



Installation Guide

Qlik® Sense

1.0.3

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1 What is Qlik Sense?

Qlik Sense is a platform for data analysis. With Qlik Sense you can analyze data and make data discoveries on your own. You can share knowledge and analyze data in groups and across organizations. Qlik Sense lets you ask and answer your own questions and follow your own paths to insight. Qlik Sense enables you and your colleagues to reach decisions collaboratively.

1.1 What can you do in Qlik Sense?

Most Business Intelligence (BI) products can help you answer questions that are understood in advance. But what about your follow-up questions? The ones that come after someone reads your report or sees your visualization? With the Qlik Sense associative experience, you can answer question after question after question, moving along your own path to insight. With Qlik Sense you can explore your data freely, with just clicks, learning at each step along the way and coming up with next steps based on earlier findings.

1.2 How does Qlik Sense work?

Qlik Sense generates views of information on the fly for you. Qlik Sense does not require predefined and static reports or you being dependent on other users – you just click and learn. Every time you click, Qlik Sense instantly responds, updating every visualization and view in the app with a newly calculated set of data and visualizations specific to your selections.

The app model

Instead of deploying and managing huge business applications, you can create your own Qlik Sense apps that you can reuse, modify and share with others. The app model helps you ask and answer the next question on your own, without having to go back to an expert for a new report or visualization.

The associative experience

Qlik Sense automatically manages all the relationships in the data and presents information to you using a **green/white/gray** metaphor. Selections are highlighted in green, associated data is represented in white, and excluded (unassociated) data appears in gray. This instant feedback enables you to think of new questions and continue to explore and discover.

Collaboration and mobility

Qlik Sense further enables you to collaborate with colleagues no matter when and where they are located. All Qlik Sense capabilities, including the associative experience and collaboration, are available on mobile devices. With Qlik Sense, you can ask and answer your questions and follow-up questions, with your colleagues, wherever you are.

1.3 How can you deploy Qlik Sense?

There are two versions of Qlik Sense to deploy, Qlik Sense Desktop and Qlik Sense.

Qlik Sense Desktop

This is an easy-to-install single user version that is typically installed on a local computer.

Qlik Sense

This is the enterprise version used to deploy Qlik Sense sites. A site is a collection of one or more server machines connected to a common logical repository or central node.

Qlik Sense custom connectors

Customized connectors are used to retrieve data from data sources not supported by a generic Qlik Sense installation.

1.4 How to manage and monitor Qlik Sense sites

With the Qlik Management Console (QMC) you can configure, manage and monitor Qlik Sense sites in an easy and intuitive way. You can manage licenses, access and security rules, configure nodes and data source connections and synchronize content and users among many other activities and resources.

1.5 Extend Qlik Sense and adapt it for your own purposes

Qlik Sense provides you with flexible APIs and SDKs to develop your own extensions and adapt and integrate Qlik Sense for different purposes.

Building extensions and mashups

Here you can do web development using JavaScript to build extensions that are custom visualization in Qlik Sense apps. You can, for instance, use the Mashup workbench to build websites with Qlik Sense content.



If you want to make use of Qlik Sense Workbench, you need to have Qlik Sense Desktop installed.

Building clients

You can build clients in .NET and embed Qlik Sense objects in your own applications. You can also build native clients in any programming language that can handle WebSocket communication by using the Qlik Engine API.

Building server tools

With service and user directory APIs you can build your own tool to administer and manage Qlik Sense sites.

Connecting to other data sources

Create Qlik Sense connectors to retrieve data from custom data sources.

Visit Qlik Sense developer help site

Visit the Qlik Sense developer site for help on how to use the SDKs and APIs to develop your own extensions and tools.

2 Introducing Qlik Sense Installation Guide

This guide explains how to plan the deployment of a Qlik Sense site, how to set it up and make it operational. It also describes how to perform maintenance on your installation; for example, how to update, repair or modify your installation.

Please review the following before you start installing Qlik Sense:

- *Qlik Sense system requirements (page 8)*
- *Supported browsers (page 9)*
- *Related documentation (page 10)*
- *Support services (page 10)*


2.1 Qlik Sense system requirements

This section lists the requirements that must be fulfilled by the target system in order to successfully install and run Qlik Sense.

Platforms	<ul style="list-style-type: none">• Microsoft Windows Server 2008 R2• Microsoft Windows Server 2012• Microsoft Windows Server 2012 R2 For development and testing purposes only: <ul style="list-style-type: none">• Microsoft Windows 7 (64-bit version only)• Microsoft Windows 8.x (64-bit version only)
Processors (CPUs)	Multi-core x64 compatible processors
Memory	8 GB minimum (depending on data volumes, more may be required ¹)
Disk space	500 MB total required to install
Security	<ul style="list-style-type: none">• Microsoft Active Directory• Microsoft Windows Integrated Authentication• Third-party security
Qlik Management Console (QMC)	Microsoft Windows 7, Windows Server 2008 R2, Windows 8.x, Windows Server 2012, Windows Server 2012 R2: <ul style="list-style-type: none">• Google Chrome

¹Qlik Sense is an in-memory analysis technology. The memory requirements for the Qlik Sense products are directly related to the amount of data being analyzed.

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	<ul style="list-style-type: none">• Microsoft Internet Explorer¹ 10 or higher• Mozilla Firefox (requires hardware acceleration, not supported in virtual environments) <p>Apple Mac OS X:</p> <ul style="list-style-type: none">• Apple Safari version 6.1 or higher• Google Chrome• Mozilla Firefox (requires hardware acceleration, not supported in virtual environments) <p>QMC minimum screen resolution for desktops, laptops, and Apple Mac:</p> <ul style="list-style-type: none">• 1024x768 <div style="border: 1px solid black; padding: 5px;"> <i>The QMC does not support tablets or iPads.</i></div>
.NET framework	4.0
Repository database	PostgreSQL ² (included)
Internet protocol	IPv4

2.2 Supported browsers

Qlik Sense is designed to work on the following platform and web browser combinations:

	Internet Explorer 10 or higher	Google Chrome	Safari, v. 6.1 or higher	Mozilla Firefox³
Windows 7	✓	✓		✓
Windows 8.x	✓	✓		✓
Mac OS X 10.7 and higher		✓	✓	✓
Windows Server 2008 R2	✓	✓		✓
Windows Server 2012 and R2	✓	✓		✓

¹Microsoft Internet Explorer does not accept cookies from domains that include characters such as underscore (“_”). When accessing such a site with Internet Explorer, Qlik Sense cannot be accessed, since cookies are used for session handling by the Qlik Sense Proxy Service (QPS). For more information, see <http://support.microsoft.com/kb/316112>.

²PostgreSQL, often referred to as Postgres, is an open source object-relational database management system. It is released under the PostgreSQL License, which is a free/open source software license.

³Requires hardware acceleration, not supported in virtual environments.

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	Internet Explorer 10 or higher	Google Chrome	Safari, v. 6.1 or higher	Mozilla Firefox ¹
iOS: iPad 2 and above or iPhone 5 and above with latest iOS ²			✓	
Android: Chrome browser only, 4.1.4 (Jelly Bean) and above ³		✓		



Minimum screen resolution for desktops, laptops and tablets is 1024x768

2.3 Related documentation

The following documentation is also available for Qlik Sense:

- Server Deployment and Configuration: Describes Qlik Sense and provides reference information on the architecture, security, logging, and licensing.
- Managing a Qlik Sense Site: Describes how to perform common or re-occurring site procedures.
- Qlik Management Console (QMC) help: Provides descriptions of the QMC user interface, including how to-procedures.

You can download the documentation from help.qlik.com.

2.4 Support services

Contact Qlik for product support, additional training, or consultation concerning application development. Consult the Qlik website for current information on how to get in touch with the support services:

www.qlik.com

Global headquarters:

Qlik
150 N. Radnor Chester Road
Suite E220
Radnor, PA 19087
USA

Phone: +1 (888) 828-9768
Fax: +1 (610) 975-5987

For other locations, visit the Qlik homepage (see above).

¹Requires hardware acceleration, not supported in virtual environments.

²Script editing not supported on tablet devices

³Script editing not supported on tablet devices

2.5 What is included in a Qlik Sense installation

This topic describes all items that are included in a typical Qlik Sense installation.

Desktop items and Start menu items

After having installed Qlik Sense, two shortcuts will be available from the desktop as well as from the **Start** button (**Start > All Programs**):

- Shortcut to Qlik Sensehub
The hub is the starting point when you run Qlik Sense. It is where you find all the Qlik Sense apps you have access rights to use.
- Shortcut to Qlik Management Console
The Qlik Management Console (QMC) is a web-based application for configuring and administering your Qlik Sense site.

Features and services

The Qlik Sense Repository Service (QRS) is always included in a Qlik Sense installation. Other features are selected during the setup process. All features have their executable files installed to *%ProgramFiles%\Qlik*.

Repository database

In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.

The QRD spawns the *PostgreSQL* executable that is located in *%ProgramFiles%\Qlik\Sense\Repository\PostgreSQL\[VersionNumber]\bin*.

Examples, apps and logs

There are some example files included in the Qlik Sense installation. These are installed to *%ProgramData%\Qlik\Examples*. For example, a number of extension code examples are installed to the *Extensions* sub-folder.

The default Qlik Sense installation comes with two example apps that you can use. They are installed to *%ProgramData%\Qlik\Sense\Repository\DefaultApps*, and you can also access them directly through the QMC:

- *License Monitor.qvf*
- *Operations Monitor.qvf*

Logs for the installed features are found in *%ProgramData%\Qlik\Sense\Log*. Installation logs are found in the *temp* folder which can be accessed with the environment variable *%temp%*.

Finding help

If you need help deploying, administering, working with or extending Qlik Sense, the Qlik Sense online help portal is the first place you should visit. It contains help topics about all aspects of Qlik Sense as well as basic tutorials.

➤ To access the Qlik Sense online help portal, point your browser to this URL: *help.qlik.com*

3 Planning the Qlik Sense deployment

This section provides a short introduction to Qlik Sense architecture. For a more detailed architectural description, see the *Server Deployment and Configuration* document.

To successfully install and run the Qlik Sense site, the requirements must be fulfilled by the target system. Refer to *Qlik Sense system requirements* (page 8).

3.1 Architecture

Qlik Sense is used to deploy Qlik Sense sites. A Qlik Sense site is a collection of one or more nodes (that is, server machines) connected to a common logical repository or central node.

