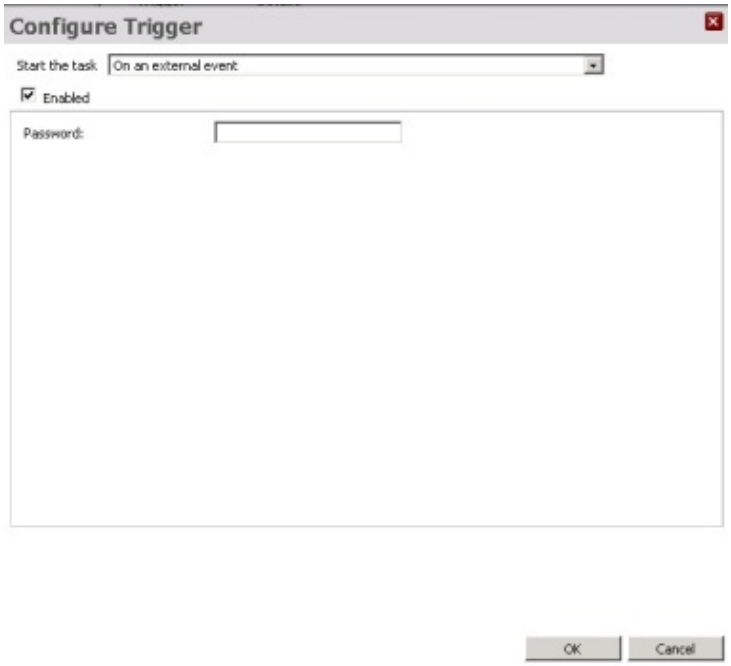
Enabled

Mark this check box to enable the trigger.

Start on

Set if the task should start on the successful or failed completion of another task.

On an External Event



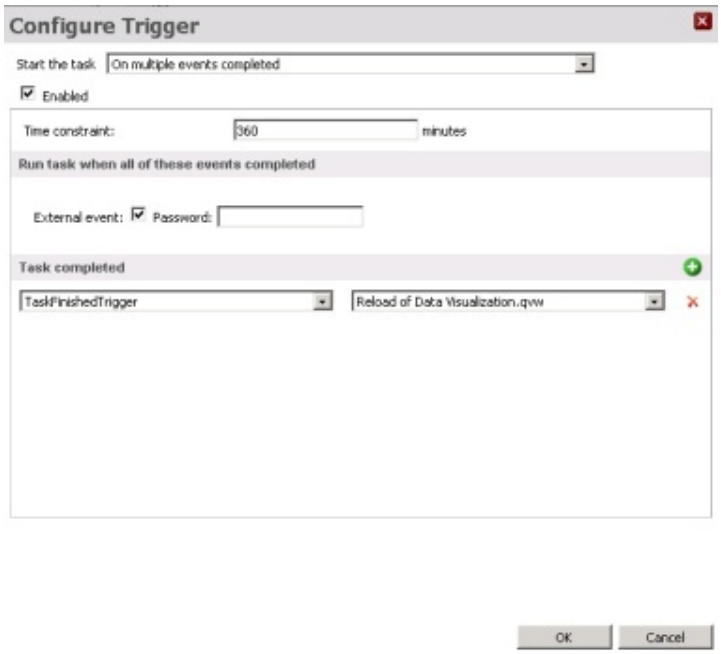
Configure trigger - On an external event

This allows an outside component to make a http call (post) and trigger the task.

Enabled

Mark this check box to enable the trigger.

On Multiple Events Completed



Configure trigger - On multiple events completed

This type of trigger will only be executed if all other events have been completed within a certain time.

Enabled

Mark this check box to enable the trigger.

Time Constraint

Set the time limit for all events to complete. Default value is ten hours. The time is set in minutes.

Run task when all of these events completed

Here you add all the tasks and events that must be completed before the current task is run. You can include both external events and several other tasks.

Task Dependencies

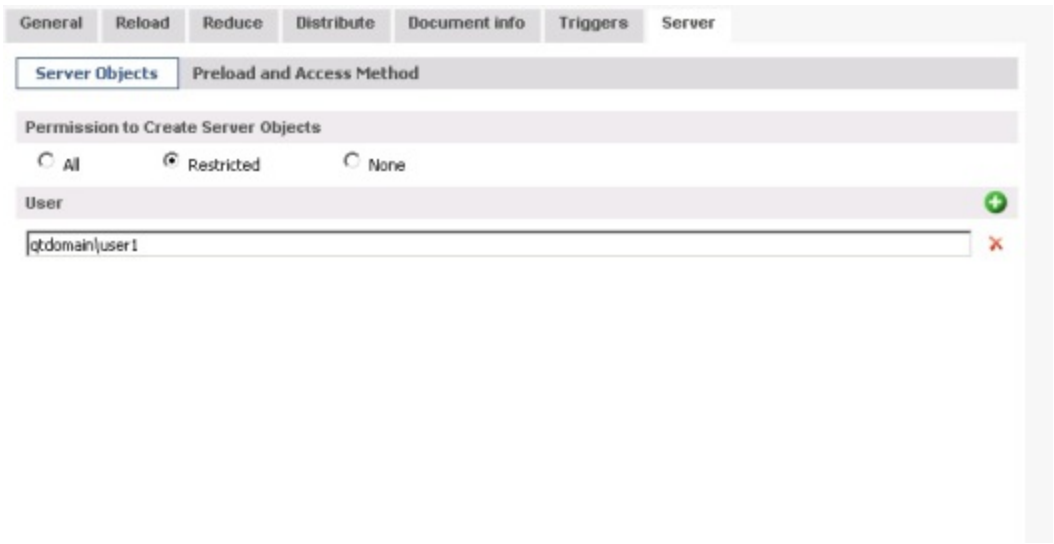
Click on the green plus sign to add dependencies for the current task. Task dependency is a way of making sure that your task only runs if other tasks have finished their last execution successfully.

Task Execution Options

Set the **Number of Tries** for the task and how the **Timeout in Minutes** should be.

Server

Server Objects



The Server tab - Server Objects

Permission to Create Server Objects

Here you can specify who should be able to create Server objects in this document.

All

Everyone may create a Server object in this document.

Restricted

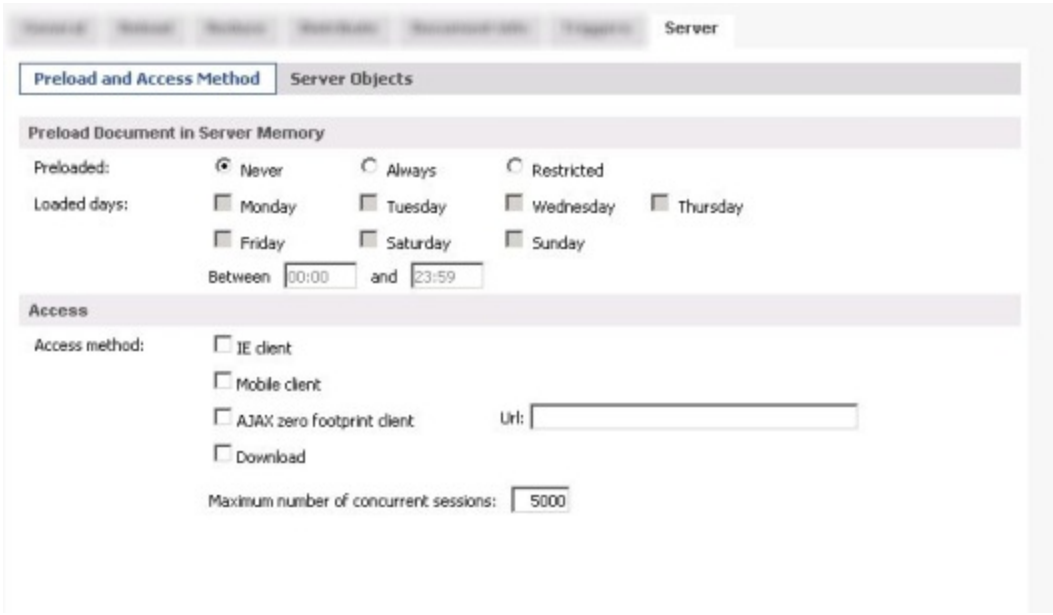
Add users in the list below that may create Server objects in this document.

None

No one is allowed to create Server objects in this document.

Preload and Access Method

Here you specify how the user documents should behave on the Server.



The Server tab - Preload and Access

Preload Document in Server Memory

Here you may set the preload options for the document. A preloaded document is loaded into the server's primary memory to ensure quick access at all times. It will however, use up memory even when no user is accessing the document.

Choose one of the options for **Preloaded** as follows:

Never

The document will never be loaded automatically. Standard loading techniques, based on user requests and **Document Timeout** settings will apply.

Always

The document will always be loaded into server memory.

Restricted

The document will be loaded automatically, based on specific day of the week and time restrictions. If this option is selected, additional settings will become visible.

If **Preloaded** is set to **Restricted**, you may choose specific days of the week to automatically load the document and the times of the day to load and unload. All times are Server local times (in 24 hour format). The server time is set during installation of the operating system. See the **Windows Control Panel - Date and Time** for more details.

Access

Access

Mark the checkboxes for which flavors of QlikView clients that should be allowed on the AccessPoint.

Url

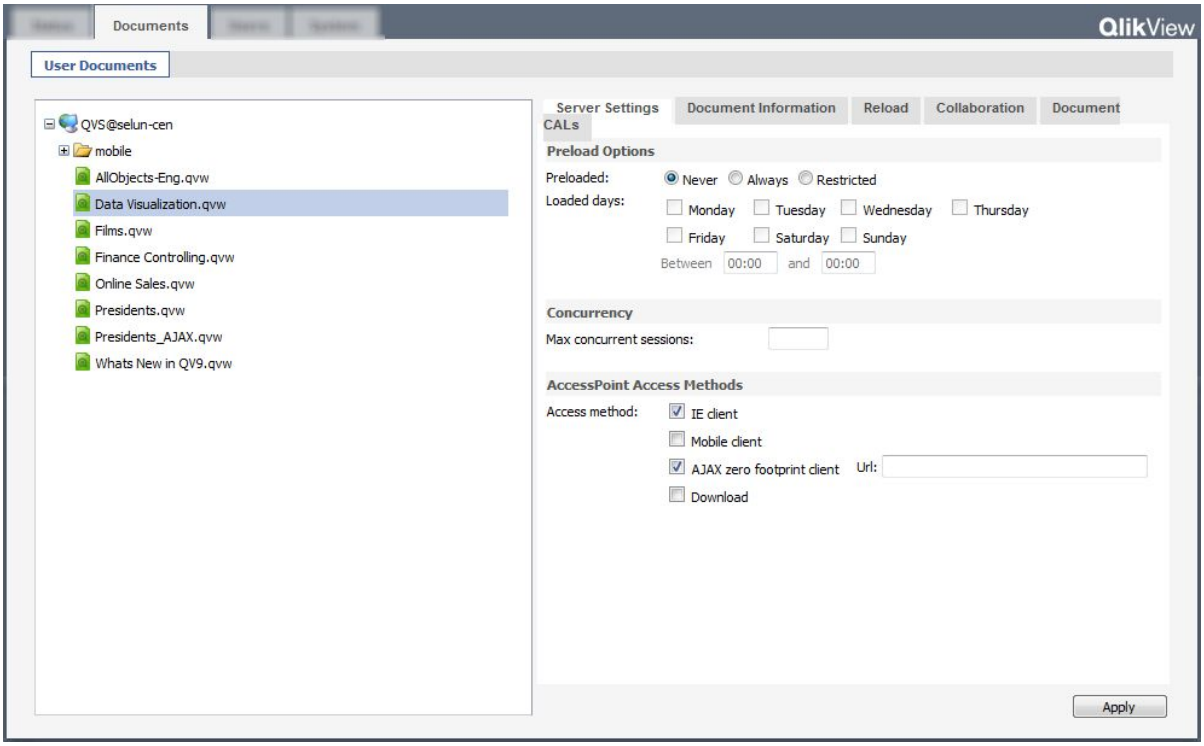
Enter a URL if you want to use your own html pages, instead of the default, for displaying the AJAX pages.

Max Concurrent Sessions

Sets the number of concurrent sessions for the document.

13.2 User Documents

Here all documents that are available on the Server are displayed. The settings here should not be changed if you have set up Publisher to distribute documents. These settings will be overridden by the settings for the Publisher.



The User Documents page in the QEMC

Server Settings

Availability Limitations

Here you set if the highlighted document should be loaded on the QlikView Server.

This setting is only available if your QlikView Server license limits the number of documents you may load concurrently.

Preload Options

Here you may set the preload options for the document. A preloaded document is loaded into the server's primary memory to ensure quick access at all times. It will however, use up memory even when no user is accessing the document.

Choose one of the options for **Preloaded** as follows:

Never

The document will never be loaded automatically. Standard loading techniques, based on user requests and **Document Timeout** settings will apply.

Always

The document will always be loaded into server memory.

Restricted

The document will be loaded automatically, based on specific day of the week and time restrictions.

If **Preloaded** is set to **Restricted**, you may choose specific days of the week to automatically load the document and the times of the day to load and unload. All times are Server local times (in 24 hour format). The server time is set during installation of the operating system. See the **Windows Control Panel - Date and Time** for more details.

Concurrency

Max Concurrent Sessions

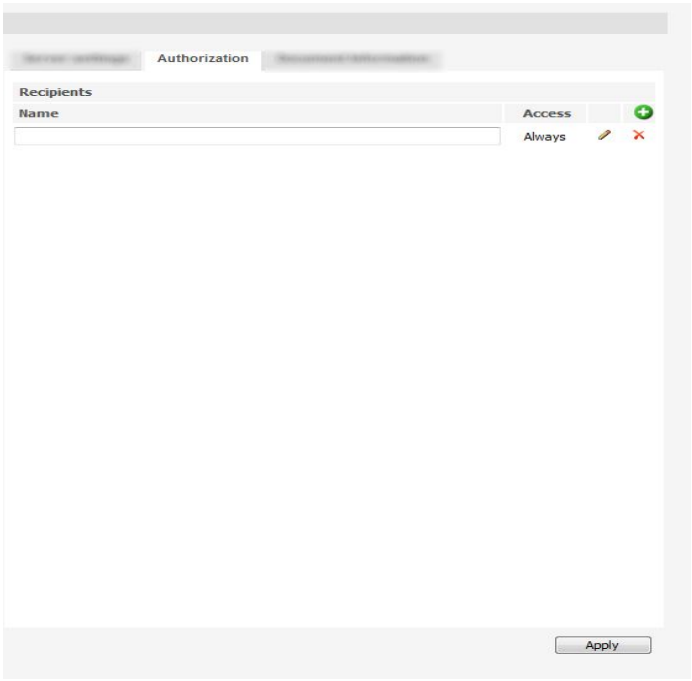
Sets the number of concurrent sessions for the document.

Accesspoint Access Methods

Access Method

Mark the check boxes for which flavors of QlikView clients that should be allowed on the AccessPoint.

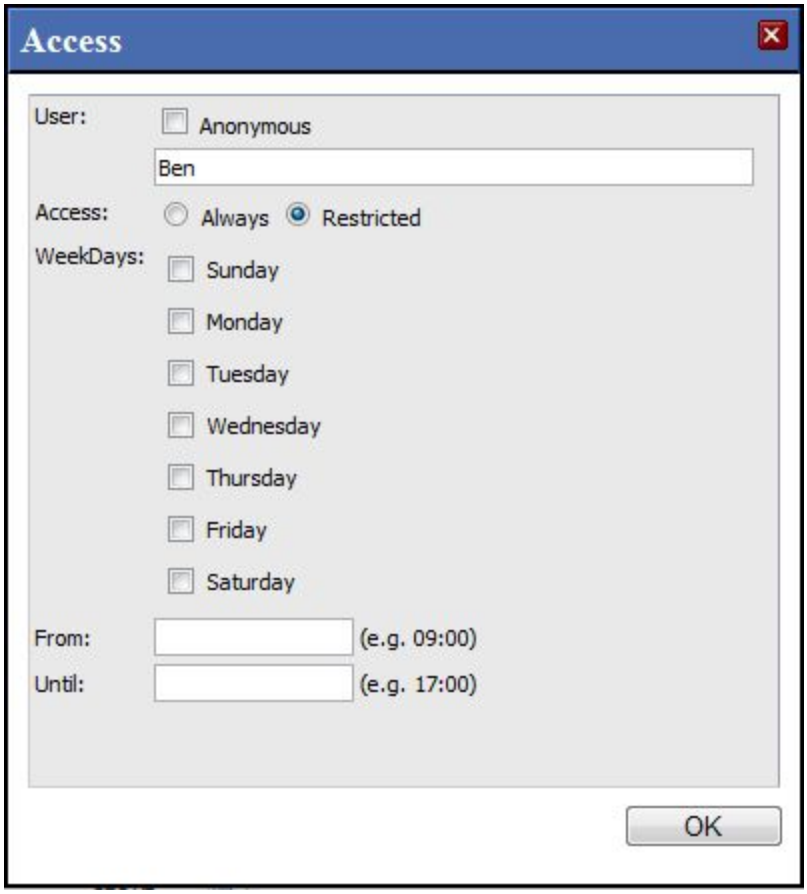
Authorization



The Authorization tab of the QEMC

This tab is used to configure document authorization settings for the selected QlikView document. This tab is only available if **DMS Authorization** is selected as the authorization method for this server. Only users specified in this configuration will be allowed access to the document once **DMS Authorization** is selected. **DMS Authorization** is set in **QlikView Server Settings**, **Security**. Read more in "Document Metadata Service (DMS)" on page 181.

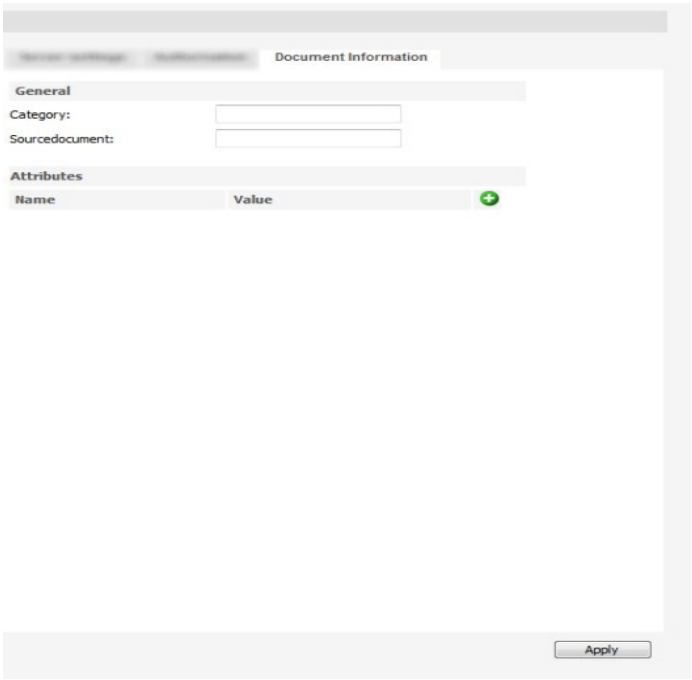
To add an authorized user/group, click on the **Add** button. To remove an existing authorized user/group, click on the X icon. The User/Group can be either Anonymous or named. Group names may be used, but access to the QlikView Directory Services Connector (DSC) will be required to resolve the Group. Click the properties icon to set the access restrictions for the user/group.



The Access dialog

Access can be granted to all users, **Anonymous**, or to named users/groups. You can set the **Access** to **Always** for no time restrictions, or **Restricted** to limit access to this document to specific days of the week as well as times. All times are Server local times (in 24 hour format).

Document Information



The Document Information tab

General

Category

This setting lets the administrator create, edit and delete categories. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category. Clicking in the field will display a popup with previously used categories.

Source Document

The name of the source document. This setting is only relevant if it is run through a QlikView Publisher task. The name is not changed by a QlikView Server reload.

Attributes

In this group you may set your own meta data attributes, with names and values, for the document. These attributes can be read from the database. The attributes will not be saved together with the document but in the metadata of the Server. See "Document Metadata Service (DMS)" on page 181 for more information.

Reload

This tab is available when running only QlikView Server.

Reload Schedule

On this tab the schedule for reloading a document is configured.

Enabled

Check the box to enable the schedule below.

The schedule can be set to **None**, **Hourly**, **Daily**, **Weekly**, **Monthly**, **Continuously**, **Completion of**, or **External event**.

On event of another task

Set this if the reload should be set off by another reload of a certain document.

External event

Set if an external event should set off the reload. Fill in the **Password** for the external event.

Timeout seconds

Set a time limit for the reload. If the document is not reloaded within the timeout the process will be terminated and the old data is kept in the document.

Dependency

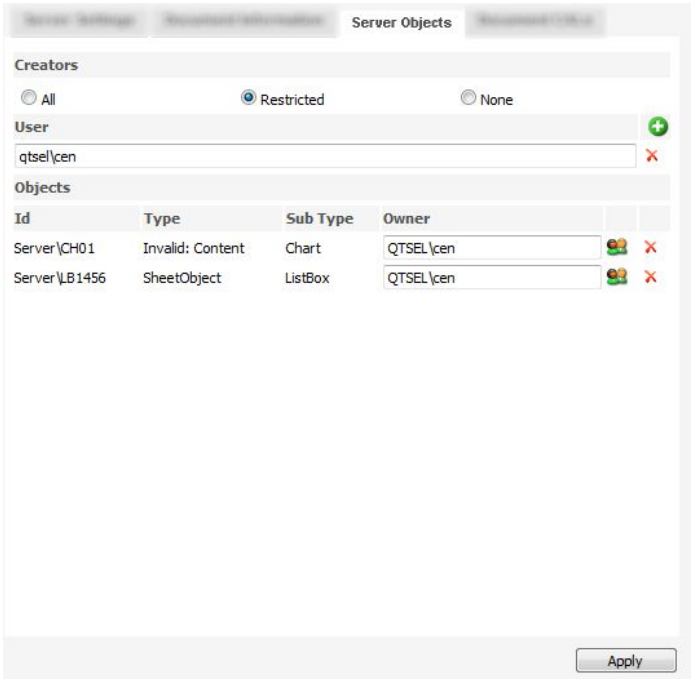
When a reload that has a dependency is about to be executed, it will check the status of the dependency and if that status is failed, the current reload will not be executed.

Data Protection

This setting allows you to select the **username** and **password** the Distribution Service should use when opening this document.

The default configuration is for the QlikView Distribution service to use the Windows credentials that are set for the service itself in the Windows Computer Management Console. Read more about section access on "Section Access" on page 207.

Server Objects



The Server Objects tab

Creators

Here you can specify who should be able to create Server objects in this document.

All

Everyone may create a Server object in this document.

Restricted

Add users in the list below that may create Server objects in this document.

None

No one is allowed to create Server objects in this document.

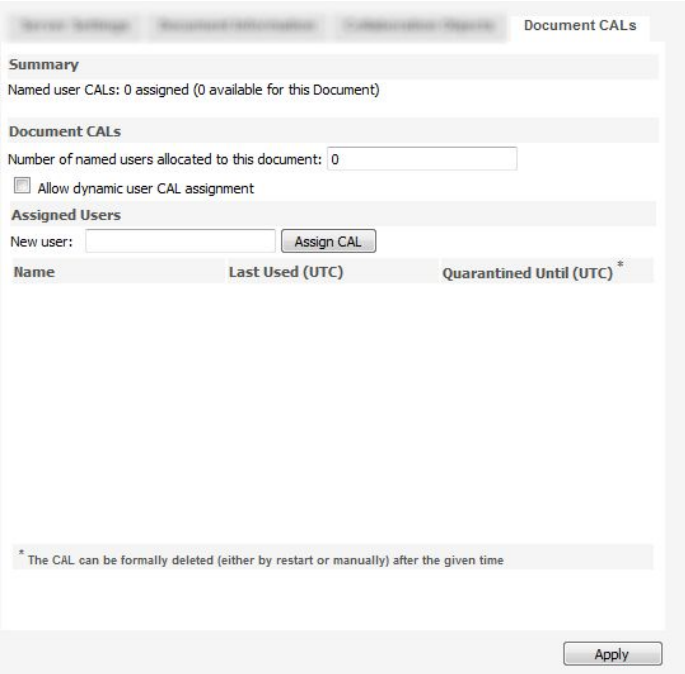
Users

Here you add the users that should be able to add Server objects to the document if you choose **Restricted** in the **Creators** group.

Objects

Here all the Server objects within the document are listed with **ID**, **Type**, **Subtype** and **Owner**. Click on the icon next to the **Owner** field to take ownership of the objekt. Clicking the red x-icon removes the shared object.

Document CALs



The Document CALs tab

This tab is only available if you have document CALs.

Summary

These lines show the number of Document CALs that the license contains, the number of Document CALs that not yet are allocated to any document, the number of Document CALs allocated to this specific document, the number of Document CALs within this document that are assigned to users, the number of Document CALs that are already embedded in the Document.

Document CALs

Number of CALs allocated to this Document

Enter the number of Document CALs that should be allocated to this document. Initally the number will be zero.

Allow Dynamic CAL Assignment

Mark this check box if you want the QlikView Server to assign CALs to any user that opens the document.

Assigned Named CALs

The current assignment of CALs is displayed. Document CALs can be either automatically assigned or manually assigned to users by clicking on the **Assign CAL** button, if there is a Document CAL. Note that the allocation of a CAL does not imply security

If the **Allow Dynamic CAL assignment** is checked, a new Document CAL will automatically be granted to a user connecting to this QlikView Server for the first time, as long as there are available Document CALs to assign.

The page has a list showing the names of all users currently holding a Document CAL on the document. You can also see the time of the respective user's last activity on the server. A name can be an authenticated user name or a machine name (including MAC address).

To delete an assigned user, thus freeing a Document CAL, click on the **Delete** button ( ). If the CAL has not been in use for the last 24 hours, it will be deleted immediately. If the CAL is currently being used or has recently been used, it will be marked for deletion, and not allow new sessions for user access through this CAL, but will still occupy an allocated CAL until the Quarantined until time. During this period, you may undelete by clicking the **Restore** button ( ). After the quarantine period, you may delete the entry manually (by clicking on the **Delete** button), or restart the QVS service.

14 Users

On these tabs the administrator can manage all objects of a certain user and set up section access.

14.1 User Management

In this dialog you can keep track of the users in the QlikView Server/Publisher system, all in one place. The following objects can be controlled: CALs, recipients, Server objects, groups and documents.

User

Enter the name of the user you wish to view or change settings for. Click on the magnifying glass to initiate the search.

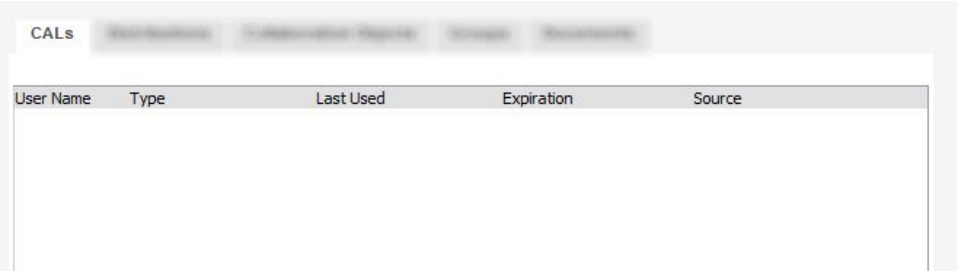
Search in

Select the directory in which you want to search for the user.

The search results are displayed with both the name and the location of the user.

CALs

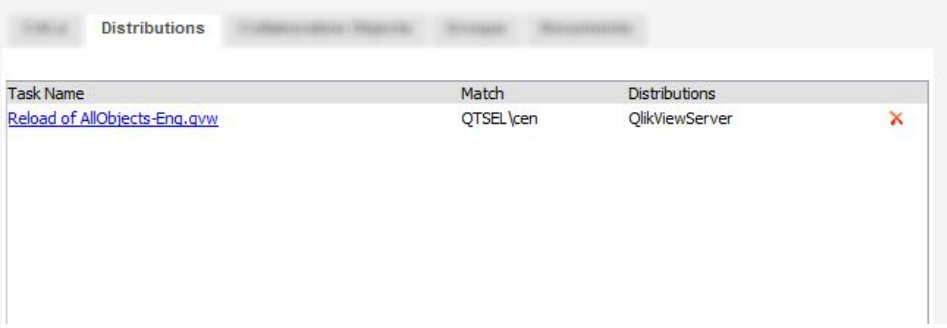
The list displays all the CALs the user is assigned. As administrator you can click on the delete icon to delete the CAL for the user. Note that the CAL will not be available for 24 hours!



The User CALs tab of User Management

Distributions

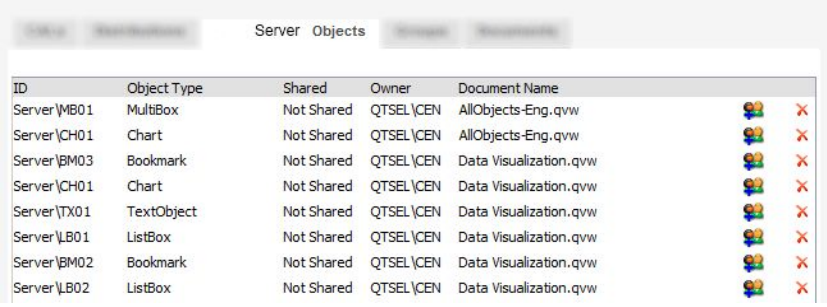
This page displays all the distributions where the highlighted user is a recipient. Click on the task name to edit the task. Click on the red X to remove the task.



The Distributions tab of User Management

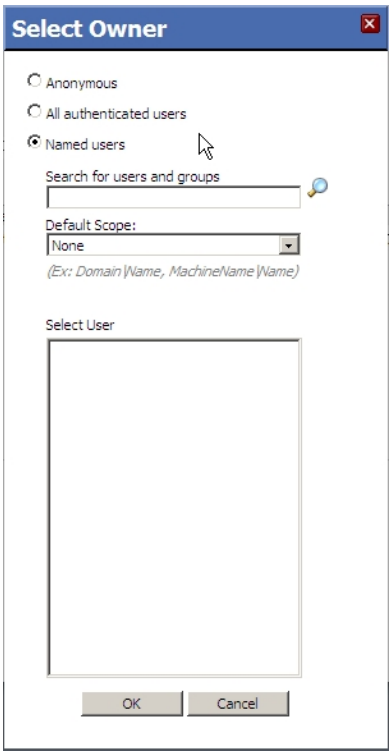
Server Objects

On this page all the Server objects that are owned by the users are displayed. The administrator can change the ownership of them or delete them. Click on the icon to open the **Select Owner** dialog.



The Server Objects tab of User Management

Here you can search for the user you want to assign the ownership.



The Select Owner dialog in User Management

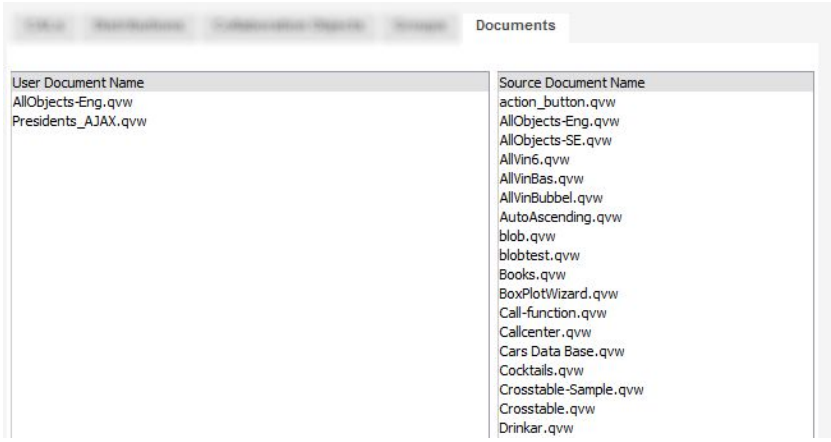
Groups

This page shows all the groups the user is member of. The check boxes on the right displays any QlikView Publisher role(s) the user may have.

The Group tab of User Management

Documents

Here you see the user and source documents that the user has access to.

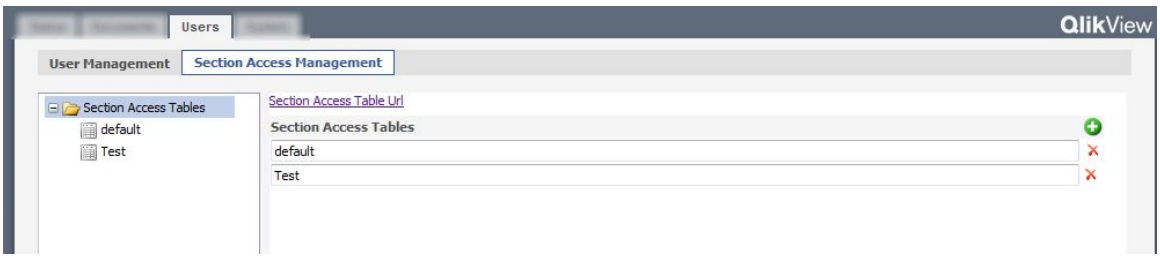


The Document tab of User Management

14.2 Section Access Management

Section Access Tables

In the tree view all the section access tables available are displayed.



The Section Access Management dialog

Section Access Table Url

Click on this link to see the path to and the contents of the different section access tables. Add this url to your load script in QlikView's **Script Editor** in order to se the tables you define here.

Section Access Tables

Click the icon to add a new table and the icon to remove an existing table.

Clicking on one of the section access tables in the tree view on the left will display the settings for that table.

The Section Access Management dialog - a table

In the Section Access table, click the icon to remove a row and the icon to add a new row in the table.

Add Users

Here you can add the users that can use this section access table in the script editor in QlikView Desktop.

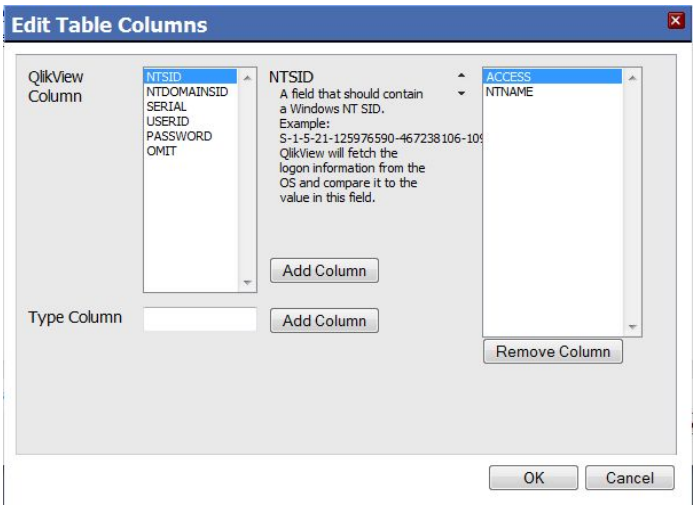
Search for Users in

Set the directory in which to search for users.

Edit Columns...

Opens the **Edit Table Columns** dialog

Edit Table Columns



The Edit Table Columns dialog

In this dialog you can add or remove columns from the section access table.

QlikView Column

The list contains all the possible reserved columns in a QlikView Section Access. Highlight the column you wish to add and click **Add Column**. When a column is highlighted an explanation will be displayed between the available columns and the chosen columns. Click **Remove Column** to remove a column from the table.

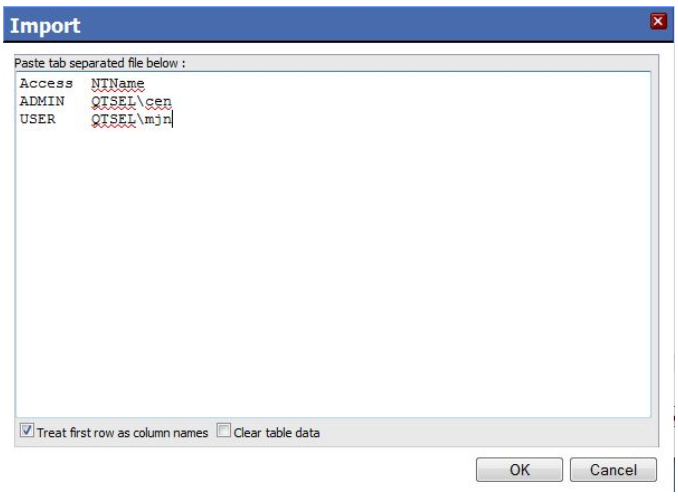
Type Column

Here you can type a name for your own custom column. Click **Add Column** to add it to the list of chosen columns.

Import Table Data...

Opens the **Import** dialog, where you can paste the contents of a tab separated file.

Import



The Import dialog in Section Access Management

Treat first row as column names

The first row in the file are made up of column names.

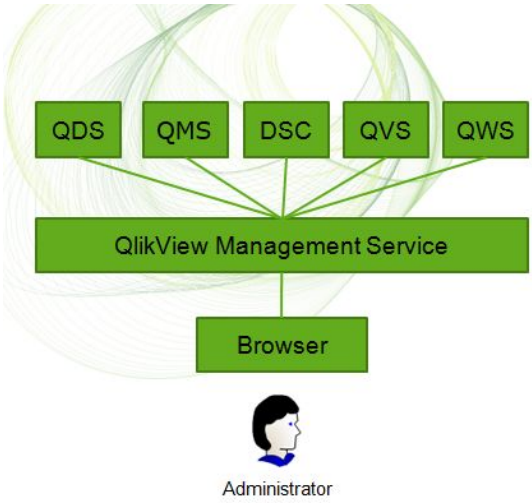
Clear table data

The previously existing data in the table is deleted when the file's content is imported.

Read more about section access on "Authorization Management" on page 207 and in QlikView Reference Manual.

15 System

The **System** tab contains all the settings for the different services in QlikView Server and Publisher.



Overview of infrastructure

QMS - QlikView Management Service

Communicates with all services and hosts the management console graphical user interface.

QDS - QlikView Distribution Service

Prepares and Distributes files.

DSC - Directory Service Connector

Keeps track of the users.

QVS - QlikView Server

Hosts the files for the end user.

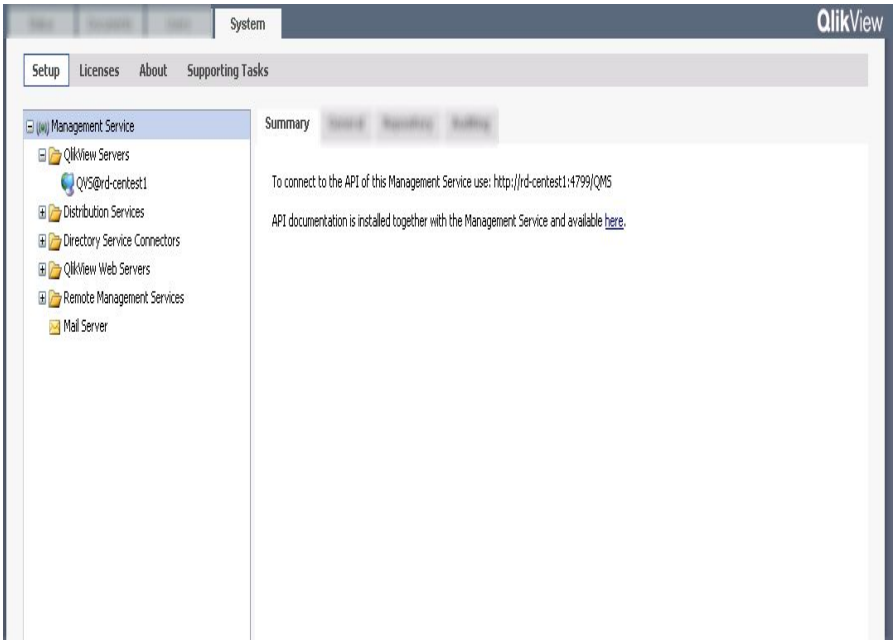
QVWS - QlikView Web Server

Acts as web server for AJAX pages, hosts the AccessPoint and load balances the QVS.

15.1 Setup

Management Service

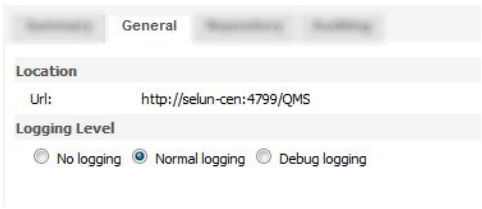
The Management Service is the central coordinating component in QlikView Publisher. It is responsible for maintaining the QlikView Publisher Repository (QVPR) and keeping track of the different components. A QlikView Publisher installation has only one Management Service. The **Summary** page displays the address of the Management Service.



The Summary page for the Management Service

Here you also have a link for the API documentation. The help is in CHM format, which means you must download it and open the file from your hard drive in order to bypass Microsoft CHM file security.

General



The General tab for the Management Service

Location

Set the **Hostname** and the **Port** for the Management Service.