The Qlik Sense site is designed as a distributed architecture, which increases the system resilience, reduces maintenance, and increases the deployment flexibility.

Services

The Qlik Sense services are the cornerstones of the Qlik Sense site architecture. The services can be deployed in different ways to suit different deployment purposes. For information on different deployments, see *Deployment* (page 18).

The Qlik Sense services are:

- The Qlik Sense Repository Service (QRS) manages persistence and synchronization of Qlik Sense apps, licensing, security, and service configuration data. The QRS attaches to a repository database and is needed by all other Qlik Sense services to run and serve Qlik Sense apps. The QRS also manages the synchronization used within multi-node Qlik Sense sites. In addition, the QRS stores the Qlik Sense app structures and the paths to the binary files (that is, the app data stored in the local file system).
- In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.
- The Qlik Sense Proxy Service (QPS) manages the Qlik Sense site authentication, session handling, and load balancing.
- The Qlik Sense Scheduler Service (QSS) manages the scheduled reloads of Qlik Sense apps as well as other types of reload triggering (for example, task chaining) based on other task events.
- The Qlik Sense Engine Service (QES) is the application service, which handles all application calculations and logic.

The Qlik Sense services have the following dependencies:

- Repository database: The QRS connects to the repository database to store and retrieve data necessary for the Qlik Sense services on the node on which the QRS is running. In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.

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- File system: The file system contains the binary files for the Qlik Sense apps.
- Directory service: The QRS and QPS communicate with a configured directory service (for example, Microsoft Active Directory) using, for example, LDAP or ODBC.
- Start and restart of services:
In a default Qlik Sense installation, the Qlik Sense Repository Service (QRS) depends on the Qlik Sense Repository Database (QRD) to be running. This means that the QRD must be the first Qlik Sense service that starts and that it should only be stopped when restoring a central node as described in *Restoring a Qlik Sense site* in the Server Deployment and Configuration document. The rest of the services can be started in any order.

Qlik Sense Repository Service

The Qlik Sense Repository Service (QRS) manages persistence and synchronization of Qlik Sense apps, licensing, security, and service configuration data. The QRS attaches to a repository database and is needed by all other Qlik Sense services to run and serve Qlik Sense apps. The QRS also manages the synchronization used within multi-node Qlik Sense sites. In addition, the QRS stores the Qlik Sense app structures and the paths to the binary files (that is, the app data stored in the local file system).



In a default Qlik Sense installation, the Qlik Sense Repository Service (QRS) requires that the Qlik Sense Repository Database (QRD) is running. This means that the QRD must be the first Qlik Sense service that starts and that it should only be stopped when restoring a central node as described in Restoring a Qlik Sense site in the guide Server Deployment and Configuration. The rest of the Qlik Sense services can be started in any order.

This section describes the QRS in terms of paths and files.

Paths

The following table lists the paths used by the Qlik Sense Repository Service (QRS).

Executable	<code>%ProgramFiles%\Qlik\Sense\Repository\Repository.exe</code>
Data	<code>%ProgramData%\Qlik\Sense\Repository</code>

Files

This section lists the files used by the Qlik Sense Repository Service (QRS).

Repository database

All files related to the repository database are stored in the folder defined below.

Path: `%ProgramData%\Qlik\Sense\Repository\PostgreSQL`



In a default Qlik Sense installation, the repository database is a specific instance of PostgreSQL that runs its own database cluster specifically for the repository. For information on the databases supported by the master QRS, see Qlik Sense system requirements (page 8).

Logs

Path: %ProgramData%\Qlik\Sense\Log\Repository

File	Description
<machine name>_Application_Repository_<timestamp>.txt	Repository application log
<machine name>_Audit_Repository_<timestamp>.txt	Repository audit log
<machine name>_License_Repository_<timestamp>.txt	Repository license log
<machine name>_ManagementConsole_Repository_<timestamp>.txt	Repository management console log
<machine name>_Performance_Repository_<timestamp>.txt	Repository performance log
<machine name>_Security_Repository_<timestamp>.txt	Repository security log
<machine name>_Synchronization_Repository_<timestamp>.txt	Repository synchronization log
<machine name>_System_Repository_<timestamp>.txt	Repository system log
<machine name>_UserManagement_Repository_<timestamp>.txt	Repository user management log

Qlik Sense Repository Database

In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.



In a default Qlik Sense installation, the Qlik Sense Repository Service (QRS) depends on the Qlik Sense Repository Database (QRD) to be running. This means that the QRD must be the first Qlik Sense service that starts and that it should only be stopped when restoring a central node as described in Restoring a Qlik Sense site in the Qlik Sense Server Reference Manual. The rest of the Qlik Sense services can be started in any order.

This section describes the QRD in terms of paths and files.

Paths

The following table lists the paths used by the Qlik Sense Repository Database (QRD) service.

Executable	The QRD spawns the PostgreSQL executable that is located in %ProgramFiles%\Qlik\Sense\Repository\PostgreSQL\[VersionNumber]\bin.
Data	%ProgramData%\Qlik\Sense\Repository\PostgreSQL

Files

This section lists the files used by the Qlik Sense Repository Service (QRS) service.

Repository database

All files related to the repository database are stored in the folder defined below.

Path: `%ProgramData%\Qlik\Sense\Repository\PostgreSQL\<database version>`



In a default Qlik Sense installation, the repository database is a specific instance of PostgreSQL that runs its own database cluster specifically for the repository. For information on the databases supported by the master QRS, see Qlik Sense system requirements (page 8).

Logs

There are no logs for the QRD service.

Qlik Sense Proxy Service

The Qlik Sense Proxy Service (QPS) manages the Qlik Sense site authentication, session handling, and load balancing.

This section describes the QPS in terms of paths and files.

Paths

The following table lists the paths used by the Qlik Sense Proxy Service (QPS).

Executable	<code>%ProgramFiles%\Qlik\Sense\Proxy\Proxy.exe</code>
Data	<code>%ProgramData%\Qlik\Sense\Proxy</code>

Files

This section lists the files used by the Qlik Sense Proxy Service (QPS).

Configuration

Path: `%ProgramData%\Qlik\Sense\Proxy`

File	Description
<code>app.settings</code>	Proxy settings

Logs

Path: `%ProgramData%\Qlik\Sense\Log\Proxy`

File	Description
<code><machine name>_Audit_Proxy_<timestamp>.txt</code>	Proxy audit log
<code><machine name>_Performance_Proxy_<timestamp>.txt</code>	Proxy performance log

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<i><machine name>_Security_Proxy_<timestamp>.txt</i>	Proxy security log
<i><machine name>_System_Proxy_<timestamp>.txt</i>	Proxy system log

Qlik Sense Scheduler Service

The Qlik Sense Scheduler Service (QSS) manages the scheduled reloads of Qlik Sense apps as well as other types of reload triggering (for example, task chaining) based on other task events.

This section describes the QSS in terms of paths and files.

Paths

The following table lists the paths used by the Qlik Sense Scheduler Service (QSS).

Executable	<i>%ProgramFiles%\Qlik\Sense\Scheduler\Scheduler.exe</i>
Data	-

Files

This section lists the files used by the Qlik Sense Scheduler Service (QSS).

Logs

Path: *%ProgramData%\Qlik\Sense\Log\Scheduler*

File	Description
<i><machine name>_Application_Scheduler_<timestamp>.txt</i>	Scheduler application log
<i><machine name>_Audit_Scheduler_<timestamp>.txt</i>	Scheduler audit log
<i><machine name>_Performance_Scheduler_<timestamp>.txt</i>	Scheduler performance log
<i><machine name>_Security_Scheduler_<timestamp>.txt</i>	Scheduler security log
<i><machine name>_System_Scheduler_<timestamp>.txt</i>	Scheduler system log
<i><machine name>_TaskExecution_Scheduler_<timestamp>.txt</i>	Scheduler task execution log

Qlik Sense Engine Service

The Qlik Sense Engine Service (QES) is the application service, which handles all application calculations and logic.

This section describes the QES in terms of paths and files.

Paths

The following table lists the paths used by the Qlik Sense Engine Service (QES).

Executable	<i>%ProgramFiles%\Qlik\Sense\Engine\Engine.exe</i>
Data	<i>%ProgramData%\Qlik\Sense\Engine</i>

Files

This section lists the files used by the Qlik Sense Engine Service (QES).

Configuration

Path: *%ProgramData%\Qlik\Sense\Engine*

File	Description
<i>Settings.ini</i>	Engine settings

Logs

Path: *%ProgramData%\Qlik\Sense\Log\Engine*

File	Description
<i><machine name>_Audit_Engine_<timestamp>.txt</i>	Engine audit log
<i><machine name>_Exit_Engine_<timestamp>.txt</i>	Engine exit log
<i><machine name>_Performance_Engine_<timestamp>.txt</i>	Engine performance log
<i><machine name>_QixPerformance_Engine_<timestamp>.txt</i>	Engine QIX performance log
<i><machine name>_Session_Engine_<timestamp>.txt</i>	Engine session log
<i><machine name>_System_Engine_<timestamp>.txt</i>	Engine system log
<i><machine name>_Traffic_Engine_<timestamp>.txt</i>	Engine traffic log

3.2 Deployment

A Qlik Sense site is a collection of one or more nodes (that is, server machines) connected to a common logical repository or central node.

Qlik Sense can be deployed in many different ways. This Installation Guide describes how to setup a single node site. For examples of other deployments, see the Server Deployment and Configuration document.

Deployment scenario

This section describes a Qlik Sense single node deployment scenario.

The following abbreviations are used:

- The Qlik Sense Repository Service (QRS) manages persistence and synchronization of Qlik Sense apps, licensing, security, and service configuration data. The QRS attaches to a repository database and is needed by all other Qlik Sense services to run and serve Qlik Sense apps. The QRS also manages the synchronization used within multi-node Qlik Sense sites. In addition, the QRS stores the Qlik Sense app structures and the paths to the binary files (that is, the app data stored in the local file system).
- In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created

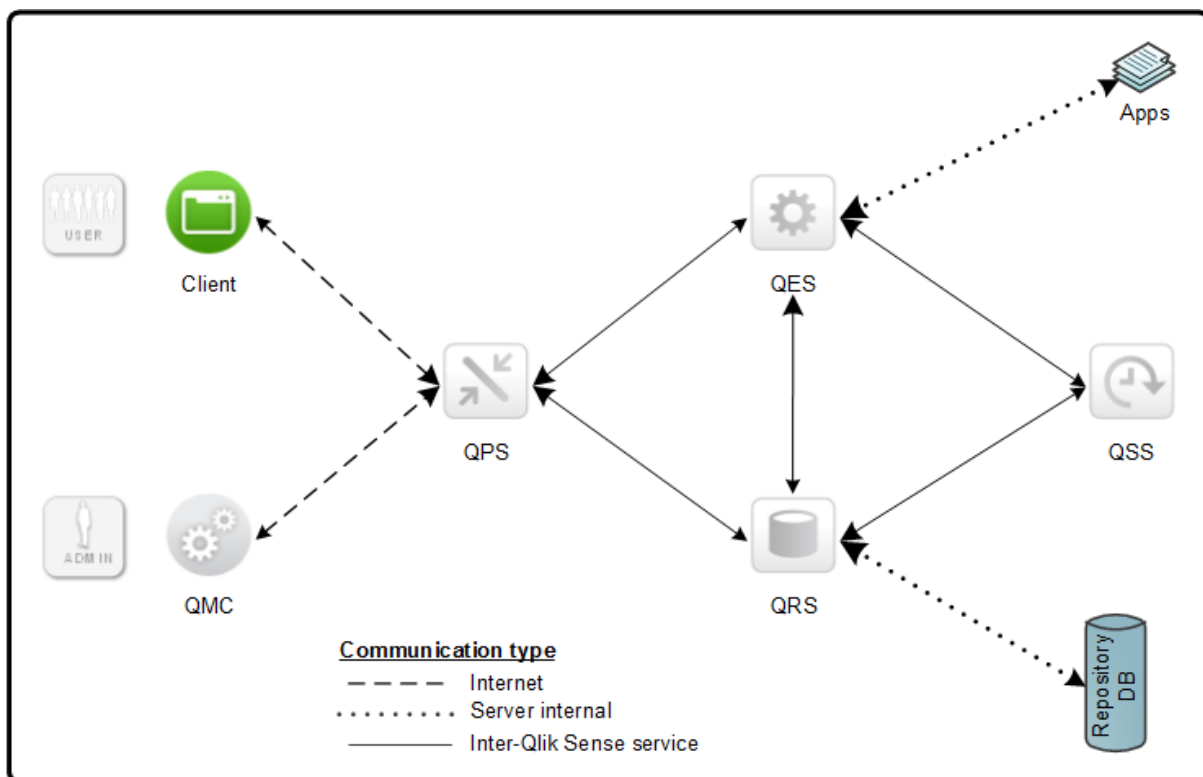
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specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.

- The Qlik Sense Proxy Service (QPS) manages the Qlik Sense site authentication, session handling, and load balancing.
- The Qlik Sense Scheduler Service (QSS) manages the scheduled reloads of Qlik Sense apps as well as other types of reload triggering (for example, task chaining) based on other task events.
- The Qlik Sense Engine Service (QES) is the application service, which handles all application calculations and logic.
- The Qlik Management Console (QMC) is used for configuration and administration of a Qlik Sense site.

Single node site

In this deployment scenario, all Qlik Sense services run on a single node. This kind of deployment works best in a single time zone, where reloads of data can be done during the night.

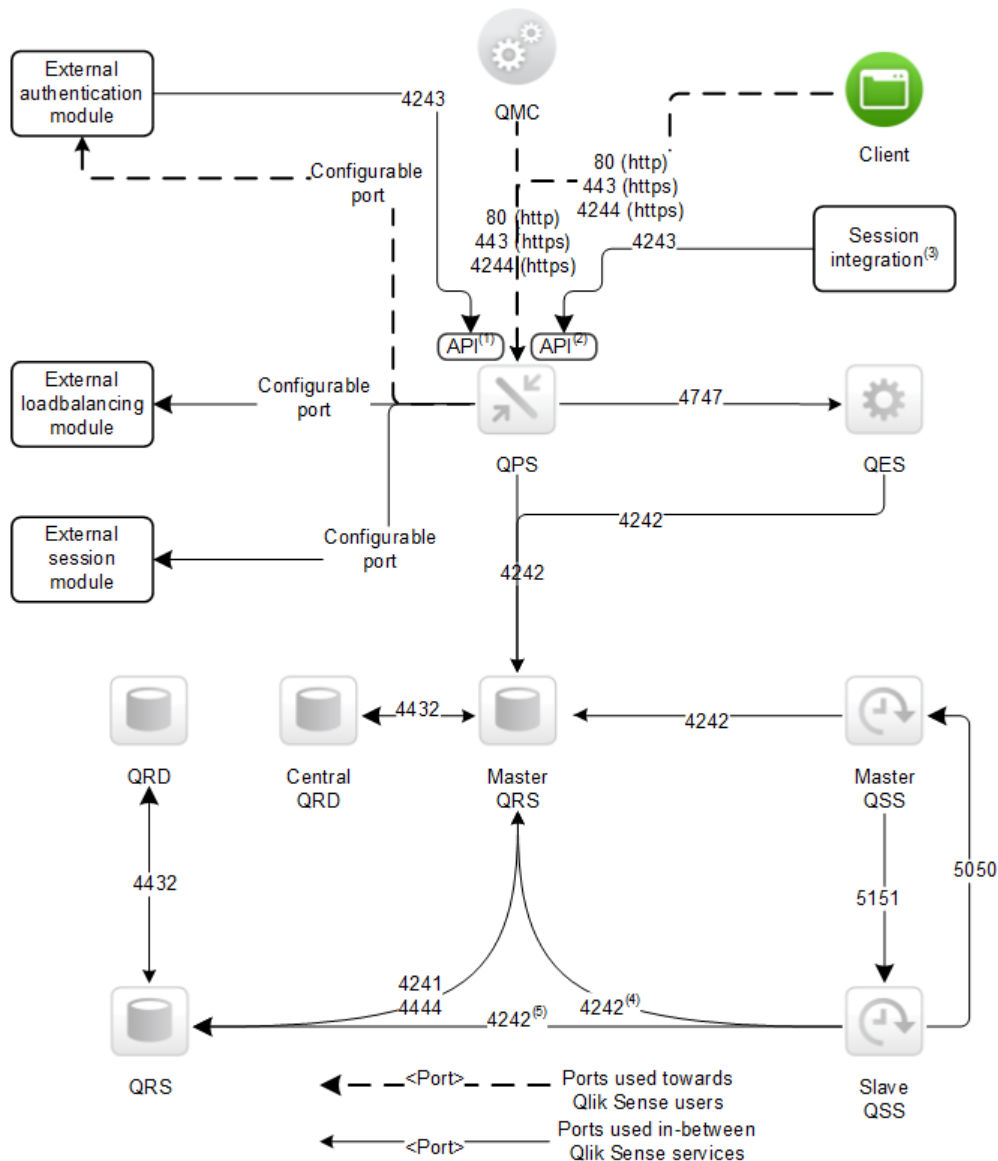


See also: See *Single-node site setup workflow* (page 22) for an example of how to set up a single-node site.

Ports in a default Qlik Sense installation

The following figure provides an overview of the ports that are used in a default Qlik Sense installation.

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The superscript numbers in the figure refer to the following:

1. The Authentication (ticket) API in the Qlik Sense Proxy Service (QPS). For information on the Authentication API, see the Qlik Sense Proxy Service API documentation.
2. The Session API in the QPS. For information on the Session API, see the Qlik Sense Proxy Service API documentation.
3. For example, a Single Sign-On (SSO) portal that uses the Session API. For information on the authentication solutions available, see section Authentication solutions in the Qlik Sense Reference manual.
4. This port is used when the slave Qlik Sense Scheduler Service (QSS) is located on the central node in the Qlik Sense site.
5. This port is used when the slave QSS is located on a node other than the central node.

The following table provides details on the ports in the figure.

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Port	Description
80	<p>Qlik Sense Proxy Service (QPS) API service port.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;">  <p><i>This port is only available when client-side http communication is enabled. This is managed in the Qlik Management Console (QMC).</i></p> </div>
443	<p>Default Qlik Sense Proxy Service (QPS) API service port. This port uses https for communication.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;">  <p><i>Make sure that port 443 is available for the QPS to use, since the port is sometimes used by other software (for example, web servers).</i></p> </div>
4241	<p>Communication port within multi-node sites for QRS-to-QRS synchronization. This port uses https for communication.</p>
4242	<p>Qlik Sense Repository Service (QRS) API service port. Also used as synchronization service port within multi-node sites for QRS-to-QRS synchronization. This port uses https for communication.</p>
4243	<p>Qlik Sense Proxy Service (QPS) REST server.</p>
4244	<p>Default port for the internal authentication module in the Qlik Sense Proxy Service (QPS) when using NTLM in Microsoft Windows. This port uses https for communication.</p>
4432	<p>Default listening port for the Qlik Sense Repository Database (QRD), used to listen for connections from the Qlik Sense Repository Service (QRS).</p> <p>In a default Qlik Sense installation, a Qlik Sense Repository Database (QRD) service is created specifically for use by the Qlik Sense Repository Service (QRS). The QRS connects to the QRD to read and write data in the repository database. A PostgreSQL database is used by default.</p>
4444	<p>This port has two functions:</p> <ul style="list-style-type: none"> • Security distribution port, only used within multi-node sites by non-master Qlik Sense Repository Services (QRSs) to receive a certificate from the master QRS. The communication is always unencrypted, but the transferred certificate package is password-protected. • Qlik Sense Repository Service (QRS) state port, used to fetch the state of a QRS in a Qlik Sense site. The state is fetched using <code>http://localhost:4444/status/servicestate</code>. The returned state is one of the following: <ul style="list-style-type: none"> • 0: Initializing. Once the node has been initialized, the node state changes into one of the other states. • 1: Certificates not installed. There are no certificates installed on the node. The node stays in this state until it has received the certificate and the certificate password. • 2: Running. The node is up and running and all APIs have been initiated.
4747	<p>Used by Qlik Sense Engine Service (QES) for communication with the Qlik Sense web clients.</p>

Port	Description
	The communication is encrypted using Secure Sockets Layer (SSL). The port number can be configured in the Qlik Management Console (QMC).
5050	Qlik Sense Scheduler Service (QSS) master REST engine.
5151	Qlik Sense Scheduler Service (QSS) slave REST engine.