Logging Level

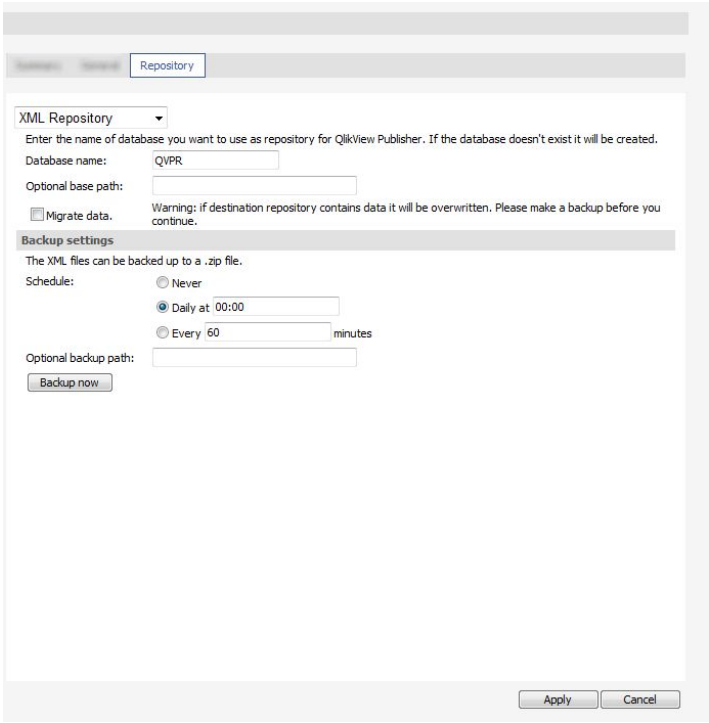
Set the level of logging, **No Logging**, **Normal Logging** or **Debug Logging**.

Repository

The repository, QVPR, is the database containing the information about every QlikView Publisher task. The repository can be either xml based or stored on a Microsoft SQL Server.

Note! The **Repository** tab is only available if you have a QlikView Publisher license.

XML Repository



Settings for XML Repository

Database Name

Enter the name of your repository.

Optional Base Path

The path to the folder where the XML repository should be created. Default path is `C:\ProgramData\QlikTech\Publisher\CommandCenter` in Windows Vista and later and `C:\Documents and Settings\All Users\Application Data\QlikTech\Publisher\CommandCenter\QVPR` for older operating systems.

Note!If the path contains a database with the same name, the data will be overwritten.

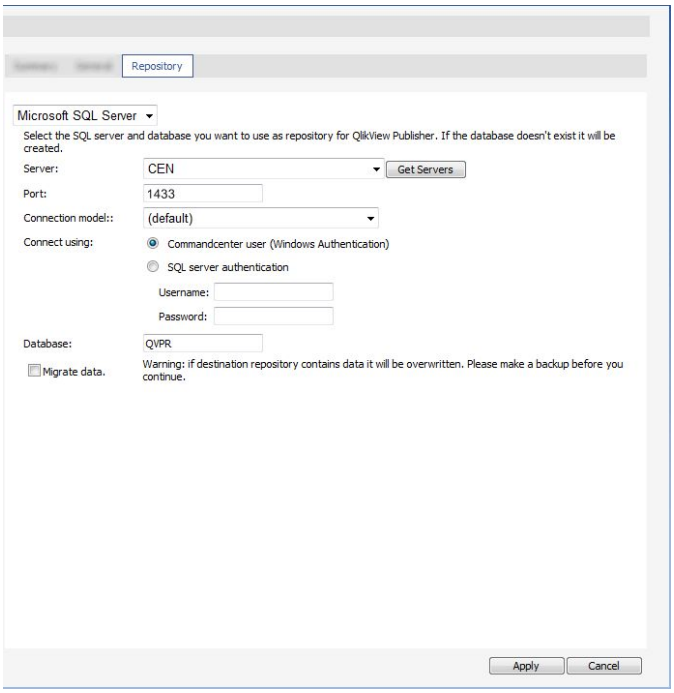
Migrate Data

Mark this check box if you want to migrate data from the current QVPR repository to a new path. When creating a new database, this allows you to move the data from your company database to the new one.

Backup Settings

Here you can configure backup of the repository. The backup is saved as a zip file and uses the timestamp of its creation as name. Change the path to the zip file by entering a path in **Optional Backup Path**. Per default the zip file is saved to the same path as the repository. Click **Backup Now** to create a backup immediately.

Microsoft SQL Server



Settings for Microsoft SQL repository

Server

Click the **Get Servers** button to choose a server from a list of Microsoft SQL Servers that are available on the network.

Port

Set the port for the communication.

Connection Model

Select the protocol that should be used for the communication with the Microsoft SQL Server.

Connect Using

Select the authentication method, **Commandcenter User (Windows Authentication)**, that is the currently logged on user in Windows, or **SQL Server Authentication**.

Database

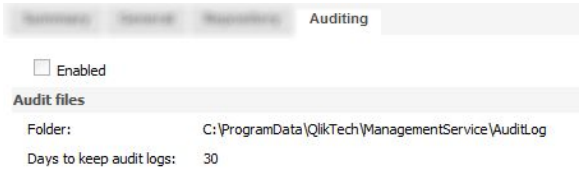
The name of the database on the SQL Server. If a QlikView Publisher database with the same name already exists it will be updated.

Migrate Data

Mark this check box if you want to migrate the data to a new location. When creating a new database, this allows you to move the data from your company database to the new one.

Auditing

Read more about auditing in "Audit Logging" on page 199. Auditing must be turned on in **`QVManagementService.exe.config`**. The configuration file is found in **`C:\Program Files\QlikView\Management Service`**.



The Auditlog tab of the QEMC

Enable

Shows if audit logging is on.

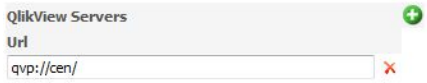
Folder

Displays the path for the logs.

Days to keep audit logs

The number of days the logs are saved. Logs older than the number set here are overwritten by new logs.

QlikView Servers



Overview of QlikView Servers

Highlight QlikView Servers to look at the Servers that are managed by this console. You can also add more Servers by clicking the green plus sign on the right. Highlight one of the Servers to configure it.

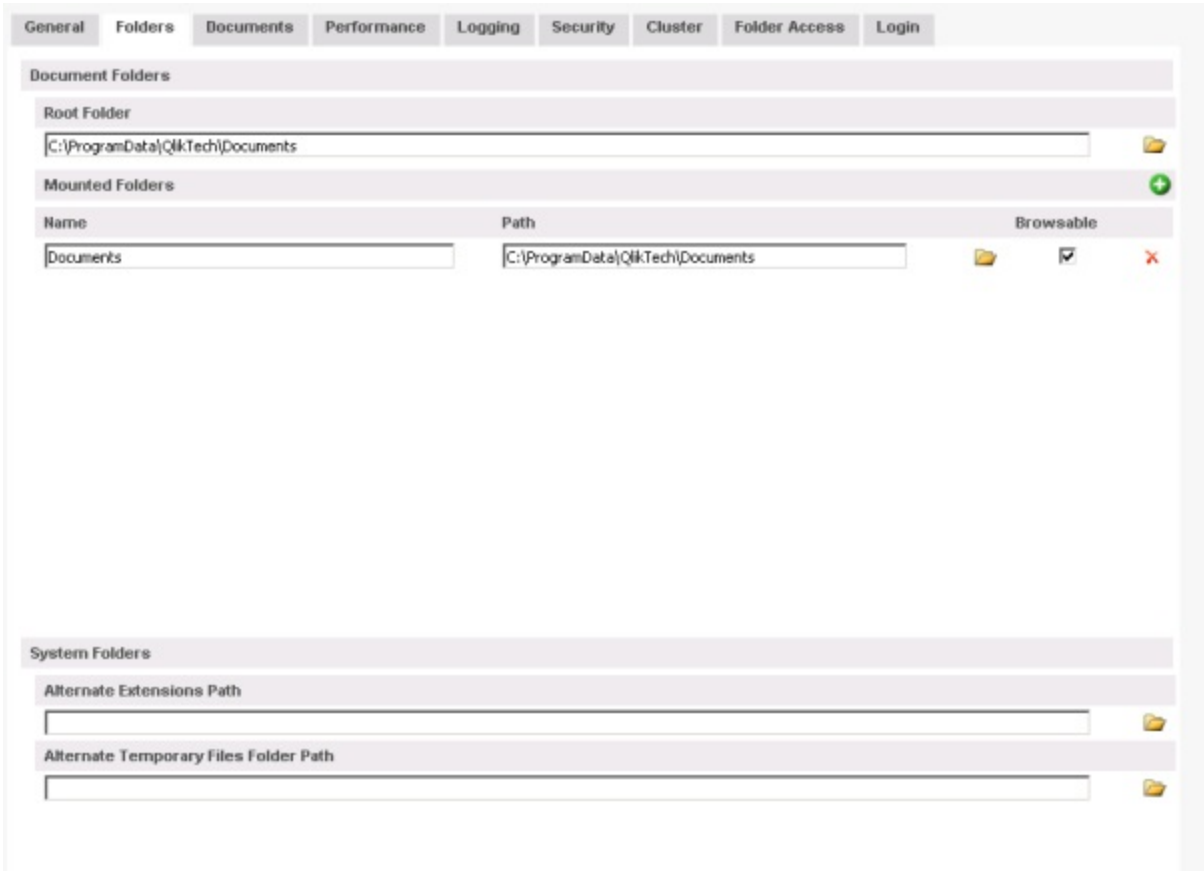
General

The General tab of a QlikView Server

Name

The name of the QlikView Server.

Folders



The Folders tab of a QlikView Server

Document Folders

Root Folder

Enter the path to the QlikView documents that are to be accessed via the Server. This path will typically reflect the default document location. Documents may also reside in subfolders to this folder. Windows file security applies for all access by a client to document folders and files, unless DMS Authorization mode is used. Read more about DMS in "Document Metadata Service (DMS)" on page 181. The default location of the Document folder may differ depending on operating system. Windows Vista and later will install the document folder to **`C:\ProgramData\QlikTech\Documents`**, while older Windows operating systems, such as Windows XP, install to **`C:\Documents and Settings\All Users\Application Data\QlikTech\Documents`** as default.

It is also possible to specify **Mounted Folders**. A folder set here may contain sub folders to any level. Click the green plus sign to add other folders.

Enable **Browsable** if you want the folder and its contents to be browsable from the **Open in Server** dialog in QlikView.

System Folders

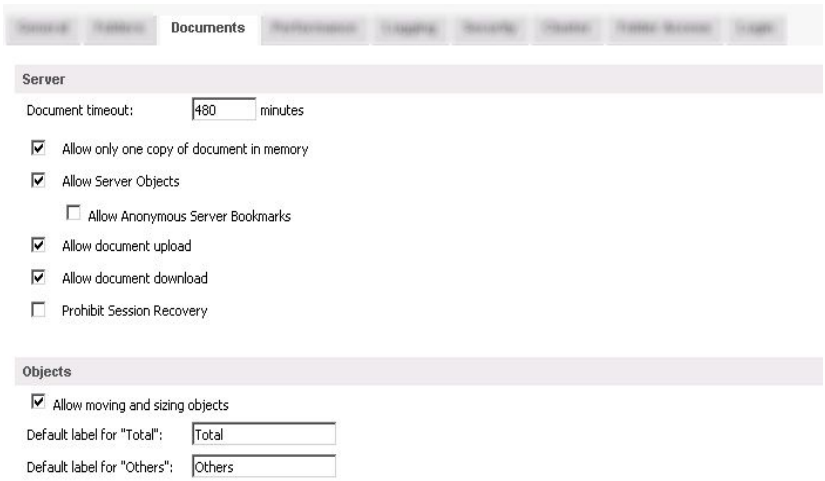
Alternate Extensions Path

Enter the path of, or browse to, the directory where your QlikView Extensions are located.

Alternate Temporary Files Folder Path

If you use clustering/load balancin for your QlikView Server, you must enter an alternate path for temporary files here. The path must be reachable by all Servers in the cluster.

Documents



The Documents tab of a QlikView Server

Server

Document Timeout

The **Document Timeout** value allows you to control for how long a document will be allowed to be unused before the QlikView Server closes the document and reclaims the resources.

A document is a QVW file opened by the QlikView Server. Open documents take up valuable system resources (i.e. RAM) and should not be allowed to remain open when not in use. However, if documents are closed too quickly, the user may see longer delay times when accessing the document while the server reopens it.

Allow Only One Copy of Document in Memory

Mark this check box to allow only one version of the document in memory. If there are changes to the document, a reload or a layout change, a session update might be forced. Allowing only one version of a document will conserve memory resources on the Server.

Allow Server Objects

QlikView Server objects for Bookmarks, Objects and Reports allows sharing of objects between users. Make sure this setting is checked if you want to allow sharing of objects. This setting requires that the QlikView Server object settings **Allow Server Bookmarks**, **Allow Server Objects** and **Allow Server Reports** located on the **Server** tab in the **QlikView Document Properties** dialog is marked.

Allow Anonymous Server Bookmarks

If this setting is checked, anonymous users will be allowed to create bookmarks. The machine ID of the client will be used for ownership. The client must allow persistent cookies to be created.

Allow Document Upload

If checked, this setting will allow new or updated documents to be uploaded to QlikView Server through the Publisher QDS. QlikView Server must be defined as a resource in Publisher. This setting must be turned on if you use Publisher.

Allow Document Download

If checked, this setting will allow documents to be downloaded through the Publisher Access Point.

Prohibit Session Recovery

With this setting active, the users will not be able to recover their sessions when lost.

Objects

Allow moving and sizing objects

Enable this setting to let your users move and resize QlikView objects in the different clients.

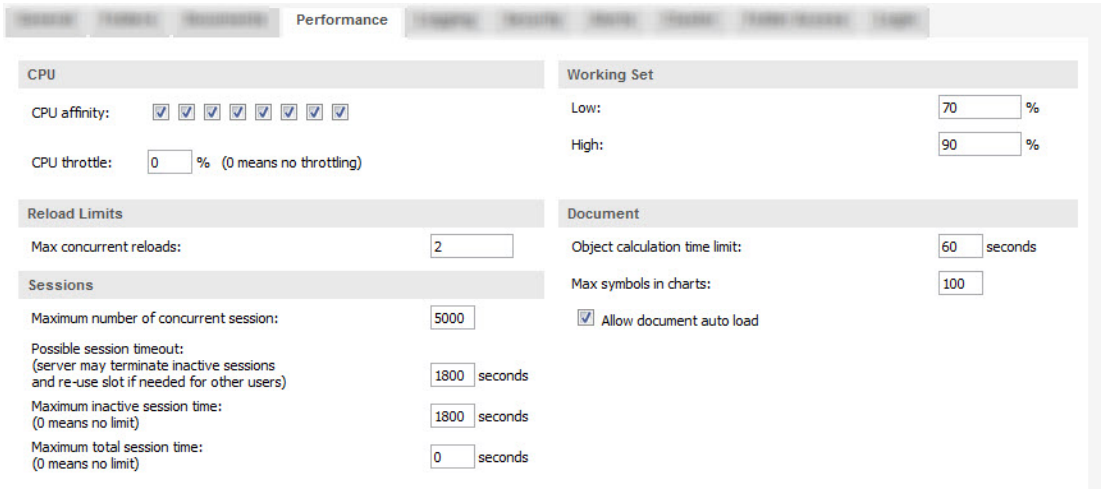
Default Label for "Total"

Here you can specify a default label for Totals in bar charts, pivot tables and straight tables.

Default Label for "Others"

Here you can specify a default label for Others in bar charts and pie charts.

Performance



The Performance tab of a QlikView Server

CPU

CPU Affinity

You may deselect the use of specific processors on the computer running QlikView Server. QlikView Server will automatically select the processors to use and this setting needs to be changed only when you wish to override that choice.

CPU Throttle

Setting a threshold value here will increase or decrease the priority of the QVS process depending on how much CPU capacity the process is utilizing. This will free the CPU for other applications, improving overall performance of the server. 0 % means no throttling. This setting should not be changed if the server is a dedicated QlikView Server server.

Note! If you notice that the CPU utilization for the QVS process exceeds the limit you have set here, it is most likely because Windows has considers more resources available.

Reload Limits

Max Concurrent Reloads

Sets how many documents may be reloaded at any one time. Be careful not to set too many reloads simultaneously as it may degrade overall performance of the computer.

Sessions

Maximum Number of Concurrent Sessions

Sets the maximum number of user sessions allowed on the QlikView Server at one time. A new user session is generated for each document that a user opens on the Server. This setting is unrelated to CAL specifications.

Possible Session Timeout (seconds)

When the session has had no activity for the specified number of seconds, it is eligible to be closed if a new user requests to start a session

Maximum Inactive Session Time (seconds)

If this setting is non-zero, and the session has had no activity for the specified number of seconds, it will automatically be terminated by QlikView Server.

Maximum Total Session Time (seconds)

If this setting is non-zero, all sessions will be limited to the maximum number of seconds as specified. Once the time limit is reached, the session will automatically be terminated by QlikView Server.

Working Set

This control sets the minimum and maximum of the physical amount of RAM that can be used by an application. This way it is possible to control if an application can be swapped out of physical memory or not. However, there are no guarantees that the operating system can serve the process with the amount of memory set here.

Using too high settings will degrade the performance of other processes on the computer, this may however be desirable if the computer is dedicated for QlikView Server. Do not change these settings unless you are well acquainted with Windows Virtual Memory Manager! Read more about working sets in the Microsoft Windows documentation. The settings are:

Low

Sets the minimum amount of memory, in percentage, to be allocated to the application/process. If the use of RAM goes above this limit, Windows is allowed to swap the memory QlikView Server is using to disk.

High

Sets the maximum amount of memory, in percentage, to be allocated to the application/process. If the use of RAM goes above this limit Windows should swap the memory QlikView Server is using to disk.

Note! QlikView Server assumes that it has reserved physical memory up to the **Low** limit.

Document

Object Calculation Time Limit

The **Object Calculation Time Limit** setting specifies the maximum amount of time the QlikView Server will attempt to calculate a chart object. The time is set in seconds of total CPU time. Note that total CPU time is not same as elapsed real time on a computer with parallel processing technology.

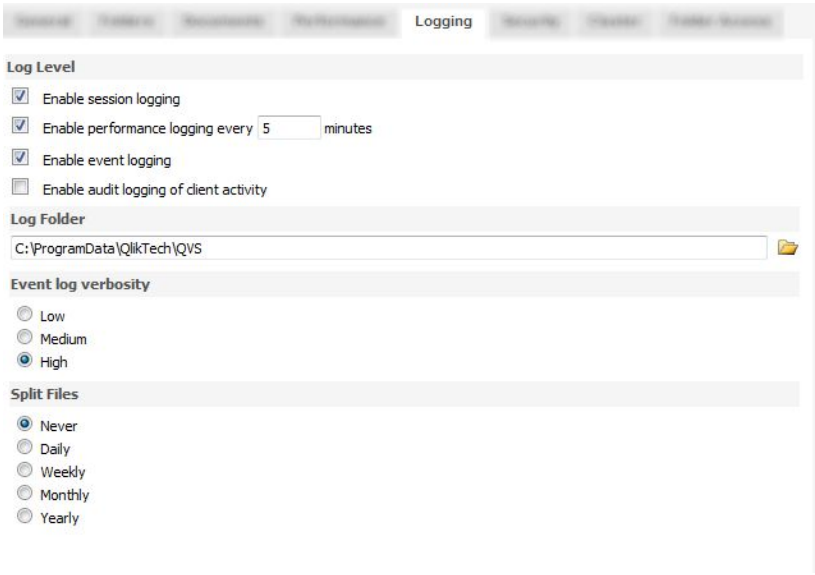
Max Symbol in Charts

Here you can specify a maximum number of symbols to plot in one chart.

Allow Document Auto Load

Check this box to enable automated document loading and unloading.

Logging



The Logging tab of a QlikView Server

Log Level

Enable Session Logging

Mark this check box to enable detailed session logging from QlikView Server. The file will be called Session-Stats.log.

Enable Performance Logging Every *n* Minutes

Mark this check box to enable performance logging from QlikView Server. The file will be called Performance.log. The logging interval can be set between one minute and 24 hours (1440 minutes).

Enable Event Logging

Mark this check box to enable mirroring to a log file of entries from QlikView Server to the Windows event log. The file will be called Events.log.

Enable audit logging of client activity

Enable this setting to log user activity to disk. Read more about audit logging in "The Audit Log" on page 171.

Log Folder

Here you may specify the folder in which QlikView server will create log files. The default is **`C:\ProgramData\QlikTech\QVS`**on Windows Vista and later,**`C:\Documents and Settings\All Users\Application Data\QlikTech\QVS`** on older operating systems.

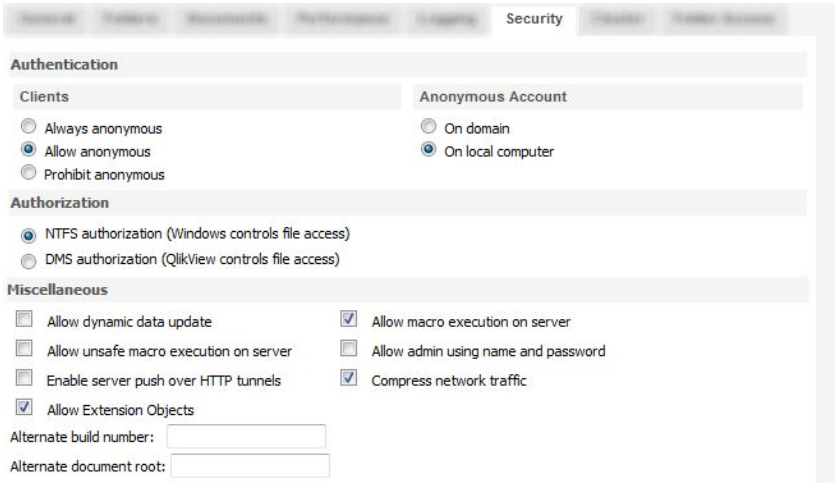
Event Log Verbosity

Use this setting to control how much information will be written to the log files.

Split Files

Set how often you wish to split the log files in order to avoid having enormous files.

Security



The Security tab of a QlikView Server

Authentication

Clients

In this group you select whether the QlikView server should use Windows authentication when possible. It is possible to force anonymous communication (**Always Anonymous**), force authentication (**Prohibit Anonymous**) or to use authentication whenever possible (**Allow Anonymous**). **Allow Anonymous** is the default.

Make sure that this setting is consistent with any security settings that may be specified in the web server virtual directories (e.g. if IIS allows Anonymous, but QlikView Server does not, the client user will get an error message when trying to open the application through the virtual directory).

Anonymous Account

Select whether the anonymous account should be from **on local computer** or **on the domain**. Read more on See "The Anonymous User Account".

Authorization

Choose one of the options in this section to determine the authorization mode that QlikView Server will use when authorizing access to documents. Traditionally, QlikView Server has utilized **NTFS Authorization**, where the Windows Operating System controls access to files for users and groups through NTFS security settings. This is the default authorization mode for QlikView Server.

Choose **DMS Authorization** to utilize the QlikView Server DMS facility to authorize access to documents for users and groups. The QlikView Publisher Directory Services Connector (DSC) must be accessible in order to resolve Group membership. Read more abour DMS on "Document Metadata Service (DMS)" on page 181.

Choose what **Directory Service Connector** to use in the drop-down menu.

Miscellaneous

Allow Dynamic Data Update

Mark the check box if the Server should allow dynamic updates in a document. This setting is by default off. This setting requires a special license.

Allow Macro Execution on Server

Mark this check box if macros should be allowed to execute on the Server. This setting is by default on.

Allow Unsafe Macro Execution on Server

Mark this check box if unsafe macros should be allowed to execute on the Server. This setting is by default off.

Allow Admin Using Name and Password

If you are running QlikView Publisher in a separate Active Directory, you must enable this setting to be able to connect to the QVS service. The account used to connect must be part of the QlikView Administrators group. If this setting cannot be enabled through the QEMC, you can add the setting in the QlikView settings file. The file is located in **`C:\ProgramData\QlikTech\QlikViewServer\`** and is called **`Settings.ini`**. In the **`Settings 7`** section you add **`AllowAlternateAdmin=1`**.

Enable Server Push over HTTP Tunnels

Mark this check box to allow graceful document refresh over HTTP tunnels. This setting is by default on.

Compress Network Traffic

Mark this check box if large packages should be compressed in communication between client and server. It is recommended to uncheck this setting in high bandwidth environments, since the compression routines could require more resource than sending large packages of data over a high bandwidth network.

Allow Extensions

If enabled, this setting will allow QlikView Extensions in the Server documents. See "Adding Extensions to the QlikView Server" on page 157. Read more about QlikView Extensions in the QlikView API Reference Manual.

Alternate Build Number

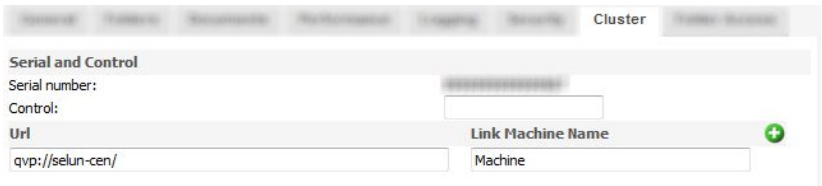
This setting is used when upgrading clustered QlikView Servers. Newer and older Servers will not cluster, but both can use the same cluster license.

Enter the build number for the upgraded QlikView Server in order for it to use the license for the cluster. On the Server that is upgraded you must enter the build number of the older Servers. Read more about clustering on "Load Sharing (Clustering)" on page 183.

Alternate Document Root

Enter the document root for the QlikView Server with the alternate build number. This must be different from the clustered Servers.

Cluster



The Cluster tab of a QlikView Server

Serial and Control

Serial Number

Here you see the Serial Number of you QlikView Server copy.

Control

When you set up a QlikView Server cluster you must enter your control number for your second QlikView Server here.

URL

When setting up a cluster you must enter the path to your second QlikView Server here.

Link Machine Name

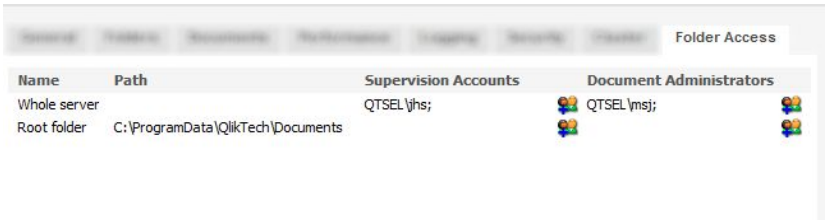
If your QlikView Server cluster is not exposed outward with the same name as is used internally, you must enter your external name here in order for the QlikView Plug-in and the QlikView Java clients to work.

If left empty, the name exposed for the clients will be the computer name of the QlikView Server.

To mimic the behavior of version 8.5, you can enter **`(FromRequest)`** here. The name exposed outward will then be the same as the url the client uses to connect to the AccessPoint, that is the setting is taken from the request coming from the client.

Folder Access

On this tab you can add supervision accounts and document administrators.



The Folder Access tab of a QlikView Server

Click on the respective **Add users** symbol to add users and groups as either **Supervision Accounts** (see "Supervision Accounts") or as **Document Administrators** (see "Document Administrators" on page 200). Give the user access to either the root folder, meaning all folders on the Server, or to a specific folder.

Note! The **System** tab (see "System" on page 107) is unavailable for Document Administrators and Supervisors. This means that they cannot access supporting tasks.

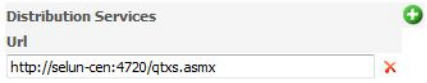
Login

Server Login

If you wish to manage a service installed on a different computer, enter the **Username** and **Password** of a user that is member of the **QlikView Administrators** group on that machine here.

Distribution Services

The Distribution Service is the component that is responsible for performing the preparation and delivery of the QlikView files. A QlikView Publisher installation can contain many Distribution services located on different machines.



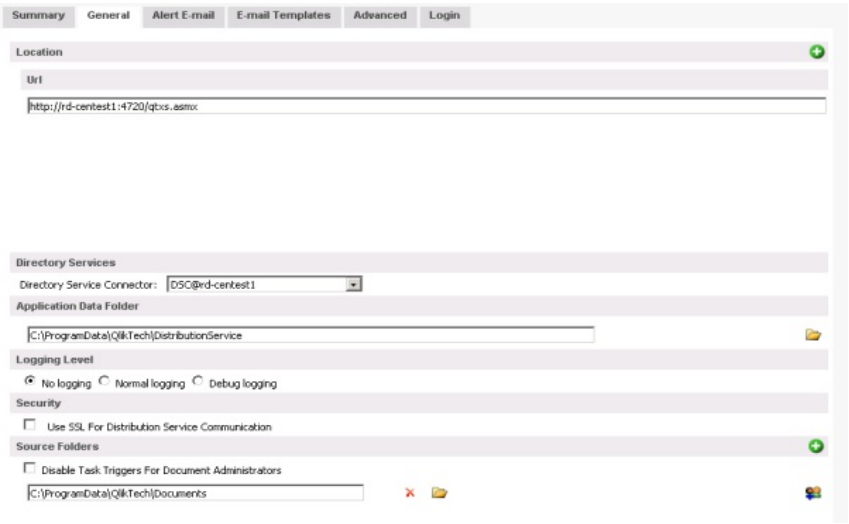
Distribution Services

Highlight **Distribution Services** to look at the services that are managed by this console. You can also add more by clicking the green plus sign on the right. Highlight one of the services to configure it.

Summary

Contains the address to the Distribution Service

General



The General tab for the Distribution Service

Location

Url

The url to the computer where the Distribution Service is running.

Directory Services

Choose what **Directory Service Connector** to connect to.

Application Data Folder

The path to the folder where data for the Distribution Service are saved. You will need to change this setting if you are clustering your distribution services. This setting may also be changed through a command line parameter. "Reloading a file from the command line" on page 195. Edit the **`datapath`** parameter.

Logging Level

Set the log level for the service to **No Logging**, **Normal Logging** or **Debug Logging**.

Security

Use SSL for Distribution Service Communication

Activate the setting to use secure socket layer communication for the distribution service.

Source Folders

Disable Task Triggers for Document Administrators

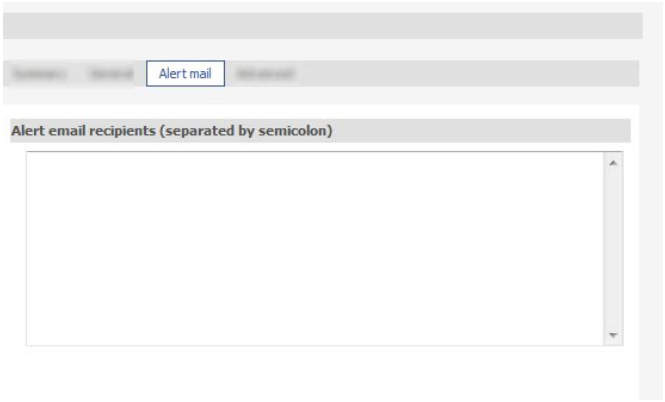
With this setting enabled your document administrators will not be able to activate any triggers when creating or editing tasks and triggers.

Path

Enter the path to the Source Documents. These are QlikView documents that contain data that is to be made accessible to end-users in the form of Distributed Documents. The default path to the source documents are in Windows Vista and later **`C:\ProgramData\QlikTech\Publisher\Sourcedocuments`**, on older operating systmes the path is **`C:\Documents and Settings\All Users\Application Data\QlikTech\Publisher\sourcedocuments`**. Click the green plus sign to add more **Source Folders**.

Add document administrators to your mounts by clicking the icon. Read more about document administrators in "Document Administrators" on page 200.

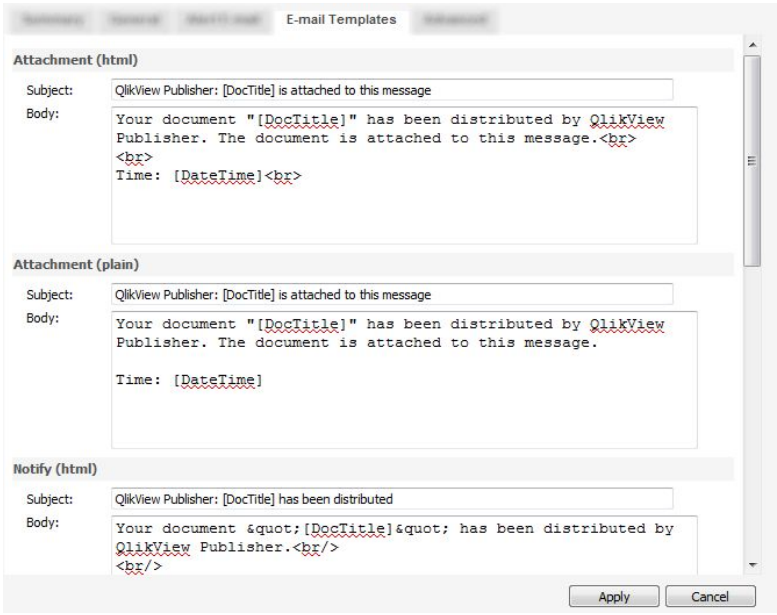
Alert E-mail



The Alert e-mail tab for the Distribution Service

Enter the e-mail addresses for those who should receive alert e-mails from the QDS, use semicolon as separator.

E-mail Templates



The E-mail Template tab for the Distribution Service.

On this page you can create e-mail templates for the different messages that can be sent from QlikView Publisher. The different messages include: **Attachment** (html and plain text), **Notify** (html and plain text) and **Alert** (html and plain text). You can edit the contents of the templates using html.

The following variables can be used (the variable must be inside square brackets):

[DocTitle] - The title of the QlikView document

[DateTime] - The current date and time

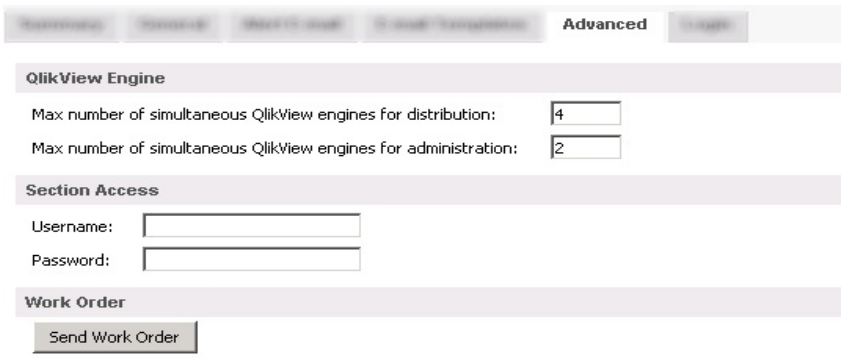
[Location] - The QlikView Server/folder to which the document has been distributed

[ResourceName] - The Publisher resource to which the document has been distributed

[TaskName] also [JobName] - The name of the task

[Log] - The log of the task.

Advanced



The Advanced tab for the Distribution Service

Set how the QDS should handle the QlikView engine (QVB.exe).

QlikView Engine

Max Number of Simultaneous QlikView Engines for Distribution

Set the number of QVBs that the QDS can send tasks to simultaneously.

Max Number of Simultaneous QlikView Engines for Administration

Set how many simultaneous QVBs the QDS can use for the management of tasks in QMC/QEMC.

Section Access

This setting allows you to select what **username** and **password** the Distribution Service will use when opening QlikView documents. The default value is that the service will use the Windows credentials that are set for the service itself in Windows computer management console. Read more about section access on "Section Access" on page 207.

Work Order

Click **Send Work Order** to send a work order to the designated Distribution Service.

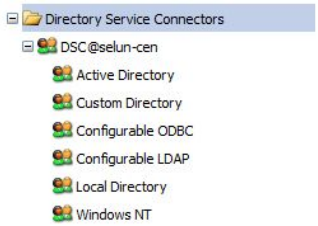
Login

Server Login

If you wish to manage a service installed on a different computer, enter the **Username** and **Password** of a user that is member of the **QlikView Administrators** group on that machine here.

Directory Service Connector

The Directory Service Connector is responsible for communicating with the Directory Service that keeps track of all the users and groups in your environment.

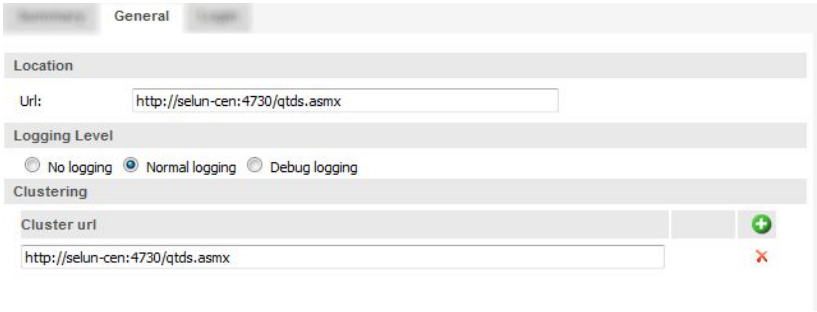


Directory Service Connectors managed by this QEMC

Highlight **Directory Service Connectors** to look at the connectors that are managed by this console. You can also add more by clicking the green plus sign on the right. Highlight one of the connectors to configure it.

The **Summary** page gives the address of the Directory Service Connector.

General



The General tab for the Directory Service Connector

Location

Set the location of the Directory Service Connector using the **Host Name** and **Port** fields.

Logging Level

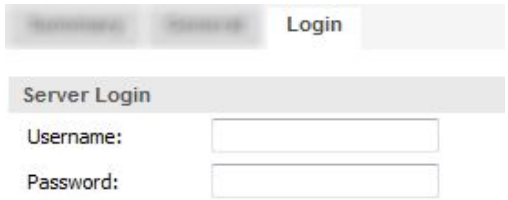
Set the log level to **No Logging**, **Normal Logging** or **Debug Logging**.

Clustering

Cluster url

When setting up a cluster you must enter the path to your other Directory Service Connectors here.

Login

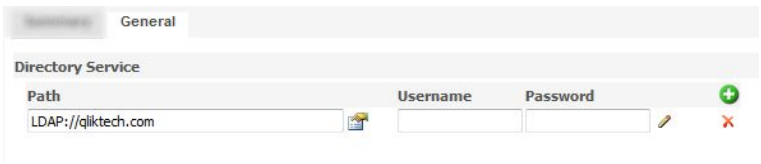


Server Login

If you wish to manage a service installed on a different computer, enter the **Username** and **Password** of a user that is member of the **QlikView Administrators** group on that machine here.

Active Directory

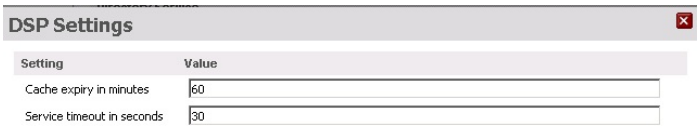
General



The General tab for the Active Directory

Set the **Path** to the active directory service and enter the **Username** and **Password** used for accessing it.

Click the settings icon ( ) to open the settings dialog:



The Directory Service Provider settings dialog for Active Directory

Cache Expiry in Minutes

Set how long the queries to Active Directory should be cached.

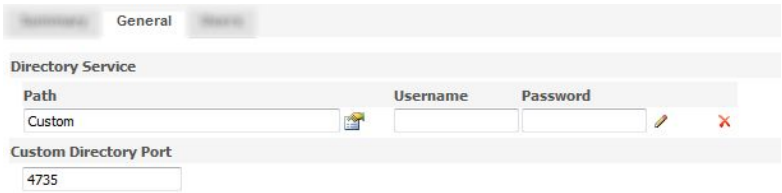
Service Timeout in Seconds

Set the time-out for the service's connection to the Active Directory.

Custom Directory

No Custom Directory is installed as default. In order to use Custom users you must first add a Directory Service Provider for custom users.

General



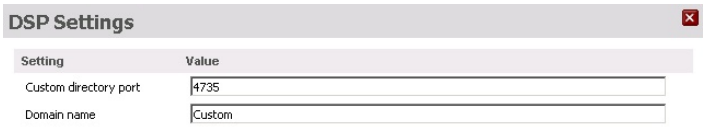
The General tab for the Custom Directory

Path

The path to the directory service. Press the  icon to use the default path or click on the green add icon to add a new directory service.

Enter the **Username** and **Password** used for accessing the directory service if needed.