For additional information on the ports used by the Qlik Sense services, see *Services (page 13)*.

3.3 Setup workflow

This section describes the workflow for setting up a single-node Qlik Sense site.

Single-node site setup workflow

This setup workflow describes installing a single-node site:

1. Select **Quick Install** during the Qlik Sense installation process. See *Performing a quick installation (page 23)*.
2. Activate the license, allocate to yourself a user access type, and optionally add more admin users. See *Managing licenses (page 28)*.
3. Allocate to yourself a user access type, and optionally add more admin users. See *Managing user access (page 31)*.

See also: See *Single node site (page 19)* for more information around single node sites.

4 Setting up your Qlik Sense site

This section guides you through the process of setting up your Qlik Sense site, including procedures for installing Qlik Sense, managing the licenses and user access.

See also:

- *Single-node site setup workflow (page 22)*

4.1 Obtaining the Qlik Sense setup file

The *Qlik_Sense_setup.exe* file can be obtained from www.qlik.com. Save it to a folder on your computer.

4.2 Installing Qlik Sense

During the Qlik Sense installation process two different installation types are presented:

- **QUICK INSTALL** installs all program features/services to a default location. This installation option is recommended for stand-alone installation and for nodes where all services/features shall be included.
- **CUSTOM INSTALL** allows you to select which program features/services to install. This installation option is recommended for advanced users and for nodes where not all services/features shall be included.

Installation prerequisites

Before you start installing Qlik Sense, there are a few requirements to consider:

- Consult *Qlik Sense system requirements (page 8)* before proceeding with the installation process.
- Consult *Planning the Qlik Sense deployment (page 13)* before proceeding with the installation process.
- Download the *Qlik_Sense_setup.exe* file from the download site, see *Obtaining the Qlik Sense setup file (page 23)*.
- On operating systems with User Account Control (UAC) disabled, make sure you have logged on with Administrator rights using an account that has an actual password defined (not a blank password).

Performing a quick installation

This installation type installs all program features into default locations. This installation type is recommended as stand-alone installation and for nodes where all services/features shall be included.

Do the following:

1. Double-click on *Qlik_Sense_setup.exe* to start the installation.
The **Welcome** dialog is displayed.

2. Click **QUICK INSTALL**.

The **License agreement** dialog is displayed.

3. Read the license agreement and then select the **I accept the license agreement** check box (if this is the case) and click **Next**.

The **Repository database superuser password** dialog is displayed.

4. Create a password for the Qlik Sense Repository Service database superuser.



If the repository database superuser password already has been created, you are asked to enter the password.



The Qlik Sense Repository Service database superuser is the person generating the user who administers the Qlik Sense Repository Service database.



It is possible, but not recommended, to proceed without creating a password.

Click **Next**.

The **Service credentials** dialog is displayed.

5. Select the check box at the top, then enter the **Username** and the (Windows) **Password** that you want the services to start with.



*The **Password** must not be blank if the check box is selected.*

You can also leave the check box cleared (default), which means that the services will be started with the local system account.

6. Select a role for the Qlik Sense Repository Service (QRS).

Leave the check box selected if you want to install as a Central node or deselect the check box if you want to install as a sync node.



See [Qlik Sense Repository Service \(page 14\)](#) for more information about the Qlik Sense Repository Service.

- **Central node** selected (default): Your installation is considered to be the master in a multi-machine setup. The master has direct access to the central repository database. The master QRS synchronizes the central repository database with the local repository databases so that they all contain the same information.
- **Central node** cleared: A local QRS instance in a multi-machine setup. The QRS instance on a sync node only has access to the local repository database on the machine where they are running.

Then click **Next**.

The **Host name** dialog is displayed.

7. The central node uses certificates to communicate with other servers securely. Specify the address to this machine in the same format that other machines will use to connect to this machine. This address (host name) will later be used for exporting certificates to other nodes. You can also select one of the pre-defined values in the list.

Then click **Next**.

The **Ready to install** dialog is displayed.

8. Select if you want the installation to create desktop shortcuts and if you want to automatically start the Qlik Sense services when the installation has completed. Then click **Install**.
9. If User Account Control (UAC) is disabled, the installation starts.
If UAC is enabled, the **User Account Control** dialog is displayed.
Click **Yes** to start the installation.

The progress is displayed.

10. When the installation has completed the **Installation summary** is displayed.
Click **Finish** to close the **Installation summary**.



*If the installation did not complete successfully, the **Installation failed** dialog is displayed. For more detailed information, see the installation log located in your **temp** folder accessed with the environment variable %temp%.*


You have now successfully installed Qlik Sense on your computer. Proceed to *Managing licenses (page 28)*.


Performing a custom installation

This installation type allows you to select which Qlik Sense features to install. It also allows you to select the installation location. This installation type is recommended for advanced users and for nodes where not all services/features are to be included.

Do the following:

1. Double-click on *Qlik_Sense_setup.exe* to start the installation.
The **Welcome** dialog is displayed.
2. Click **CUSTOM INSTALL**.
The **License agreement** dialog is displayed.
3. Read the license agreement and then select the **I accept the license agreement** check box (if this is the case) and click **Next**.
The **Installation location** dialog is displayed.
4. Define the **Installation path** either by entering the installation location, or click to browse for the location or leave it to be installed at the predefined location.

 You cannot install onto a mapped network location.


 If an invalid installation path is defined, an error sign ! is displayed in the entry field and the **Next** button is disabled.


5. Select the features you want to install:
 - **Engine:** when selected, the Qlik Sense Engine Service (QES) will be installed on your machine. When the check box is cleared, the Qlik Sense Engine Service will be omitted from the installation.
 - **Proxy:** when selected, the Qlik Sense Proxy Service (QPS) will be installed on your machine. When the check box is cleared, the Qlik Sense Proxy Service will be omitted from the installation.
 - **Scheduler:** when selected, the Qlik Sense Scheduler Service (QSS) will be installed on your machine. When check box is cleared, the Qlik Sense Scheduler Service will be omitted from the installation.
 - **Repository database:** when selected, the Qlik Sense Repository Database (QRD) will be installed on your machine. When the check box is cleared, the Qlik Sense Repository Database will be omitted from the installation.


Click **Next**.

The **Repository database superuser password** dialog is displayed.

6. Create a password for the Qlik Sense Repository Service database superuser.

 If the Repository database superuser password already has been created, you are asked to enter the password.


 The Qlik Sense Repository Service database superuser is the person generating the user who administers the Qlik Sense Repository Service database.

 It is possible, but not recommended, to proceed without creating a password.

Click **Next**.

The **Service credentials** dialog is displayed.

7. Select the check box at the top, then enter the **Username** and the (Windows) **Password** that you want the services to start with.

 The **Password** must not be blank if the check box is selected.

You can also leave the check box cleared (default), which means that the services will be started with the local system account.

8. Select a role for the Qlik Sense Repository Service (QRS).
Leave the check box selected if you want to install as a Central node, or deselect the check box if you want to install as a sync node.



See *Qlik Sense Repository Service* (page 14) for more information about the *Qlik Sense Repository Service*.

- **Central node** selected (default): Your installation is considered to be the master in a multi-machine setup. The master has direct access to the central repository database. The master QRS synchronizes the central repository database with the local repository databases so that they all contain the same information.
- **Central node** cleared: A local QRS instance in a multi-machine setup. The QRS instance on a sync node only has access to the local repository database on the machine where it is running.

Then click **Next**.

The **Host name** dialog is displayed.

9. The central node uses certificates to communicate with other servers securely. Specify the address to this machine in the same format that other machines will use to connect to this machine. This address (host name) will later be used for exporting certificates to other nodes. You can also select one of the pre-defined values in the list.

Then click **Next**.

The **Ready to install** dialog is displayed.

10. Select if you want the installation to create desktop shortcuts and if you want to automatically start the Qlik Sense services when the installation has completed. Then click **Install**.
11. If User Account Control (UAC) is disabled, the installation starts.
If UAC is enabled, the **User Account Control** dialog is displayed.
Click **Yes** to start the installation.

The progress is displayed.

12. When the installation has completed the **Installation summary** is displayed.
Click **Finish** to close the **Installation summary**.



If the installation did not complete successfully, the **Installation failed** dialog is displayed. For more detailed information, see the installation log located in your **temp** folder accessed with the environment variable `%temp%`.

You have now successfully installed Qlik Sense on your computer. Proceed to *Managing licenses* (page 28).

4.3 Managing licenses

When you have installed Qlik Sense you need to activate the license. This is performed from the Qlik Management Console (QMC). The first time you start the QMC, the **License properties** page is displayed.

The licensing in Qlik Sense is based on tokens, which are used to allocate access types to Qlik Sense users. Each access type provides the user with a certain type of access to Qlik Sense apps and has a specific token value.

The License Enabling File (LEF) determines the number of available tokens for a Qlik Sense site. You must activate the license to make the tokens available.



The tokens used in Qlik Sense are not compatible with the Client Access Licenses (CALs) used in QlikView. In addition, QlikView licenses cannot be used in Qlik Sense.

Activating license (LEF) for a Qlik Sense site

The first time you start the QMC, the **License properties** page is displayed. All fields are empty and you must enter the license information.



Activating the license automatically makes you the RootAdmin for the Qlik Sense site.

Do the following:

1. Start the **Qlik Management Console** (QMC).
The **License properties** page is automatically displayed the first time you launch the QMC.

4 Setting up your Qlik Sense site

Start Help

License properties

Welcome
Before you can begin working with the Qlik Management Console (QMC) you need to enter your license information.

LICENSE

Owner name
Mandatory. Please enter a value.

Owner organization
Mandatory. Please enter a value.

Serial number
Mandatory. Please enter a value.

Control number

LEF
Get LEF from server

License and tokens

- Tokens
- User access
- User access rules
- Login access
- ✓ License

Apply Cancel

2. On the **License properties** page, define all mandatory fields.

Start Help

License properties

Welcome
Before you can begin working with the Qlik Management Console (QMC) you need to enter your license information.

LICENSE

Owner name* Diar Thon

Owner organization* QlikPartner GmbH

Serial number* 1234567890123456

Control number* 44734

LEF
Get LEF from server

License and tokens

- Tokens
- User access
- User access rules
- Login access
- ✓ License

Apply Cancel

3. Click **Get LEF from server** to download a LEF file from the Qlik Sense LEF server. Alternatively, copy the LEF information from a LEF file and paste it in the LEF field.
LEF was successfully retrieved is displayed.

The screenshot shows the 'License properties' dialog in the Qlik Management Console. It includes a 'Welcome' message, a 'LICENSE' section with input fields for Owner name, Owner organization, Serial number, and Control number, and a 'LEF' section with a 'Get LEF from server' button. A green message box indicates 'LEF was successfully retrieved.' The 'License and tokens' sidebar is open, showing 'License' as the selected option. The 'Apply' and 'Cancel' buttons are at the bottom.



Failed to get LEF from server is displayed if the serial number or control number is incorrect.

4. Click **Apply** in the action bar to apply and save your changes. **Successfully licensed** is displayed.



The padlock symbol turns red to indicate that the properties have been closed for editing.

The screenshot shows the 'Successfully licensed' dialog box. It contains the following text: 'Qlik Sense has been successfully licensed with 10000 tokens. The tokens must be allocated to access types to allow the users to access Qlik Sense. You manage the allocation of tokens via user access and login access found in the License and tokens panel.' Below the text is a link: 'Link to Qlik Sense webhelp about License and Tokens'. An 'OK' button is at the bottom.



Failed to apply changes is displayed if any value is incorrect.

You have now activated the license and made the Tokens available. You are now the RootAdmin of the node.

4.4 Managing user access

When you have activated the license, you need to allocate yourself User access. You may also want to add more admin users.

Typical user management process

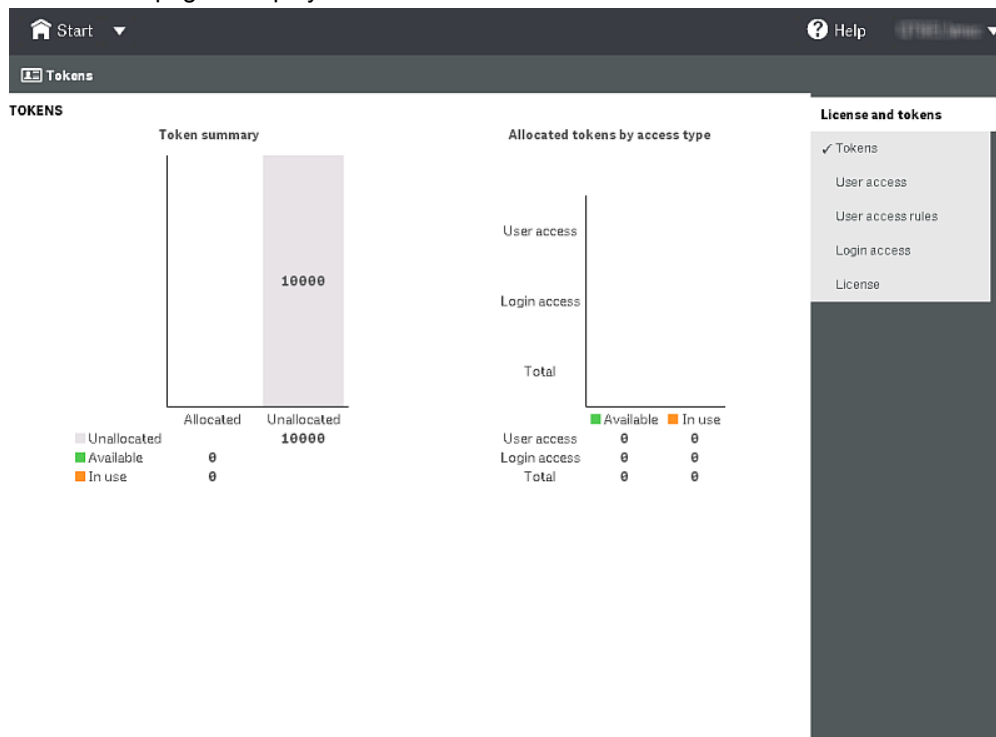
1. Allocate user access.
When you have activated the license you must allocate yourself User access.
See *Allocating user access (page 31)*.
2. Add more admin users.
You may want to add more admin users to the Qlik Sense site. In such case you need to:
 - Add a new user directory connector.
See *Adding user directory connector (page 34)*.
 - Add administrative role to a user.
See *Adding an administrative role to a user (page 38)*.

Allocating user access

When you have activated the license you must allocate yourself user access. Also use this procedure for allocating user access for other users.

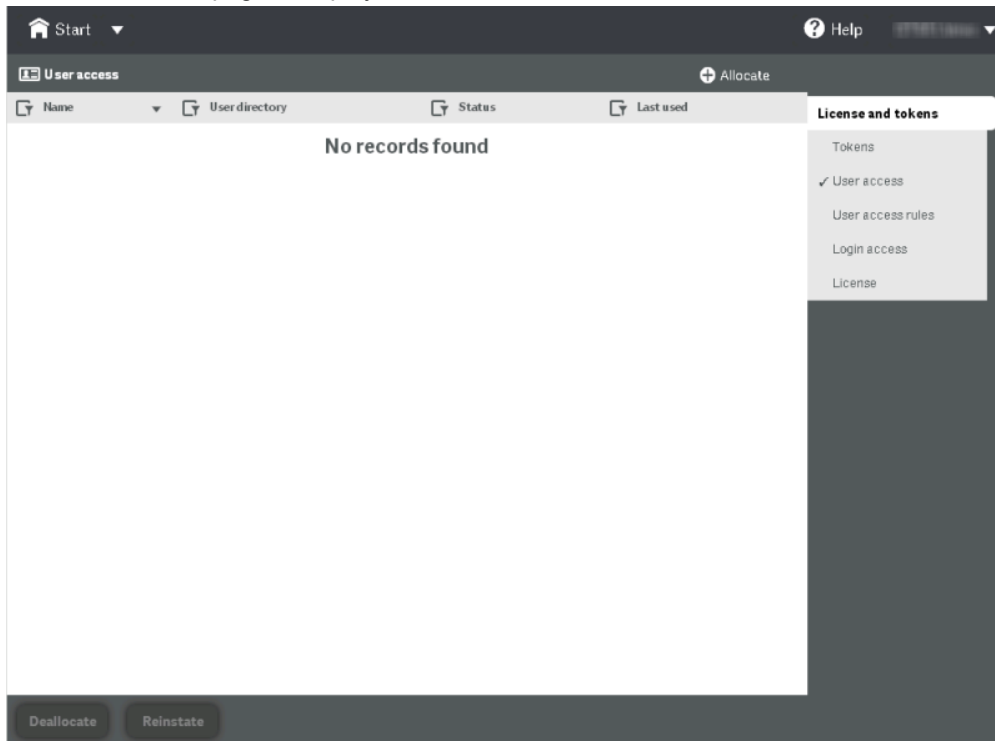
Do the following:

1. Select **License and tokens** from the Qlik Management Console (QMC) **Start** page.
The **Tokens** page is displayed.



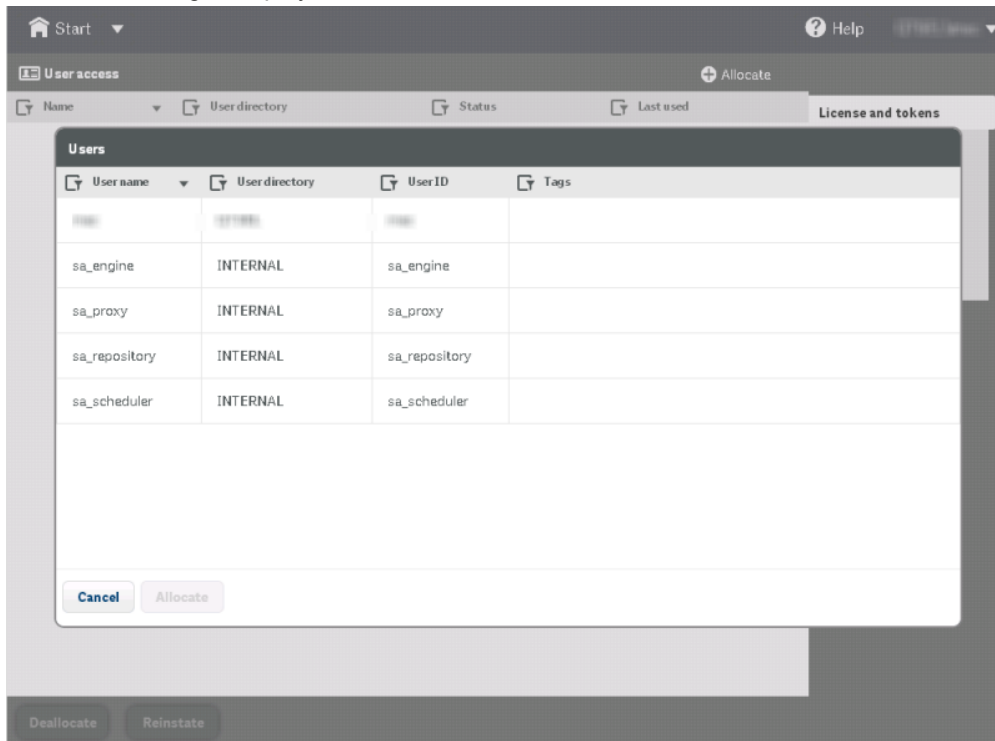
2. Select **User access**.

The **User access** page is displayed.



3. Click **Allocate**.

The **Users** dialog is displayed.



4. Select the user to add user access for and click **Allocate**.

4 Setting up your Qlik Sense site

The **User access** page is displayed and you can see that the user has been added and the status is **Allocated**.

The screenshot shows the 'User access' page in Qlik Sense. The main content area displays a table with the following data:

Name	User directory	Status	Last used
		Allocated	-

The right-hand sidebar menu is open, showing the following options under 'License and tokens':

- Tokens
- ✓ User access
- User access rules
- Login access
- License

At the bottom of the page, there are two buttons: 'Deallocate' and 'Reinstate'.

- To view the remaining number of tokens, select **Tokens** from the panel on the right side.

The screenshot shows the 'Tokens' page in Qlik Sense. The main content area displays two charts and a table.

Token summary

Category	Count
Allocated	1
Unallocated	9999

Allocated tokens by access type

Access Type	Available	In use
User access	1	0
Login access	0	0
Total	1	0

The right-hand sidebar menu is open, showing the following options under 'License and tokens':

- ✓ Tokens
- User access
- User access rules
- Login access
- License

You have now allocated yourself user access.