Click the settings icon ( ) to open the settings dialog:



The Directory Service Provider settings dialog for custom users

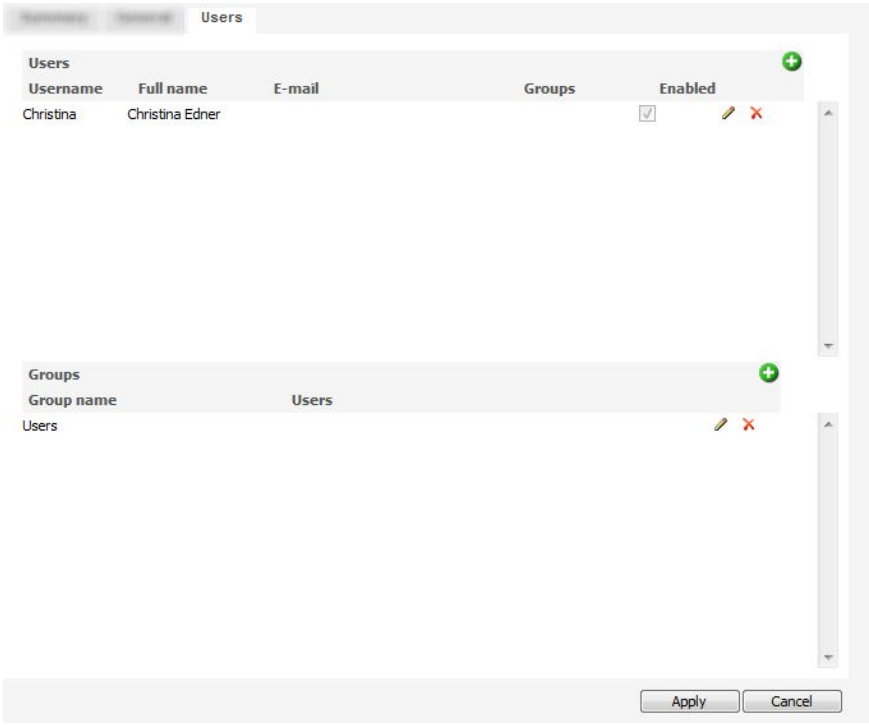
Domain Name

Enter the name of the domain for your custom users.

Custom Directory Port

The port for the custom directory.

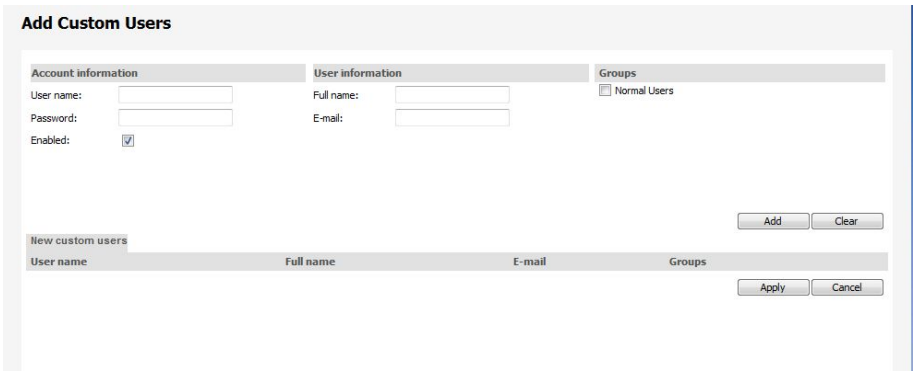
Users



The Users tab of the Custom Directory

Click the green plus sign to add **Custom Users** and **Groups**.

Add Custom Users



The Add Custer Users dialog

Account Information

User Name

Enter the user name.

Password

Set a password for the user.

Enabled

Mark this check box to enable the user.

User Information

Full Name

Enter the full name of the user.

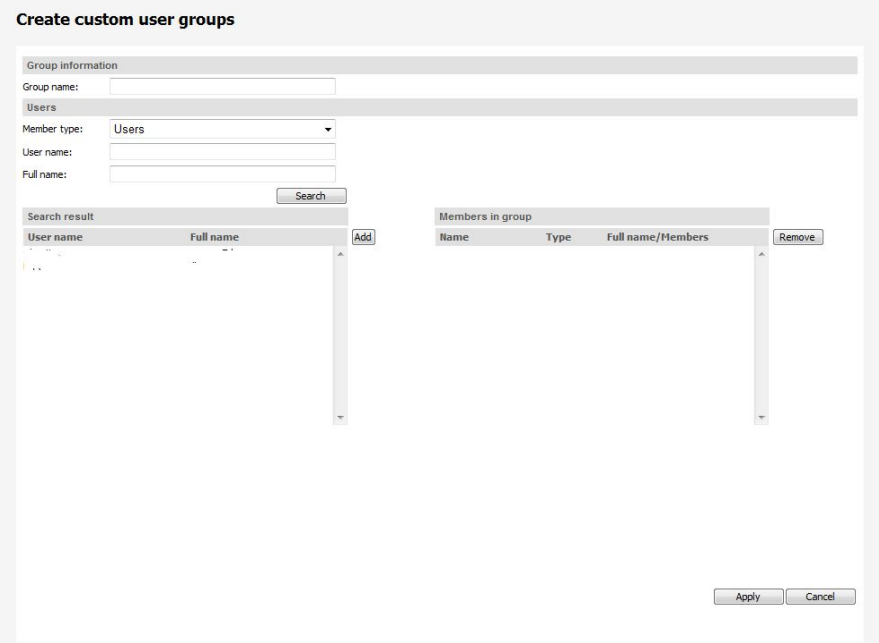
E-mail

Enter the e-mail address of the user.

Groups

Mark the check boxes for the groups that the user should belong to.

Create Custom User Groups



The Create custom user groups dialog

Group Information

Group Name

Enter the name of the new group.

Users

Member Type

Choose to add **Users** or **Groups** to the new group.

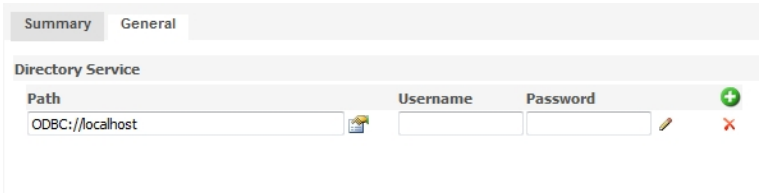
Use the fields below to search for users or groups to add to the new group.

The information about custom users and groups is saved in `C:\ProgramData\QlikTech\DirectoryServiceConnector\CustomDataDirectory.xml`.

Configurable ODBC

Read more about configuring the ODBC database in "Configurable ODBC" on page 255 in the Appendix.

General



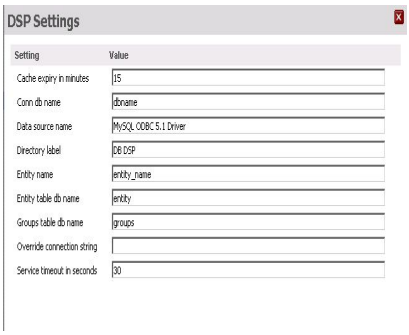
The General tab of the Configurable ODBC settings

Path

The path to the directory service. Press the icon to use the default path or click on the green add icon to add a new directory service.

Enter the **Username** and **Password** used for accessing the directory service.

Click the settings icon ( ) to open the settings dialog:



The Directory Service Provider settings dialog for configurable ODBC

Cache Expiry in Minutes

Set how long the queries to ODBC database should be cached.

Connection Database Name

The name of the ODBC database you wish to connect to.

Data Source Name

The name of the ODBC driver.

Directory Label

The label of the directory service you are connecting to.

Entity Name

The name of the entity.

Entity Table Database Name

The name of the entities table.

Groups Table Database Name

The name of the groups table.

Override Connection String

The string entered here will be used and the settings in **Connection Database Name**, **Data Source Name**, **Username** and **Password** will be ignored.

Service Timeout in Seconds

Set the time-out for the service's connection to the ODBC.

Configurable LDAP

This directory service provider can connect to any generic LDAP.

General

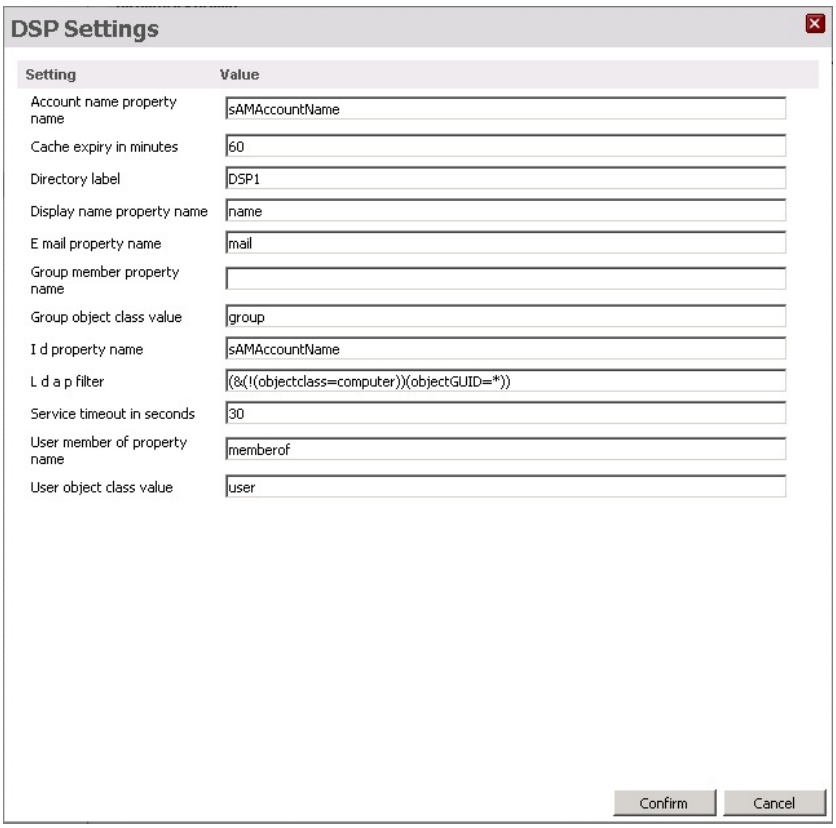
The General tab of the Configurable LDAP settings

Path

The path to the directory service. Press the icon to use the default path or click on the green add icon to add a new directory service.

Enter the **Username** and **Password** used for accessing the directory service.

Click the settings icon ( ) to open the settings dialog:



The Directory Service Provider settings dialog for configurable LDAP

Account name property name

The property containing the account name of the node.

Cache expiry in minutes

How long the queries to the LDAP are cached.

Display name property name

The property containing the display name of the node.

Directory Label

The unique name of the Directory Service Provider instance.

E-mail property name

The property containing the e-mail of the node.

Group member property name

The property that identifies the users in a group.

Group object class value

The class value for the LDAP group object.

ID property name

The property containing ID of a node.

Ldap filter

The LDAP filter to use when searching user objects.

Service timeout in seconds

The time-out for the service's connection to the LDAP server.

User member of property name

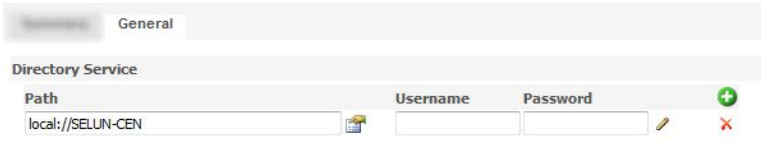
The property value that specifies what group(s) the user is member of.

User object class value

The class value for the LDAP user object.

Local Directory

General



The General tab of the Local Directory settings

Path

The path to the directory service. Press the icon to use the default path or click on the green add icon to add a new directory service.

Enter the **Username** and **Password** used for accessing the directory service.

Click the settings icon ( ) to open the settings dialog:

The Directory Service Provider settings dialog for local directory

Cache Expiry in Minutes

Set how long the queries to local directory should be cached.

Windows NT

General

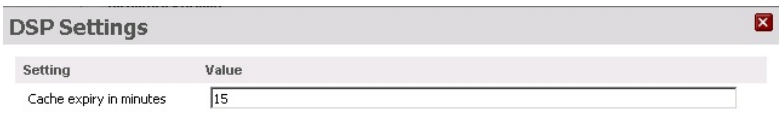
The General tab of the Windows NT settings

Path

The path to the directory service. Press the icon to use the default path or click on the green add icon to add a new directory service.

Enter the **Username** and **Password** used for accessing the directory service.

Click the settings icon ( ) to open the settings dialog:



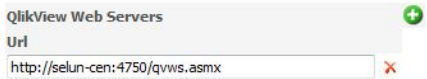
The Directory Service Provider settings dialog for Windows NT

Cache Expiry in Minutes

How long the queries to Windows NT directory are cached.

QlikView Web Services

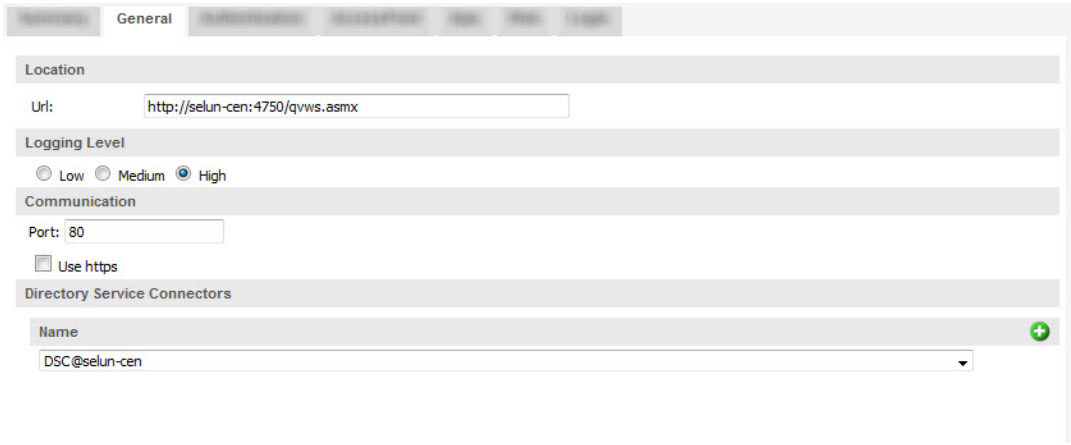
The QlikView Web services are responsible for the AccessPoint, load balancing, AJAX pages and the QlikView Web Server.



The QlikView Web Server managed by this QEMC

The **Summary** page contains the address of the service.

General



The General tab for QlikView Web Server

Location

Set the location of the QlikView Web Server using the **Url** field.

Logging Level

Set the log level to **No Logging**, **Normal Logging** or **Debug Logging**.

Communication

Port

The port number that the web server will use.

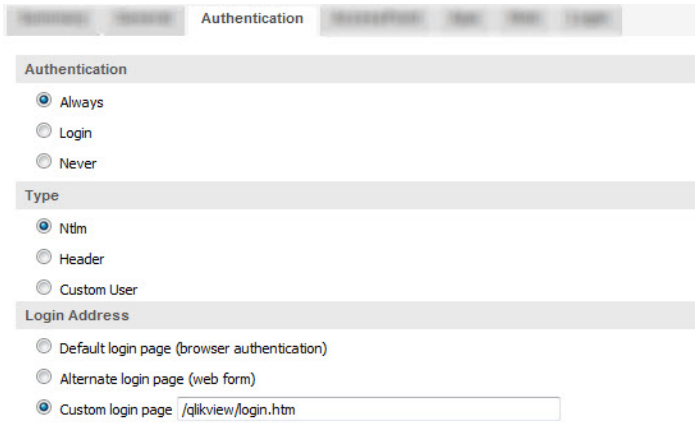
Use https

Enable this check box if all communication should go through secure http.

Directory Service Connectors

Enter the URL address for the QlikView Publisher Directory Service Connector (DSC). This must contain a valid address for the active DSC in order to resolve Group membership when using DMS Authorization.

Authentication



The Authentication tab

Authentication

Sets how the client should access the AccessPoint.

Always

The client must log in to the AccessPoint.

Login

The client can login, but can access the AccessPoint even without login in.

Never

The AccessPoint only accepts anonymous users.

Type

Choose the what type of authentication to use:

Ntlm

Uses the Microsoft authentication protocol.

Header

Uses a http header specified under **Parameters**.

Custom User

Uses the custom user Directory Service Provider.

Parameters

Header Name

Available only if **Header** is selected in the **Authentication** group. If you use a customized login system, you must specify the http header here in order for the AccessPoint to understand the login process.

Prefix

Available only if **Header** is selected in the **Authentication** group. Enter the prefix used for the header.

Prefix

Available only if **Custom User** is selected in the **Authentication** group. Enter the prefix used for custom users.

Login Address

If using custom users, you must specify an address to your login page.

Default Login Page (browser authentication)

Uses the web browsers login prompt.

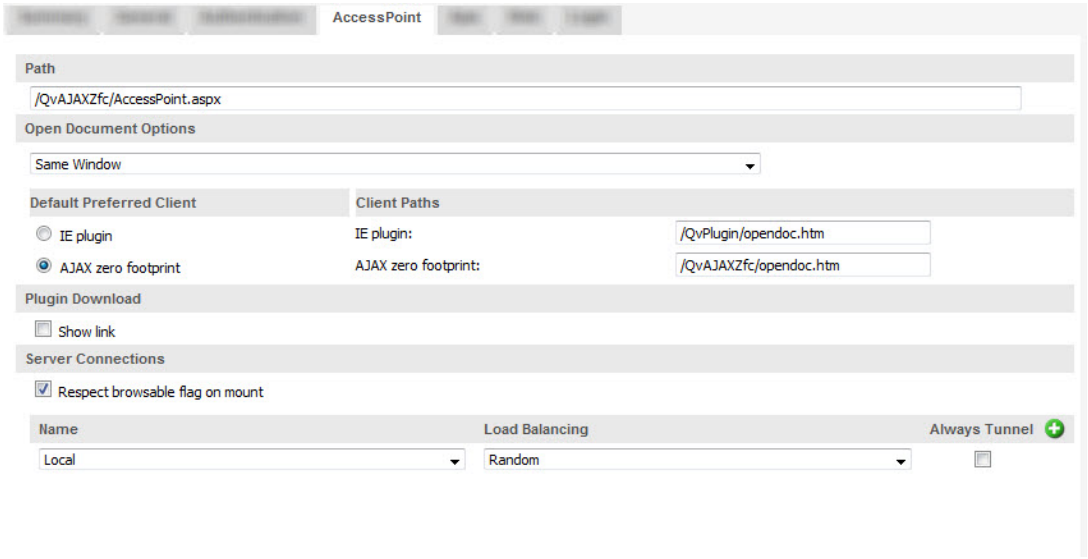
Alternate Login Page (web form)

A web page is used for login.

Custom Login Page

Your own custom login page is used for logging in. Enter the path to the page in the field.

AccessPoint



The AccessPoint tab

Path

Add the path to the AccessPoint.

Open Document Options

Reuse New Window

Opens the QlikView document in a new browser window. The next QlikView document that is opened will use the same window.

Same Window

Opens the QlikView document in the same browser window as the AccessPoint.

New Window

Opens each QlikView document in a new browser window.

Default Preferred Client

Set which client should be set as preferred client for a user's first visit to the AccessPoint for clients.

Client Paths

Enter the paths to where the different client files are located for the **IE Plugin** and **Ajax zero footprint** clients.

Plugin Download

Check the **Show Link** check box if you want the link for downloading the plugin to be visible on the AccessPoint.

Server Connections

Respect blowsable flag on mount

With this setting enabled, only those mounts in the QVS that are set as **Browsable** will be displayed on the AccessPoint.

Name

Choose which QlikView Server to view in the drop-down menu.

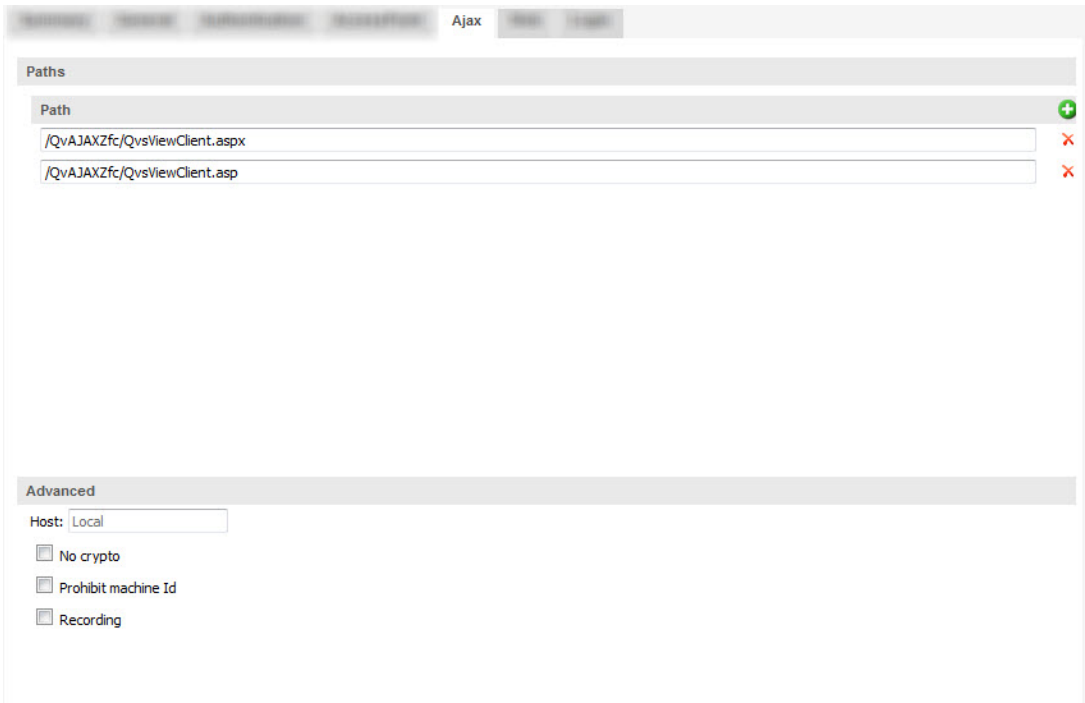
Load Balancing

Set how the load balance should be calculated. Possible values are **Random**, where the client is directed to a QVS at random, or **LoadedDocument**, where the client is directed to the QVS where the document the client requests already is loaded.

Always Tunnel

Enable the setting to anlways tunnel the communication to the QlikView Server.

Ajax



The Ajax tab

Path

The path to **`QvsViewClient.aspx`**. The path may be changed, but the file names must remain unchanged for the installation to work.

Advanced

Host

The default QlikView Server that the client will connect to.

No Crypto

When enabled, this setting prohibits the use of encryption between the QlikView Web Server and the QlikView Server.

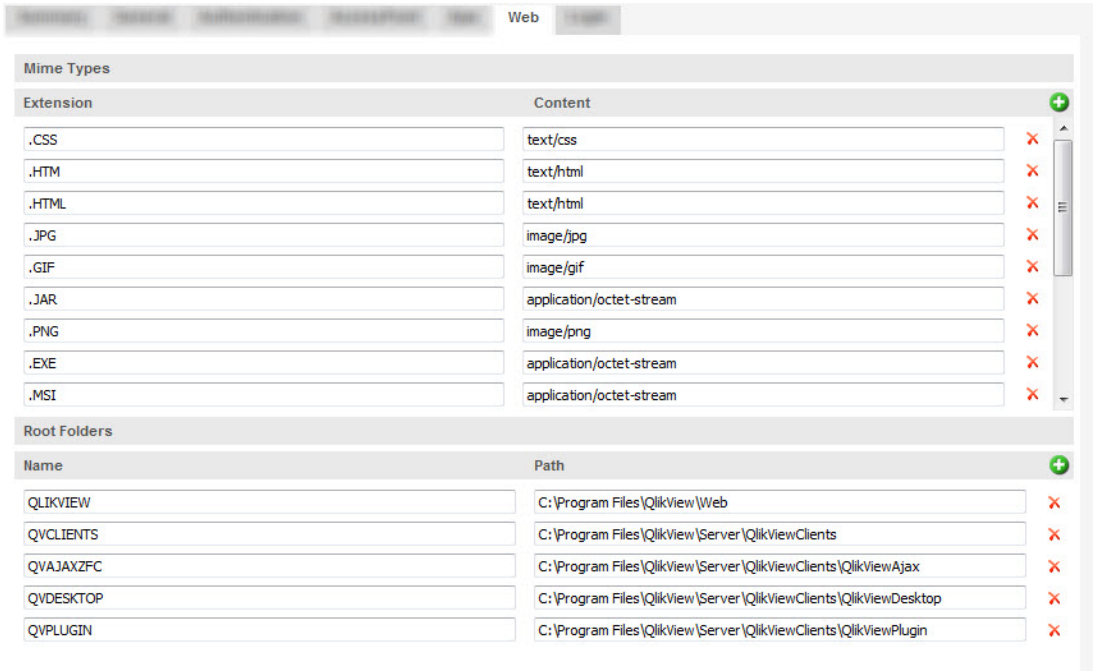
Prohibit Machine ID

Prohibit sending machine id. This will effectively exclude the usage of anonymous bookmarks.

Recording

Logging of qvpx calls for the AJAX zero footprint client.

Web



The Web tab

MimeTypes

Specify what file extensions QlikView Web Server should allow.

RootFolders

The path to the different virtual folders in the QlikView Web Server.

Login

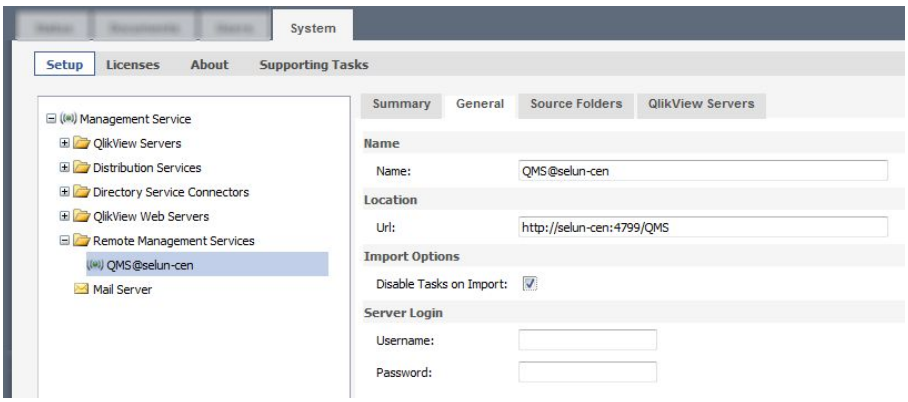
Server Login

If you wish to manage a service installed on a different computer, enter the **Username** and **Password** of a user that is member of the **QlikView Administrators** group on that machine here.

Remote Management Services

Add the remote Servers from which you want to import tasks by entering the **Url** to the Servers' management services. The connection is made as the user you are currently logged in as. The user must be member of the QlikView Management API security group.

General



The General tab of Remote Management Services

Name

The name of the remote connection.

Location

Url

The path to the QlikView Management Services on the remote host.

Import Options

Disable Tasks on Import

Mark this check box to have all the tasks that are imported disabled. This is the default setting.

Source Folders

The Source Folders tab of Remote Management Services

Source Document Folder Mappings

In the **From** and **To** fields you set up the mappings for the souce and target document folders of the different management services.

QlikView Servers

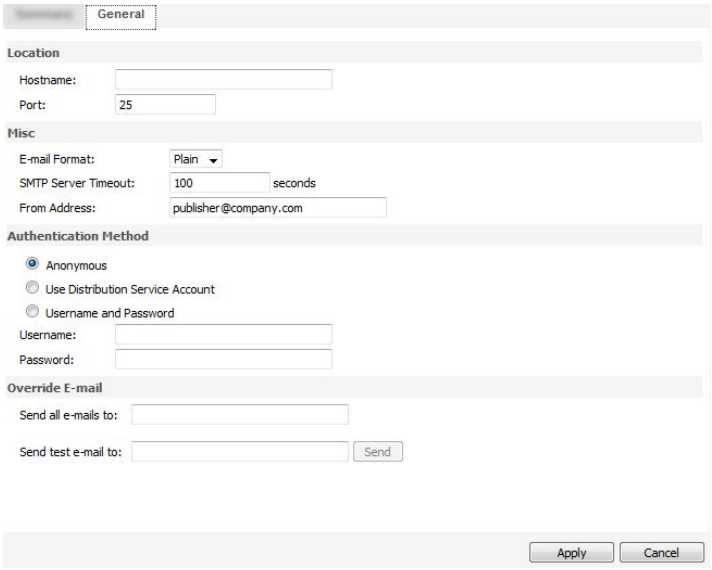
The QlikView Servers tab of Remote Management Services

QlikView Server Mappings

In the **From** and **To** fields you set up the mappings for the source and target QlikView Servers.

E-mail Server

General



The General tab of E-mail Server

Location

Host Name

Set the address to the SMTP server.

Port

Set the port for the SMTP server.

Misc

E-mail Format

Send the e-mail as either **Plain** text och **HTML** message.

SMTP Server Timeout

Set how long the service should wait for a response from the server.

From Address

Set the address of the sender.

Authentication Method

Set how the user should authenticate itself when sending an e-mail, **Anonymous**, **Use Distribution Service Account** or enter **Username** and **Password**.

Override E-mail

Send All E-mails to

Enter an address that should receive all e-mails sent by QlikView Publisher. Only for test purposes.

Send Test E-mail

Enter an address and click the button to test your settings.

Folder Access

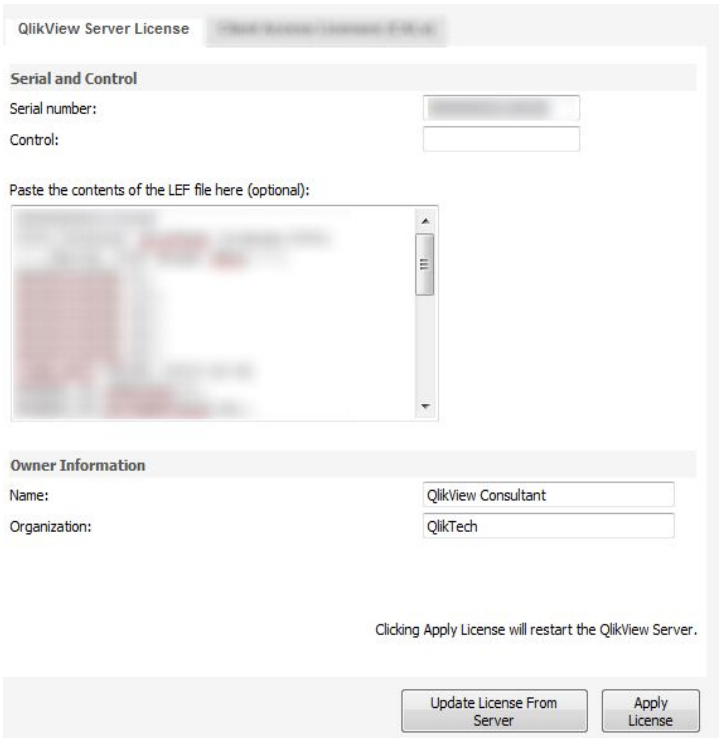
On this tab you add the names of the document administrators that are allowed to distribute via e-mail.

Licenses

The Licenses page

Highlight the product for which you wish to enter a license.

QlikView Server



The QlikView Server License tab

QlikView Server License

Enter the **Serial Number** and **Control Number** assigned to your copy of QlikView Server. You should also enter your **name** and **organization** in the fields provided.

Use the **Update License from Server** to download a new lef file from QlikTech's Lef server. This is primarily used when updating the number of CALs.

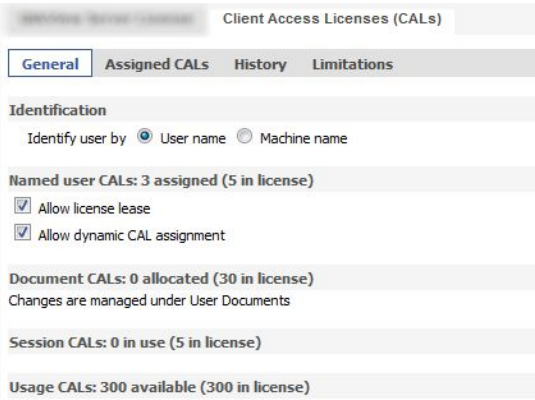
The License Enabler File (lef.txt) for QlikView Server will be automatically written to **`C:\ProgramData\QlikTech`** on Windows Vista and later, and to **`C:\Documents and Settings\All Users\Application Data\QlikTech`** in older operating systems. If for any reason, the LEF information cannot be accessed through the Internet from your server, you can obtain this information from your

vendor, and copy the entire **LEF.txt** file to this location, or paste the LEF data using the corresponding field on this page. Contact your vendor for specific instructions.

Client Access Licenses

These pages display information about the client access licenses that are available on the server.

General



The Client Access License: General tab

Identification

In the **Identify by** group you decide whether named users should be identified via identified **User Name** or via **Machine Name** (actually machine name + MAC address). It is possible to change this setting at any time but it is strongly recommended to use one mode consistently with a given QlikView Server. If changed during operation, the same user can take up two CALs, one based on user name and one on machine name.

The usage by type of CAL and number of CALs defined in the LEF is displayed.

Usage CALs are allocated in full upon license initiation. Then, 1/28th of your total number of usage CALs are replenished daily up to the amount of the total licensed usage CALs available. For example, if you license 56 usage CALs, you should see 2 additional usage CALs allocated daily, minus any used, not exceeding 56.

Allow License Lease (Named User CALs)

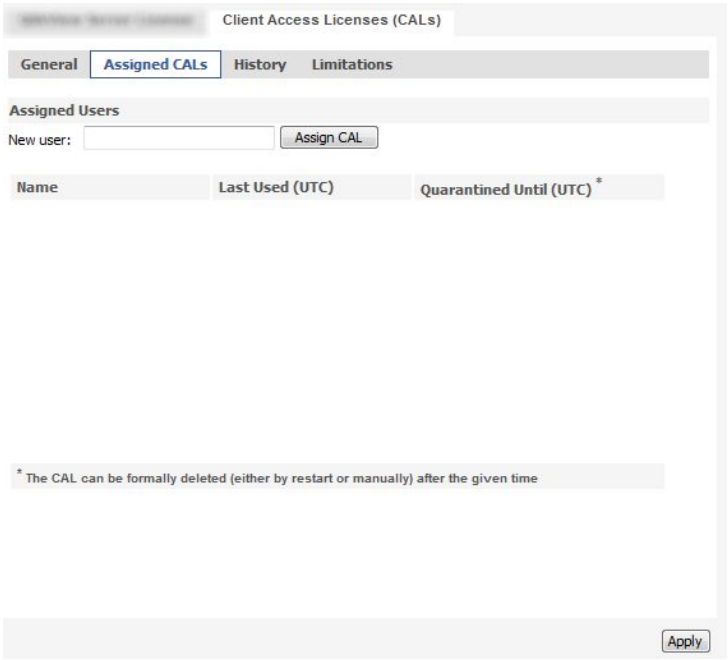
Mark this check box if you want users to be able to “borrow” a license for use off-line for a period of 30 days.

Allow Dynamic CAL Assignment (Named User CALs)

Enable this setting if you wish to add CALs dynamically.

Allow Dynamic CAL Assignment

Assigned Cals



The Client Access License Assigned Cals tab

Assigned Users

The current assignment of CALs is displayed. Document CALs can be either automatically assigned or manually assigned to users by clicking on the **Assign CAL** button, if there is a Document CAL. Note that the allocation of a CAL does not imply security.

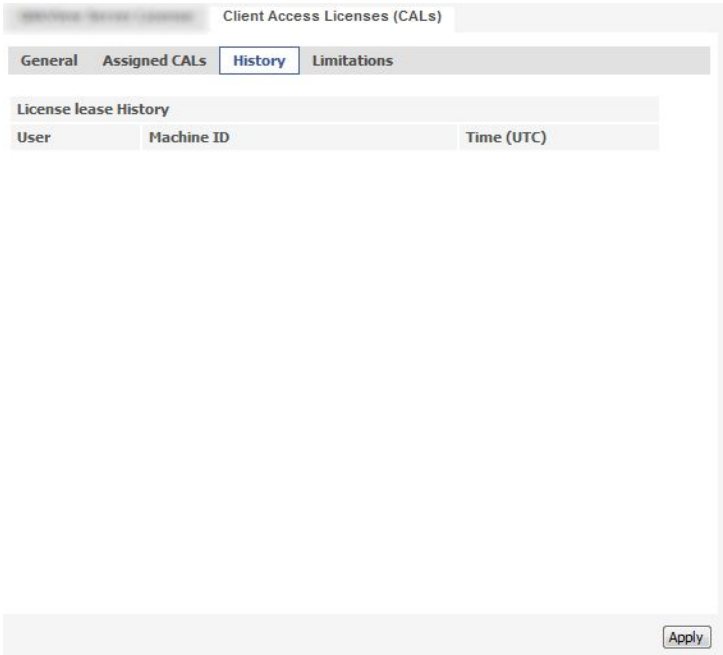
If the **Allow Dynamic CAL assignment** is checked, a new Document CAL will automatically be granted to a user connecting to this QlikView Server for the first time, as long as there are available Document CALs to assign.

The page has a list showing the names of all users currently holding a Document CAL on the document. You can also see the time of the respective user's last activity on the server. A name can be an authenticated user name or a machine name (including MAC address).

To delete an assigned user, thus freeing a Document CAL, click on the **Delete** button ( ). If the CAL has not been in use for the last 24 hours, it will be deleted immediately. If the CAL is currently being used or has recently been used, it will be marked for deletion, and not allow new sessions for user access through this CAL, but will still occupy an allocated CAL until the Quarantine time ends. During this period, you may undelete by clicking the **Restore** button ( ). After the quarantine period, you may delete the entry manually (by clicking on the **Delete** button), or restart the QVS service.

Note! Maintenance of Named CALs does not require a restart of the QlikView Server service.

History

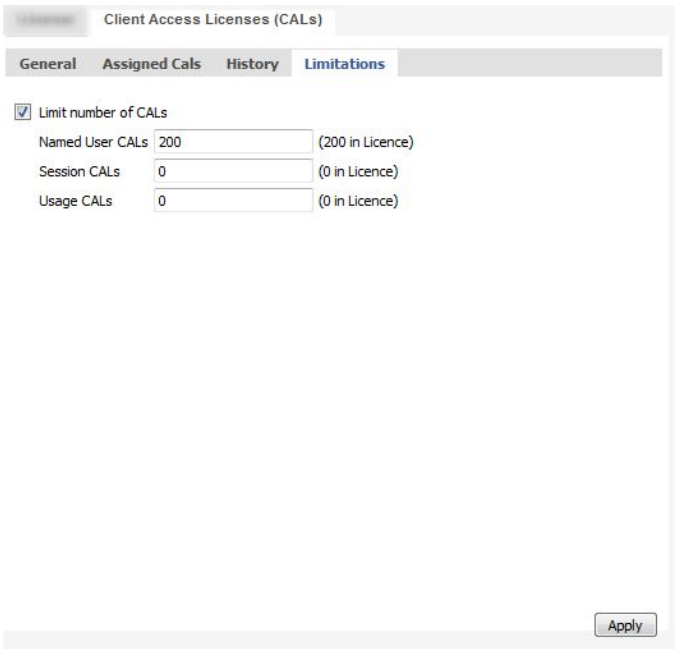


The Client Access License History tab

License Lease History

This section lists current information about leased license activity. A leased license is used by clients who connect to QlikView Server and are allowed to borrow a license to open the downloaded server document for 30 days.

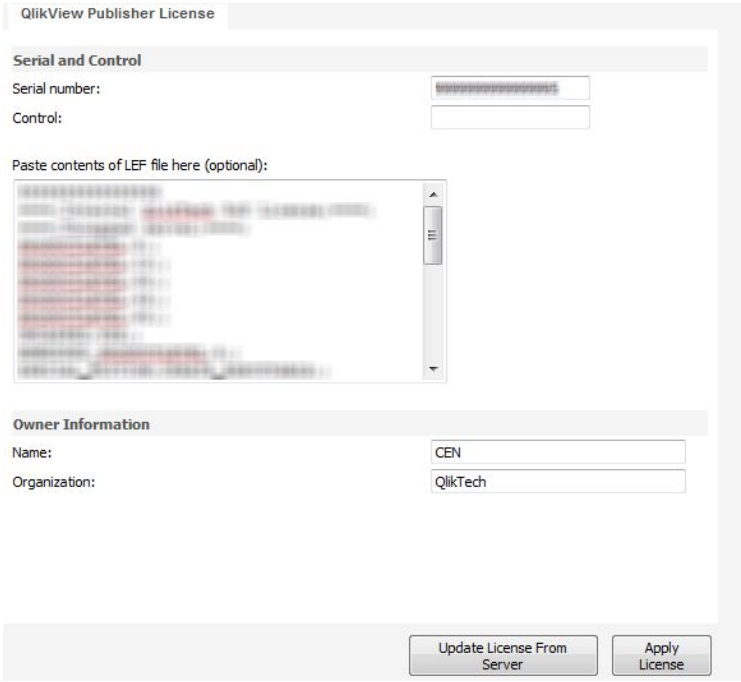
Limitations



The Client Access License Limitations tab

On this page you can limit the number of CALs that may be in use at one time.