You can also create login access. Use the Qlik Management Console (QMC) help to learn how to.

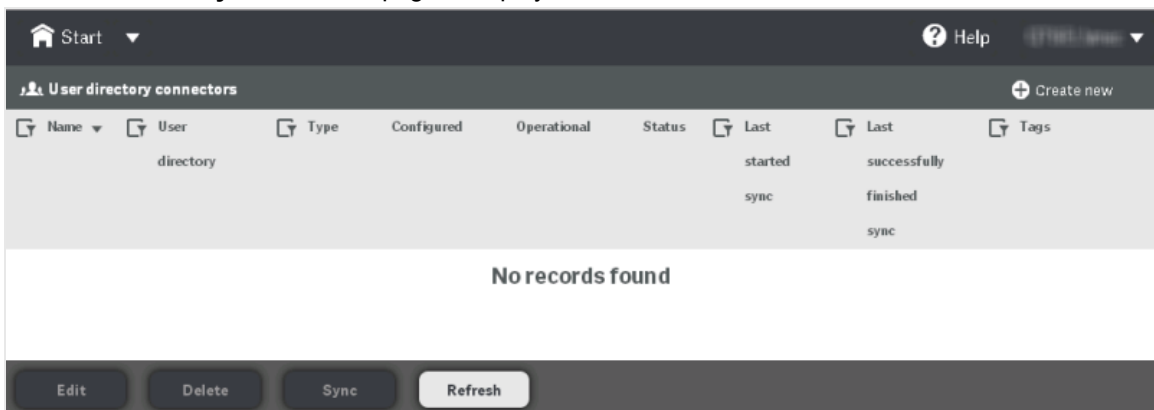
Adding user directory connector

A user directory connector (UDC) connects to a directory service to retrieve users.

Follow the procedure below to add a user directory connector.

Do the following:

1. Select **User directory connectors** from the QMC Start page.
The **User directory connectors** page is displayed.



2. Click **Create new**.
A popup menu is displayed.
3. Select the appropriate user directory connector from the popup menu.



In this example **ODBC** was selected.

The **User directory connector edit** page is displayed.

The screenshot shows the 'User directory connector edit' interface. It features a breadcrumb trail 'User directory connectors' and a title 'User directory connector edit'. The main content area is divided into three sections: 'IDENTIFICATION', 'USER SYNC SETTINGS', and 'CONNECTION'. The 'IDENTIFICATION' section includes a 'Name' field with a red error message 'Mandatory. Please enter a value.' and a 'Type' dropdown menu set to 'ODBC'. The 'USER SYNC SETTINGS' section has a 'Sync only existing users' checkbox that is checked. The 'CONNECTION' section includes fields for 'User directory name', 'User table name', 'Attributes table name', 'Visible connection string', 'Encrypted connection string', and 'Synchronization timeout (seconds)' set to '240'. On the right side, there is a 'Properties' panel with a list of checked items: 'Identification', 'User sync settings', 'Connection', and 'Tags'. At the bottom of the form are 'Apply' and 'Cancel' buttons.

4. Give the User directory connector a name. The **Name** field is mandatory.
5. With **User sync settings** selected in the panel on the right side, check or uncheck **Sync only existing users** that decides how the synchronization will be performed:
 - If the check box is checked, only the existing users will be synchronized. An existing user is a user that has logged in to Qlik Sense and/or been previously synchronized from the configured directory service.
 - If the check box is unchecked, all users, defined by the properties for the user directory connector, will be synchronized from the configured directory service.



*Uncheck **Sync only existing users** if you wish to retrieve all users. You can create additional LDAP filters for certain types of user directory connectors. Use the Qlik Management Console (QMC) help to learn how to.*

6. Make sure **Connection** is selected and define the applicable fields.

4 Setting up your Qlik Sense site

The screenshot shows the 'User directory connector edit' dialog in Qlik Sense. The dialog is titled 'User directory connector edit' and has a breadcrumb 'User directory connectors'. The main content area is divided into three sections: 'IDENTIFICATION', 'USER SYNC SETTINGS', and 'CONNECTION'.
- In the 'IDENTIFICATION' section, 'Name*' is 'QlikAdmins' and 'Type' is 'ODBC'.
- In the 'USER SYNC SETTINGS' section, 'Sync only existing users' is checked.
- In the 'CONNECTION' section, 'User directory name*' is 'ODBC1', 'User table name*' is 'Table1.csv', 'Attributes table name*' is 'Table2.csv', 'Visible connection string*' is 'Driver={Microsoft Access Text Driver (*.txt, *.csv)};Extensions=asc,csv', 'Encrypted connection string' is empty, and 'Synchronization timeout (seconds)' is '240'.
At the bottom are 'Apply' and 'Cancel' buttons. On the right, a 'Properties' sidebar shows 'Identification', 'User sync settings', 'Connection', and 'Tags' all checked.

7. Click **Apply**.
The user directory is successfully added.

4 Setting up your Qlik Sense site

The screenshot shows the 'User directory connector edit' interface. It is divided into three main sections: IDENTIFICATION, USER SYNC SETTINGS, and CONNECTION. The IDENTIFICATION section has 'Name' set to 'QlikAdmins' and 'Type' set to 'ODBC'. The USER SYNC SETTINGS section has 'Sync only existing users' checked. The CONNECTION section has 'User directory name' as 'ODBC1', 'User table name' as 'Table1.csv', 'Attributes table name' as 'Table2.csv', and 'Visible connection string' as 'Driver={Microsoft Access Text Driver (*.txt, *.csv)};Extensions=asc,csv;'. A green bar at the bottom of the form says 'Successfully updated'. There are 'Apply' and 'Cancel' buttons at the bottom.

8. Click **User directory connectors**.

The **User directory connectors** overview page is displayed showing the existing connectors.

Name	User directory	Type	Configured	Operational	Status	Last started sync	Last successfully finished sync	Tags
QlikAdmins	ODBC1	ODBC	✓	✓	Idle	-	-	

Buttons at the bottom: Edit, Delete, Sync, Refresh.

9. Make sure the directory you just added is selected and then click **Sync**.

The user directory is synchronized and the users are now available from the **Users** page.

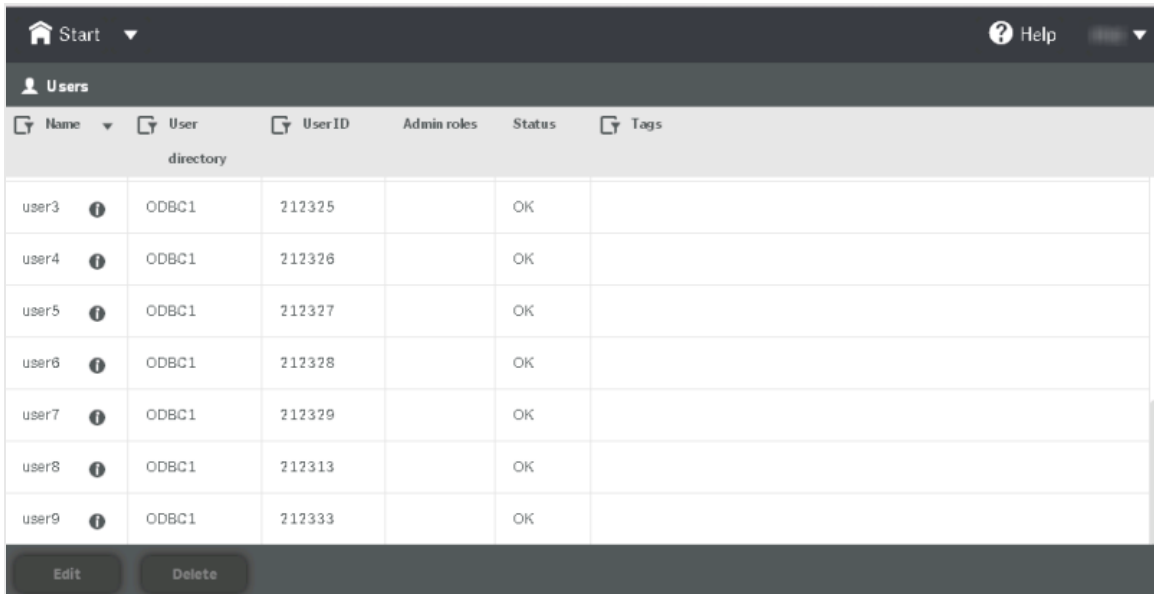
You have now added a user directory connector and synchronized the users from the configured directory service.

Adding an administrative role to a user

You can add administrative roles to a user.

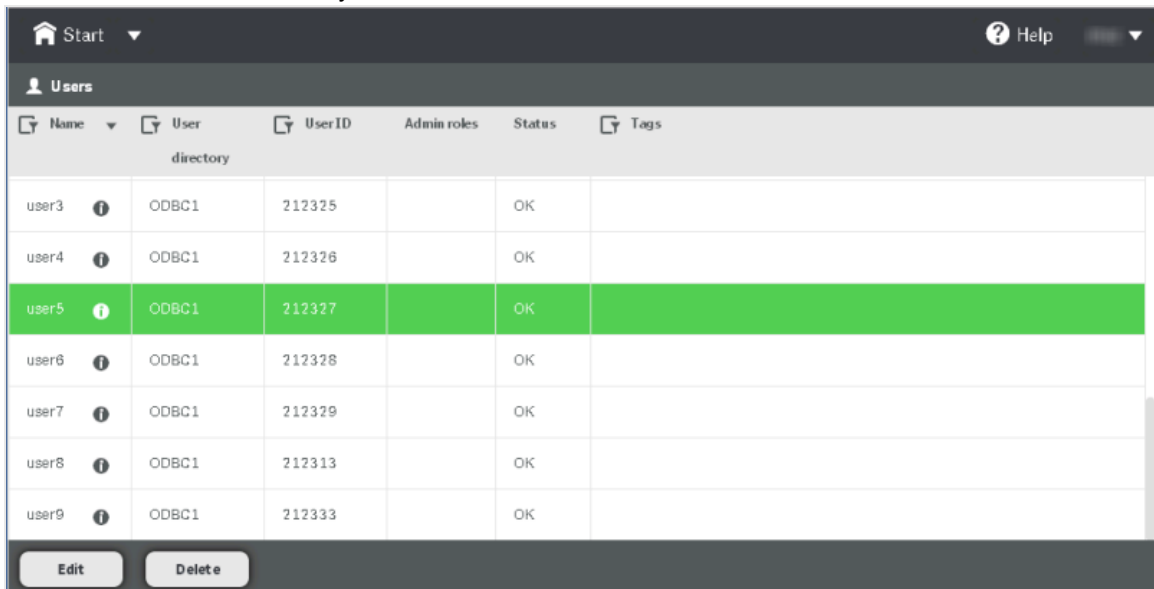
Do the following:

1. Select **Users** from the QMC**Start** page to display the **Users** overview.



Name	User	User ID	Admin roles	Status	Tags
directory					
user3	ODBC1	212325		OK	
user4	ODBC1	212326		OK	
user5	ODBC1	212327		OK	
user6	ODBC1	212328		OK	
user7	ODBC1	212329		OK	
user8	ODBC1	212313		OK	
user9	ODBC1	212333		OK	

2. Click on the user or users that you want to connect to one or more administrative roles.



Name	User	User ID	Admin roles	Status	Tags
directory					
user3	ODBC1	212325		OK	
user4	ODBC1	212326		OK	
user5	ODBC1	212327		OK	
user6	ODBC1	212328		OK	
user7	ODBC1	212329		OK	
user8	ODBC1	212313		OK	
user9	ODBC1	212333		OK	

3. Click **Edit** in the action bar.

4 Setting up your Qlik Sense site

The screenshot shows the 'User edit' interface for a user named 'user5'. The 'IDENTIFICATION' section contains the following fields: Name (user5), User directory connectors (ODBC1), User ID (212327), Admin roles (with a plus icon), and Inactive (checkbox). The 'TAGS' section contains a 'Tags' field and a 'Connected tags' field with a plus icon. On the right, the 'Properties' panel shows 'Identification' and 'Tags' checked, and 'Associations' with 'Owned items' checked. 'Apply' and 'Cancel' buttons are at the bottom.

4. Make sure the **Identification** property group is selected from the panel to the far right.

Click **+** in the **Admin roles** attribute and type the name of the administrative role that you want to connect to in the text box that appears.



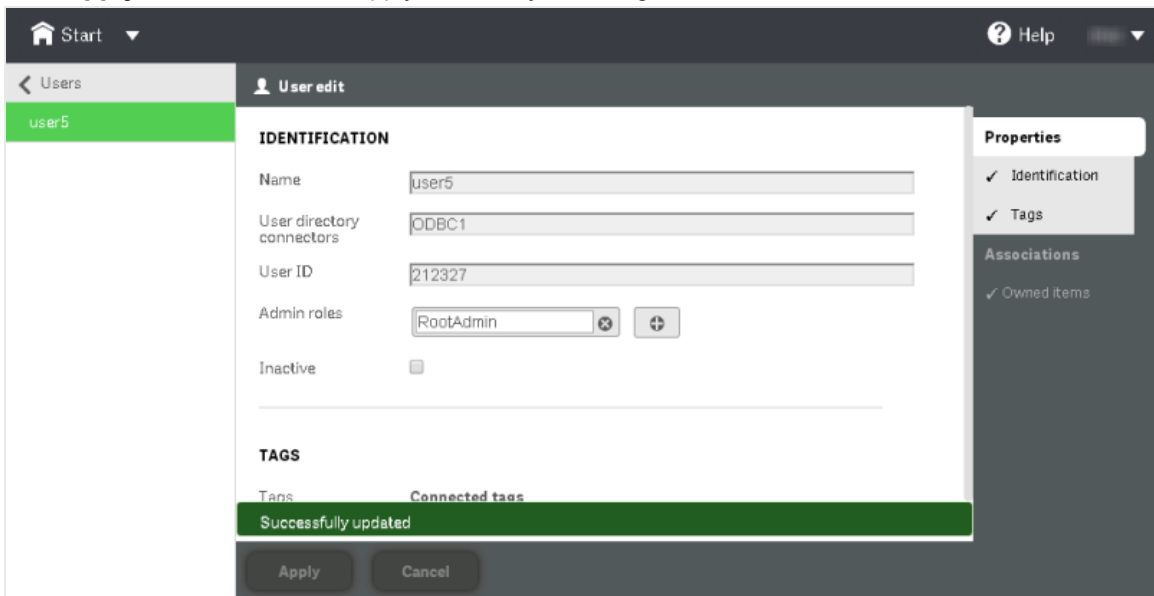
*The **Admin roles** text field is case sensitive, but the QMC will suggest roles as you type. Click on a suggestion to select it.*

This screenshot shows the 'User edit' interface with the 'Admin roles*' field expanded into a dropdown menu. The menu lists the following roles: Admin, AuditAdmin, ContentAdmin, DeploymentAdmin, RootAdmin, and SecurityAdmin. The 'Apply' and 'Cancel' buttons are visible at the bottom.

4 Setting up your Qlik Sense site

i As in the Qlik Sense Client, if a user does not have access to a resource in the QMC, the user will not be able to access it in the QMC interface. For example, if you change a user's role from RootAdmin to DeploymentAdmin, the user will no longer be able to access the Apps, Streams or Data connections pages in the QMC (amongst others).

5. Click **Apply** in the action bar to apply and save your changes.



6. Select **Users** to display the overview where you can confirm that the administrative role has been applied correctly.

The screenshot shows the 'Users' overview table in the Qlik Sense QMC. The table has the following columns: Name, User, User ID, Admin roles, Status, and Tags. The row for 'user5' is highlighted in green, showing 'RootAdmin' in the Admin roles column.

Name	User	User ID	Admin roles	Status	Tags
user3	ODBC1	212325		OK	
user4	ODBC1	212326		OK	
user5	ODBC1	212327	RootAdmin	OK	
user6	ODBC1	212328		OK	
user7	ODBC1	212329		OK	
user8	ODBC1	212313		OK	
user9	ODBC1	212333		OK	

You have now added an administrative role to a user.

5 Upgrading Qlik Sense

The upgrade option is available when Qlik Sense has been previously installed and a newer version of **Qlik_Sense_setup.exe** is executed. When upgrading, the previous version is completely replaced by the new version.

There are different upgrade types available:

- **Quick Upgrade** upgrades all program features that are currently installed, into default locations. This upgrade option is recommended for single node installation.
- **Custom Upgrade** allows you to select which program features to upgrade. This upgrade option is recommended for advanced users.

5.1 Upgrade prerequisites

Before you start upgrading Qlik Sense, there are a few requirements to consider:

- Consult *Qlik Sense system requirements (page 8)* before proceeding with the upgrade process.
- Download the **Qlik_Sense_setup.exe** file from the download site.
- On Operating Systems with User Account Control (UAC) disabled, make sure you have logged on with Administrator rights using an account that has an actual password defined, that is, not a blank password.



Consider backing up the Qlik Sense site before performing an upgrade.

5.2 Performing a quick upgrade


This upgrade type installs all program features that are currently installed into default locations. New features that would have been installed from a quick installation are also installed. If you have removed features via custom install in the version that already exists on the machine, those will not be installed.




Make sure that you have located and/or obtained the setup file before starting the installation procedure.

Do the following:


1. To start the upgrade, double-click on *Qlik Sense_Server_setup.exe*.
The **Welcome** dialog is displayed.
2. Click **Quick Upgrade**.
The **License agreement** dialog is displayed.
3. Read the license agreement and then tick the **I accept the license agreement** checkbox (if this is the case) and click **Next**.

 You also have the option to print the license agreement.

The **Repository Database superuser password** dialog is displayed.

 This dialog is only displayed if a superuser password has been set when initially installing Qlik Sense.

4. Enter the superuser password that was entered when installing Qlik Sense and click **Next**. The **Service Credentials** dialog is displayed.


 This dialog is not displayed if you started the services with the local system account when initially installing Qlik Sense.

5. Type the **Password** and click **Next**. The **Ready to install** dialog is displayed.
6. Click **Upgrade**:
 - If UAC is enabled, the **User Account Control** dialog is displayed.
 - If UAC is disabled, the upgrade starts.
7. Click **Yes** to start the upgrade.

 This is only applicable if UAC is enabled.

The upgrade starts.


8. When the installation has completed the **Upgrade Summary** is displayed. Click **Finish** to close the **Upgrade Summary**.

 If the upgrade did not complete successfully, the **Upgrade failed** dialog is displayed. For more detailed information, see the installation log located in your **temp** folder accessed with environment variable `%temp%`.

You have now successfully upgraded to a newer version of Qlik Sense.


5.3 Performing a custom upgrade

This upgrade type allows you to select which Qlik Sense features to install. It also allows you to select the installation location. This upgrade type is only recommended for advanced users.

 Make sure that you have located and/or obtained the setup file before starting the upgrade procedure.


Do the following:


1. To start the upgrade, double-click on *Qlik Sense_Server_setup.exe*.
The **Welcome** dialog is displayed.
2. Click **Custom Upgrade**.
The **License agreement** dialog is displayed.
3. Read the license agreement and then tick the **I accept the license agreement** checkbox (if this is the case) and click **Next**.


 *You also have the option to print the license agreement.*

The **Installation Location** dialog is displayed.

4. Define the **Installation Path** either by entering the installation location, or click to browse for the location or leave it to be installed at the predefined location.

 *You cannot install onto a mapped network location.*


 *If an invalid installation path is defined, **UNC paths are not allowed** is displayed.*

 *Only the following characters can be used in the installation path: a-z, A-Z, and 0-9.*

5. Select the features you want to install:
 - **Engine:** when selected, the Qlik Sense Engine Service will be installed on your machine. When the checkbox is cleared, the Qlik Sense Engine Service will be omitted from the installation.
 - **Proxy:** when selected, the Qlik Sense Proxy Service will be installed on your machine. When the checkbox is cleared, the Qlik Sense Proxy Service will be omitted from the installation.
 - **Scheduler:** when selected, the Qlik Sense Scheduler Service will be installed on your machine. When the checkbox is cleared, the Qlik Sense Scheduler Service will be omitted from the installation.
 - **Repository database:** when selected, the Qlik Sense Repository Database (QRD) will be installed on your machine. When the check box is cleared, the Qlik Sense Repository Database will be omitted from the installation.

Click **Next**.

The **Repository Database superuser password** dialog is displayed.

 *This dialog is only displayed if a superuser password has been set when initially installing Qlik Sense or if you are adding the repository database during the update.*

6. Enter the superuser password that was entered when installing Qlik Sense or create a password for the database superuser if you are adding the repository database during the update. Then click **Next**. The **Service Credentials** dialog is displayed.