QlikView Publisher

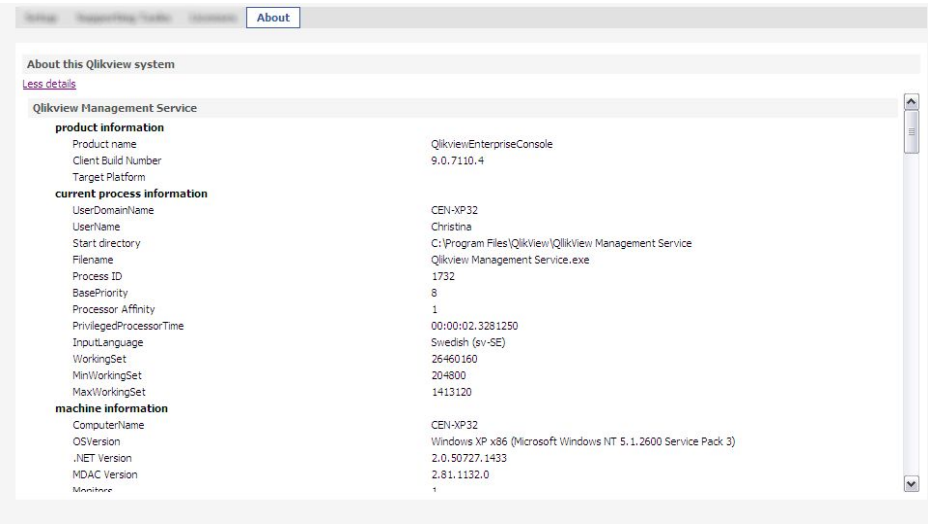


The Qlikview Publisher license tab

Enter the **Serial Number** and **Control Number** assigned to your copy of QlikView Publisher. You should also enter your **name** and **organization** in the fields provided.

The QlikView Publisher LEF file is saved in **`c:\ProgramData\QlikTech\Publisher\CommandCenter\Publisher LEF`** on Windows Vista and later, and on older operating systems it is found under **`c:\Documents and Settings\All Users\Application Data\QlikTech`**. If for any reason, the LEF information cannot be accessed through the Internet from your server, you can obtain this information from your vendor, and copy the entire **`LEF.txt`** file to this location, or paste the LEF data using the corresponding field on this page. Contact your vendor for specific instructions.

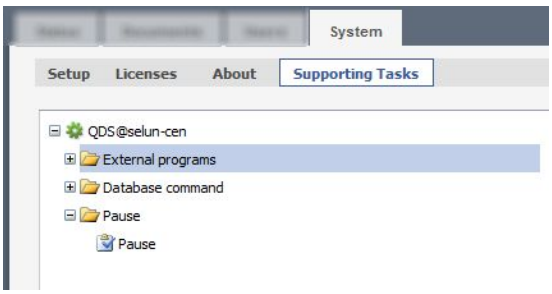
About



The About tab in System

This page displays information about the different services and the computer they run on.

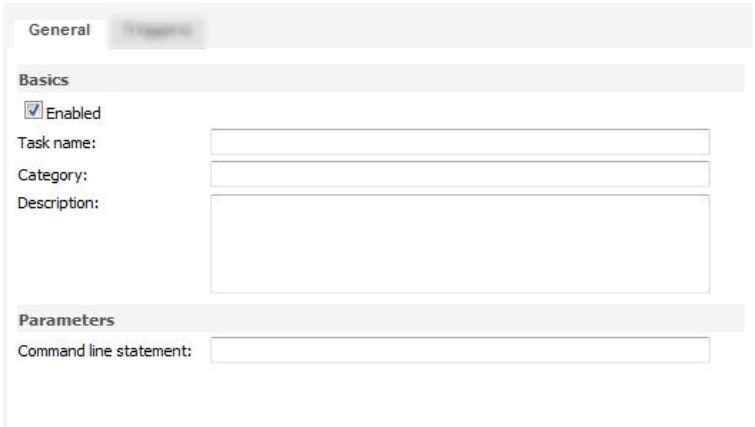
Supporting Tasks



The Supporting Tasks page

External Programs

General



The General tab in External Programs

Enabled

If the check box is is checked the task is activated.

Task Name

The name of the task. All names must be unique within the installation.

Category

Enter a category for the task. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category.

Description

Enter a description of the task.

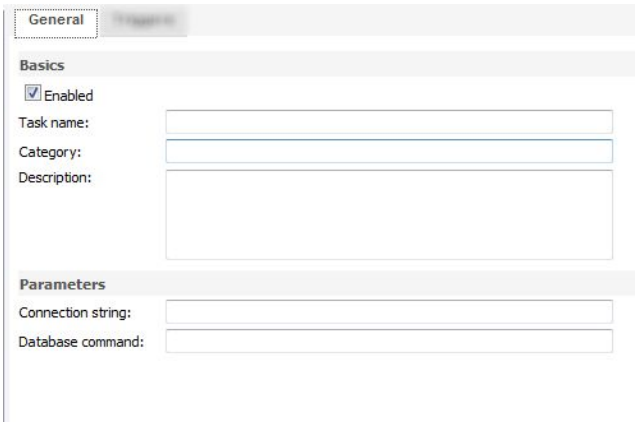
Command Line Statement

The command line statement that will be executed. Please note that you must use quotation marks around your path if it contains a space.

Triggers

See "Triggers" on page 88 for information about **Current Triggers** and **Task Dependencies**.

Database Command



The General tab in Database Command

A Database Command task allows you to run any command against a database

Basics

Enabled

Check the check box to activate the task.

Task Name

The name of the task. All names must be unique within the installation.

Category

Enter a category for the task. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category.

Description

Enter a description of the task.

Parameters

Connection String

The connection string that will be used for connecting to the database.

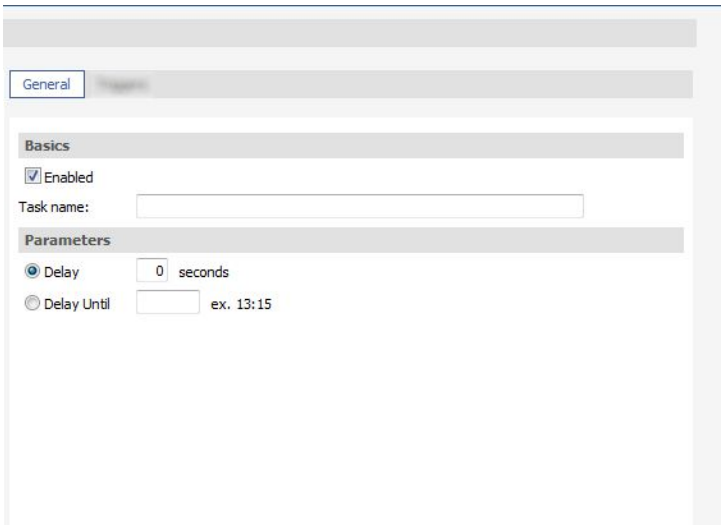
Database Command

The statement that will be executed. This can be any command that the database will recognize (stored procedures or SQL statements).

Triggers

See "Triggers" on page 88 for information about **Current Triggers** and **Task Dependencies**.

Pause



The General tab

Basics

Enabled

Check the check box to activate the task.

Task Name

The name of the task. All names must be unique within the installation.

Category

Enter a category for the task. A category bundles documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint. Each document can only be part of one category.

Description

Enter a description of the task.

Parameters

Delay Seconds

This will pause for *n* seconds.

Delay Until

This will pause until the specified time.

Triggers

"Triggers" on page 88 for information about **Current Triggers** and **Task Dependencies**.

Part 4 QlikView Server

16 Security Set-up

16.1 Communication Encryption

All communication between QlikView Server and Windows based clients is encrypted. QlikView Server will attempt to establish 128-bit encryption based on the RSA algorithm when a client connects. The level of encryption may however be lowered if the operating system of the client computer does not support this strength of encryption.

Communication with the AJAX client can be secured using Secure Socket Layer (SSL) and HTTPS protocol between the web browser and the web server (IIS or the QVS built in http server - QVWS). This requires an additional certificate. Communication between the QVWS and QVS is, by default encrypted starting with 8.5. If IIS is used, encryption is not possible between QVWS and QVS.

Secure communication between QlikView Server and the AJAX client depends on http or https. Between the web browser and QVS, it depends on IIS or the QvWeb Server.

If you require a secure channel (using SSL) for communication with the server, these settings must be made on the web server, either by using the built-in web server or in IIS. For IIS, set this on **Web Site Properties**, **Directory Security**, **Secure Communications**.

For the QlikView Web Server read more in "How to Activate SSL for Services in Windows".

16.2 File System Security on Server

If **DMS Authorization** is not set on the **Security** page in the QMC or QEMC, QlikView Server will only make qvw documents available to a connecting client if the client has an identity with operating system file access rights to that document. The account that the QlikView Server service is running as must have read and execute permissions on both file and directory. See below for details regarding anonymous clients.

Document and folder permissions are set on the **Security** page of the **Properties** dialog for documents and folders respectively. These settings are made entirely in the operating system and not from QlikView or QlikView Server.

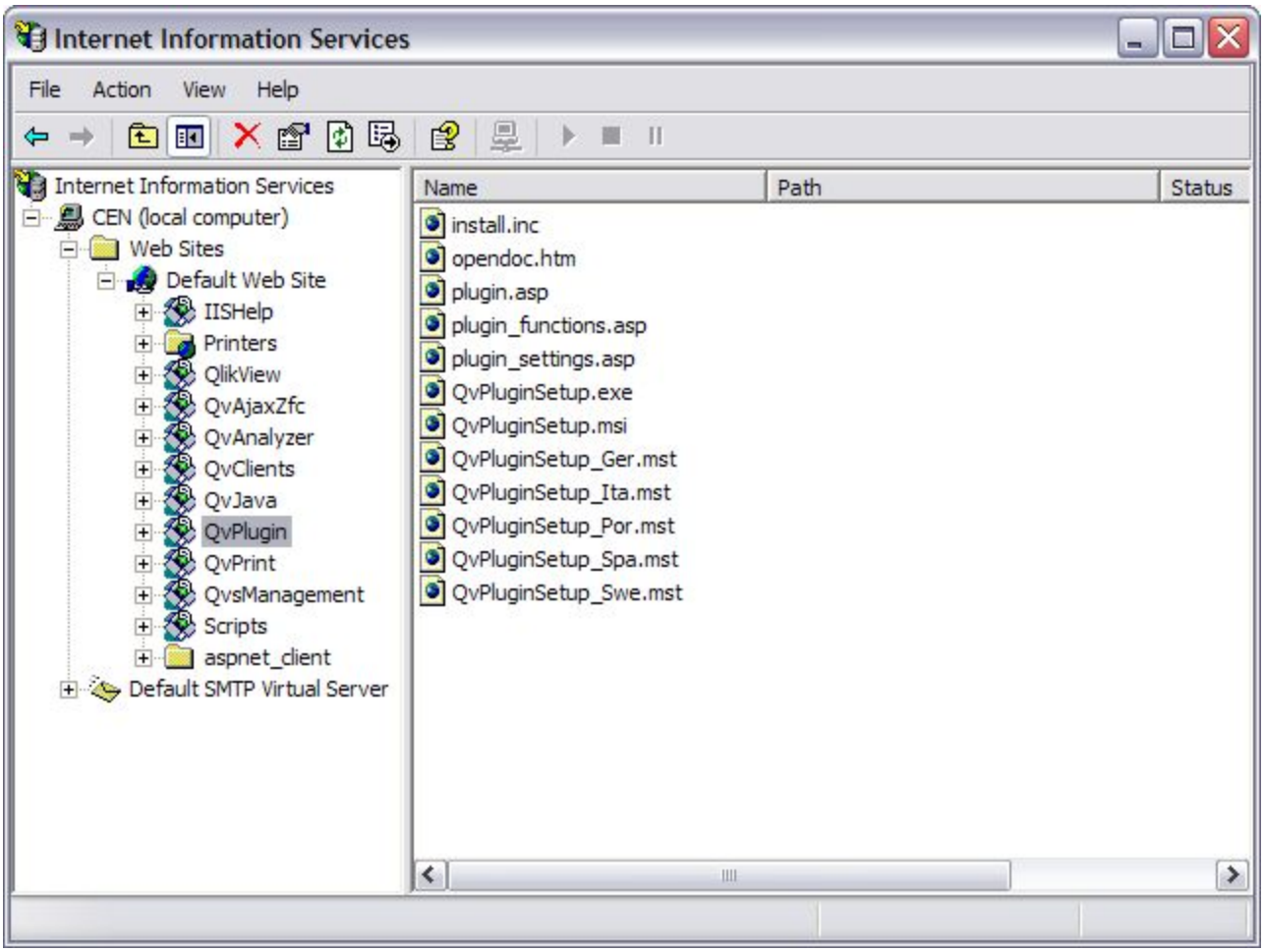
TIP: Make sure to review the effective permissions after changing permission settings on a file or folder level. In complex environments it is not uncommon that conflicting permission settings cause access to be more or less restricted than intended.

For DMS Authorization mode information and settings, refer to the sections titled Document Metadata Service (DMS) and the **Security** page description for the QMC and QEMC.

Setting up IIS for Windows Authentication with QlikView for IE and QV AJAX ZFC

In order for the QlikView for IE plug-in to be able to work with Windows authentication when the client computer is not on the same domain as the QVS, the following steps have to be performed:

Under **Administrative Tools** in the Windows Control Panel open **Internet Information Server**. Then expand your web site in the tree control.



Right-click on **QVPlugin** and select **Properties**. Navigate to the **Directory Security** tab and click on **Edit**.

Make sure that **Anonymous Access** is deselected and that at least one of the check boxes under **Authenticated Access** is selected.

Setting up IIS for Windows Authentication with QlikView AJAX ZFC

In order for the QlikView AJAX ZFC to be able to work with Windows authentication you must perform the same procedure as the one described for QVA for IE above, but set properties for **QvAjaxZfc** instead. This step is required if only named CALs are licensed.

While it is not a requirement, you may also want to set the virtual directory subfolder **`QlikView\QvAjaxZfc`** to Windows authentication as well to set the access rights to the html pages.

The Anonymous User Account

When the QlikView Server is started for the first time on a machine an account will be created for anonymous users. The account will be named IQVS_name where name is the name of the machine in the local network.

If the machine in question is a domain server, the anonymous account will be created as a domain account or it will be a local machine account.

Each folder and file that should be available from anonymous clients must be given read privileges to the anonymous account.

It is important to start QlikView Server and thereby let it create the anonymous account before any attempt is made to grant privileges. You must not try to create the anonymous account yourself!

Connection Pseudo-URLs

When connecting to QlikView Server from Windows clients, either via the **Open in Server** dialog or via link files, the identity to be used is specified via the pseudo-URL document address.

The syntax is:

```
qvp://[[username]@]servername [:(port | protocol)] /
[documentname.qvw][?paramname=paramvalue{&paramname=paramvalue}]
```

where

username is a Windows user ID

servername is the name of a server running QlikView Server

documentname is the name of the QlikView document (excluding qvw extension)

port (e.g. 4749) can be used to specify a specific port used by the server

protocol (e.g. http) can be used to specify tunneling protocol

paramname := (USERID | XUSERID | PASSWORD | XPASSWORD | MACRO |

IIS_AUTHENTICATE)

USERID denotes a section access userID in clear text

XUSERID denotes a scrambled section access userID

PASSWORD denotes a section access password in clear text

XPASSWORD denotes a scrambled section access password

MACRO denotes the name of a macro to be run when the document is opened

(only one macro allowed)

IIS_AUTHENTICATE denotes a single-use key (40 hex characters) for IIS integrated authentication.

paramvalue is a valid value for each parameter.

@ without **username** denotes anonymous identity.

If user identity is omitted altogether, the logged in Windows identity is assumed.

Examples:

qvp://www.qliktech.com/AcmeStores.qvw

qvp://@www.qliktech.com/AcmeStores.qvw

qvp://john.doe@www.qliktech.com/AcmeStores.qvw

qvp://www.qliktech.com:http/AcmeStores.qvw

```
qvp://www.qliktech.com/AcmeStores.qvw?USERID=JOHN&PASSWORD=ABC123
```

```
qvp://www.qliktech.com/AcmeStores.qvw?MACRO=Mymacro
```

TIP: Internet Explorer 7 and 8 do not support @ or : in the URL in order to prevent spoofing of URLs. To specify these characters in the URL, you need to URL-encode them.

Use %3A for: and %40 for @.

16.3 File System Security vs. QlikView Section Access Security

NTFS Authorization or DMS Authorization mode file system security only controls which documents a client is allowed to see in the file tree and attempt to open. The documents may of course contain a script section access which further prevents or limits the client's access to the content of the document once opened.

The QlikView Windows clients will prompt the user for section access USERID and PASSWORD when required. When using section access with QlikView USERID and PASSWORD in connection with QlikView AJAX ZFC it is necessary to make your own provisions for entering them and then pass them to the QlikView AJAX ZFC by means of URL parameters (see special sub-section titled “Using section access with QlikView AJAX ZFC” for details).

16.4 Security Configurations

There are, of course, many configuration choices available for a QlikView Server implementation. This section will attempt to describe some options as examples of possible configurations.

Authentication vs. Authorization

Authentication: ”Who is this user?”

The main way of authenticating a user should be

- an Operating System logon (Windows, Novell, etc), or
- any Web logon using a Directory Service.

Either way, it is made by non-QlikTech software.

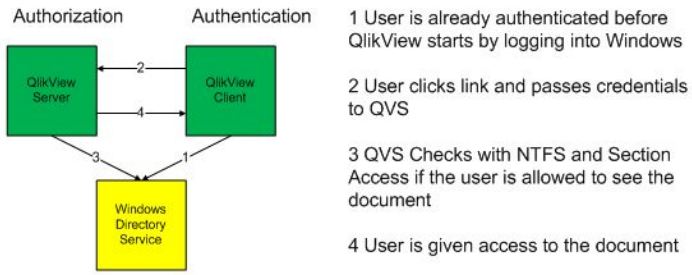
An additional authentication can be made by QlikView through the fields USER, PASSWORD or SERIAL in a Section Access of the load script.

Authorization: ”What data is this user allowed to see?”

1. If the QlikView Server runs in **DMS Authorization** mode, the authorization is handled through the DMS thread on the QlikView Server.
2. If the QlikView Server runs in **NTFS Authorization** mode (legacy mode), the authorization is handled by the Windows NTFS file system. This requires that the authentication is made through Windows.
3. In both modes, an additional access limitation can be defined in the Section Access of the script using e.g. NTNAME. This is handled by QlikView.

Client Side Authentication

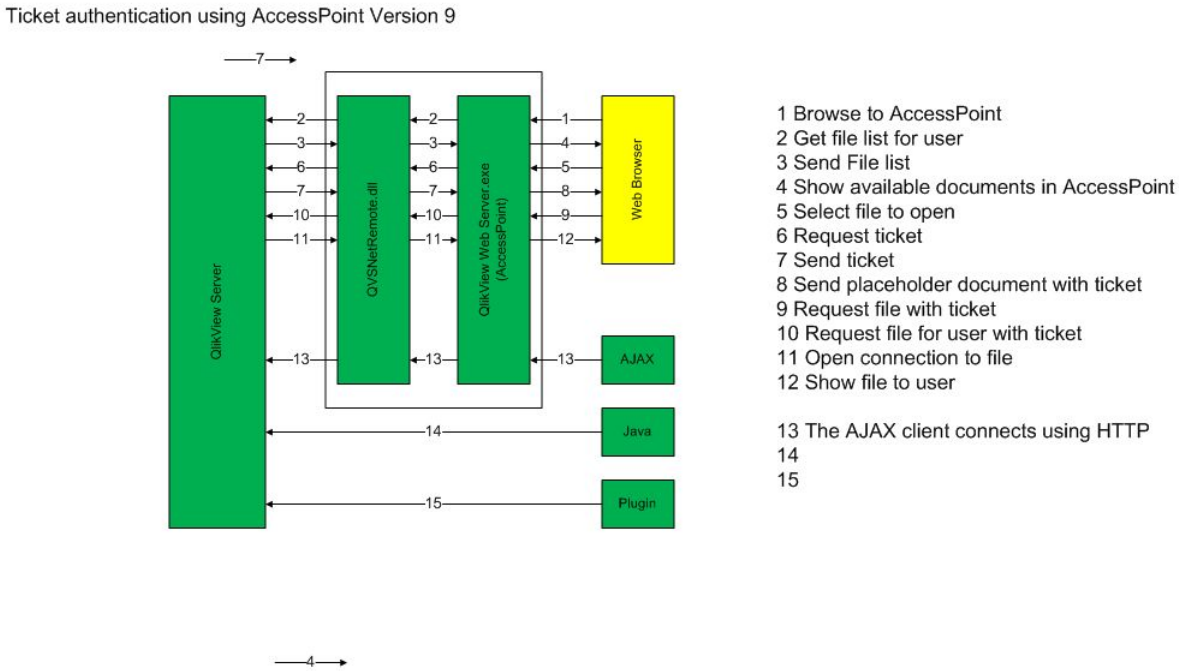
The QlikView Server is within the same Domain as the client, and a Windows Directory Service is available.



The user is already authenticated when the QlikView client is started. As the client clicks on a QlikView link, a request is sent to the QVS with the user credentials. The QlikView Server uses NTFS and Section Access to see if the user is allowed to see the document.

Server Side Authentication – Using AccessPoint

The QlikView Server will issue a ticket for authenticating a user through **`QvsComRemote.dll`**. If the user presents a valid ticket when requesting a session, the access is granted based on the user's authorization to open a document.

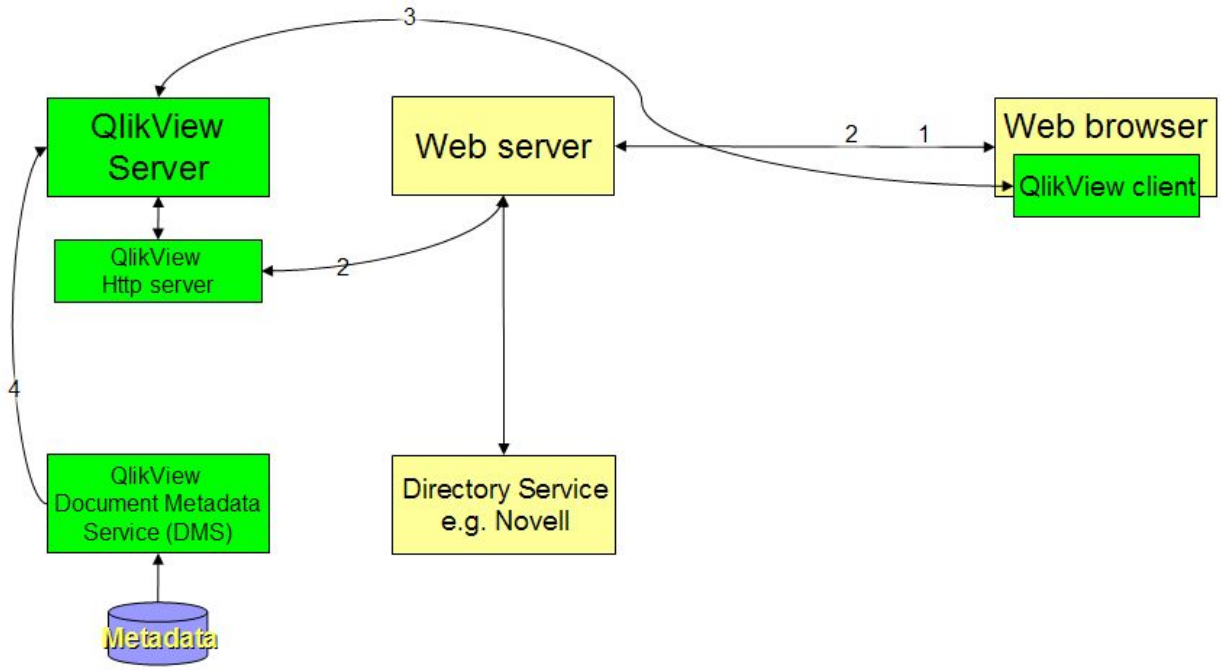


1. The client browses to the AccessPoint
2. The AccessPoint requests the file list from the QlikView Server
3. The QVS sends the file list
4. The AP shows the available documents
5. The client selects which file to open
6. The AP requests ticket from the QVS

7. The QVS sends the ticket
8. The AP sends a placeholder document with the ticket
9. The client requests the right file with the ticket from the AP
10. The AP requests the file with the ticket from the QVS
11. The QVS opens a connection to the file
12. The AP shows the client the file

Server Side Authentication – Non Windows Web Server

The QlikView Server will issue a ticket for authenticating a user through the QlikView web server. If the user presents a valid ticket when requesting a session, the access is granted based on the user's authorization to open a document.



1. The client makes a call to a web server. The web server must already have an authentication system in place. Either background authentication or a log-on screen.
2. As the client clicks on a QlikView link, the web server makes a web service call to the QlikView Http server with a request to the QVS with the user name and gets a ticket in return.
3. The client launches a QlikView client that sends a request including the ticket to the QVS.
4. The QVS trusts the web server and thus ”knows” who the user is. QVS checks with the DMS if the user is allowed to see the document.

Server Side Authentication – Get Ticket Process

QlikView Server does not authenticate the user; it authenticates the process asking for a connection. There are two methods that can be used for authentication, Negotiated Authentication and Ticket Authentication. Once the connection is established QVS make no distinction between how the authentication was done.

Authenticated Names are required for any task where a user name is required, other than CAL assignments, which use a simple, best guess procedure.

Negotiated Authentication: This authentication will be used as the authenticated user if:

- The connection is marked as admin.
- Or if all the below apply:
- The server is not set to 'Always anonymous'
- The connection is not done by ticket
- The authenticated user isn't considered as equal to anonymous (e.g. USR_...)
- Negotiated Authentication will attempt to use Kerberos, but if that is unsuccessful, NTLM will be used.
- **Ticket Authentication**: The alternate method to get an authenticated user is through ticket. See examples below for additional information.
- QVS is passed a username from a trusted source (in QVS Admin Group) and QVS trusts that authentication has happened elsewhere.
- Or, Tickets can also be obtained 'For Me' i.e. for the actual user of the asking process

Client Usage:

- The Windows client can use tickets (via QVP url) or negotiate authentication
- The AJAX client must use the ticket parameter, e.g. **http://localhost/salesdemo/AJAXzfc/?ticket=510EA55C2DB723DC04C16C6FB3CDAB24F3390792**

Get Ticket examples:

There are two ways of requesting a ticket from QlikView Server, to be used in different Single Sign On (SSO) scenarios:

GetTicketForMe This will require that you are an authenticated Windows user and will generate a ticket only valid for yourself. The function takes no parameters.

To try it out type the following in a web-browser:

```
http://webhost/qvajaxzfc/qvsviewclient.aspx?cmd=<Global%20method='GetTicketForMe'%20/>

In programming (ASP/VBScript), use the following:
set ntsecurity = Server.CreateObject("QVSRemote.Client")
ntsecurity.AdminConnect "localhost"
ticket = ntsecurity.execute("<Global method='GetTicketForMe'/>
The response will be an XML-document in the following format:
<Global>
<_retval_>
40 char hex
</_retval_>
</Global>
```

GetTicket This function will generate a ticket for any UserId submitted to the function.

Only members of the local QlikView Administrators group can retrieve a ticket. If not part of the group the function will return **<Error />**. See below for other options

In programming (ASP/VBScript), try the following:

```
set ntsecurity = CreateObject ("QVSRemote.Client")

ntsecurity.AdminConnect "localhost"

ticket = ntsecurity.Execute("<Global
method='GetTicket'><UserId>User</UserId></Global>")

msgbox ticket
```

The UserID is retrieved from any other trusted authentication source.

If QVS and IIS is installed on different machines, replace "localhost" with the IP/DNS name for the QlikView Server.

16.5 Supervision Accounts

These accounts always have the right to open documents on the Server through one of the QlikView clients, for example, through **Open in Server** in QlikView Desktop.

Note! The **System** tab (see "System" on page 107) is unavailable for Document Administrators and Supervisors. This means that they cannot access supporting tasks.

Add the users to the mounts in QEMC, see See "Folder Access".

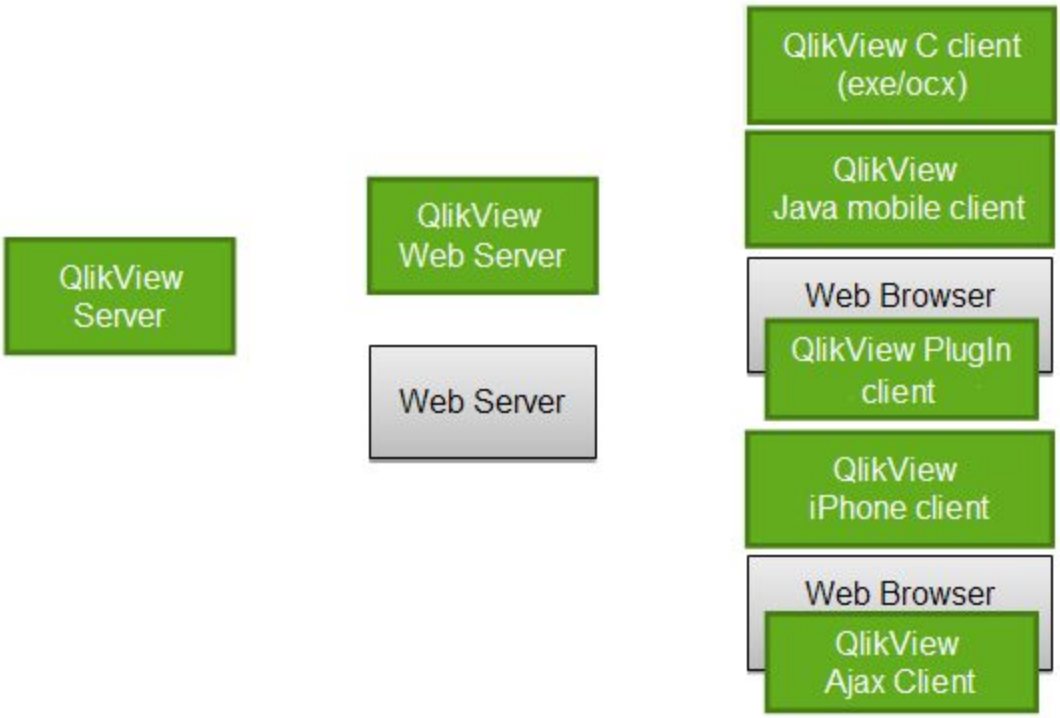
16.6 Adding Extensions to the QlikView Server

To make it possible to run QlikView Extensions on a QlikView Server you must copy the extension folder contents from **`%USERPROFILE%\AppData\Local\QlikTech\QlikView\Extensions\Objects`** to the following folder on the Server, **`%PROGRAMDATA%\QlikTech\QlikViewServer\Extensions\Objects`**.

17 Functional Architecture

17.1 QlikView Server – Client Communication

The QlikView Server – Client communication architecture requires three primary processes, which must be able to communicate with each other in a consistent and secure manner. This interaction can potentially involve multiple computers and multiple network connections, as well as other subordinate processes.



The three primary processes are:

1. The **QlikView Server (QVS)**, which provides QlikView functionality to the client. The machine that is hosting this service must be running in a Microsoft Windows Operating System (refer to System Requirements section at the beginning of this document).
2. The **Client**, running in a web browser or an application shell that provides a container for the client code. The client communicates with QlikView Server either directly or through the Web Server to provide the QlikView interface and functionality to the end user.
3. The **Web Server**, running an HTTP server, which can be used to serve up the HTML web page to the client, assist with authentication of the user, and enable communication between the client and QlikView Server.

In the simplest scenario, all three processes can be running on a single machine, with a single user. The complexity of this relationship can increase quickly, however, as separate machines, Internet connections, multiple firewalls, and multiple Web Servers are introduced. Finally, multiple users who require security authentication and authorization from a myriad of Directory Services are added, and a QlikView Server – Client communication architecture can become quite involved.

There are, of course, a large number of possible network configurations that QlikView Server can participate in, but there are a few considerations to keep in mind regardless of the final configuration:

- QlikView Server runs as a Windows Service only
- At least one network communication path must exist between the QlikView Server and the Client
- The authentication of the Client user must be performed either through Windows Authentication, QlikView Authentication (section access), or any third party system that can authenticate the user.

QlikView Server will cache group membership lookups for 15 minutes. This applies for Servers running in both NTFS and DMS mode.

QlikView Server Functional Description

There will be one QlikView Server process per logical computer, which must be running a Windows Operating System. QlikView Server can run as a 32-bit or 64-bit process (OS and hardware dependent). The QlikView Server process can be identified as qvs.exe.

Client Access License (CAL)

All client access to QlikView Server must be licensed. This is accomplished through the use of Client Access Licenses (CALs) linked to the specific instance of the QlikView Server through the LEF file. In this context, it is important to understand the definitions of anonymous user and authenticated user.

Anonymous user – an unidentified or unknown user (any user). There is no authentication for anonymous users, they can be anyone.

Authenticated user – an identified user whose identity can be verified.

Authenticated Windows OS user (e.g. NTNAME, NT User, NTDOMAINSID)

Authenticated non-Windows user

Authenticated QlikView user (e.g. section access: USERID, PASSWORD)

Authenticated third party (build partner) user

The type of CAL will affect how users are allowed to connect to QlikView Server, based on the Client type and Authentication settings in the Web Server and/or QlikView Server. Read more about the different CALs in "Types of CALs" on page 173.

Client Functional Description

QlikView Server can support the following categories of Clients:

1. **Windows Clients** – this is the QlikView Desktop. This category also includes the Internet Explorer plug-in ActiveX client running as a full window or object only (QlikX). All Windows Clients require installation with Administrator level rights. QlikView Desktop requires licensing on the client machine in addition to the QlikView Server CAL.
2. **AJAX (ZFC) Clients** – this includes the AJAX Client, which supports HTML objects only. No Client side installation or licensing is required.
3. **Mobile Client** – this includes the iPhone client and the Java based mobile clients (for BlackBerry and others). An App Download to the mobile device and installation is required. Settings are available to configure the server from the download site as well as on the client device. No Client side licensing is required.

Client Communication to QlikView Server

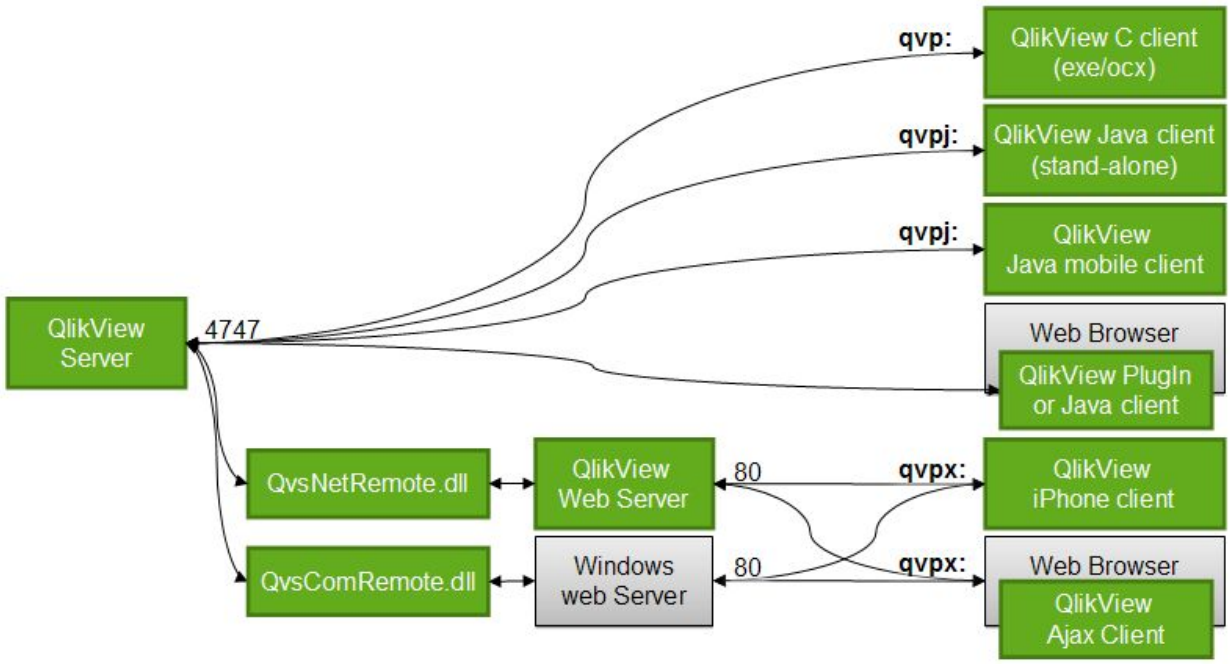
There are multiple protocols defined for client communication with QlikView Server (QVS).

- QVP: Encrypted, binary, communicates directly with the QVS on port 4747
- QVPX: Not encrypted, xml, communicates with the QVS using http/https through a web server.

Windows clients (exe/ocx) communicate directly with QlikView Server, using QVP (QlikView Protocol) on port 4747. These clients do not require a Web Server to establish and maintain a connection with QlikView Server.

AJAX (ZFC) Clients can never communicate directly with QlikView Server. They must establish and maintain a connection using the QVPX protocol through a Web Server (e.g. QVWS or IIS). This is typically accomplished through port 80 (http).

The iPhone client and the BlackBerry client must establish and maintain a connection using the QVPX protocol through a Web Server (e.g. QVWS or IIS). This is typically accomplished through port 80 (http).



The default installation settings for QlikView Server will use the QlikView Web Server and not the IIS. The QlikView Web Server will share port 80 with IIS on Vista, 2003 Server and 2008 Server. On Windows XP, only one of the two web servers (IIS and QVWS) can be used on port 80. If both are configured to run, they must be assigned different ports.

All clients will communicate through a web server using http or https when tunnel is required. AJAX and Mobile clients require connection to a web server when authentication is necessary. An http or https connection to the QlikView Server is used to get a ticket.

Web Server Functional Description

Traditionally, the standard web server in a QlikView Server configuration has been Microsoft Internet Information Services (IIS). QlikView offers an alternative solution that is included with the QlikView Server installation. This is the QlikView Web Server. This web server can act as a stand alone service, but is cannot handle asp pages.

Other web servers can be utilized in a QlikView Server environment, but there are some restrictions. If the other web server is able to direct traffic to the QlikView web server (running on the same machine as QlikView Server), the possibilities are many, including the configuration with the other web server running under a non-Windows operating system. If the other web server must utilize a local QlikView Server dll (**`QvComRemote.dll`**) to communicate with QlikView Server (e.g. for tunneling), then the other web server must be running under a Windows operating system.

Web Server on Separate Machine from QlikView Server

If the Microsoft IIS or QlikView Web Server is running on a separate machine from the QlikView Server, you will need to configure the location of the QlikView Server, and optionally, the port, to allow the web server to locate the QlikView Server. The configuration requirement will vary, based on which web server you are using.

IIS web server

Edit the file **`QvClients\settings.js`** to point to the QlikView Server, and optionally, the port. Change the variables **`QvsHost`** and **`QvsPort`** to match your environment, and remove the comments. The **`QvsViewClient.aspx`** is configured to include the **`settings.js`** code, but you will need to remove the comment tags.

QlikView Web Server

Edit the file **`C:\Program Files\QlikView\Server\QvWebServer\config.xml`** to point to the QlikView Server. Change the tags **`QvsHost`** and **`QvsTunnel`** to match your environment.

17.2 QlikView Server Tunnel

If the standard communication port to QlikView Server (4747) is blocked in any way (typically by a firewall limitation), the Windows Clients will attempt to re-route their connection through port 80 (http). This connection path must then include the QVWS so that the QlikView Tunnel communication can be established. All communication through the QVS Tunnel must include the secure communication packet, so this will significantly increase the network traffic (along with response times) required between the QlikView Server and the client. The infrastructure might also interfere, for example, if the traffic is routed through proxy servers. This is especially true if tunneling using HTTPS. It is recommended to set up rules to bypass proxy servers when tunneling using HTTPS.

The QlikView Tunnel is installed into the Web Server process and allows the QlikView Client to be tunneled over the HTTP protocol to the HTTP process and then forwarded onwards to the QVS process.

When there is a requirement for the HTTP process to run on a third machine (perhaps since it is not a Microsoft Windows server) but communication between the Client and the HTTP machine is restricted, then the setup is similar. The HTTP machine having a Tunnel installed to redirect the QlikView Client protocol on the QVS machine. Communications between the QVS and HTTP cannot be restricted in any way.

Finally, if the HTTP process must run on a third machine and communication between the Client and HTTP machine is not restricted in any way, then another process can come into play. This is a TCP/IP Redirector (or Redirect) that runs on the HTTP machine. It is required because (in the case of Java) the Client applet can only connect to the machine that served the web page containing the applet. The redirect process accepts the connection from the applet for the QlikView Client protocol and forwards it onto the actual QVS machine. The Redirect process may be a separate program, part of the operating system of the HTTP machine or even a function of the firewall/proxy system in use between the HTTP machine and the Client machine. All that matters is that both the machine name and the IP address of the Redirect is the same as the HTTP machine.

For Tunneling on a Windows Server using IIS

If you want to use tunneling, you must add the tunnel dll-file as an ISAPI filter.

For Microsoft IIS 7: open the **Internet Information Services Manager**, select the IIS top node. Open the **ISAPI and CGI Restrictions** dialog. Choose **Add** in the **Actions** pane and browse to the location of

`QVSTunnel.dll`. Give the instance a description and make sure to check **Allow extension path to execute**.

Open the site that should host the QlikView Server/Publisher pages and click on **Scripts**, then open the **Handler Mappings** dialog. Locate the **ISAPI-dll** and choose **Edit Features Permission** in the **Actions** pane. Check **Execute** in the dialog that opens.

Two entries are required in the registry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\QlikTech\QlikTunnel]
```

"QVSPort"=dword:000012a6

"QVSServer"="QvsHost"

The QVSPort entry should already exist, but the QVSServer must be added manually.

Note! These registry entries are only relevant when the Microsoft IIS and the QVS are on different machines.

Note! The tunnel.dll file is only needed when using Microsoft IIS and tunneling traffic.

For Tunneling using QlikView Web Server:

Edit the Config.xml file to specify the location of the <QvsHost> and <TunnelHost>. <QvsHost> is used in all non-tunnel-cases and <TunnelHost> when tunnelling is requested. It is thus possible to have one Qvs handling all non-tunneling and another handling tunnelling. Note that if you omit <TunnelHost> the QlikView Web Server will NOT support QVS tunnel.

```
<Config>
<QvsHost>HIC-HP</QvsHost>
<TunnelHost>HIC-HP</TunnelHost>
```

Tunneling from Windows clients

Tunneling from Windows clients is achieved by adding http as protocol in the pseudo-URL describing the server or document address. For Internet Explorer 7 and 8, the QVP syntax requires “;” in place of “:” in order to prevent spoofing of URLs. For example, qvp://host;http/test.qvw.

QlikView Tunnel Test Procedure

You can test the QlikView Tunnel by entering the following URL from a Client browser window if you are running Microsoft IIS:

```
http://Server/scripts/qvstunnel.dll?test
```

Where

`Server` is the Web Server name or address

If the QlikView Tunnel is set up correctly, the webpage should return with a message saying that tunneling is available and the version number of QlikView Server.

18 Logging

18.1 Logging from QlikView Server

Alerts from QlikView Server will appear in the Windows event log.

More detailed logs for sessions can be found in the logging directory specified on the **QlikView Server Settings**, **Logging** tab of QMC and on the **System**, **QlikView Server**, **Logging** in QEMC. The default location is **`C:\Documents and Settings\All Users\Application Data\QlikTech\QVS`**, Windows Vista and later uses **`C:\ProgramData\QlikTech\QVS`**.

Log files can be set to split (create new) daily, weekly, monthly, yearly or never. Performance log intervals can be set from 1 minute and higher.

A QlikView document designed to load data from the log files and support analysis is provided on the default installation of QlikView Server. This file is named **`QvServerPerformance.qvw`** and is located in the QvsDocuments folder.

18.2 The Session log

The session log is updated each time a session ends. A session is defined as a single user connected to a single document. The file name of the session log is **`Sessions*.log`**, where * reflects the server name and the split interval. Each entry of the session log will contain the following fields.

Session Log filed	Explanation
Exe Type	Type of QlikView Server build Example: 'RLS32' = 32-bit release build
Exe Version	Full version number of QlikView Server. Example: '8.0.4366.0409.10'
Timestamp	Date and Time when log entry was created
Document	QlikView document accessed
Document Timestamp	File timestamp of document accessed
QlikView User	QlikView section access UserID (if used)
Exit Reason	Reason for session termination: 'Socket closed'= client induced termination. 'LRU'=terminated as Least Recently Used in

Session Log filed	Explanation
	favor of new user 'Shutdown'=server induced termination for other causes Additional values exist, but should normally not occurr.
Session Start	Time when session was started
Session Duration	Duration of session in hours:minutes:seconds
CPU Spent (s)	CPU-seconds spent by session
Bytes Received	Bytes received by server during session
Bytes Sent	Bytes sent by server during session
Calls	Number of QlikView calls during session (bidirectional)
Selections	Number of QlikView selections made during session
Authenticated user	Authenticated Windows NT UserID (if it exists)
Identifying user	User identification for client
Client machine identification	Machine identification for client
Serial number	Serial number of QlikView client (QVA+, QVP or QVE installed client only)
Client Type	Type of client used 'Windows exe'=Windows client 'Java'=Java client 'iPhone'=iPhone client

Session Log filed	Explanation
Secure Protocol	'On' when encrypted communication is used (typically Windows clients=. 'Off' when non-encrypted communication is used
Tunnel Protocol	'Tunnel' when QVS tunnel communication is used.
Server Port	Port used by server.
Client Address	Client IP number
Client Port	Client port
Cal Type	Type of Client Access License used 'User'=Named CAL 'Session'=Session CAL 'Usage'=Usage CAL
Cal Usage Count	Count of Usage CALs

18.3 The Performance log

The performance log is updated at an interval set on the **Logging** page of the QlikView Enterprise Management Console. The default interval is 5 minutes. Additional entries are made whenever the server is started or stopped. The file name of the session log is **`Performance*.log`**, where * reflects the server name and the split interval. Each entry of the log will contain the following fields.

Performance Log field	Explanation
Exe Type	Type of QlikView Server build Example: 'RLS32' = 32-bit release build
Exe Version	Full version number of QlikView Server Example: '8.0.4366.0409.10'

Performance Log field	Explanation
Timestamp	Date and Time when log entry was created
EntryType	Type of entry. 'Server starting' denotes startup. 'Normal' denotes normal interval log entry. 'Server shutting down' denotes shutdown
ActiveDocSessions	Number of document sessions* that have shown activity during the interval and still exist at the end of the interval
DocSessions	Total number of document sessions* that exist at the end of the interval
ActiveAnonymousDocSessio-ns	Number of document sessions* with anonymous user that have shown activity during the interval and still exist at the end of the interval
AnonymousDocSessions	Total number of document sessions* with anonymous user that exist at the end of the interval
ActiveTunneledDocSessions	Number of document sessions* with tunneled connection that have shown activity during the interval and still exist at the end of the interval
TunneledDocSessions	Total number of document sessions* with tunneled connection that exist at the end of the interval
DocSessionStarts	Number of document sessions* that have been initiated during the interval
ActiveDocs	Number of documents loaded at the end of the interval in which there has been user activity during the interval
RefDocs	Number of documents loaded at the end of the interval for which there is a session at the end of the interval
LoadedDocs	Total number of documents loaded at the end

Performance Log field	Explanation
	of the interval
DocLoads	Number of new documents loaded during the interval
DocLoadFails	Number of documents that have failed to load during the interval
Calls	Total number of calls to QlikView Server during interval
Selections	Number of selection calls during interval
ActiveIpAddrs	Number of distinct IP-addresses that have been active during the interval and still exist at the end of the interval. Note that tunneled sessions and multiple users originating from the same IP cannot be distinguished
IpAddrs	Total number of distinct IP-addresses connected at the end of the interval. Note that tunneled sessions and multiple users originating from the same IP cannot be distinguished
ActiveUsers	Number of distinct NT users that have been active during the interval and still exist at the end of the interval. Note that anonymous users cannot be distinguished here
Users	Total number of distinct NT users connected at the end of the interval. Note that anonymous users cannot be distinguished here
CPULoad	Average CPU load from QlikView Server during interval
VMAllocated(MB)	Size in MB of virtual memory allocated by QlikView Server at the end of the interval **
VMCommitted(MB)	Size in MB of virtual memory actually used by QlikView Server at the end of the interval.

Performance Log field	Explanation
	This number is part of VMAllocated(MB) and should not exceed the size of the physical memory in order to avoid unacceptable response times
VMFree(MB)	Size in MB of unallocated virtual memory available to QlikView Server **
VMLargestFreeBlock(MB)	Size in MB of the largest contiguous block of unallocated virtual memory available to QlikView Server. This number is part of VMFree(MB)
UsageCalBalance	'-1.00' denotes no Usage CALs exist

* one user + one document = one document session

**VMAllocated(MB)+ VMFree(MB) = total maximum virtual memory space available to the QlikView Server process.

18.4 The Event log

The event log is updated each time a log entry is made to the Windows event log from QlikView Server. The information stored is a mirror of the information written to the Windows event log. The file name of the event log is Events*.log, where * reflects the server name and the split interval. Each entry of the log will contain the following fields.

Event Log field	Explanation
Timestamp	Date and Time when log entry was created
SeverityID	Unique ID of severity level 1 = Error 2 = Warning 4 = Information
EventID	Unique ID for the type of event
Severity	Severity level of event Error | Information | Warning

Event Log field	Explanation
Message	Description of the event

18.5 The Audit Log

This setting logs user selections, including clear selections, sheet activation, the application of bookmarks, report access. A log file called AUDIT_<machinename> is saved to **C:\Documents and Settings\All Users\Application Data\QlikTech\QVS**, Windows Vista and later uses **C:\ProgramData\QlikTech\QVS**.

Note! The logging of user selections in QlikView Server is based how the current selections object works and therefore larger selections are not logged in detail.

Audit log field	Explanation
Server started	The date and time the QlikView Server was started.
Timestamp	Date and time the log entry was created.
Document	The path and the name of the document that was accessed.
Type	The type of selection that was made, for example Selection and Bookmark.
User	The name of the user.
Message	Information about the type of selection or the application of bookmark that was made in the document. Example: Apply Server\BM15.

19 Licensing

19.1 Client Access Licenses (CALs)

In order to connect to a QlikView Server each client needs a Client Access License (CAL). The CALs are purchased with QlikView Server and tied to the QlikView Server serial number. A CAL is never transferred to a client, but a client uses a CAL when connecting to a specific QlikView Server, CAL. CALs are thus not transferable between different instances of QlikView Server. If a user is required to work with documents residing on several instances of QlikView Server, a separate CAL is needed at each of the QlikView Servers.

19.2 Types of CALs

There are four different types of CALs available:

- Named CAL (an identified user on a server) – Access is based on user identity and valid for all documents on the server, that is any number of concurrent sessions from one user on one machine at a time is allowed.
- Document CAL (an identified user within a given document) – Just as above, the access is based on user identity, but the CAL is valid only for one document. If the same user connects to two documents using this licensing method, he will hence consume two Document CALs.
- Session CAL – Each Session CAL allows one user on one computer to access QlikView documents, that is any number of concurrent sessions from one user on one machine at a time is allowed. Anonymous users are allowed, no identification of the client user is necessary.
- Usage CAL – Each Usage CAL gives the right to initiate one session (single document) per running 28-day period. The session may last a maximum of one hour. Any activity after the first hour has expired will count as a new session (albeit without visible interruption). No identification of the client user is necessary.

Note! CALs are used for purposes of licensing only and they have nothing to do with user authentication for data access purposes.

Identification

In order to utilize a Named CAL or a Document CAL, the client user must be identified either via an authenticated user name (Windows Active Directory or through a ticket exchange between the web server and the QlikView Server) or with a unique machine ID. An IP address is not a valid form of identification for a Named CAL. The two methods of identification cannot be mixed on the same instance of QlikView Server. Note that the user name identification requires Windows authentication on Ajax clients, since machine name identification is not possible from these clients.

Document restrictions

The purpose of the Document CAL is to provide a mechanism by which licensees can license the use of a single document. To prevent the combination of many data models into a single document, there are restrictions in the documents which can be used with the Document CAL. The Named CAL, the Session CAL and the Usage CAL can however be used to open any functional QlikView document. The Document CAL, however, can only be used with documents which have a single contiguous data model and do not contain any chasm traps between tables.

Most common data models used in QlikView documents can be used for Document CALs. For instance, proper star schemas and snowflake schemas typically have the field with the highest cardinality in the fact table and the keys in dimensional tables have a lower cardinality. For snowflake schemas, the cardinality decreases further as you move away from the fact table. Documents containing such models typically fulfill the above demands and are well suited for Document CALs.

But documents with multiple logical islands are normally not allowed. Multiple logical islands are only allowed if the additional tables are unconnected and contain only few records or one single column.

Further, the document may not contain any loosely coupled tables.

Finally, the cardinality (number of distinct values) of the key fields must decrease as you move away from the fact table.

19.3 Combining different types of CALs

A given instance of QlikView Server can carry any combination of the CAL types listed above. When different CAL types are combined on the same server, the order of priority in the CAL assignment will be made as follows:

1. If there is a dedicated Named CAL for the connecting client, it will be used.
2. If there is a dedicated Document CAL for the connecting client, it will be used.
3. If it is possible to assign a new Named CAL for the connecting client, it will be used.
4. If it is possible to assign a new Document CAL for the connecting client, it will be used.
5. If there is an available session CAL, it will be used.
6. If there is an available usage CAL, it will be used.
7. If none of the above, access will be denied.

19.4 License Lease

A QlikView client, that does not have a registered license, is allowed to connect to a QlikView Server and "borrow" a license so that the user can work off-line for a period 30 days. The QlikView client must then make an authenticated log on (not anonymous) and obtain a Named CAL. Each time QlikView is started, QlikView tries to contact the QlikView Server and renew the license lease. If the client cannot reach the Server after 30 days, the license lease expires.

A license lease is only possible using the QlikView Desktop or the QlikView Plug-In for Internet Explorer. It is hence not possible to obtain a license lease using the Ajax clients.

19.5 Cluster Licensing

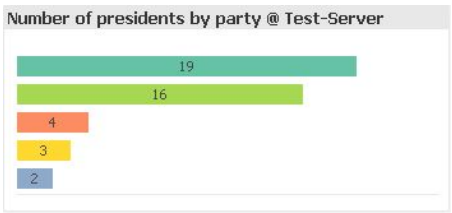
A special type of license is available to allow multiple QlikView Server installations to share the same license serial number, and support shared CALs. These servers are automatically considered as clustered. Note that this configuration will affect networks where unauthorized license sharing between test and production environments has been configured.

19.6 Cold Standby Servers

QlikView Server license keys can be installed on as many servers as required provided that only the licensed number of QlikView Servers are running at any given time. Thus, a cold standby environment can be installed and ready-to-run, but cannot be live (that is, the Windows services cannot be started) and in use prior to the live environment being shut down.

19.7 Test License

A special license type has been created for use with QlikView Server for test purposes. A QVS running with such a license will have the full feature set and performance, but the word "Test" will be superimposed on all charts and added to all object captions.



A bar chart from a test Server

19.8 Editions of QlikView Server

QlikView Server currently comes in the following different editions with different capabilities designed for different organizations and different purposes. Upgrading is done through the license key.

Enterprise Edition (EE)

QlikView Server Enterprise Edition (EE) is available for customer looking to support large number of users and integrate into enterprise environments. Offering features such as unlimited documents, server based collaboration, integration with third party security systems and server clustering.

Small Business Edition

QlikView Server Small Business Edition (SBE) is available for customers looking for a QlikView Server specifically designed to support a smaller organization.

Information Access Server

Information Access Server (IAS) is available for customers looking for a QlikView Server with a limited number of documents and large number of anonymous users.

Below is a table of the features and limitations of the different editions.

	EE	SBE	IAS
Licensing			
Named CAL	✓	Max 25	×

	EE	SBE	IAS
Session CAL	✓	×	✓
Document CAL	✓	Max 100	×
Usage CAL	✓	×	×
Clients			
AJAX	✓	✓	✓
Workbench	Option-al	×	✓
IE Plugin	✓	✓	✓
Mobile	✓	✓	✓
Desktop Client	✓	✓	✓
Scaleability			
Can be clustered	✓	×	✓
Unlimited Documents	✓	✓	×
Integration			
3rd party security integration	✓	×	×
Dynamic Update (additional license fee required)	✓	×	✓
Features			

	EE	SBE	IAS
License leasing	✓	✓	×
Server Objects	✓	×	✓
Can use Publisher	✓	✓	✓
Can use SAP Connector	✓	✓	✓
Test Server available	✓	×	✓
Security			
Section Access	✓	✓	×
DMS	✓	×	×
AD/NTFS	✓	✓	×
Anonymous	Possibl-e	No	Require-d

20 Repository for Shared Objects

20.1 Types of Objects Available for Sharing

There are multiple objects available for user collaboration and sharing through QlikView Server.

- Bookmarks
- Sheet objects, including Charts
- Reports

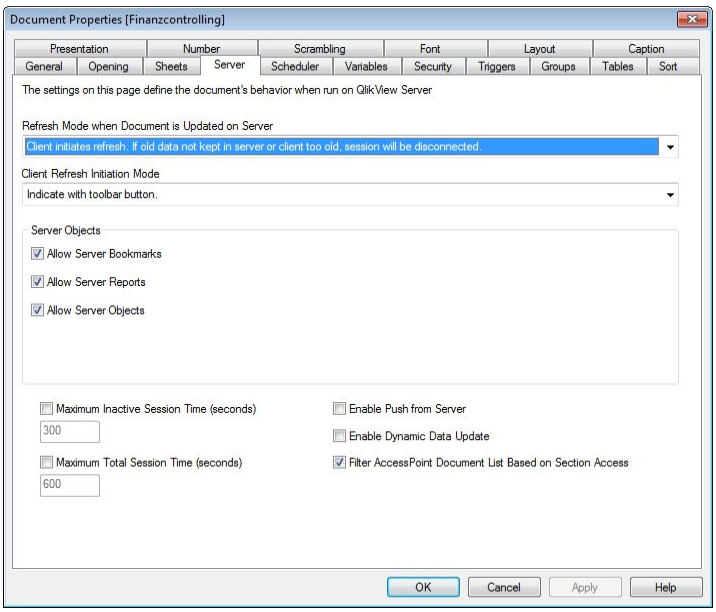
Each of these objects may be defined as a user object, available to the authenticated user, regardless of access method or location, or a shared object, available to all users of the document through QlikView Server.

20.2 Settings required for Server Objects

Client based bookmark, object and report creation is limited as follows:

- Server and client are QlikView version 8 or later
- All clients except Mobile
- User authentication is required for Reports and Objects

In order for QlikView document objects to be enabled for sharing, the document must be set to allow Server objects on each of the object types. This is the default setting for documents in QlikView 10.



*The **Server** page of the QlikView Document Properties dialog.*

Allow Server Bookmarks

This check box must be enabled, if remote clients are to be allowed to create and share bookmarks with this document on the QlikView Server.

Allow Server Objects

This check box must be enabled, if remote clients are to be allowed to create and share sheet objects with this document on the QlikView Server.

Allow Server Reports

This check box must be enabled, if remote clients are to be allowed to create and share reports with this document on the QlikView Server.

TIP: For more information on Server objects settings in QlikView, please consult the QlikView Reference Manual.

In addition, QlikView Server must be set to **Allow Server Objects**. Set this on the **System** tab, **Setup** page, **QlikView Servers**, **Documents** tab of the QlikView Enterprise Management Console, the setting is not available in the QlikView Management Console. If the Server is set to **disallow**, this setting will override the Document settings for all documents on that server.

Once QlikView Server is enabled for Server objects, and any of the QlikView Server object settings are checked, and the document is opened in QlikView Server, a special database file will be created and maintained in the same location as the QlikView document. The file will have the same name as the QlikView document, but will have a file extension of .Shared.

For example:

QlikView document: **`Presidents.qvw`**

QlikView Server share file: **`PRESIDENTS.QVW.Shared`**

If the name of the QlikView document is changed for any reason, you will have to manually rename the .Shared file to match before opening the newly named QlikView document in QlikView Server. This will preserve the shared objects attached to the document.

Note! After upgrading from a previous version, you will find files named with a .OLD extension, for example, presidents.qvw.Shared.OLD. These files will be in the same folder as your documents. The files are created when users open a document in the new version for the first time. The .OLD files contain the data from the previous version. The original file called, presidents.qvw.Shared, has been upgraded to version 10. These files are temporary and may be deleted.

When updating a Server object, report, bookmark or input field data the file is exclusively locked, but making a selection or simply activating the object does not lock the file and any number of Servers can read the file at the same time. A partial lock is implemented so different sections of the file may be updated simultaneously by different Servers in the cluster.

The file is read once when the Server opens the document, but it is not read again unless there are changes. All sessions share the same internal copy of the shared file, that is, opening a session will generally not require the file to be read from disk.

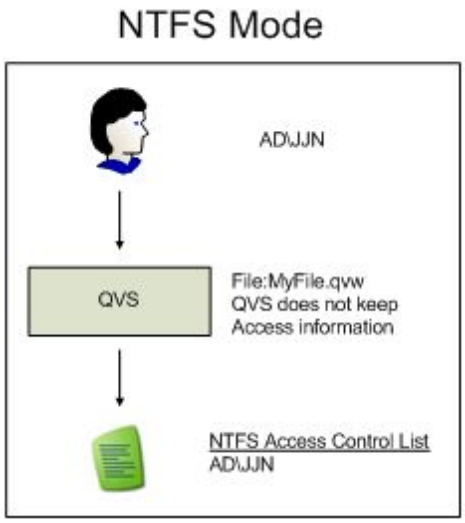
You can manage the Server objects in **QEMC** on the tab **Documents**, **User Documents** and **Server Objects**. The **Take** icon enables you to take ownership of an object. You can then open a QlikView client and make changes to the object.

Note! Once you have taken ownership of an object you cannot give it back to the original owner.

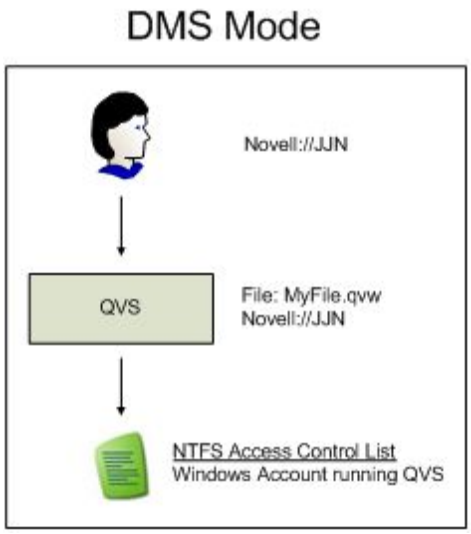
21 Document Metadata Service (DMS)

Document Metadata Service (DMS) is part of the QlikView Server. It has two separate functions. The first is to set Autoload and restricted access for documents, this feature is always available no matter what mode the QVS is running in. The second feature is to control access to documents hosted by the QVS, this feature is only available when the QVS is running in the DMS Authorization mode. The DMS is a running as a separate thread in the QVS Process.

DMS Authorization mode can be used with any Directory Service that is supported out of the box, like AD, but it can also be used by other non-Windows Directory Services. .



In NTFS Authorization mode it is up to Windows to decide who has access to each file. This is done in NTFS by the Access Control List (ACL) that keeps a number of Access Control Entries (ACE). Each ACE is identifying a single user or a security group know to the windows based Directory Service. However the ACE is limited to what Windows can identify, so putting another user type, like a user stored in for example Novell, is not possible. To get around this DMS Authorization was developed.



DMS Authorization means that it the QVS that will decide who gets access to a file, not Windows. The DMS keeps a list of users who has access to each particular document. This list can be populated in three different ways. The first way is through QlikView Publisher sending a file to a QVS running in DMS Authorization mode. The second way is through the QMC or QEMC, Please note that if you do changes to a User Document that is delivered by Publisher your changes will be overwritten by Publisher each time a new document is published, it is recommended that you instead do the change in the Publisher distribution task. The third way you can populate the DMS access list is through an API where you can programmatically add and remove access.

The DMS will grant access to a user who's credentials match a name in the list of users having access. The match is a string match so in the picture the user Novell://JJN would be granted access to the file MyFile.qvw. However if a group has been given access to the file rather than one single user the DMS must use the DSC to do a lookup to verify group membership. A call will then be made to the DSC and the specific DSP including the username and group. If the DSP and Directory Service verify the membership then the user will get access to the file.

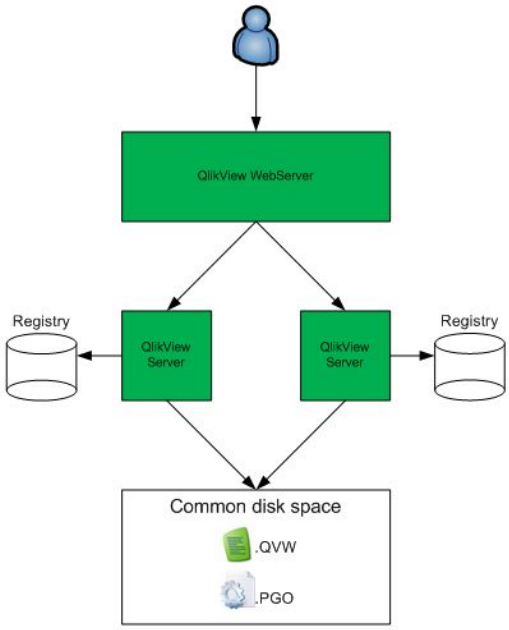
When DMS is used the QVW file on disk is only available to the account running the QVS and not to any of the users located in the DMS access list.

The metadata is stored in a file next to the QVW file with the extension .meta so the file presidents.qvw would have a metadata file called presidents.qvw.meta.

Note! After upgrading from a previous version, you will find files named with a .OLD extension, for example, presidents.qvw.meta.OLD. These files will be in the same folder as your documents. The files are created when users open a document in the new version for the first time. The .OLD files contain the data from the previous version. The original file called, presidents.qvw.meta, has been upgraded to version 10. These files are temporary and may be deleted.

22 Load Sharing (Clustering)

All clustering requires the QlikView Enterprise Management Console. QlikView Server will support load sharing of documents across multiple physical or logical computers. This sharing includes the ability to share in real time, information about Server objects, automated document loading and unloading (through DMS), and user license CALs. Special licensing is available to enable multiple server instances to share the same license number.



In order to utilize load sharing between multiple QlikView Servers, all document and support files must be shared between the servers. In other words, all servers should point to the same physical location for the files. In addition to the file types described in the diagram above, QlikView Server will create and maintain additional files to store load sharing data. These files will have a file type extension of .pgo (Persistent Group Object), and they will be located in the same folder as the QlikView documents. These files are locked while the QlikView Server is running. The different pgo files contain information about borrowed CALs, CALs in use, Server settings and ticket data.

Operating System Load Balance or Failover configurations are external to the QlikView Server load sharing configuration, and QlikView Server has no control over those systems.

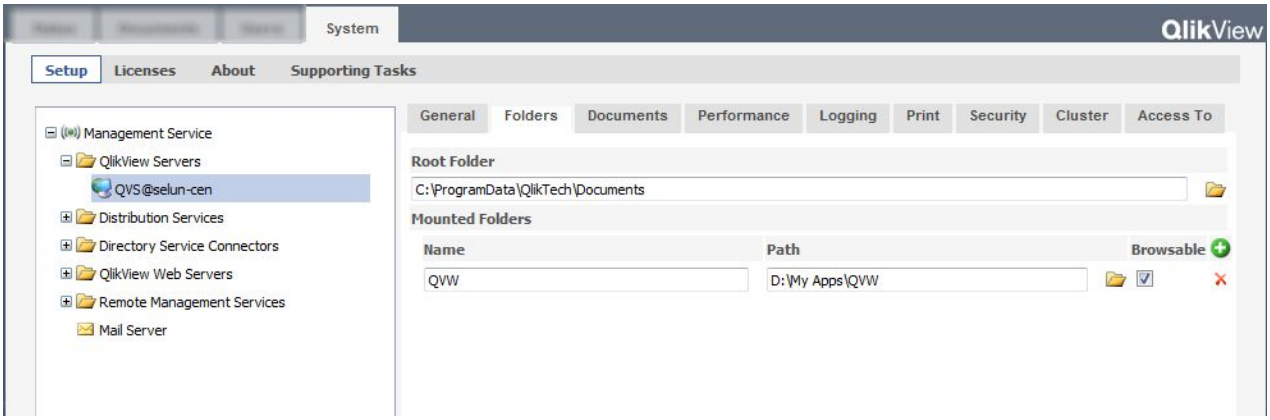
Server configuration settings are shared between all clustered QVS, and can be maintained through the QlikView Enterprise Management Console connected to any of the clustered QVS. Performance of a particular QVS system can be monitored through the Management Console by connecting to that system. How the load balancing is made, that is which QlikView Server the client should be directed to, is set in the QlikView Web Server's configuration file, see "Configuring the QlikView Web Service" on page 29.

Since DMS data is shared among the QV Servers, any automated document load/unload procedures are performed on all Servers. DMS Authorization is, of course, also shared among all clustered QVS.

22.1 Setting up a Cluster

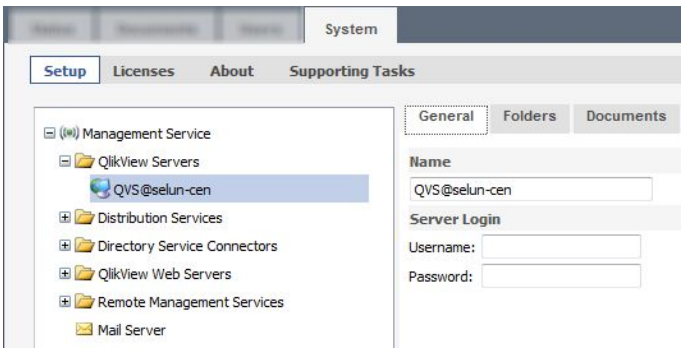
1. Install the first, "master"; QlikView Server, QlikView Distribution Service and QlikView Management Services of the cluster and license the installation. The account running the Management Service must be a member of the **QlikView Administrators** group and a member of the local **Administrators** group on each "slave" QlikView Server computers in order to restart all QlikView Servers from the QEMC.
2. Set the path for the User Document **Root Folder** and **Mounted Folders** under **System**, **Setup**, **QlikView Servers**, your QVS, **Folders**, to a disk area that can be read by all Servers in the cluster, preferably a NAS.

Note! QlikView Server currently only conforms with Windows File Share or a Windows-based NAS. This means that storage must be owned, governed, and shared by a Windows operating system instance (typically accessed using a path like `\\<servername>\<share>`).



Setting the path to the shared disk area

3. To make it easier to recognize your cluster you can change the name of the QVS in the field **Name** on **System**, **Setup**, **QlikView Servers**, your server, **General**.

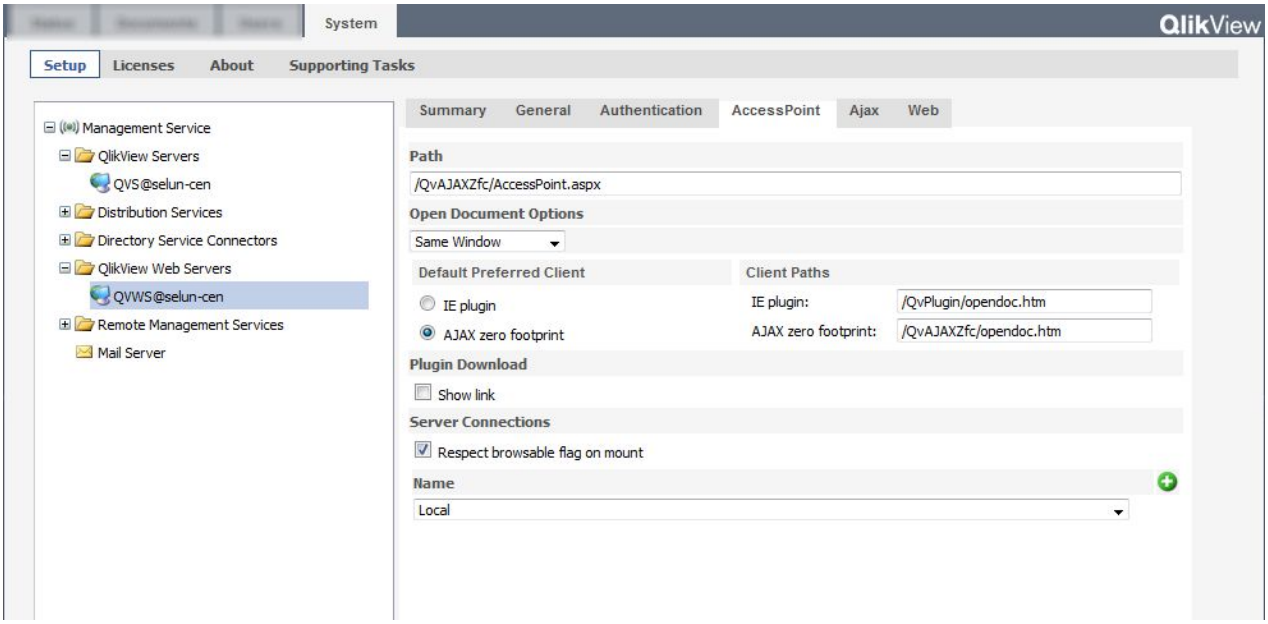


Change the name of the cluster

4. Install the second QlikView Server, installing QVS and Management Services.
5. Open the QEMC on the "master " QVS and on the **Cluster** tab under **System**, **Setup**, **QlikView Servers**, your first QVS, enter the **Control Number** and **URL** for the second QVS in the cluster.

The Cluster tab

6. Repeat steps 3 and 4 for any other Servers that should be part of the cluster.
7. Make sure that your cluster is selected on the **AccessPoint** tab in **System**, **Setup**, **QlikView Web Servers**, your QVWS.



The Server Connections field for the AccessPoint

Part 5 QlikView Publisher

24 Post Installation Settings

24.1 Installation on a Single Machine

If all components of QlikView Publisher are installed on the same machine you do not need to modify any settings and the only action you need to take before running QlikView Publisher is to start the services. The following services are part of the QlikView Publisher installation and are all found in the Windows Management Console Services; QlikView DirectoryServiceConnector, QlikView Web Service and QlikView Publisher DistributionService.

24.2 Installation on Multiple Machines

There are many possible installation combinations for QlikView Publisher. Here

we will go through the settings you need to modify in order to install different components on different machines. These combinations are only possible when running QlikView Enterprise Management Console.

Distribution Service

The QlikView Distribution Service (QDS) needs to know which Directory Service Connector (DSC) it will communicate with. This is set in the file C:\Program Files\QlikView\Publisher\Distribution Service\QlikViewDistributionService.exe.config.

If you use any other value than the default, which is **`http://localhost:4730/qtds.asmx`**, you modify the key:

```
<add key="DSCAddress" value=""/>
```

Directory Service Connector

The DSC has no settings that need to be modified if you install on different machines.

24.3 Installation Overview

The components that will be installed are:

- The QlikView Management Service is a set of html based web pages that are used to configure what the QlikView Publisher will do. It is also the central coordinating component in QlikView Publisher. It is responsible for maintaining the QlikView Publisher Repository (QVPR) and keeping track of the different components.
- The Distribution Service is the component responsible for performing the preparation and delivery of the QlikView files. A QlikView Publisher installation can contain many Distribution services located on different machines.
- The Directory Service Connector is responsible for communicating with the Directory Service that keeps track of all the users and groups in your environment. You need to have one Directory Service per Directory Service Provider (DSP). A DSP is a connection to a specific Directory Service. The included DSPs allows you to connect to Active Directory, NT4 domains, Local Users and Custom Users. Custom Users are users that only exist inside QlikView Publisher and have no matching Windows user attached to them.

25 Publisher Upgrade Tool

The QlikView Publisher Upgrade Tool must be run in order to update an older Publisher database to version 10.

As of version 9 the repeat task is obsolete, but the functionality has been retained in the new distribution task. The upgrade tool will convert the more simple repeat tasks to corresponding tasks in Publisher 10. More complex repeat tasks will, however, need to be restructured after the upgrade. See "Source Documents" on page 79 for more information on what tasks are supported in version 10.

If a job is disabled in version 8.5, the trigger will be disabled in later versions and if a task is disabled in version 8.5, the task will be disabled in version 10 as well.

Note! The upgrade tool does not support upgrades from Publisher Standard Edition!

Note! Before running the upgrade tool, stop the Command Center Service and make sure the Directory Service Connector Service is running.

Note! Back-up your database before running the upgrade tool!

25.1 Upgrading

The upgrade tool is installed together with QlikView Server/Publisher and is found in the folder **`C:\Program Files\QlikView\Publisher\Support Tools\`**. Run PubUpgrade.exe to start the upgrade. The program creates a txt logfile in **`C:\ProgramData\QlikTech\Publisher\Support Tools\Upgrade`**.

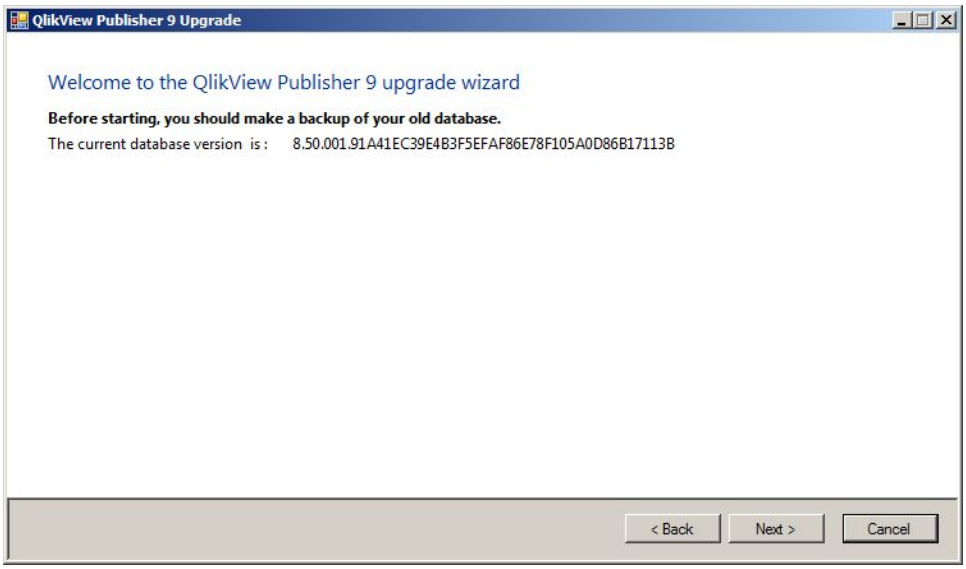
1. The first dialog will inform you of the current database version. If the upgrade cannot be carried out, the first dialog may display one of the following messages instead:

a. The Current database is up to date

b. Permission to current database is denied

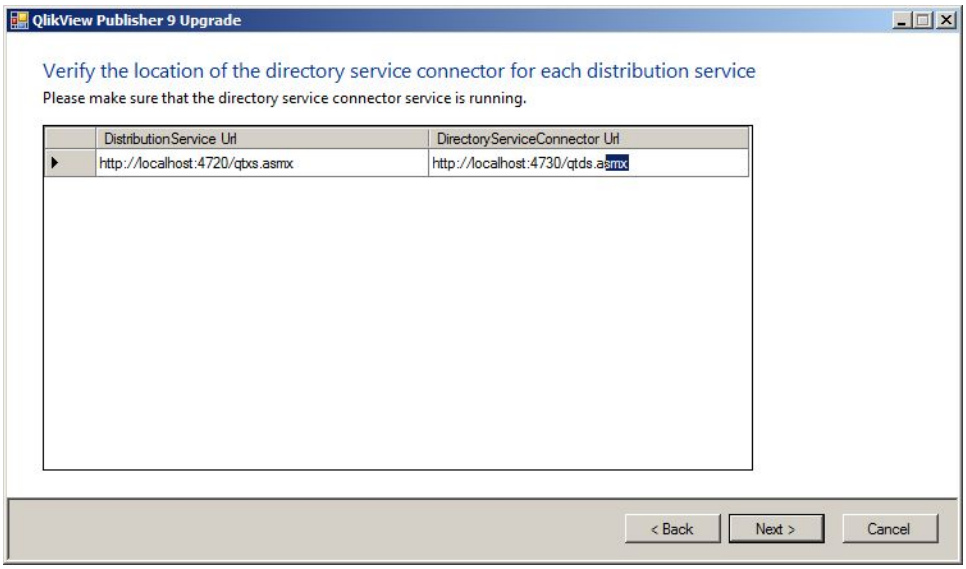
c. The current database is too old and cannot be upgraded using this tool

d. The upgrade cannot be run because the Command Center Service is running. Please stop the service and restart the upgrade tool.



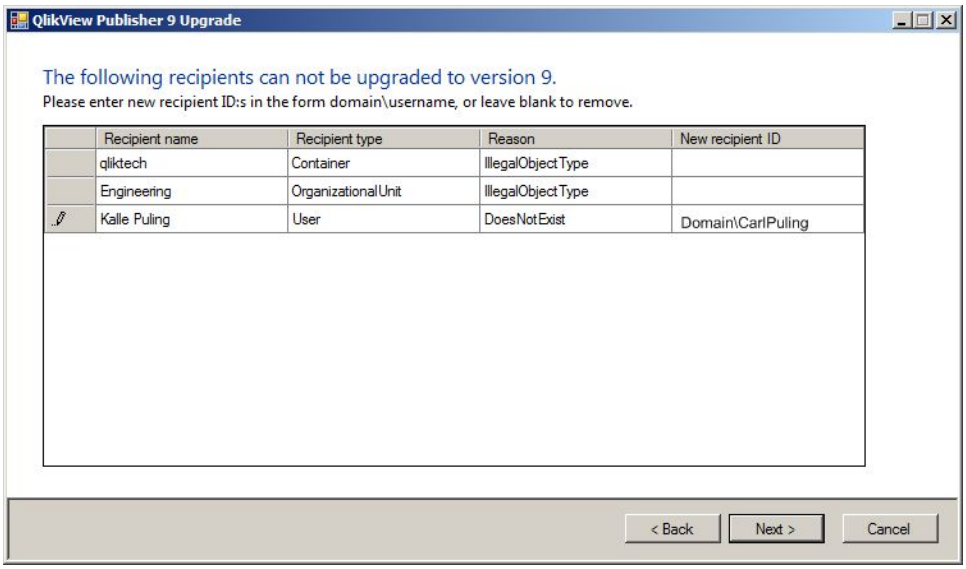
Upgrading the XML repository

2. You enter the location of the Directory Service Connector for each distribution service. The upgrade tool looks for the directory service locally only. Edit the path to the **`qtds.amx`** in the right pane if the path is incorrect.



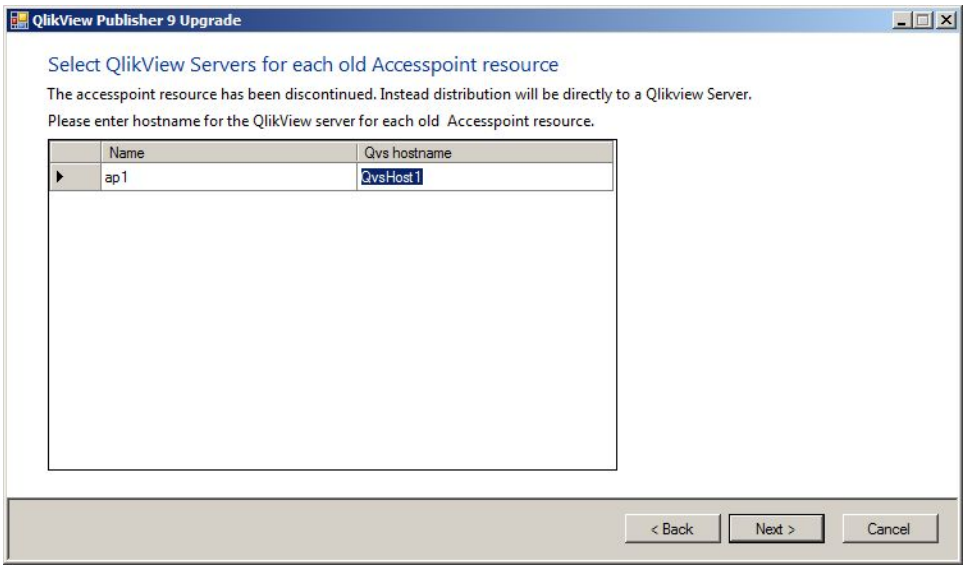
Enter the path to the Directory Service Connector

3. QlikView Publisher version 10 can only handle users and security groups as recipients. This means that recipients of the type containers, organizational units and the likes will not be upgraded. If a recipient name does not correspond with a user or a security group present in the directory service database, you can enter a **New Recipient ID**. The the recipient should be in the format domain\user. If no **New Recipient ID** is entered, the recipient is removed.



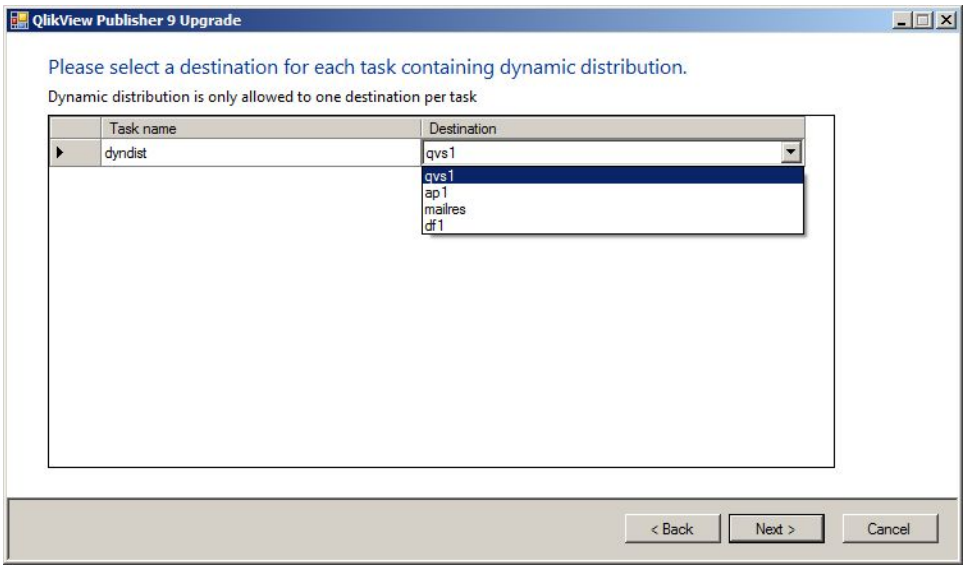
Upgrading recipients

4. The AccessPoint resource of previous versions has been removed and the distribution is now handled by QlikView Server. Enter the name of the QlikView Server that will handle the distribution.



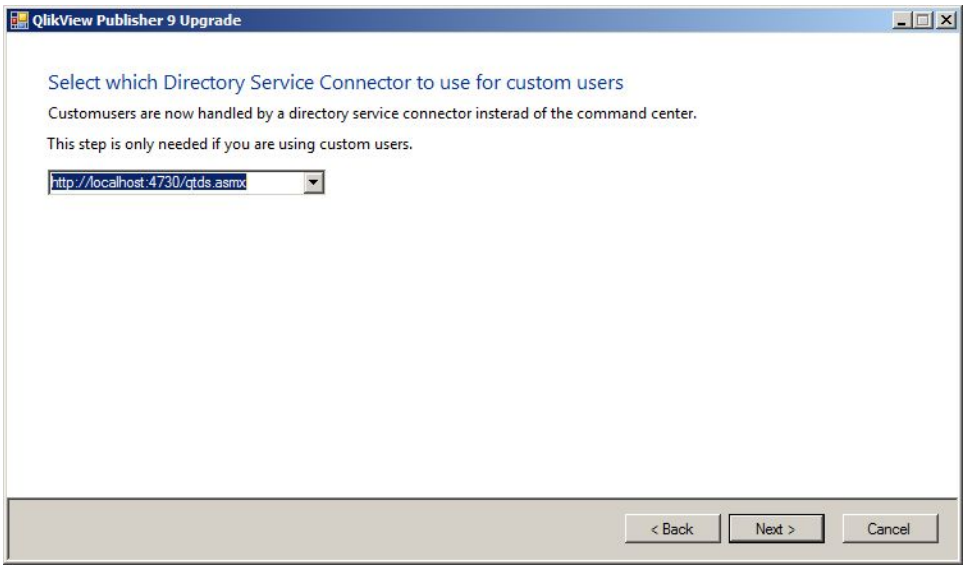
Select QlikView Server

5. In version 9 only one destination per task is allowed for dynamic distribution. You must choose a destination for each task that contains a dynamic distribution.



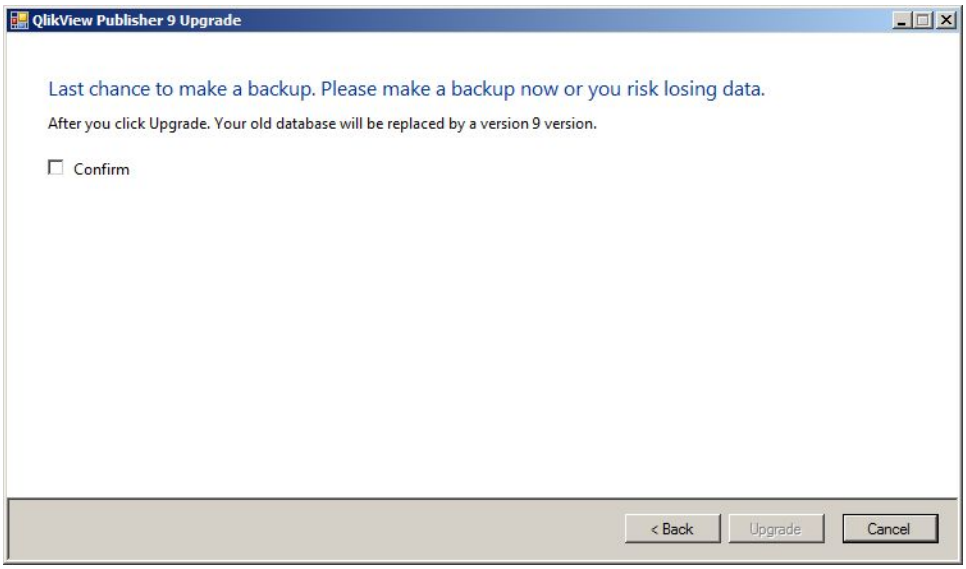
Choose destination for the old dynamic distributions

6. The Command Center no longer handles the Custom Users. You must choose a Directory Service Connector to handle your Custom Users.



Select Directory Service Connector to handle Custom Users

7. Until you mark the **Confirm** check box and click **Upgrade** you can still cancel the upgrade of the repository.



Confirm the upgrade

After the upgrade has been completed, you must start the QlikView Management Service. You can now open the QMC or the QEMC and change your settings.

25.2 Reloading a file from the command line

The following value in **`QlikViewDistributionService.exe.config`** needs to be set to true:

```
<add key="EnableBatchMode" value="false"/>
```

The following parameters are used for reloading:

-r=path to qvw file	Reload and quit
-rp=path to qvw file	Partial reload and quit
-out=logfile	Redirect output to file. Default output is console. -out=. creates a lofile in the current directory
-variablename=name	Variable name
-variablevalue=value	Variable value
-debug	Service will run as standalone EXE
-sleep	Service will wait 60 seconds before starting main

-datapath=path	Path to datafiles. Use -datapath=. for current directory.
-port=number	Override listening port specified in workorder

Example:

```
QlikViewDistributionService.exe -r=d:\myapps\document.qwv -out=d:\logfiles

echo Error Code: %errorlevel%
```

This will reload the document document.qwv and set the home directory to d:\logfiles where the Distribution Service files will be written.

The error code parameter goes through the log file and returns the number of errors found in it.

Note! Alerts will not be triggered via a command line reload.

26 Load Sharing (Clustering)

All clustering requires the QlikView Enterprise Management Console.

26.1 QlikView Distribution Service

In order to cluster QlikView Distribution Service, the services will need a common disk area on a NAS to save the configuration file.

Note! QlikView Server currently only conforms with Windows File Share or a Windows-based NAS. This means that storage must be owned, governed, and shared by a Windows operating system instance (typically accessed using a path like `\\<servername>\<share>`).

Add the same value to the setting **<ApplicationDataFolder>** in the **QlikViewDistributionService.exe.config** for all Distribution Services that should be clustered.

Note! All computers in the cluster must have the same regional settings and the clocks must be synchronized.

The load sharing is determined by a internal ranking system based on the amount of memory available and on previously cached documents. You can change how the ranking is done in the configuration file **QlikViewDistributionService.exe.config.** The key (below) is written in JavaScript.

<add key="LoadBalancingFormule" value="(AverageCPULoad*400) + ((MemoryUsage / TotalMemory) * 300) + ((NumberOfQlikViewEngines / MaxQlikViewEngines)*200) + (NumberOfRunningTasks*100)"/>.

AverageCPULoad

The average CPU load of all running QVBs.

MemoryUsage

The total memory usage for the entire application.

TotalMemory

The total amount of memory in the machine.

NumberOfQlikViewEngines

The number of the QlikView engines currently in use.

MaxQlikViewEngines

The configured value of max QlikView engines.

NumberOfRunningTasks

The number of currently running tasks.

If the log message “The network BIOS command limit has been reached” occurs in the Debug-Cluster log, you need to increase the limit for long-term sessions in the registry. Failure to do so may result in tasks not being run!

Increase the following parameters in the registry:

HKEY_LOCAL_
MACHINE\SYSTEM\CurrentControlSet\Services\lanmanworkstation\parameters\MaxCmds

and

HKEY_LOCAL_
MACHINE\SYSTEM\CurrentControlSet\Services\lanmanserver\parameters\MaxMpxCt

This issue only occurs on Windows Server 2000, Windows XP and Windows Server 2003! More information is available on http://support.microsoft.com/kb/810886.

26.2 Directory Service Connector

To cluster the Directory Service Connector, you need to add one or more Directory Service Connectors in the QEMC, "Clustering" on page 124. You do not have to change the settings for those services pointing to the Directory Service Connector that you add the other connectors to. They will automatically point to the cluster when the other connectors are added.

When using Custom Users you will need a common disk area on a NAS for the different services. The disk area is set in the key **<add key="ApplicationData- Folder" value="" />** in the file **QVDirectoryServiceConnector.exe.config**.

Note! QlikView Server currently only conforms with Windows File Share or a Windows-based NAS. This means that storage must be owned, governed, and shared by a Windows operating system instance (typically accessed using a path like \\<servername>\<share>).

Notable behavior in a DSC Cluster

Every node in a DSC cluster has its own cache. This means you might see variations between searches if a change has recently been made in your directory service. The variations are due to the fact that the QlikView Management Service randomly picks a DSC node for a search and the result of that search is cached with that node for 30 minutes. A workaround for this is to restart all DSC clusters after a change is made in the underlying directory service, or searches should wait until the cache expires.

An example:

1. A cluster with two DSC nodes is running.
2. The administrator searches for User1 and DSC node 1 executes the search and answers GroupA.
3. In the underlying directory service, User1 is moved from GroupA to GroupB.
4. A new search is made by the administrator and this time DSC node 2 executes the search. The result is GroupB.
5. Another search is made, DSC node 1, that still has the result of the first search in its cache, executes the search and the result is GroupA.

27 Detailed Technical View

27.1 Audit Logging

Audit logging gives you the possibility to track changes on tasks and settings made in the system, to see who made the changes and when they were made.

You set the location of the log files in the Management Service configuration file, **QVManagementService.exe.config**, see "Management Service – QVManagementService.exe.config" on page 201. Changing the values requires that you restart the QMS service.

One folder per table is created. Each folder contains one file per day with the changes made to the tasks. The logs are tab separated files.

The following entries can be found in the logs:

TransactionID- The id of the transaction. Useful for keeping track of changes made simultaneously.

ChangeType - The type of operation made. The sub types are:

Update - New or changed entries.

Delete - Entries have been deleted.

ModifiedTime - The time and date the changes were made in UTC.

ModifiedByUser - The user that has made the changes in the user interface. The entry **System** means that the change has been initiated by the system and not by any user.

The following example comes from the table alert e-mail. The log has been put in a table for better overview.

TransactionID	455a241d-8428-4dc7-ba67-4ae7cb21cf3d
ChangeType	Update
ModifiedTime	2010-02-02 15:12:54
ModifiedByUser	MyDomain\mjn
ID	b3745325-cee7-4fe7-b681-9c9efe22fc5c
DistributionServiceID	8846d7dd-bb3f-4289-9c9b-b0ca71b7c3b2
EmailAddress	mjn

The following example comes from the table QDSCluster. Notice that the TransactionID is the same for both examples. This means that the changes were made simultaneously.

TransactionID	455a241d-8428-4dc7-ba67-4ae7cb21cf3d
ChangeType	Update
ModifiedTime	2010-02-02 15:12:54
ModifiedByUser	MyDomain\mjn
ID	a37f242c-6d80-42da-a10c-1742d2ec927f
DistributionServiceI-D	8846d7dd-bb3f-4289-9c9b-b0ca71b7c3b2
QDSWebAdress	http://computer-mjn:4720/qtxs.asmx
CurrentWorkorderID	96bff2dc-f1ea-84d2-b6c4-ea58bf5c98e5

27.2 Security Groups

When installing QlikView Server\Publisher, a couple of security groups are created.

The QlikView Server/Publisher services must run under an account that is member of the security group QlikView Administrators. Users connecting to QMC and QEMC must be part of this group. Anyone connecting to a remote service must also be part of QlikView Administrators.

The users connecting through the API must be members of the security group QlikView Management API. This group is created by the installation program and those users already part of the QlikView Administrators group are automatically made members to this group as well. You must also be a member of this group to be able to import tasks from another Server/Publisher.

The security group QlikView EDX is not created during installation, but must be added in order to create EDX tasks.

27.3 Document Administrators

To delegate the responsibility of creating tasks to people not part of the QlikView Administrators group, you can now make users document administrators. The users that are appointed document administrators will only be able to access those tabs in QEMC that are related to either user documents or source documents.

Note! The **System** tab (see "System" on page 107) is unavailable for Document Administrators and Supervisors. This means that they cannot access supporting tasks.

Add the users to the mounts in QEMC, see "System" on page 107 for adding users to a user document folder and "System" on page 107 for adding users to source document folders.

If the users are to distribute via e-mail, you must add them to the e-mail server in the same way as the QVS, see "System" on page 107.

27.4 Configuration Files

Note! Use QEMC to set the parameters described in this section, since modifying the configuration files directly may cause problems.

Management Service – QVManagementService.exe.config

In a default installation this file is found under **C:\Program Files\QlikView\Management Service**. This file has a number of automatically generated tags that should not be modified, but the following settings that can be modified. Read more about the snmp in"SNMP" on page 257.

ApplicationDataFolder

This is the folder where the log folder and all other files/folders will be created. The default value is **C:\Documents and Settings\All Users\Application Data\QlikTech\Publisher\CommandCenter**. This folder is where the XML version of QVPR and the LEF information are stored.

UseHTTPS

If the value is set to **True** the communication will run over SSL instead of http. To enable this setting you need a certificate for your web site.

Trace

Used for debug logging.

QMSBackendWebServicePort

This is the port the backend management service listens to. The default value is 799.

QMSFrontendWebServicePort

This is the port the frontend management service listens to. The default value is 4780.

MaxLogRecords

With this setting you can specify the maximum number of log records that should be retrieved for a task.

EnableAuditLogging

Set this value to True if you want to track changes on tasks and settings made in the system, to see who made the changes and when they were made.

AuditLogFolder

Set the path to the folder where the audit logs should be saved.

AuditLogKeepMaxDays

Set the maximum number of days each log should be saved.

Distribution Service – QvDistributionService.exe.config

In a default installation this file is located in **C:\Program Files\QlikView\Distribution Service**. The app settings tag is the part that can be modified. Read more about the snmp in "SNMP" on page 257. Below are some of the settings in the configuration file explained:

ApplicationDataFolder

This is the folder where the log folder and all other files/folders will be created. The default value is **C:\Documents and Settings\All Users\Application**

Data\QlikTech\Publisher\CommandCenter. This folder is where the XML version of QVPR and the LEF information are stored.

WebservicePort

This is the port that the Distribution service will use to communicate with. The default value is 4720.

UseHTTPS

If the value is set to **True** the communication will run over SSL instead of http. To enable this setting you need a certificate for your web site.

DSCAddress

This is the port that the Directory Service Connector service will use to communicate with. The default value is 4730. If you modify that, you will need to modify the tag "DSCAddress" in the **QVDirectoryServiceConnector.exe.config** file too.

DSCTimeoutSeconds

The timeout for calls to the Directory Service Connector.

DSCCacheSeconds

Set how long the service should cache the responses from the Directory Service Connector.

QlikViewEngineQuarantineTimeInms

Set how often a QlikView engine is allowed to start.

OpenDocumentAttempts

This setting allows you to define how many tries that should be made to open a document before it is logged as an error during distribution.

DebugLog

Set to **True** if you want to enable logging of memory usage and stack trace on "Error" logging.

Trace

Set this to **True** if you wan to enable debug logging.

EnableBatchMode

Enable this setting if you want to make batch calls to the Distribution service.

Directory Service Connector – QVDirectoryServiceConnector.exe.config

By default this file is located in **C:\Program Files\QlikView\Directory Service Connector\DirectoryServiceConnector.exe.config.** Read more about the snmp section in "SNMP" on page 257. Some of the more commonly modified settings are explained below:

ApplicationDataFolder

This is the folder where the log folder and all other files/folders will be created. The default value is **C:\Documents and Settings\All Users\Application Data\QlikTech\DirectoryServiceConnector**.

WebservicePort

This is the port that the Directory Service Connector service will use to communicate with. The default value is 4730. If you modify that, you will need to modify the tag "DSCAddress" in the **QVDistributionService.exe.config** file too.

UseHTTPS

If the value is set to **True** the communication will run over SSL instead of http. To enable this setting you need a certificate for your web site.

PluginPath

This is the path where the DSC will look for available DSP plugins. The default value is **C:\Program Files\QlikView\Publisher\DirectoryServiceConnector\DSPlugins.**

Trace

Set this to **True** if you wan to enable debug logging.

DisableCompress

Enable this setting if you do not want to use compression on your http communication.

27.5 Triggering EDX Enabled Tasks

In order to start the tasks that have an external event as trigger, you must make two POST type request calls to the QlikView Distribution Service that has been assigned the task. The user making the request calls must be member of the local group QlikView Administrators or QlikView EDX. The QlikView Administrators group is set up during installation of QlikView Server, but the QlikView EDX group you must create yourself in **Computer Management**. A member of the QlikView EDX group has only the right to trigger an EDX enabled task.

The body of the first request call must contain the following:

```
<Global method="GetTimeLimitedRequestKey" />
```

The reply will contain the following important entry:

```
<GetTimeLimitedRequestKey>

<GetTimeLimitedRequestKeyResult>zLavfNlancWoyhACGlpaE5sWOy8kicLa</GetTimeLimitedRequestKeyResult>
 </GetTimeLimitedRequestKey>
```

The value of the entry **GetTimeLimitedRequestKey** is then used for the next request:

```
<Global method="RequestEDX" key="zLavfNlancWoyhACGlpaE5sWOy8kicLa">
 <i_TaskIDOrTaskName>MyTask</i_TaskIDOrTaskName>
 <i_Password>MyPassword</i_Password>
 <i_VariableName />
 <i_VariableValueList />
 </Global>
```

The attributes in the second request are:

TasIDOrTaskName - The name or ID of the task you want to start

i_Password - The password you set when you created the trigger. If no password was set the attribute must still be included but can be left empty.

i_VariableName - The name of the variable you wish to change. The attribute may be left empty.

i_VariableValueList - The values you want to assign the variable. The variables are entered according to the same pattern as in QEMC. The attribute may be left empty.

The status of the task is returned in xml format. The response for a successful call will look like the following:

```
<RequestEDX>
 <RequestEDXResult>
 <Log />
 <TaskStartResult>Success</TaskStartResult>
 <TaskStartResultCode>0</TaskStartResultCode>
 </RequestEDXResult>
 </RequestEDX>
```

Where

Log - A small part of what is written in the log. It will be empty if the task has been started successfully.

TaskStartResult - A textual representation of **TaskStartResultCode**.

TaskStartResultCode - The result of the attempt to start a task. 0 means that the task was started successfully. 1 means **TaskNotFound**, 2 means **TaskIsAlreadyRunning**, 3 means **NoEDXTriggerFound** and 9 is **OtherError**.

The response to an unsuccessful call may look like this:

```
<RequestEDX>
 <RequestEDXResult>
 <Log>
 <string>2009-10-29 12:32:18 Error Could not trigger task. Bad password. Task=Notepad,
EDX triggered</string>
 </Log>
 <TaskStartResult>OtherError</TaskStartResult>
 <TaskStartResultCode>9</TaskStartResultCode>
 </RequestEDXResult>
 </RequestEDX>.
```

You can connect to the Publisher to check the status of a given task. You must be member of the QlikView Administrators group to be able to do this.You must also get a temporary key, using the **GetTimeLimitedRequestKey** request. Then you send the request:

```
<Global method="GetTaskStatus" key="rPnBL6zlbvNr5k2nowI919EJkkOeHsi8" >
<TaskNameOrId>Notepad, EDX triggered</TaskNameOrId>
</Global>
```

Where

TaskNameOrId is the name or ID of the task you wish to check.

The respons is as follows:

```
<GetTaskStatus>
 <GetTaskStatusResult>
 <TaskStatus>
 <DocumentPath />
 <ID>55a4d924-f7bc-4027-9204-4c00711e001a</ID>
 <LastLogMsg>Executing c:\windows\notepad.exe
 Executing commandline: "c:\windows\notepad.exe" in folder "c:\windows".
 Process exited with exit code: 0 at 2009-10-29 12:31:31
 Process exited with exit code: 0 at 2009-10-29 12:31:31
 The task "Notepad, EDX triggered" finished successfully
 </LastLogMsg>
 <Name>Notepad, EDX triggered</Name>
 <Server />
 <Start>On EDX</Start>
 <LastExec>2009-10-29 12:31:34</LastExec>
 <Status>Waiting</Status>
 <DoAlert>False</DoAlert>
 <TaskType>ExternalProgramTask</TaskType>
 <Summary />
 <Category>Default</Category>
 </TaskStatus>
 </GetTaskStatusResult>
 </GetTaskStatus>
```

Where

DocumentPath - The path to the qvw document.

ID - the ID of the task.

LastLogMsg - The last log message for this particular task.

Name - The name of the task.

Server - Not used.

Start - If the task is running according to a schedule, the next scheduled time is displayed. If the task has an EDX trigger **Start** will say **On EDX**. If the task is already running, the start time is displayed.

LastExec - The time when the task was last finished.

Status - The status of the task, Running, Waiting, Finished with errors or Finished with warnings.

Do Alert - Is returned True if the task has errors, but has not been aborted manually.

Summary - Not used.

Category - The category of the task. If no category is set in the management console “Default” will be displayed.

28 Section Access

A very important change in QlikView Publisher 8.00 and onwards compared to older versions is that QlikView Publisher respects the Section Access of any document it works with. This means that if you have a Section Access in your document script, the Publisher user or user account must have ADMIN rights according to the Section Access statement. If the Distribution Service is running under the local computer accounts Local System or Network Service, the computer account must be added to your Section Access. The account name of the computer is usually the name of the computer plus a $ sign, e. g. PublisherServer$. If a dynamic reduction is made, the reduction field must be left empty.

Example:

Section Access;

LOAD * INLINE [

ACCESS, NTNAME, REDUCTIONFIELD

ADMIN, PUBLISHERACCOUNT,

USER, HIC, A

USER, TNI, B

Section Application;

Load …

It is important that the Section Access line containing the Publisher account does not reduce data in an unwanted way. Example: If you would use a wildcard "*" in the reduction field, this would limit QlikView Publisher's access to the data in the QlikView file to other values defined in the Section Access (A and B in this example; however, the values C to Z would not be included). Such a reduction can be avoided in two ways: either you need to make sure that all values of the reduction field are represented in the Section Access, or you leave the reduction field blank. In the latter case, no reduction will be made since the Publisher account is an ADMIN account. However, in this case, the Publisher account cannot be used to open the file on a Server since all accounts are USER accounts on a Server and the user will then be denied access since no values are allowed.

Read more about Section Access in the Security chapter in the QlikView Reference Manual.

28.1 Authorization Management

From version 10 QlikView Enterprise Management Console can provide a centralized way of maintaining authorization tables that are used in the section access part of a QlikView document. This is done by letting the QlikView Administrators create and maintain the tables in the QEMC user interface. The tables are stored in the repository and can be used by a QlikView developer as any other table by connecting to the QlikView Management Service, for example **`http://MyServer:4780/QMS/authtables`**. This page will supply the developer with all the authorization tables that exist. It is however possible to get only a specific table by specifying a table in the query string, for example **`http://MyServer:4780/QMS/authtables?Salesauthtable.`**

The QlikView Administrator can specify which document developer should be able to use the whole authorization table or parts of it.

Example of an authorization table:

Access	NT Name	Country	Product Group
Admin	QvAdmin	*	*
User	Bob	US	Socks, Shoes
User	Stig	Swe	Ties, Hats

Table users: Sara

Column Users:

Access and NTName: John, Jenny

Country: John

Product Group: Jenny

This means that when requesting the authorization table Sara will get the entire table, John will get 'Access', 'NT Name' and 'Country', finally, Jenny will get 'Access', 'NT Name' and 'Product Group'.

More information on where you create these tables are found in "Section Access Management" on page 103.

28.2 Important notices and Troubleshooting

- All paths that are used by QlikView Publisher must be reachable from the application.

It is highly recommended that a designated account is created to run QlikView Distribution Service. This account must be permitted to log on as a Windows service. It must also be permitted to read from the directory service as well as to write to folders, change and set permissions on the content therein.

- Reduction based on Section Access may cause unwanted results in the Distributed Documents and should be used with caution.
- If QlikView Publisher has difficulties when reading from Active Directory, a probable cause is that the account running the application lacks permissions to read from the directory service. Check the permissions of this account.
- Make sure that Local Service, Network Service and the account running QlikView Distribution Service have been given read and execute permissions to the .NET Framework component System.Management.dll.
- Should a field name within a Source Document change, QlikView Publisher will not be able to distribute Distributed Documents based on this field. Please ensure that field names used for reductions are correctly represented in the Distributed Documents.
- The number of roles given access to a file on a Windows computer cannot exceed 1820.
- QlikView Distribution Service does not execute any macros that may exist in the Source Document.
- If a Source Document contains an "Only One Selected Value" setting on a field, this setting will be respected by QlikView Publisher. Any selections made on the document will be affected by this field.

28.3 SSL on QlikView Publisher

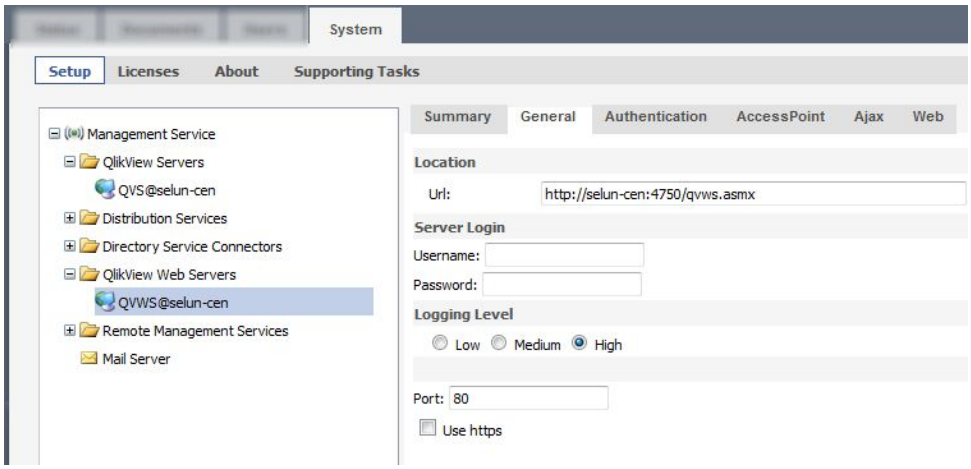
Configuring SSL for the QlikView Publisher services can only be done in QlikView Enterprise Management Console and requires an SSL certificate.

The certificate must be installed for all QlikView Publisher Services, specifying their ip addresses and ports, e.g. 0.0.0.0:4710. For more information on how to add certificates for services see Microsofts' homepage.

The configuration file for each service must be changed, see "Configuration Files" on page 201 for more information about the configuration files. The setting **`<add key="UseHTTPS" value="false"/>`** must be set to **`TRUE`**.

In **`C:\ProgramData\QlikTech\WebServer\config.xml (C:\Documents and Settings\All Users\Application Data\QlikTech\WebServer\config.xml`** on older systems**`)`** change the setting **`<ConfigUrl>http://_:4750/qvws.asmx</ConfigUrl>`** to include https instead of http.

It is important that the **URL** for the services match the URL in the certificate. The settings must be changed in the user interface: **System**, **Setup**, **Service**, **General**, **Location**. The picture below shows the QlikView Web Services Service.



Setting the domain for SSL

Part 6 Clients

29 Summary of QlikView clients

A QlikView client is required for display and usage of an existing QlikView document (.qvw file). While the QlikView Server is responsible for opening, hosting, and calculating the document, the clients are required for user interaction and presenting the document and its objects. In addition, clients (except Mobile Clients) can be used to add personal and shared objects to a document.

The choice of which client or set of clients to use is entirely dependent on the customer's environment and preferences. Client choices range from a fully installed QlikView Developer to a (no installation required) AJAX Zero-Footprint Client (ZFC), to a Mobile Client on your iPhone. Any combination of client types is allowed, as long as the proper licensing CALs are available (see Section QVS Licensing) on the server license. In general, any QlikView document may be displayed with any client, although additional HTML code must be created for the Object clients, including AJAX, to display and interact with the objects within a particular document. In the case of AJAX, this code is generated automatically by QlikView Server. Finally, certain considerations must be taken into account when deploying a QlikView document with QlikView Server and its clients. See Section Considerations when developing documents for use with QlikView Server for information on limitations when using a QlikView client to interface with a QlikView document.

The following table provides a brief summary description of client choices.

QlikView Client	Description
Windows Installed Client	Full image desktop installed QlikView Desktop. Installation and client licensing required.
QlikView IE Plug-in	Full image ActiveX plug in for Internet Explorer web browser. Installation required. No client side licensing required.
QlikX Analyzer for Internet Explorer	Object only ActiveX plug in for Internet Explorer web browser. Requires web page design or QlikView Client Generator. Installation required. No client side licensing required.
AJAX Zero-Footprint Client (ZFC)	Object only Dynamic HTML client utilizing AJAX architecture in web browser. Web page is automatically generated by QlikView Server. No installation or client side licensing required.
QlikView iPhone client	One object-at-a-time view of full QlikView document. Download and install App through App Store. No client side licensing required.
QlikView BlackBerry and Java Mobile clients	Full image client is based on Java Mobile Edition (Java ME) and will run on most mobile phones that support MIDP 2.0. Download and install

QlikView Client	Description
	App on device. No client side licensing required.

The table below shows the different client varieties and some of their most important positioning properties.

Clients for publishing QlikView documents	Clients for building web applications with QlikView data and logic	Layout fidelity and functionality	Demands on client environment and install bandwidth
Installed EXE clients (QVE, QVP, QVA)	-	High ↓ Low	High
QVA for IE (plug-in)	QlikX:s (part of plug-in)		
QVA Java client	QVA Java Objects client		Medium
-	AJAX Zero Footprint Client (ZFC)		Low

The leftmost column in the table contains client variants where entire QlikView documents with sheets and layout can be presented without the need for web page design.

The second column shows client variants which require web page design.

30 Developing Documents for Use with QlikView Server

30.1 General

The QlikView Server will read all qvw files created by QlikView 6.0 and later. Files with older file formats must be converted to a newer file format before used with the QlikView Server.

30.2 General limitations when working from clients

Regardless which client you use there are some things you cannot do when working with a document opened through QlikView server:

- You cannot create new documents
- You cannot access or execute the script
- You cannot access or change the macro module
- You cannot save changes to the document, beyond shared objects

30.3 Performance Considerations

Response time and memory usage both on the server and on the client can depend heavily on how your application is designed. Below are a few tips to bear in mind when building your application:

1. Each open chart and table will require extra memory in the server for each user connected. Minimized charts/tables as well as charts/tables not on the active sheet do not require extra memory. Each open chart/table must also be recalculated on the server after each change in the logical state, which could prolong response times. Therefore avoid opening charts and tables when it is not necessary, or try to spread them over several sheets.
2. Large bitmap pictures in sheet backgrounds or text objects may cause delays, as they have to be transferred from the server to the client. The bitmaps are compressed during transfer and are only transferred once per session, but nevertheless can cause substantial amount of data to be moved. Consider using colored sheet background and text objects with opaque background for better performance. If you have to use bitmap sheet backgrounds, it is more efficient to apply one background on application level than assigning the same background to each sheet.
3. Very small (e.g. 1x1 pixel) tiled background bitmaps can greatly reduce performance on the client, as they have to be rendered repeatedly by the Java Virtual Machine. Rather use medium size (e.g. 20x20 pixel) tiles or colored sheet background.

30.4 Document Configuration

Certain settings in the QlikView document are utilized for additional purposes when that document is opened under QlikView Server. The following considerations are suggestions for making the QlikView Server experience better for your clients.

1. The Object caption Title Text is used in any document list of objects in the collaboration dialogs. If the caption Title Text is not set, the object ID will be used. Be sure to set the object caption Title Text on all objects, including buttons, line arrow, and text objects, which do not use a default title.

You can set the object caption Title Text on the object Properties, Caption dialog.

2. Expression Labels are used in the collaboration dialogs. The default Expression Label is the expression itself, which may not be descriptive. Be sure to set all Expression Labels in chart objects to a descriptive name.
3. Avoid using large images for the mobile clients, since the transfer of these images can cause response time delays for these clients. Images that exceed the memory capacity of the device will not be displayed. They will, however be transferred from the server and cause delays in the opening of the document. Smaller images should perform fine.

30.5 Security and Access restriction

It is important that information is distributed only to those with access rights to it. Since QlikView makes the previously cumbersome process of retrieving information a very simple task, it is obvious that an access restriction mechanism is necessary. This can be done when creating the application. For more information on this, see the QlikView reference manual.

When a QlikView document is published on a QlikView Server, it is just as important to protect confidential data and prevent unauthorized access as it is when running the standard QlikView. QlikView Server therefore supports all security features built into QlikView. In addition, it is possible to use the Windows NT file security or DMS authorization to control access to specific documents. This can be done also without using any of the QlikView built-in security features.

QlikView File Security

QlikView and QlikView server can be instructed to test for a number of user properties before letting the user open a document. (For more information on this, see the QlikView reference manual.) Possible fields are:

USERID: A field that should contain a valid user ID. The client will open a dialog asking for user ID.

PASSWORD: A field that should contain a valid password. The client will open a dialog asking for Password.

SERIAL: A field that should contain a number corresponding to the QlikView serial number. The server will check the Server Serial Number and compare that to the valid ones listed in the QlikView document. In other words, the Serial Number check is a very blunt security instrument for documents that are to be published: Any client will be allowed to open a document on the valid server.

NTNAME: A field that should contain a string corresponding to a Windows NT Domain user name or group name. The server will ask the operating system if the user named in the QlikView document corresponds to the user logged on, or to a group to which the logged on user belongs.

NTDOMAINSID: A field that should contain a string corresponding to a Windows NT Domain SID. The server will ask the operating system if the Windows NT Domain named in the QlikView document corresponds to the Domain to which the logged on user belongs.

NTSID: A field that should contain a Windows NT SID. The server will ask the operating system if the NT SID named in the QlikView document corresponds to the NT SID of the user logged on, or to a group to which the logged on user belongs.

Only if all the required tests are passed, will the user be able to open the document.

The Windows File security described above and the three last tests are of course very similar. The difference is that for the former, the security information is fetched from the file system, whereas for the

latter, it is fetched from within the QlikView file. Both are, however, compared to the logon information from the operating system.

Dynamic Data reduction

QlikView Web Server supports a feature that can hide some part of the data (field values) in a document from the user based on the login information. Only the information that the user has the right to see will be shown.

The selection of values to be shown is controlled by means of having one or more fields with common names in the data and in the access restriction data. Only the field values logically connected to the user logged on will be shown.

This is a very efficient way to hide information to which the user does not have access.

For more information on how to build such an application, see the QlikView reference manual.

31 QlikView IE Plug-in

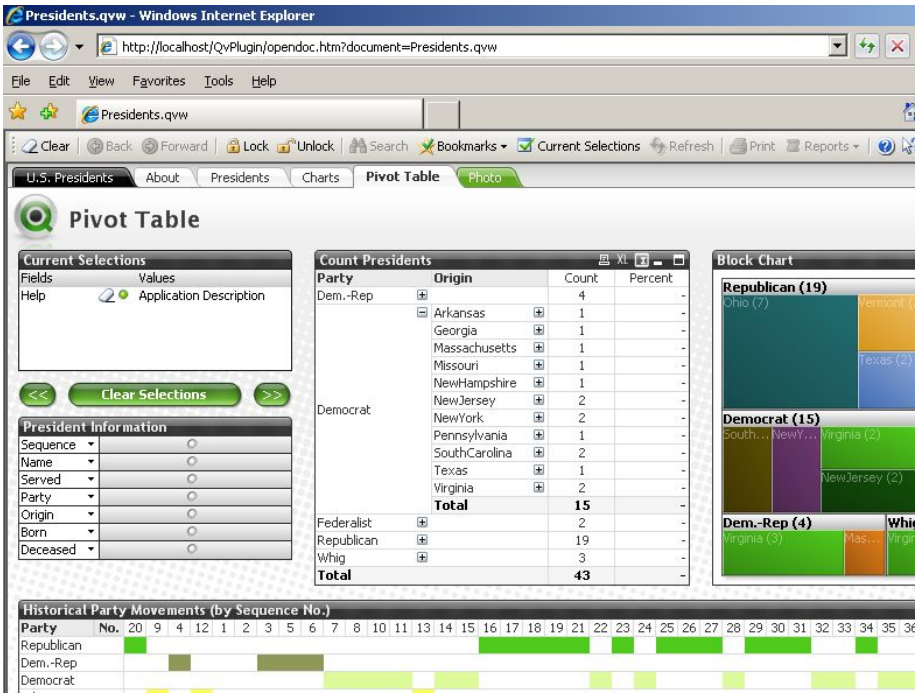
31.1 Plug-in Client

A plug-in is a program hosted by and running inside a web browser. Typically it consists of an ActiveX component with ocx as file extension. Acrobat Reader is a common example of a plug-in that computer users should be familiar with. QVA for IE installs and operates along exactly the same principles.

QlikView IE Plug-in is a freely downloadable program and can easily be distributed throughout the company via the sample HTML pages provided with the installation of QlikView Server.

The QVA for IE client appear as an integrated part of the MS Internet Explorer window. No QlikView menu bar is available, but most of the QlikView toolbar functions are available. Sheet and sheet object context menus are available where applicable.

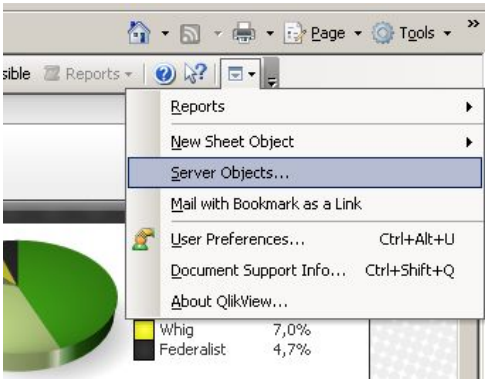
Local files are not accessible from QVA for IE.

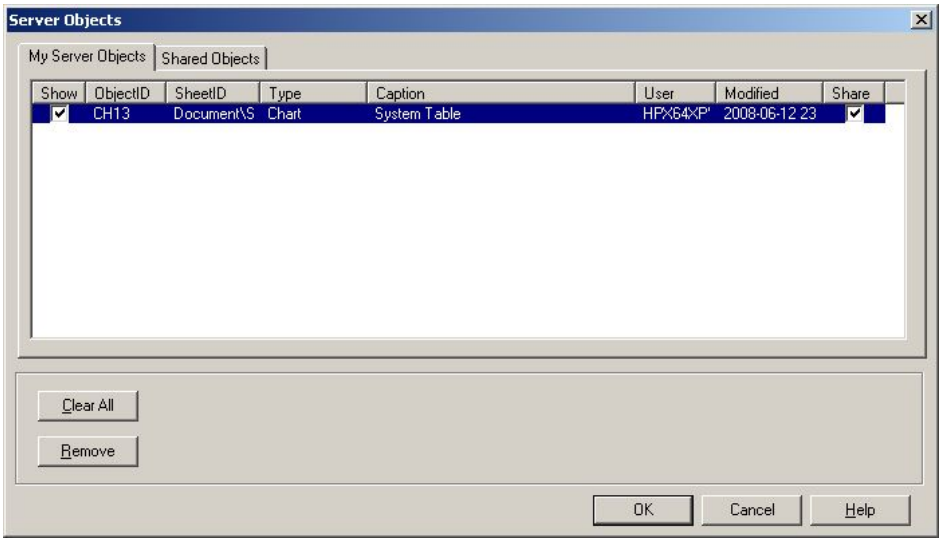


QlikView plug-in client in Internet Explorer.

31.2 Collaboration - Shared Objects

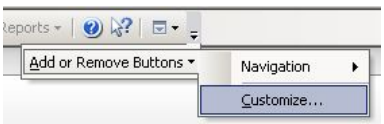
Collaboration – shared objects – is supported in the Plugin Client for authenticated users. Sheet objects may be created, moved, and sized. Use the standard right-click menu and select **New Sheet Object**. Reports can be created and existing reports can be edited. New objects, reports and bookmarks may be shared with other users through the **Server Objects** dialog. Locate this option off the Menu Options toolbar icon.

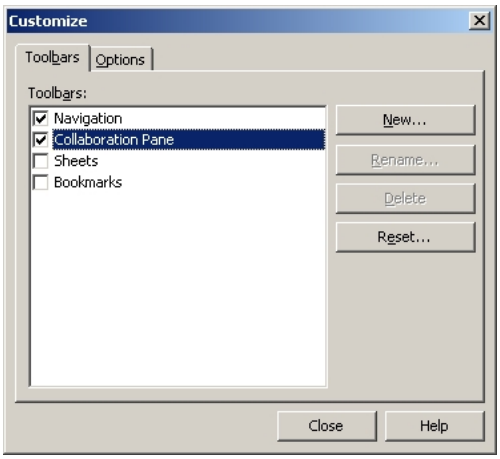


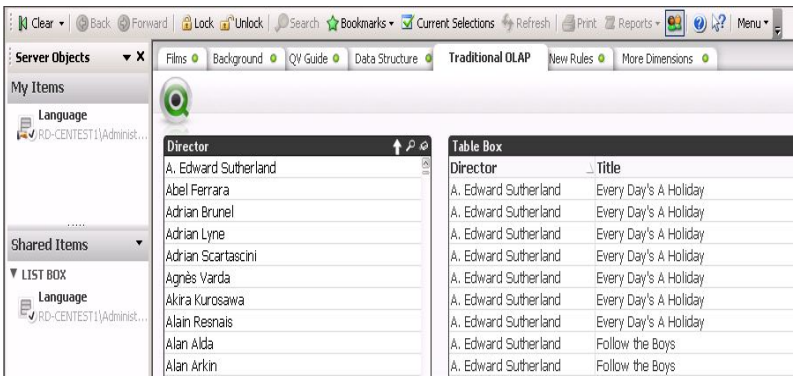


Use the **Share** option to share the selected objects with other server users. Access to the object through this dialog will move to the **Shared Objects** tab.

Shared Objects may also be controlled through the **Server objects** menu. You can display the **Server objects** menu from the **Add** or **Remove** buttons dialog off the main toolbar. Choose the **Server Objects Pane** from the **Toolbars** tab of the dialog.







The **Server Objects Pane** will list all objects that you have created, as well as any shared objects that are available.

31.3 Deployment of QVA for IE

There are two basic ways to get the QVA for IE plug-in installed on a client computer:

Simple install link on web page

Clicking on a **download and install** link on a web page starts the installation. This is a very common approach used for many commercial plug-ins.

It is necessary that the user installing the plug-in has install privileges on their own machine in order for this approach to work.

Pushing out client via group policy

In organizations where individual users are not allowed to install new software on their computers, the system administrator may create a so called "group policy" and "shoot out" the QVA for IE clients to any set of computers in the directory.

31.4 Customizing settings for QVA for IE

The appearance and behavior of the QVA for IE client can be changed via a couple of special commands, as follows.

Selecting toolbars

The client comes with a predefined toolbar for Navigation, Server objects, Sheets and Bookmarks. The toolbar may be customized by clicking on the **Toolbar Options** icon located to the right of the toolbar.

Setting User Preferences

Use the **Show Menu** toolbar icon to display the **User Preferences** selection. This will allow setting user preferences, such as language and printing preferences. For a detailed explanation of each of the available commands, please refer to the QlikView Reference Manual.

32 QlikX - Publishing separate sheet objects from the QVA for IE plug-in client

32.1 Technical description of the QlikX concept

The QVA for IE plug-in has the ability to support the display of individual sheet objects on a web page, without the surrounding sheet environment. Sheet objects from different QVS documents can be displayed on the same page. Web pages that are to utilize this functionality may be created manually. This section describes the requirements and process for creation and/or maintenance of a QlikX web page.

Incompatibility notice! The whole architecture for this concept was changed in version 9 of QlikView. The QlikOcx control is used for each object that is displayed and the QlikOcx.ocx directly connects to the QlikView document holding the data. The class id for the QlikOcx is also changed from the QlikOcx class id used in version 8.

32.2 Limitations

The following conditions must be met for the QlikXs to work:

- MS Internet Explorer version 6 or later must be installed on the client computer
- The QlikView IE Plug- must be installed on the client computer

32.3 Getting it to work

This section provides an outline of the steps necessary to build a web page with QlikX objects. It is assumed that the reader possesses a general knowledge of HTML.

Infrastructure

Server environment

QlikView Server must be of version 7 or later.

Web page components

HTML web page

The basic HTML web page(s) defining the client typically reside in a directory somewhere under the web server's wwwroot, either directly, or indirectly through the QlikView virtual directory. The pages could contain any standard HTML code. The details of how to present QlikX sheet objects is described in the next chapter.

Plug-in

The QlikView IE Plug-in must be installed on the client computer.

32.4 Capabilities, differences and limitations

This section describes some of the technical differences and limitations with QlikX in relation to other QlikView clients.

Sheet Objects supported

All sheet objects apart from Custom Objects are supported

QlikView entities with partial support

The following QlikView entities currently have partial support:

- Sheets (there is no direct connection available to the sheets in the QVW document, but it is very easy to create the same functionality using HTML frames and tabs).
- The following QlikView entities currently have no counterpart in the QlikX environment but may appear in some form in future versions:
- Alerts
- Reports

Navigational differences

There are a few differences in the GUI facing users of QlikX compared to users of other types of QlikView clients.

- There is no menu bar
- There is no toolbar

Print/Export

Print and export work exactly as in normal QlikView. Right-click on the object and select Print...

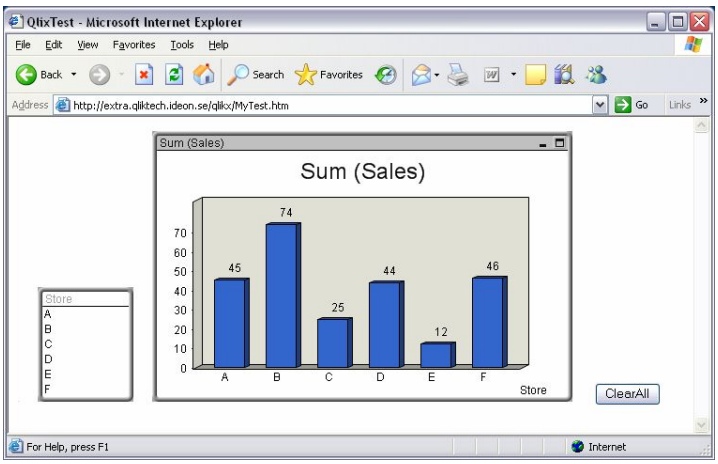
32.5 Complete sample page

Below is a complete HTML page for displaying one list box and one chart with QlikX. Minimum HTML formatting applied.

```
<html>
<head>
<title>QlixTest</title>
<meta name="vs_targetSchema" content="http://schemas.microsoft.com/intellisense/ie5">
<script type="text/javascript">function ClearAll()
{
Qlix1.ActiveDocument.ClearAll();
}
</script>
</head>
<body>
<OBJECT
id="Qlix1"
height="122"
width="102"
classid="CLSID:6E1BAAF6-ECB9-4505-86C1-5D04467B02CC" >
<PARAM NAME="ObjectID" VALUE="Document\LB01">
<PARAM NAME="DocName"
VALUE="qvp://extra.qliktech.ideon.se/MyQvApp.qvw">
</OBJECT>
     
```

```
<OBJECT
id="Qlix2"
height="288"
width="448"
classid="CLSID:6E1BAAF6-ECB9-4505-86C1-5D04467B02CC" >
<PARAM NAME="ObjectID" VALUE="Document\CH01">
<PARAM NAME="DocName" VALUE="qvp://extra.qliktech.ideon.se/MyQvApp.qvw">
</OBJECT>
     
<input
type="button"
value="ClearAll"
onclick="ClearAll()"
id=button2
name=button2>
</body>
</html>
```

The result of the HTML code above can be seen below:



The QlikX example in Microsoft Internet Explorer.

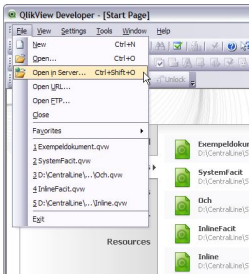
33 QlikView installed Windows clients

33.1 Locally installed Windows Client

With QlikView Desktop installed on your machine, you may open any application on QlikView Server which you have access rights to.

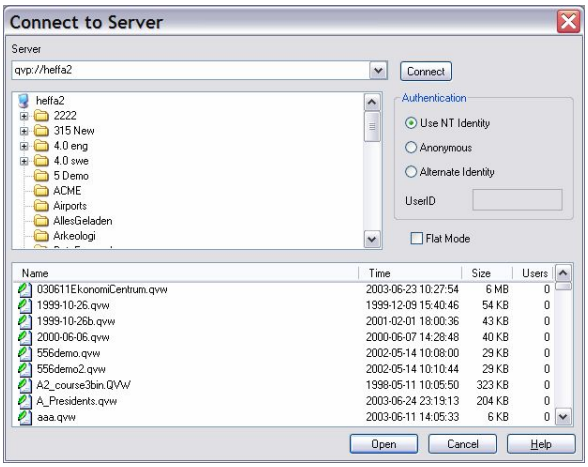
33.2 Open in Server

Once QlikView has been installed, the end user can choose to open QlikView documents through the **Open in Server** command in the **File** menu.



The Open in Server menu item.

This command will provide the end user with all the possible QlikView documents provided and which QlikView Servers are available. By clicking in the **Connect to Server** dialog the application will open and the analysis session can begin.



The Connect to Server dialog in QlikView.

Connection pseudo-URLs

When connecting to QlikView Server from Windows clients, either via the Open in Server dialog or via link files, the identity to be used is specified via the pseudo-URL document address. The syntax is:

```
qvp://[[username]@]servername [:(port | protocol)] /
[documentname.qvw][?paramname=paramvalue{&paramname=paramvalue}]
```

where

username is a Windows user ID

servername is the name of a server running QlikView Server

documentname is the name of the QlikView document (excluding qvw extension)

port (e.g. 4749) can be used to specify a specific port used by the server

protocol (e.g. http) can be used to specify tunneling protocol

paramname := (USERID | XUSERID | PASSWORD | XPASSWORD | MACRO | IIS_AUTHENTICATE)

USERID denotes a section access userID in clear text. This parameter is also utilized to pass a **Ticket** value during the **Get Ticket** process.

XUSERID denotes a scrambled section access userID

PASSWORD denotes a section access password in clear text

XPASSWORD denotes a scrambled section access password

MACRO denotes the name of a macro to be run when the document is opened

(only one macro allowed)

IIS_AUTHENTICATE denotes a single-use key (40 hex characters) for IIS integrated authentication.

paramvalue is a valid value for each parameter.

@ without username denotes anonymous identity.

If user identity is omitted altogether, the logged in Windows identity is assumed.

Examples

qvp://www.qliktech.com/AcmeStores.qvw

qvp://@www.qliktech.com/AcmeStores.qvw

qvp://john.doe@www.qliktech.com/AcmeStores.qvw

qvp://www.qliktech.com:http/AcmeStores.qvw

qvp://www.qliktech.com/AcmeStores.qvw?USERID=JOHN&PASSWORD=ABC123

qvp://www.qliktech.com/AcmeStores.qvw?MACRO=Mymacro

TIP: Internet Explorer 7 does not support @ or : in the URL in order to prevent spooling of URLs. To specify these characters in the URL, you need to URL-encode them.

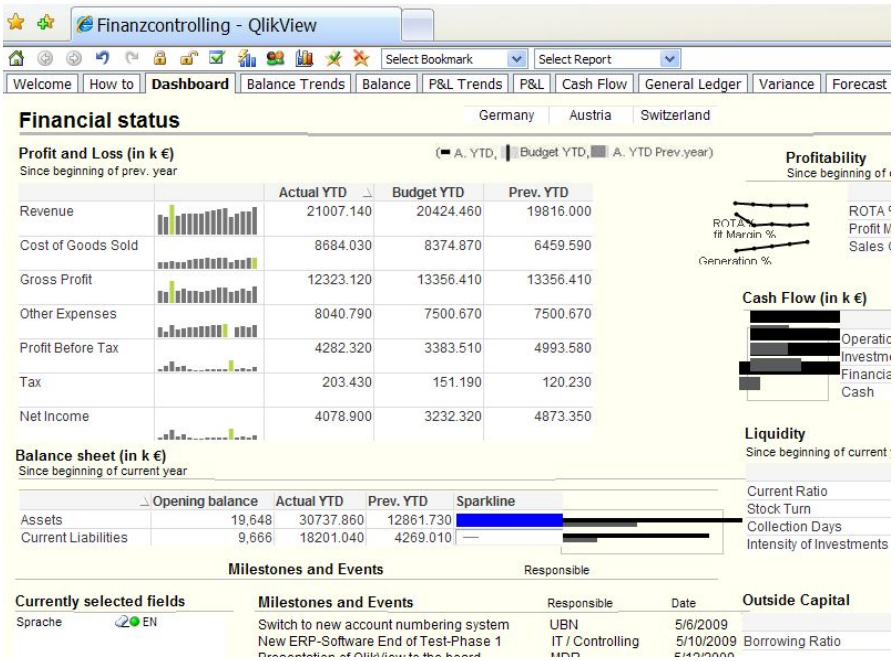
Use %3A for: and %40 for @.

34 The QlikView AJAX Zero-Footprint Client (ZFC)

34.1 General

The QlikView AJAX Zero-Footprint Client (ZFC) provides an object based client environment built on a state-of-the-art AJAX (Asynchronous JavaScript And XML) architecture. The QlikView AJAX ZFC requires no installation or version maintenance on the client computer. Implementations may chose to custom develop their own HTML/ASP code for display and user interaction, but most installations can simply use QlikView Server to automatically generate HTML code as needed. Almost all customization can be accomplished through the source QlikView document.

TIP: The detailed documentation for defining web pages using the AJAX client is now accessed through the QlikView Software Development Kit (SDK). SDK materials are available in the installation package for QlikView Server.



QlikView AJAX client

Basic description of the QlikView AJAX ZFC

One of the main advantages of the AJAX architecture is the inherent asynchronous update capability to provide quick, incremental updates to the user interface, without requiring a browser page refresh. The QlikView AJAX ZFC provides the environment for the QlikView Server to produce and send Dynamic HTML (DHTML) pages and XML data to the browser running on the client computer and also receive feedback from the user clicking in those pages. DHTML is basically HTML with scripting. Nothing is installed on the client computer.

QlikView AJAX ZFC is based on the component AVQ.HTC, which is part of Winsider AB's "Visual Value"™ framework. The "Visual Value"™ framework is a data modeling and presentation framework

that allows location independent presentation and manipulation of data with advanced business logic rules and constraints. QlikTech has licensed this component for use with QlikView Server.

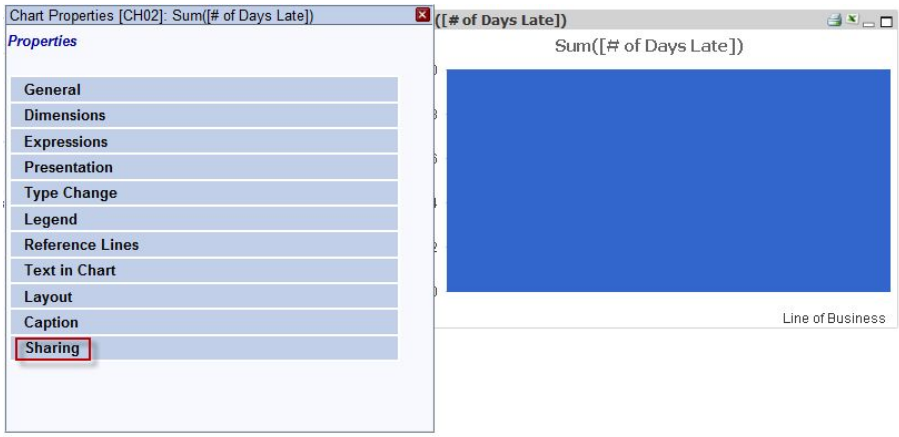
Requirements and Limitations

- The client requires one of the following browser types:
  - MS Internet Explorer version 7 or later
  - Browsers based on the Mozilla engine version 1.0.6 or later (e.g. Firefox)
  Different browsers may render the same page slightly differently.
- This is a way to build web pages featuring one or more QlikView sheet objects. The standard QlikView Sheet Tab is not supported, but separate QlikView sheets may be emulated through the use of multiple HTML pages. Selection state in the source QlikView document will hold throughout the same browser session.
- Almost all types of QlikView sheet objects and their functionality are supported. See the end of this chapter for details.

34.2 Collaboration - Shared Objects

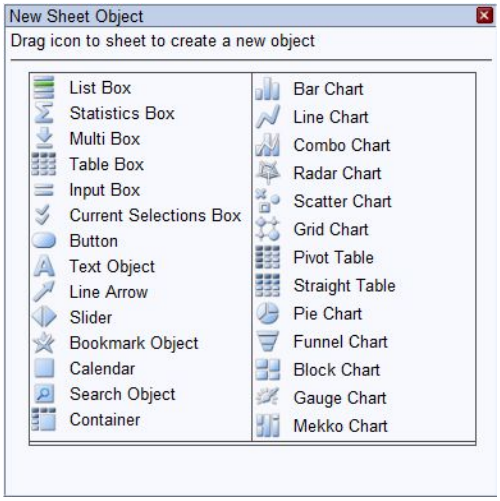
All authenticated users are allowed to create and share objects through the AJAX client. Use the Shared Objects dialog to create new objects, access object properties, hide or show shared objects, and copy existing objects.

Use the **Share** option when you have created a new object to share the selected objects with other server users.



QlikView AJAX client Collaboration

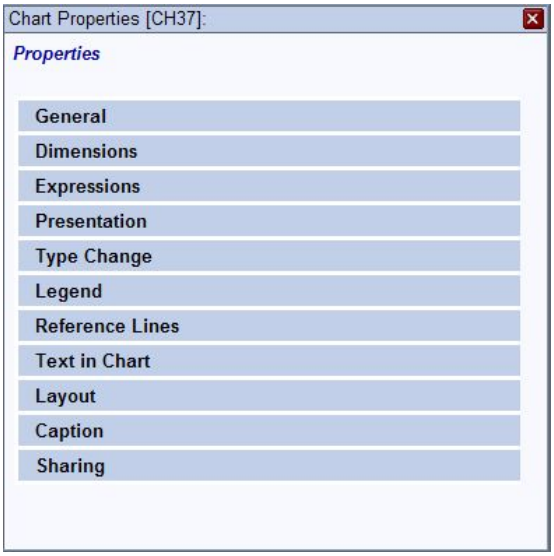
Click on **New Sheet Object** in the context menu to create a personal object.



Create new object

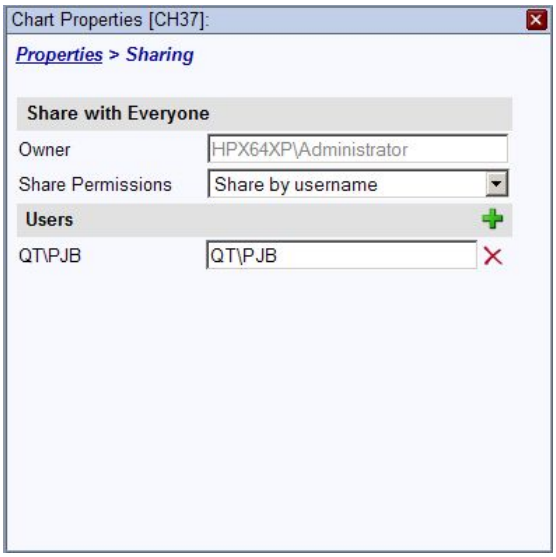
Select the object type and drag the icon to the desired location on the currently displayed sheet. This will display the **Properties** dialog for the new object. Set the desired properties and close the dialog by clicking on the red X in the upper right corner.

Multiple Property dialogs can be open at the same time, and existing properties can be copied by dragging.



The properties page

Objects can be shared with other users through the Sharing dialog. Click on **Sharing** in the **Properties** dialog to control how the object should be shared or to turn off sharing.



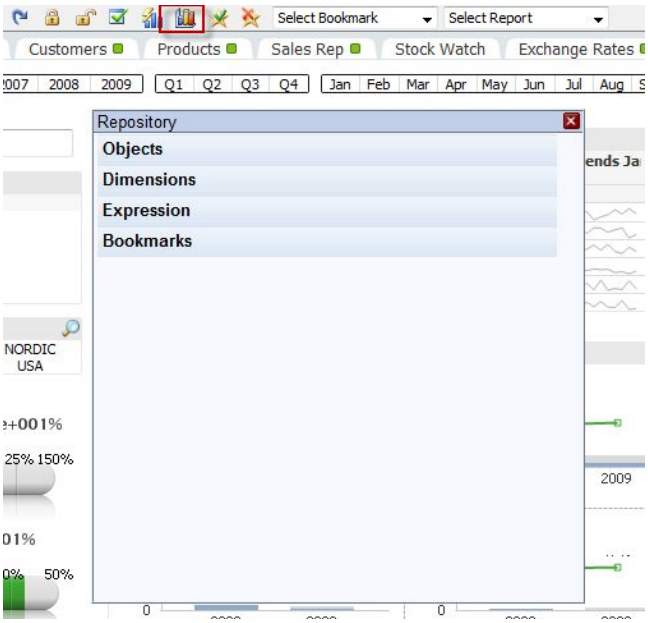
The Sharing dialog

Objects may be shared with all users, shared with specific users, or not shared. Click on the plus sign under **Users** to add specific users. Click on the X next to a user to stop sharing with that user.

To hide an object, right-click on the object and choose **Delete**. To show a hidden object you must drag the object from the **Repository**. You may also copy (clone) an object by dragging the clone icon onto the current sheet. To copy (clone) a document object, drag the clone icon for the desired object onto the current sheet.

34.3 Document Repository

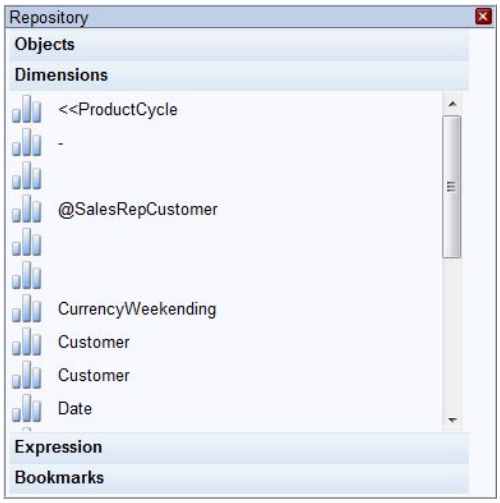
The AJAX client has access to all document chart dimensions and expressions. To access the Repository, click on the toolbar icon in the AJAX client.



The Repository dialog

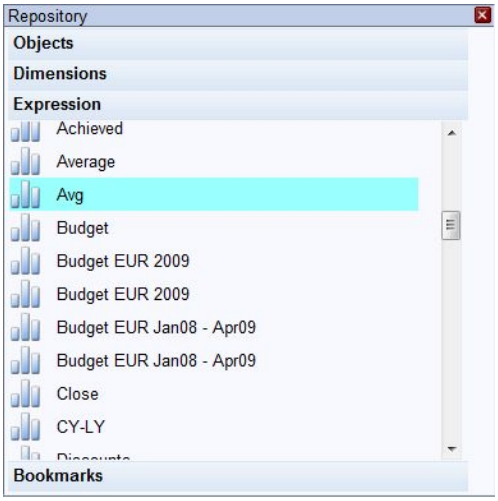
In the Repository you see all objects of the document, those that originally were part of the document, the shared objects of other users and your own objects.

Use this dialog to view dimensions (fields) used in the document and to drag a dimension to another open property dialog.



The Document Dimensions page of the Repository dialog

Use this dialog to view expressions used in the document and drag an expression to another open property dialog.



The Document Expressions page of the Repository dialog

34.4 Capabilities, differences and limitations

This section describes some of the technical differences and limitations with QlikView AJAX ZFC in relation to other QlikView Server clients.

Document Properties Support

Opening images and sounds are not supported.

Sheet Objects supported

Virtually all sheet objects and functionality is now supported through the AJAX client. The few minor exceptions to this are noted below.

The following types of sheet objects are not supported in the QlikView AJAX ZFC and are very unlikely to ever be supported:

- Custom Object

QlikView entities with partial support

The following QlikView entities currently have partial support in the QlikView AJAX ZFC environment:

- Sheets (there is no direct connection available to the sheets in the QVW document, but it is very easy to create the same functionality using HTML frames and tabs). User selection state is maintained throughout a single browser session.

Print/Export

The following general comments can be made with regard to print and export of objects and data when using the QlikView AJAX ZFC

Functionality supported includes:

- The HTML page can be printed by using the Print command in MS Internet Explorer. The usual rules and limitations regarding MS IE printing apply.
- Chart images can be copied to clipboard or saved as any other pieces of graphics on a web page.

Note! In order to copy an object you must first put your web browser in native mode by clicking shift+ctrl. You can then right-click and choose **Copy Image**.

- Button-driven server-side export providing results in a new MS Internet Explorer window.

Caption icons can be utilized in object captions for additional functionality.

APIs and integration

QlikView AJAX ZFC builds on HTML. This implies certain limitations with regard to programmatic access and integration

- Automation APIs cannot be used
- No real client side APIs are available. It may be possible in the future to access data stored client-side in QlikView AJAX ZFC elements via scripting.

Note however that

- Actions can be executed via buttons and objects
- The HTML elements of QlikView AJAX ZFC can co-exist with all other types of web page components on a common HTML page. That includes other QlikView clients (e.g. QVA for IE plug-in, including QlikX components) and all types of ActiveX controls. Interaction between QlikView AJAX ZFC and the other components will however be limited.

Selection Parameters in the URL

Selection Parameters in the URL It is possible to include selection parameters in the url for the Ajax ZFC. Note that the selection parameters always clears any other selections in the list box.

The following syntax rules apply:

- Separate selections are divided by “&”
- Separate selection values are divided by “,”

- White spaces matters
- Syntax is case sensitive The following table includes a list of possible actions and url parameters.

Action	Parameter
Single selection in list box	select=LB02,Germany
Multiple selection in one list box	select=LB02,Germany,Argentina
Multiple selection in multiple list boxes	select=LB02,Germany,Argentina,Albania& select=LB01,-Boero
Specify whether the object is a Server or document object (document is default)	select=Server\LB02,DE4620 select=Document\LB02,Germany,Argentina
Specify data source or document (only necessary if there is more than one on the page)	select=DataSource1.Document\ LB02,Germany,Argentina select=Safpro9.Document\LB02,Germany, Argentina select=DataSource1.LB02,Germany, Argentina select=Safpro.LB02,Germany,Argentina
Select a bookmark. NB! Must enter bookmark id, not name. Do the following to obtain the correct id: 1. Open the document in QlikView 2. In the Bookmarks menu choose "More..." 3.The id is in column "ID" 3. Only document bookmark can be used. The prefix is therefore always "Document". (Prefix must be entered)	bookmark=Document\BM02
Combine bookmark with selection	select=LB02,Germany&bookmark=Document\ BM06
Change a data source document if there is only one data source on the page	application=Films

Example of a url:

http://AccessPoint1/QvAJAXZfc/opendoc.htm?document=Data%20Visualization.qvw&host=localhost&select=Document\LB02,Germany,Argentina,Albania&select=Document\LB01-Boero

34.5 ASP timeouts for very large QlikView documents

When using the QlikView AJAX ZFC with large QlikView documents, the asp code might sometimes require that you increase the asp timeout. This can be made in two ways, either programmatically or by customizing the IIS.

- By setting the Server.ScriptTimeout property in your code, such as: <%Server.ScriptTimeout = 180 %>, where the numeric value is the number of seconds that the current script will be executed.
- To set the timeout in the IIS, open the **IIS Management Console**, open **Properties** for the folder containing the asp code, go to the **Directory** or **Virtual Directory** page (depends on what type of folder you use), press the **Configuration** button to open the **Application Configuration** dialog, go to the **Options** page where you find the edit box for the **ASP Script Timeout**.

35 The QlikView iPhone Client

35.1 General

The QlikView iPhone Client is available for free and can be downloaded from the Apple iTunes AppStore. Download and install the QlikView for iPhone app. The QlikView iPhone Client requires version 8.5 SR2 or later of QlikView Server.

Supported Devices

All generations of iPhone and iPod Touch are supported, using firmware version 3.0 or later.

35.2 Setup

Once the QlikView for iPhone app is downloaded and installed on your device, start the app, select the **Settings** menu ( )and select **Edit** on the first screen.

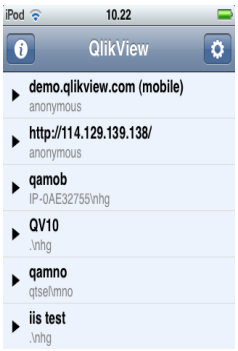
Editing the settings for a QlikView Server

URL	The url to the QlikView Server.
Display Name	The name that should be presented in the Server list.
Uses Mobile Directory	Set whether to use the Mobile Directory of the QlikView Server (generally recommended for documents specific to mobile devices).
Username	Username for logging on to the Server.
Password	Password for logging on to the Server. If the **Password** is left out here, you will be required to enter it each time you open a document.

The URL can be specified in several different ways (the qvp protocol is not supported):

- demo.qlikview.com
- http://demo.qlikview.com

- https://demo.qlikview.com
- the ip address



Host names, ip addresses and display names in the QlikView Server list

You can enter the same QlikView Server several times and have different user credentials.

If you want your data/user credentials sent encrypted, you will need to set up a VPN for secure access to your server environment.

35.3 Document Access

If you wish to use anonymous access for you QlikView iPhone clients you must configure your server according to one of the following:

Anonymous Access Using NTFS Authorization

- Set the QlikView Server authorization to **NTFS** in QEMC on the tab **System**, **Setup**, **Security**.
- Set the QlikView Server authentication to **Always Anonymous** or **Allow Anonymous** in QEMC on the tab **System**, **Setup**, **Security**.
- Give the user IQVS_MachineName access rights to the document on the file server.

Anonymous Access Using DMS Authorization

- Set the QlikView Server authorization to **DMS** in QEMC on the tab **System**, **Setup**, **Security**.
- Set the QlikView Server authentication to **Always Anonymous** or **Allow Anonymous** in QEMC on the tab **System**, **Setup**, **Security**.
- Add the anonymous user to the document in QEMC in the **Edit User** dialog on the tab **Documents**, **User Documents**, **Authorization.**

If you wish to use authenticated access for your QlikView iPhone clients you must configure your server according to the following. Note that the client will not send any user credentials unless prompted for them.

Authenticated Access Using NTFS Authorization

- Set the QlikView Server authorization to **NTFS** in QEMC on the tab **System**, **Setup**, **Security**.

- Set the QlikView Server authentication to **Allow Anonymous** or **Prohibit Anonymous** in QEMC on the tab **System**, **Setup**, **Security**.
- Give the user in question access rights to the document on the file server.

Authenticated Access Using DMS Authorization

- Set the QlikView Server authorization to **DMS** in QEMC on the tab **System**, **Setup**, **Security**.
- Set the QlikView Server authentication to **Allow Anonymous** or **Prohibit Anonymous** in QEMC on the tab **System**, **Setup**, **Security**.
- Add the user in question to the document in QEMC in the **Edit User** dialog on the tab **Documents**, **User Documents**, **Authorization.**

35.4 Application Flow

The list of documents is created based on the contents of the root folder and the mounted folders on the QlikView Server. The list may also filtered by the AccessPoint Method. This is set on the QlikView Server, in the QEMC (see the QlikView Server Reference Manual for more information).

The document list

Sheets and objects

Once you have selected a QlikView document to open, you will be presented with a navigation bar with the Sheets available in the document. Selecting a sheet will then display one object on that sheet at any time. Other objects are displayed through cover flow at the bottom of the screen. The logic behind the order in which objects are displayed in the cover flow is: list boxes, charts, tables, text objects. The order within each group is arbitrary. All objects are, of course, updated as selection state changes. Standard iPhone touch interaction is supported for the object.

An example of a QlikView document

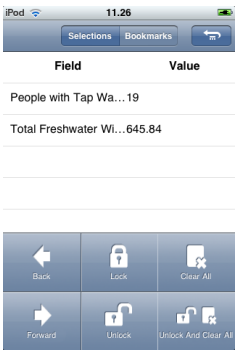
Touch a value to select, touch it again to deselect. To select multiple values in a list box, swipe sideways on the list box. Two buttons are displayed at the top of the list box, **Cancel** and **Select**. Tap the values in the list box you wish to alter selection state for. The values will be marked with a tick. Tap again to remove the tick-mark. Tap **Select** to send the request to the Server or **Cancel** to go back to previous select state. Tapping an excluded (gray) value will include it in the current selection, if it is not in conflict with selections made in other list boxes. In case of a conflict, all conflicting values will be deselected before selecting the tapped value.

For a list box, the All/Possible/Excluded buttons can be used to make multiple selections.

To make selections in charts, touch and hold for one second in the area you wish to select. A square with movable corners and two buttons is displayed. Tap and drag the corners to mark the area you wish to select. Tap **Select** to select the marked area or **Cancel** to keep the current selection.

Use the **E-mail** () button in a chart to e-mail the image of the chart, the chart title and a list of current selections. Make sure you have configured your device for e-mail.

Current Selections and Bookmarks buttons are located on a common page. View the page by pressing the  button in the upper right corner.



The Current Selections screen

Here you can manipulate your selections, for example lock and clear.

The Bookmarks screen

With the Snapshot Bookmarks button in the Bookmarks screen, you can download the bookmarks from the document. Note that this will store all data from the document locally!

When viewing a list box, shake the device to clear the selections shown in the list box.

Move to horizontal or vertical to change perspective.

Pan and zoom are supported.

Text in text objects is displayed. Text objects are presented last in the cover flow.

Press the  button to access the information screen. Here you can access Demo files and System details for support. There is an option to send an e-mail to support@qlikview.com. The message, which can be edited, contains information about the client software and the device.

Press the Help button to enter an introductory walkthrough of QlikView.

Close and reopen a document to refresh it.

Supported objects

The following objects are supported:

- List box
- Text object
- Charts
- Current selections
- Limited support* for:
- Pivot table**
- Straight Table***
- Table box

*Supported features are:

- Selection in table cells (single tap on a cell)
- Re-order table colums (tap on the header and drag the column)
- Sort a column (double tap on a column header)
- Links in tables
- Expression formatting
- Calculation conditions
- Table grid lines
- Table styles

Headers are locked while scrolling, there is limited column resizing.

**Supported features:

- Partial sums
- Expand and collapse by tapping the + symbol and the - symbol

***Supported features:

- All types of gauges as data representation for expressions
- Linked images as data representation for expressions
- Mini charts as data representation for expressions
- Subtotals
- Links

The totals row is always locked on top.

Design Guidelines

There are a few things to consider when developing applications that should be viewed on the iPhone client.

- Group Sheet Objects into Sheets so that they make sense without requiring a screen position. However, do not add too many Objects per Sheet. A maximum of 10 objects and 4 charts. (Charts take up the most resource.)
- All objects should be maximized.
- Charts should have white backgrounds.
- Charts should be brightly colored, and colors should match on a sheet.
- Charts should have axis titles.
- Charts should not have cycle groups or scroll bars.
- No need for Current Selections or Bookmarks objects on the sheets. However, you should assign some interesting bookmarks to be saved in the document.
- Make use of location services by adding two listboxes, preferably to a separate sheet, one name "longitude", and one name "latitude".
- Consider reducing data before distribution to reduce data traffic.
- Keep in mind that not all fonts are supported by the iPhone.

36 The QlikView BlackBerry and Java Mobile Clients

36.1 General

The BlackBerry and Java Mobile clients are both based on Java. The main difference between them is that while the Java Mobile client is restricted to only use the Java ME standard MIDP 2.0, the BlackBerry client uses BlackBerry native api for the User Interface.

The client connects to a QlikView Server, using either a socket connection (QVPJ) or HTTP/HTTPS, if tunneling is available on the server.

3G communication or WiFi is recommended. Connection speed is the most important factor for the performance of the mobile clients.

The client will, of course, be most effective on larger screens. If a touch screen is available it will be used, but almost all functionality is available even from a phone with just a numeric keypad.

36.2 Communication

The Java Mobile client communicates with the QlikView Server using the QVPX protocol. The protocol is xml based and used by both the Ajax Zero-Footprint client and the iPhone client. With the support for QVPX, a protocol designed for communication over HTTP, the performance is improved when running over HTTP or HTTPS compared to the older QVPJ protocol.

To use QVPX you must enable the setting **Use XML interface** in the Server setup screen.

The support for QVPJ will be removed in the future. QVPJ communicates either directly over a socket or via the tunneler using http or https. For authorization it uses an https connection to the QlikView Server to get a ticket.

36.3 Setup

To install the client use a browser for installation (by simply browsing to the JAD file). No special setup is needed on the QlikView Server, but if you want to use authorization you will need to configure https on your server with a certificate that is supported by your device. A QlikView Server Enterprise license is required to support the mobile client.

Configuration with JAD Files

JAD (Java Application Descriptor) files are part of the Java Mobile Edition framework. They contain some parameters that are mandatory for all Java ME applications and some QlikView specific parameters, e.g., what host to connect to, etc. They can be customized in a customer installation to point directly to the customer's host.

In the JAD file you can set the following parameters:

Server configuration parameters:

The first parameter should always be the DNS name or IP address, the second parameter, which is optional, should be the Server name. The user name and password cannot be pre-configured. The user will be prompted with a log-in dialog when connecting to the Server.

XML	Use QVPX xml interface
ANONYMOUS	Do not log in
SOCKET	Use socket for communication
HTTP	Use http communication
HTTPS	Use SSL communication
LOGINHTTP	Login over http
DIR=zzz	Set directory zz
READONLY	Do not allow the user to modify or remove Server configuration.

Up to ten QlikView Servers can be configured with the parameters QV-HOST and QV-HOST1 to 9, for example:

```
QV-Host: demo.qlikview.com;QlikView demo;XML;ANONYMOUS;READONLY;DIR=mobile
QV-Host1: mobilebetaeu.qlikview.com;Beta EU;SOCKET;HTTP
```

General parameters:

DEBUG	Enable debug mode
DPI=xx	Set dpi to xx
SINGLE	Single object mode is default
STDMENU	Use standard menu (only for Java ME phones with touch functionality)
NOSTDMENU	Do not use standard menu (only for Java ME phones with touch functionality
RECENT=y	Number of recent documents to save (0=no recent documents)
FORCE_MDS	Force MDS communication (only BlackBerry)
FORCE_TCP	Force direct Tcp communication (only BlackBerry)
FORCE_WAP2	Force WAP2 communication (only BlackBerry)
USE_WLAN	Use WLAN (only BlackBerry)
NOCOMPRESSION	Do not use compression

The communication path from the device to the server is a little more complicated than the standard client communication path, but basically it will go through the telephone operators network and over Internet to

the QVS host. If you use WiFi, which many modern devices support, and your QVS host is on the same local network as your wireless router you will, however not go over the internet.

Blackberry devices have a more complicated communication infrastructure, where communication is encrypted between the device and Blackberry BES server, if you use one of those. Blackberry also do not use JAR files but have their own JAD file format.

To set up Internet connection with your phone you might need to download settings from your operator. For BlackBerry phones you may need to enter settings by hand, depending on your service provider.

If you are installing from the download link and have an existing version already installed, you might need to clear your content cache. If you haven't done this you might get an error message 'JAR size mismatch'.

Centralized Configuration in BlackBerry

The BlackBerry client can be configured centrally. The configuration is done through the BlackBerry IT Policy. The administrator must log in to the BlackBerry Administration service and define IT Policy Rules. Add the setup parameters, QV-Setup, QV-Host or QV-Host1 to 9. The parameters the administrator can configure will be displayed under User Defined. The possible parameters are the same as those available for a JAD file (see above). All parameters configured in BlackBerry IT policy are automatically read only.

Changes in the IT Policy will automatically propagate to the clients.

Note! Settings made in the BlackBerry IT Policy will overwrite any parameters set in a JAD file!

Authorization

If authorization is enabled in the setup screen the mobile client will ask for username and password. It will then try to get a ticket from the QlikView Server. For this to work the server must be configured with SSL support.

36.4 Application Flow

The client shows QlikView documents in much the same way as the desktop clients, but on a screen that is considerably smaller. It is also limited by the font handling of Java ME, where only three, pre-defined font sizes (small, medium and large) are available. This means that text sizes might be different from the desktop clients and some objects might not work. Another limitation is on image sizes, where images that exceed the memory capacity of the device will not be displayed. They will, however be transferred from the server and can make opening the documents slow. When designing documents for the mobile client you should avoid using large images. Smaller images will work fine.

When you start the application you get a list of all your configured Servers. If you have opened documents before you also get an entry called **Recent documents**. When you click on a Server, the list of documents is displayed below the Server. In the settings form you can also see some information about your device and version of the QlikView Mobile client.

General Features

- The documents**Recent Documents**list can be removed
- **Server** name can be added in the Server settings
- A logo can be displayed on the documents

Supported objects

The following objects are supported:

- List box
- Table box
- Charts
- Text objects. Transparent text objects are supported in the BlackBerry client.
- Line/Arrow
- Button
- Current selections
- Statistics box
- Straight table
- Multi Box (read-only)
- Pivot table

Drawings of the objects are simplified compared to the desktop clients. Columns cannot be moved or resized.

Supported operations

The following operations are supported:

- Selection
- Clear
- Lock
- Unlock
- Back
- Forward
- Search
- Fast Change
- Apply bookmark
- Minimize
- Maximize/Restore
- Cycle and drill down
- Table sort
- Creating bookmarks
- Zoom (only newer BlackBerry and Symbian devices)
- Open URL. Depending on device the following URL types are supported:
    - http/https
    - tel
    - sms
    - mailto
- Pivot tables (pivoting is not supported. Expand/collapse is supported)
- Drill-up in list boxes and tables
- Cycle in list boxes and tables
- Tree view in list boxes

- URLs in tables
- Actions in line/arrow object

Note! Pivot tables are not supported in QVPJ!

Keyboard mapping phone keyboard

1: prev object	2:up	3:next object
4:left	5:select	6:right
7:prev tab	8:down	9:next tab
*:clear	0:back	#:forward

Arrow keys or scroll wheel scrolls the display, 2-4-6-8 moves within list boxes and tables. Other operations are available in the menu.

Keyboard mapping qwerty

Q:prev tab	W:	E: prev object	R:	T:up	Y:	U:	I: next object	O:	P:next tab
A:back	S:	D:left	F:left	G:	H:right	J: right	K:	L:	Backspace:clear
	Z:forward	X:	C:clear	V:down	B:down	N:	M:start select		Enter:Select

The Escape key on BlackBerry is mapped to the Back function in QlikView. If no more steps backward are available, the document is closed. Trackball scrolls the display, T-F-H-V moves within list boxes and tables. Many functions are mapped to several keys, to support Blackberry with small keyboard, like Pearl.

Touch screen support

Touch screen is supported:

- Selection is made by pressing the screen
- Setting the pointer in the background, on a non-focusable object or in the caption and dragging scrolls the screen
- Clicking on maximize or restore icon in object caption will maximize or restore object
- To highlight an object you must double-click the object.

On phones without touch screen a cursor is used and clicking middle soft key or trackball will simulate pointer press or release, depending on context.

Design Guidelines

-
- Keep objects small. The screen is scrollable, but objects that are larger than the screen are generally not a good idea.
- Verify that the font sizes you use work on your device. Small fonts might be displayed larger on the device, which might mean that texts will be cut off. The exception to this rule is graphs, which are rendered on the server, so scalable fonts can be used. Keep texts short if possible.
- Avoid buttons, if your users don't have a pointing device.
- Only use small images. A large image will take time to transfer to the device and make your document slow and you do not want to use your limited memory for large images. If the image is too big to fit into the devices memory it will not be displayed (but still take time to transfer).

36.5 Web Server for Mobile Downloads for QlikView

Note! The set up below is only one way of setting up a site for downloading the mobile client!

Prerequisites

In order to make the mobile client downloadable from a phone, the following prerequisites should be fullfilled:

- The Midlet files (Java files)
- An URL used as the download location
- Optionally a redirect site (Sample source code is included)

If Microsoft IIS is used as web server, the file getticket.asp must be placed in the Script folder. It is installed together with the feature **Microsoft IIS Support**.

Configuring the Web Server

Configure the following mime-types:

*.jad text/vnd.sun.j2me.app-descriptor

*.jar application/java-archive

*.cod application/vnd.rim.cod

This step must not be skipped!

Modifying the Midlet Configuration Files

Extract the Midlet on the local harddrive. The structure will look as follows:

QvJME.jar

QvJME.jad

bb\QvQlikView.jad

bb\QlikView-1.cod

bb\QlikView.cod

Upload to the WebServer

Upload the Midlet files to webserver.

Configuring the redirect site (optional)

Depending on the types of phones accessing the download site, they might be redirected to different sites depending on the type. The two most common redirects are:

Non-mobile-phone => "Please use a phone to access this page"

Blackberry => bb\QvJME.jad

All other => QvJME.jad

Sample source code

```
if (Request.ServerVariables["HTTP_USER_AGENT"].Contains("Windows NT"))
Response.Redirect("windowsuser.aspx"); else if (Request.ServerVariables["HTTP_USER_
AGENT"].Contains("BlackBerry")) Response.Redirect("bb/qvjme.jad"); else
Response.Redirect("qvjme.jad");
```

Test

Open the URL pointing at the redirect site (or directly on the QvJME.jad) in the mobile phone.

37 The QlikView Android Client

37.1 General

The QlikView Android client is available on Android Market free of charge. It is a client that can view QlikView Server data.

3G communication or WiFi is recommended. Connection speed is the most important factor for the performance of the mobile clients.The current version is 1.0.

37.2 Requirements

The client requires Android 1.5 or later and a screen resolution from 320x480 and above. The client will, of course, be most effective on larger screens.

QlikView Server version 9 is required on the Server side.

37.3 Application Flow

The list of documents is created based on the contents of the root folder and the mounted folders on the QlikView Server. The list may also filtered by the AccessPoint Method. This is set on the QlikView Server, in the QEMC (see the QlikView Server Reference Manual for more information).

Sheets and objects

Once you have selected a QlikView document to open, you will be presented with the first sheet of the document. At the bottom you see the tabs for all sheets. Selecting a sheet will display one object on that sheet at the time. Other objects on the same sheet are displayed in a list to the right. All objects are updated as selection state changes.

Touch a value in a list box to select, touch it again to deselect. To make a selection in a chart, you touch the screen and a "slider" selection will appear. Paint over the selections you wish to make and tap the **Select** button at the bottom, or tap the **Cancel** button to undo the selection.

Use the **E-mail** button in a chart to e-mail the image of the chart, the chart title and a list of current selections. Make sure you have configured your device for e-mail.

37.4 Supported Objects

The following objects are supported:

- List boxes
- All chart types*

*It is possible to select in all chart types except tables.

The current selections object is not supported, but there is a list of current selections built into the client. The bookmark object is not supported, but a list of current bookmarks is built into the client.

Part 7 Appendix

38 The Directory Service Provider

38.1 The Directory Service Provider Interface

This chapter will examine the two relevant interfaces, their methods and properties and make notes on implementation details where due. The chapter is aimed at users with programming experience.

The reason for developing a DSP of your own is to be able to use QlikView to distribute QlikView documents to users in a directory service not supported per default today.

IDirectoryServiceProvider

This is the interface of the class that should plug into the framework. The members are as follows:

```
LogMessage LogMessageEvent { set; get; }
```

Directly after construction this field will be instantiated with a delegate providing crude logging facilities.

```
string ProviderName { get; }
```

A free-form, preferably somewhat descriptive, name for the component suitable for the end-user.

```
string ProviderType { get; }
```

An installation-unique identifier used internally by the framework and related components. The identifiers used by the supplied providers are: AD, NT, Local and Custom.

```
void SetupPath (string _path, string _username, string _password);
```

Should create a node representing the corresponding directory service node at the specified path. Upon failure, an exception should be thrown.

```
IList<string>GetKnownRootPaths ();
```

The list returned should contain one or more viable paths for the methods above and below.

```
void ClearCache ();
```

If the implementation keeps a cache a call to this method should clear it.

```
string DomainName { get; }
```

A “domain name” associated with the path that is set up. It is used as qualifier to separate nodes of different providers (for example, the shipped Active Directory provider uses NetBIOSName as domain name).

```
IDictionary<string, string> GetSettings ();
```

The dictionary of supported settings has name of setting as **`key`** and name of type as **`value`**.

```
void SetSetting (string _name, string _value);
```

The parsing responsibility is obviously set on the provider.

```
IList<IDSObject> Search (string [] _pattern, eSearchType _type, string _
otherattribute);
```

Search for nodes with attributes matching any of the patterns supplied. The attributes are specified with the type parameter which can be one or more values from the enumeration. If type is “other”, then the last parameter specifies the name of the attribute. The search type “legacyid” is used for backward compatibility. Search should support patterns containing the wildcard sign ‘*’ that matches zero or more characters of any kind.

```
void Dispose ();
```

This method will be called whenever a provider object is released.

IDSObject

A simple interface for any type of node within the directory service.

```
string ID { get; }
```

The id of the node, unique within the instantiated path and consistent over all executions.

```
string DisplayName { get; }
```

The common name of the node in the directory service.

```
string AccountName { get; }
```

If present, this is the account name associated with the node.

```
eDSObjectType ObjectType { get; }
```

The basic type of the object.

```
IList<IContainer> MemberOf ();
```

A list of all the groups the node is member of.

```
string GetCustomProperty (string _name);
```

Any other property not natively supported by the interface. If not present null should be returned.

```
string Email { get; }
```

The primary, if any, email-address associated with the node.

38.2 Configurable ODBC

The ODBC database has to have two table, or two views, one for entities and one for groups.

The entity table must have the four following fields: **entityid**, **name**, **descr** and **email**. The fields **name**, **descr** and **email** must be strings. **Entityid** must be a unique identifier (suitable for primary key).

The groups table must contain two fields: **groupid** and **memberid**. Together these two fields create a unique identifier.

39 SNMP

QlikView Publisher now incorporates SNMP agents for all Publisher services, the setting is, however, per default off. This implementation is in its initial stages and is subject to change. At the time of writing we have enabled read from the agents. We support the following messages: **GetRequest**, **GetRespons** and **GetNextRequest**.

All services answer the standard SNMP queries, answer examples in parentheses:

1.3.6.1.2.1.1.1	sysDescr	Description of service/product (sysDescr.0:Qlikview Publisher Commandcenterservice version 8.50.600)
1.3.6.1.2.1.1.2	sysObjectID	Type of unit (sysObjectID.0:iso.org.dod.internet.private.enterprises.qliktech .products.publisher.Distributionservice)
1.3.6.1.2.1.1.3	sysUpTime	The system uptime (sysUpTime.0:0 hours, 12 minutes, 15 seconds)
1.3.6.1.2.1.1.4	sysContact	Possible to set in configuration file (sysContact.0:Unspecified System contact)
1.3.6.1.2.1.1.5	sysName	Possible to set in configuration file (sysName.0:Unspecified name)
1.3.6.1.2.1.1.6	sysLocation	Possible to set in configuration file (sysLocation.0:Unspecified location)
1.3.6.1.2.1.1.7	sysService	Constant, 72 means application server (sysServices.0:72)

The Distribution Service can answer additional queries. These are specified in the MIB file; see section about MIB file later in this chapter.

Each service has a configuration file, found in their subfolder in the Publisher installation folder, i.e. the configuration file for the Distribution Service is **QlikViewdistributionService.exe.config**.

The SNMP settings can be adjusted in the SNMP SETTINGS part of the configuration file. The SNMP has to be enabled for all services, the default is off.

EnableSNMP - Set to true to enable SNMP listener. Default value is **false**.

SNMPPort - Set the port you want to use for the particular Publisher service. See default settings for each service below.

SNMPsysContact - The textual identification of the contact person for this managed node, together with information on how to contact this person. Default value is **Unspecified System contact**.

SNMPsysName - An administratively-assigned name for this managed node. By convention, this is the node's fully-qualified domain name. If the name is unknown, the value is the zero-length string. If left empty, it defaults to current machine name. Default value is **Unspecified name**.

SNMPsysLocation - The physical location of this node (e.g. 'telephone closet, 3rd floor'). Default value is **`Unspecified location`**.

DebugSNMP - Set to true to enable extended debuglog for SNMP listener. Default value is **`false`**.

The default port settings for the services are:

Management Service	4781
Directory Service Connector	4731
Distribution Service	4721 (default SNMP port).
QlikView Server	4748

The ports are all configurable. If the services are installed on different computers they can all run on the same port. The ports will change as the implementation moves away from the experimental SNMP range and in to the range allotted QlikTech.

QlikTech has included a MIB file, so all SNMP managers will be able to interpret the additional responses for the Distribution Service. The file is installed to **`.\QlikView\Support Tools`**. The Support Tools requre a customized install. The MIB file is subject to change. The Distribution Service can answer the following queries, in addition to the ones previously mentioned:

1.3.6.1.4.1.30764.1.2.2.1	QDSTaskExecuteStatusTable
1.3.6.1.4.1.30764.1.2.2.1.1	QDSTaskExecuteStatusEntry
1.3.6.1.4.1.30764.1.2.2.1.1.1	QDSTaskID (ID-number of the task)
1.3.6.1.4.1.30764.1.2.2.1.1.2	QDSTaskName (Name of the task)
1.3.6.1.4.1.30764.1.2.2.1.1.3	QDSTaskExecuteStatus.(Status of the task. Possible values are: • Waiting • Running • Aborting • Failed • Warning
1.3.6.1.4.1.30764.1.2.2.1.1.4	QDSTaskNextExecutionAt (When the taskwill be executed next).
1.3.6.1.4.1.30764.1.2.2.1.1.5	QDSTaskLastExecutedAt (When the taskwas

	last executed).
1.3.6.1.4.1.30764.1.2.2.1.1.6	QDSTaskCurrentWork (What the task is doing now).
1.3.6.1.4.1.30764.1.2.2.1.1.7	

Read more about SNMP:

RFC for SNMP - http://www.ietf.org/rfc/rfc1157.txt

Wikipedia - http://en.wikipedia.org/wiki/Simple_Network_Management_Protocol

40 Active Directory Attributes

Below are Microsoft's definitions of the Active Directory attributes used in **Check User Identity on** in a distribution

SecurityIdentifier - A unique value of variable length used to identify a user account, group account, or logon session to which an ACE applies.

DisplayName - The display name for an object. This is usually the combination of the users first name, middle initial, and last name.

SAMAccountName - The logon name used to support clients and servers running older versions of the operating system, such as Windows NT 4.0, Windows 95, Windows 98, and LAN Manager. This attribute must be less than 20 characters to support older clients.

E-mailAddress - The list of email addresses for a contact.

UserPrincipalName - This attribute contains the UPN that is an Internet-style login name for a user based on the Internet standard RFC 822. The UPN is shorter than the distinguished name and easier to remember. By convention, this should map to the user e-mail name. The value set for this attribute is equal to the length of the user's ID and the domain name. For more information about this attribute, see the Naming Properties topic in the Active Directory guide.

41 How to Activate SSL for Services in Windows

Make sure you have a valid certificate for the web site. You can use Microsoft IIS to generate a Certificate Request (CSR) or certreq.exe (part of Administration Toolkit in Windows Server 2003 (not covered here).

Import the certificate to the correct certificate store on the server using **Management Console** and the **Certificate snap-in.**

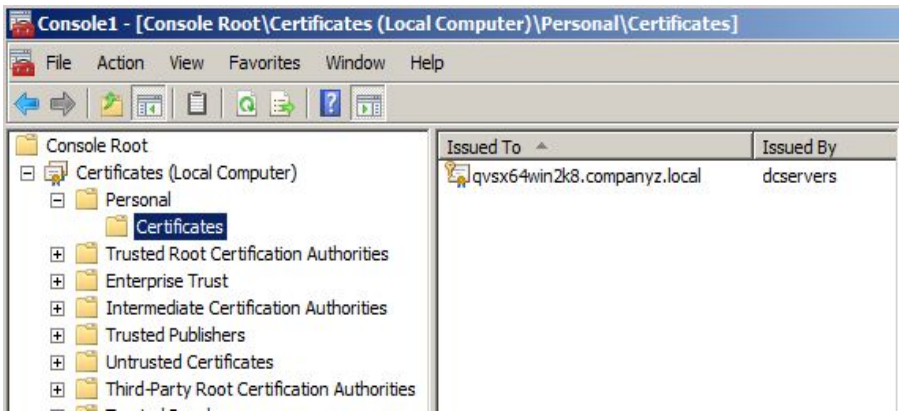
Bind the certificate to SSL using httpcfg in Windows Server 2003 or netsh.exe in Windows Server 2008.

Import Certificate

Open the **Management Console** (**MMC**)by pressing **Start**, **Run** and typing **mmc.exe**. In the **MMC** go to **File**, **Add/Remove Snap-ins**. Select **Certificates** and click **Add**. Make sure you select **Computer Account** and **Local Computer** when prompted.

Browse to **Certificates** and then **Personal**. If the certificate is not present, right-click and select **All Tasks**, **Import...**

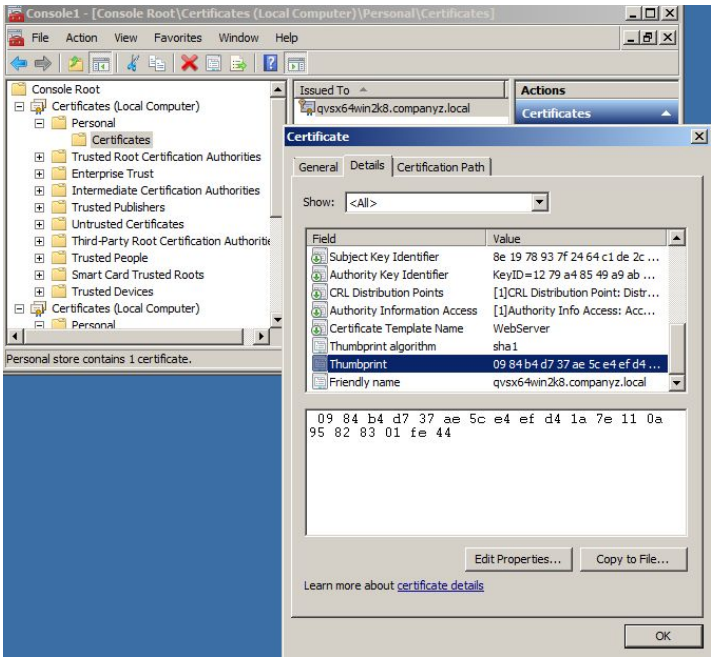
Locate the certificate you wish to import. Make sure the Certificate store is set to **Personal**.

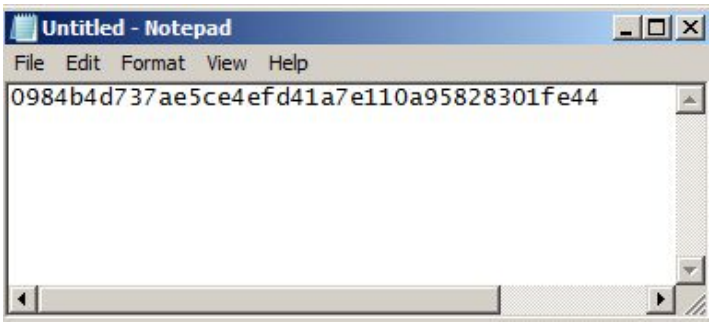


The Source Document page

Get the Thumbprint for the Certificate

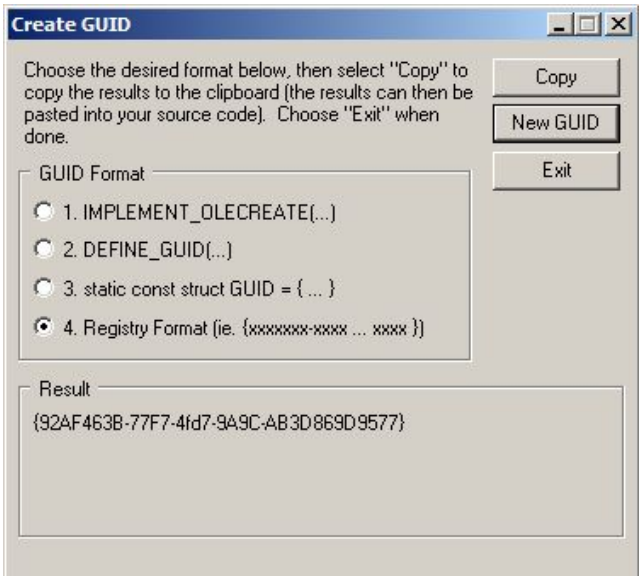
Open the **Certificate snap-in** in **MMC** and double-click on the certificate. Copy the **Thumbprint** hash to notepad or similar. Remove the spaces in the hash.





Generate a GUID

Download **`Guidgen.exe`** from Microsoft to generate a unique GUID. Copy the GUID to **`Notepad.exe`**.



Bind to SSL in Windows Server 2003

Use **httpcfg** to add the certificate in the SSL store (**httpcfg** can be found in the Support Tools for Windows 2003). Make sure you do not already have the certificate in the SSL store. If you do, you can skip this part.

The syntax for adding a certificate using **httpcfg** is:

```
Httpcfg set ssl /i ipnumber:port /h hash /g GUID
```

where

ipnumber:port the ipnumber of QlikViewWebServer and port used for SSL (443)

hash the Thumbprint hash of the certificate.

GUID the generated GUID in the form {xxxxxxxx-xxxx-….}". The GUID must be enclosed by curly brackets.

To verify the registration of the certificate, use **httpcfg query ssl**. The result will look something like:

```
-----------------------------------------------------------------

 IP                        :         10.1.2.5:443

Hash                       :        7091684c6baf12306788bca24f5ca3df4d63937a

Guid                       :        {c52f8795-6047-43f4-94da-4fe84df7517c}

CertStoreName              :        (null)

CertCheckMode              :        0

RevocationFreshnessTime    :        0

UrlRetrievalTimeout        :         0

 SslCtlIdentifier           :         (null)

 SslCtlStoreName            :         (null)

 Flags                      :         0
```

Read more on http://technet2.microsoft.com/windowsserver/en/library/e17527d2-105a-451f-8e3f-d515479527011033.mspx?mfr=true

Bind to SSL in Windows Server 2008

On Windows 2008 you use the netsh command shell:

```
netsh http add sslcert ipport=0.0.0.0:443 certhash=hash appid=GUID
```

where

ipport is the ipnumber of QlikView Web Server and port used for SSL (443).

certhash is the thumbprint hash of the certificate.

appid is the generated GUID in the form {xxxxxxxx-xxxx-….}". The GUID must be enclosed by curly brackets.

To verify the registration of the certificate, **`use netsh http show sslcert`**.

Addintional changes for the QlikView Web Server

Make changes to **`config.xml`** for QlikView Web Server to add the full URL used for SSL. The default location for the **`config.xml`** file is **`C:\Program Files\QlikView\Server\QvWebServer`**. Note that the URL must match the URL for which the certificate is valid.

```
<Url>https://QVS.companyx.local:443/</Url>
```

Make sure no other services are using the port specified for SSL (for example a running IIS) and restart the service. If it fails to start, it's either because a service is already running on the specified port, or errors exist in the **`config.xml`**.

42 Deploying MSI packages with Group policies

General

A common issue today is how to deploy applications in a network environment where the users have limited rights and how to deploy applications to a specific group of users. This document will shortly describe how to deploy Microsoft's Windows Installer (.msi) packages with group policies in an Active Directory environment.

Note! Deploying software with group policies is only supported by workstations running Windows XP Professional, Windows Vista or 2003 or 2008 Server.

The QlikView .msi packages also require version 2.0 or higher of the Windows Installer service to be installed on the destination workstations.

Deploying the MSI Package

When you have obtained your .msi file it must be placed in a folder shared on the network. Make sure that all users and/or computers that will install the application have read access to that folder. When the package is made accessible to these users and/or computers you are ready to create the Group policy object that will advertise the installation package. See section 1.3 for further information about advertising.

The package can be advertised for each user or each computer. Use the "User Configuration/Software Settings" container to advertise per user. Use the "Computer Configuration/Software Settings" container to advertise it per computer. Both containers are located in the Group Policy Object editor.

If the package is advertised per user, you can either assign or publish it. A package that is advertised per computer can only be published.

To publish a package per user means that it is listed (advertised) in the "Add programs from your network"-list in the "Add/Remove programs" dialog, see figure below.

Each user must then click the **Add** button to complete the installation.

To publish a package per computer means that the package is installed and accessible for all users on that computer the next time the computer is rebooted.

An advertised package that is assigned is also listed in the “Add programs from your network” list and can be added from there. This option also offers a few more ways to activate the installation package:

Shortcuts, if the installation package adds any shortcuts, to desktop and/or start menu, these are added and the installation package can be executed by clicking on any of these.

File association, the installation program is executed when the user tries to open a file that is associated with the advertised application.

There are a few more ways to execute the installation when it is advertised as assigned but they are not applicable to any QlikView installations and therefore fall out of the scope for this documentation.

Executing the installation from shortcuts or via a file association is not applicable to the “QlikView Analyzer for Internet Explorer”-installation package, since is doesn’t add any shortcuts or file associations. Therefore it is not recommended to advertise QlikView installation packages with the assign option.

Advertising

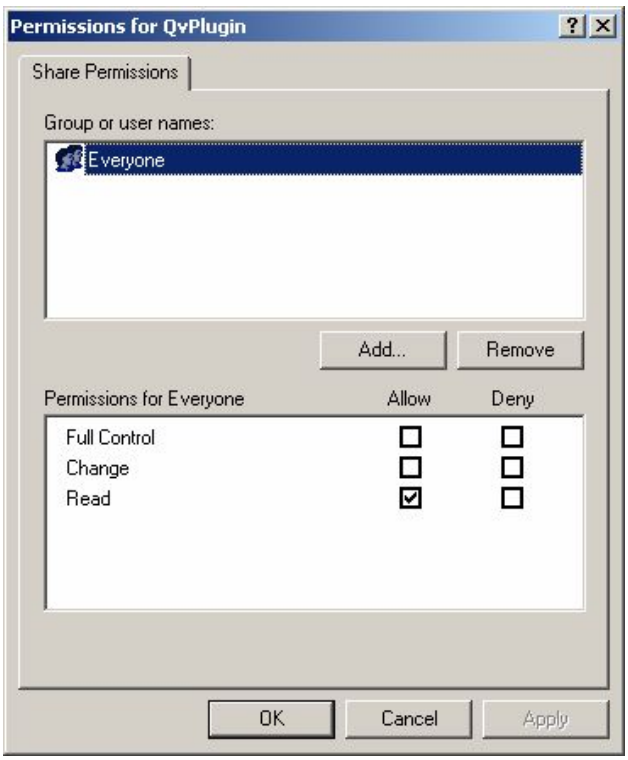
To advertise means that the administrator gives the installation package permission to execute on an account with locked down permissions.

When the package is advertised, there are so called “entry points” loaded onto the destination system. Entry points are typically shortcuts, file associations, listing in the Add/Remove programs dialog etc.

Step-by-step guide

This section provides a brief step-by-step guide for creating a group policy for the advertising of QlikView Internet Explorer plug-in.msi package on a number of machines in the Active Directory.

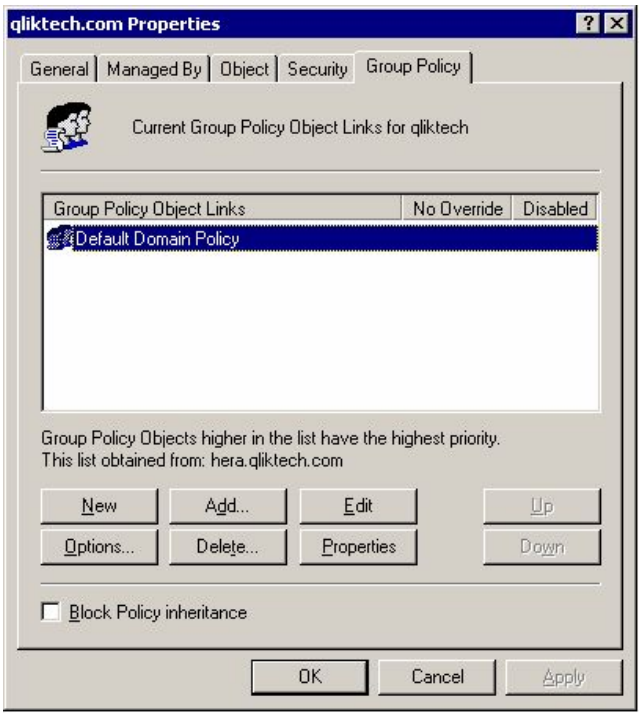
For more details on creating group policies we refer to the wealth of published literature in this field.



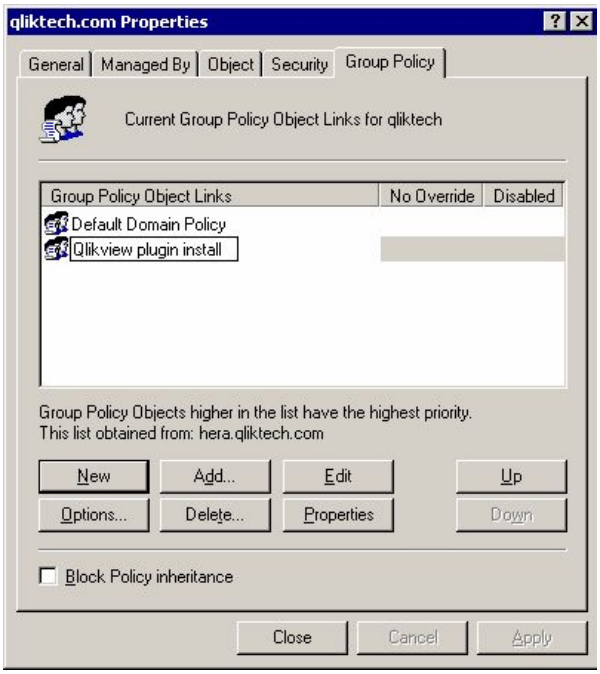
Browse to the folder containing the .msi package. Share the folder to the network users with permission to install the package.

Open **Active Directory Users and Computers** and highlight the **Organizational Unit (OU)** where you want to deploy the package.

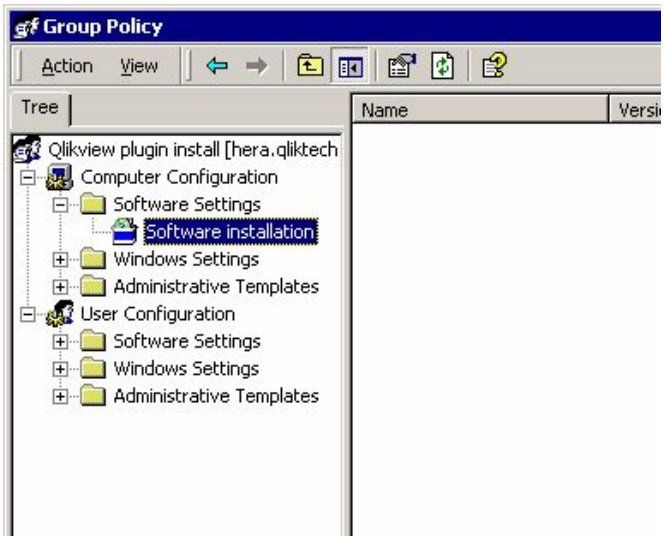
Right-click and choose **Properties**.



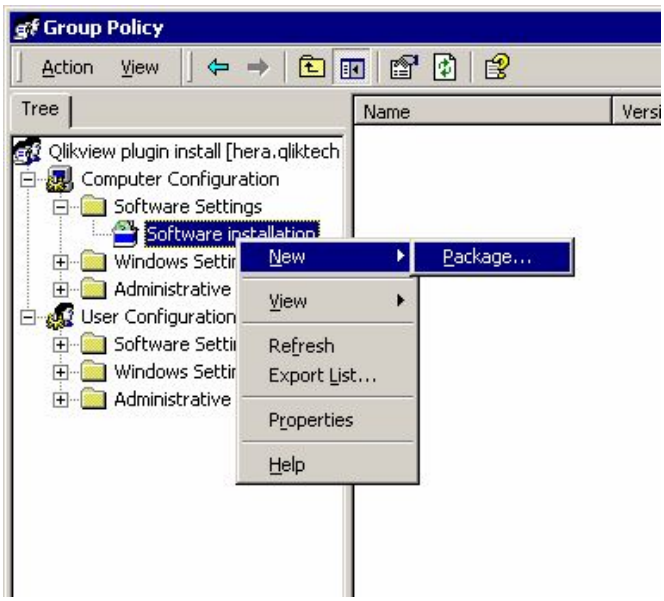
Go to the **Group Policy** tab, click **New** and give it an appropriate name.



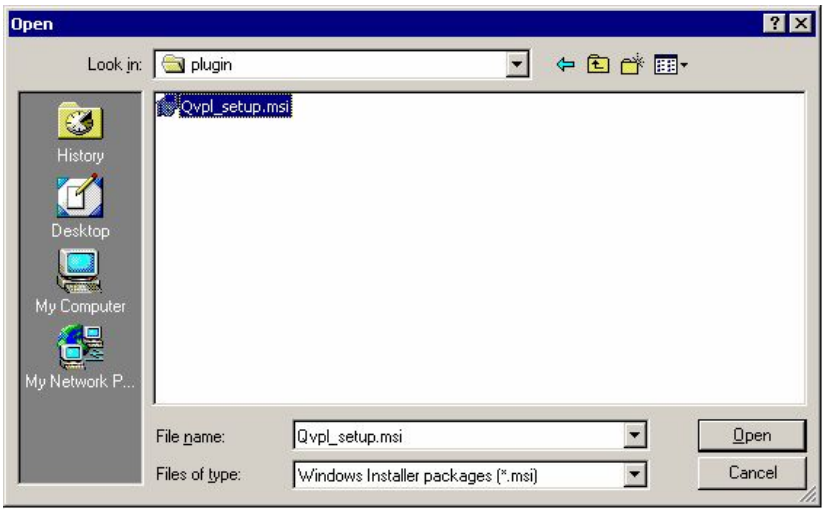
Highlight the new group policy object and press **Edit**.



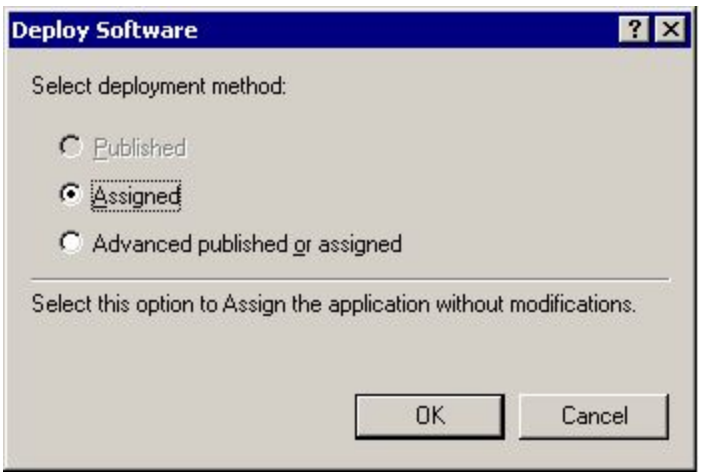
Expand to **Computer Configuration/Software Settings** or **User Configuration/Software Settings** depending on how you want to deploy the package. We select **Computer Configuration** and then highlight **Software installation**.



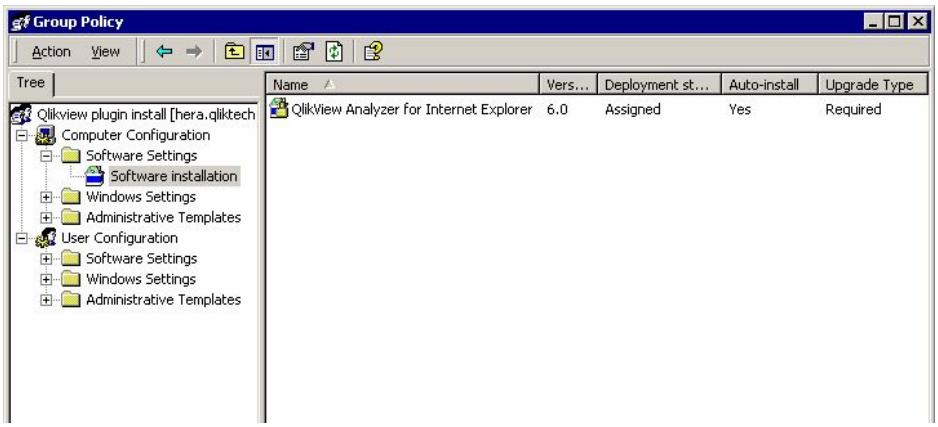
Right-click **Software installation** and choose **New** -> **Package**. A pop-up window is shown asking where to locate the installation package.



Find the installation package, select it and press **Open** (in this case **`QvPluginSetup.msi`**).



Select the deployment method **Assigned** and press the **OK** button. Since we selected to apply the installation to the **Computer configuration** in item #6, it is only possible to use the **Assigned** deployment method, see section 1.2 for further information.



The deployment rule is now ready for use. All the machines in this Operational Unit (OU) get this deployment automatically. What actually happens is that when a computer is rebooted the installation

program is executed so that any user who logs on to a computer in that OU, will be able to run the installed program. The rule can be applied to many different OUs.

43 Glossary

AccessPoint	A web portal that lists the User Documents hosted by the QlikView Server.
Attribute	Meta data attributes set on User Documents, but saved in the meta data of the Server, not in the document.
Category	Bundles User Documents in containers to make categorization easier for the end-user. They are only visible to the end-user on an AccessPoint.
Data reduction	Only selected data and associated fields make up a User Document that has been reduced.
Distribution task	Produces a User Document based on a Source Document
Preload	Load the document into the server's RAM for faster access.
Reload task	Reloads and refreshes the data in a Source Documen.
Repository	The database that contains all QlikView Publisher data. It can either be an XML repository or a Microsoft SQL database.
Source document	QlikView documents that contain data that is to be made accessible to end-users in the form of Distributed documents
Trigger	This is what sets of a QlikView Publisher task. A trigger can be set on a schedule, it can be an external event etc. A taska can have multiple triggers, making it possible to set up a workflow of tasks.
User document	QlikView documents that are distributed to users, either through QlikView Server or QlikView Publisher.

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