This dialog is not displayed if you started the services with the local system account when initially installing Qlik Sense.

7. Type the **Password** and click **Next**. The **Ready to install** dialog is displayed.
8. The role for the Qlik Sense Repository Service (QRS) cannot be changed.

Click **Upgrade**:

- If UAC is enabled, the **User Account Control** dialog is displayed.
- If UAC is disabled, the upgrade starts.

9. Click **Yes** to start the upgrade.



This is only applicable if UAC is enabled.

The upgrade starts.

10. When the installation has completed the **Upgrade Summary** is displayed. Click **Finish** to close the **Upgrade Summary**.



*If the upgrade did not complete successfully, the **Upgrade failed** dialog is displayed. For more detailed information, see the installation log located in your **temp** folder accessed with environment variable %temp%.*

You have now successfully upgraded to a newer version of Qlik Sense.

6 Maintaining Qlik Sense

After installing Qlik Sense you can perform a number of maintenance tasks from the **Programs and Features** option on the **Control Panel**. This includes modifying, repairing and uninstalling Qlik Sense.

When updates are distributed and applied, they can be maintained from the **Installed Updates** option on the **Control Panel**.

Example:

If you want to change the default Windows user account that is used to run Qlik Sense, use the Modify option and update in the **Service Credentials** dialog. See *Modifying Qlik Sense (page 45)*.

6.1 Modifying Qlik Sense

The **Modify** option allows you to add features currently not present in your Qlik Sense installation. You can also remove features that have been previously installed.

In addition to the features added and/or removed, the remaining features are repaired with the credentials defined at the time of modifying.

Do the following:

1. To start modifying the installation, open the **Control Panel** and select **Uninstall a program**. Then select **Qlik Sense** from the list of programs and click **Change**.

The **Qlik Sense Setup Maintenance** dialog is displayed.



You can also perform this action by double-clicking the Qlik_Sense_setup.exe file. In that case, you must use the correct version of the setup file when modifying your Qlik Sense installation, that is, the same version used when installing Qlik Sense.

2. Click **MODIFY**.

The **Installation Location** dialog is displayed.

3. In the **Features** section, make sure to select the features you want to install and deselect the features you do not want to install. Then click **Next**.

The **Service Credentials** dialog is displayed.

4. Select the check box at the top, then enter the **Domain\Username** and the (Windows) **Password** that you want the services to start with. You can also leave the check box cleared (default) which means the services will be started with the local system account.



*The **Password** must not be blank if the checkbox is selected.*



The settings defined when modifying your installation will overwrite the settings defined when performing the original installation.

Click **Next**.

The **Ready to Install** dialog is displayed.

5. Click **Modify** to start modifying your Qlik Sense installation.
The **User Account Control** dialog is displayed.



This is only applicable if UAC is enabled.

6. Click **Yes** to start modifying your Qlik Sense installation.



This is only applicable if UAC is enabled.

The progress is displayed.

When finished, the **Modification Summary** dialog is displayed to confirm that Qlik Sense has been modified successfully.

7. Click **Finish**.

You have now successfully modified your Qlik Sense installation.

6.2 Repairing Qlik Sense

The **Repair** option restores all missing files, shortcuts, registry values and services. All services being restored will have default credentials (logging in with local system account). If a service is not restored, no credentials will be changed.

Do the following:

1. To start repairing the installation, open the **Control Panel** and select **Uninstall a program**. Then select **Qlik Sense** from the list of programs and click **Change**.

The **Qlik Sense Setup Maintenance** dialog is displayed.



You can also perform this action by double-clicking the Qlik_Sense_setup.exe file. In that case, you must use the correct version of the setup file when modifying your Qlik Sense installation, that is, the same version used when installing Qlik Sense.

2. Click **REPAIR**.
The **Ready to Repair** dialog is displayed.
3. Click **Repair**.
 - If UAC is enabled, the **User Account Control** dialog is displayed.

- If UAC is disabled, the repair process starts.
4. Click **Yes** to start repairing your Qlik Sense installation.

 *This is only applicable if UAC is enabled.*


The progress is displayed.

When finished, the **Repair Summary** dialog is displayed to confirm that Qlik Sense has been restored successfully.

5. Click **Finish**.

You have now successfully repaired your Qlik Sense installation.


6.3 Uninstalling Qlik Sense


 *The Qlik Sense uninstaller does not remove the certificates. The certificates must be manually removed if desired.*

Do the following:

1. To start uninstalling, open the **Control Panel** and select **Uninstall a program**. Then select Qlik Sense from the list of programs and click **Uninstall**.

A confirmation dialog is displayed asking if you are sure that you want to uninstall Qlik Sense from your computer.


 *If the repository of this server is installed as **Central**, you may have other servers on other machines that require this repository to function properly.*

 *You can also uninstall Qlik Sense by double-clicking the `Qlik_Sense_setup.exe` file and then selecting **Uninstall** from the **Maintenance** dialog. In that case, you must use the correct version of the setup file when modifying your Qlik Sense installation, that is, the same version used when installing Qlik Sense.*

2. Click **Uninstall** to start uninstalling Qlik Sense.

The progress of the uninstall process is displayed. When finished the **Uninstall Summary** dialog is displayed to confirm that Qlik Sense has been uninstalled successfully.

3. Click **Finish**.

 *The Qlik Sense uninstaller does not remove the database. The database must be manually removed if desired.*

4. If you want to perform a complete uninstall, manually delete the *Qlik* folder in this location: *%ProgramData%\Qlik*.

The database is removed.

You have now uninstalled Qlik Sense.

7 Silent operations



The operations described below should only be performed by advanced users.

This section describes the unattended silent operations that can be performed.

7.1 Silent installation

When running a silent installation, Qlik Sense is installed with no dialogs at all. This means all features, properties and user selections have to be known before performing a silent installation.

Performing a silent installation

1. Select **Start > All Programs > Accessories > Command Prompt**.
The **Command Prompt** window is displayed.
2. In the **Command Prompt** window, navigate to the folder containing the *Qlik_Sense_setup.exe* file.
3. Enter *Qlik_Sense_setup.exe* followed by the silent installation syntax preferred, see *Syntax* (page 49).

Syntax

```
Qlik_Sense_setup.exe [-silent] {-log "path\filename"} {-addfeatures "FeatureSetName1" "FeatureSetName2" "FeatureSetNameN"} {-syncnode} {-desktopshortcut} {-skipstartservices} {-installdir "path"} {-dbpassword} {-hostname "www.hosturlofyourmachine.com"} {-layout "path"}
```

Options

- silent (or -s)** Install the product silently.
- log (or -l)** Log file directory and log file name.



The user must have access to this directory.

- addfeatures (or -a)** Install the named features. Can be all or any of:
Engine, Proxy, Scheduler, PostgreSQL



-a Engine Scheduler will also install mandatory features, such as repository.

- syncnode** If you want to run the repository as a sync node. Default is central.
- desktopshortcut** To add a desktop shortcut.

-skipstartservices	To skip starting services after the installation has finished.
-installdir (or -i)	Path to custom install directory. Need only be defined if the default install directory should not be used (<i>%ProgramFiles%\Qlik\Sense</i>).
-dbpassword (or -dbp)	Password for the Repository database superuser that creates the user that runs the database.
-hostname (or -h)	Host name of the central node.
-layout	Extracts files to the destination directory. Should not be combined with other command line arguments.

Example:

```
Qlik_Sense_setup.exe -s -a Engine Scheduler -syncnode
```

7.2 Silent modify

You can silently modify the current Qlik Sense installation.

Performing a silent modification

1. Select **Start > All Programs > Accessories > Command Prompt**.
The **Command Prompt** window is displayed.
2. In the **Command Prompt** window, navigate to the folder containing the *Qlik_Sense_setup.exe* file.
3. Enter *Qlik_Sense_setup.exe* followed by the silent installation syntax preferred, see *Syntax (page 50)*.

Syntax

```
Qlik_Sense_setup.exe [-silent] [-modify] {-log "path\filename"} {-addfeatures "FeatureSetName1" "FeatureSetName2" "FeatureSetNameN"} {-removefeature "FeatureSetName1" "FeatureSetName2" "FeatureSetNameN"} {-syncnode} {-desktopshortcut} {-skipstartservices} {-dbpassword} {-hostname "www.hosturlofyourmachine.com" }
```


Options

-silent (or -s)	Trigger the silent mode.
-modify	Modify the product silently.
-log (or -l)	Log file directory and log file name.



The user must have access to this directory.

If this option is not defined, the log file will be stored with the default name in the default location.

-addfeatures (or -a)	Install the named features. Can be all or any of: Engine, Proxy, Scheduler, PostgreSQL
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <i>-a Engine Scheduler will also install mandatory features, such as repository.</i></div>	
-removefeature (or -r)	Remove the named features. Can be all or any of: Engine, Proxy, Scheduler, PostgreSQL
-syncnode	If you want to run the repository as a sync node. Default is central.
-desktopshortcut	To add a desktop shortcut.
-skipstartservices	To skip starting services after the installation has finished.
-dbpassword or -dbp	Password for the Repository database superuser that creates the user that runs the database.
-hostname or -h	Host name of the central node.

Example 1: Removing Proxy feature from installation

This example shows how to silently remove the Proxy feature from a complete installation.

```
Qlik_Sense_setup.exe -s -modify -r Proxy
```

Example 2: Adding Proxy feature to installation

This example shows how to silently add the Proxy feature to a custom installation where it did not exist previously.

```
Qlik_Sense_setup.exe -s -modify -a Proxy
```

7.3 Silent repair

You can silently repair the current Qlik Sense installation.

Performing a silent repair

1. Select **Start > All Programs > Accessories > Command Prompt**.
The **Command Prompt** window is displayed.
2. In the **Command Prompt** window, navigate to the folder containing the *Qlik_Sense_setup.exe* file.
3. Enter *Qlik_Sense_setup.exe* followed by the silent installation syntax preferred, see *Syntax (page 51)*.

Syntax

```
Qlik_Sense_setup.exe [-silent] [-repair] {-log "path\filename"}
```

Options

-silent (or -s)	Trigger the silent mode.
-repair	Repair the product silently.
-log (or -l)	Log file directory and log file name.



The user must have access to this directory.

If this option is not defined, the log file will be stored with the default name in the default location.

Example:

This example shows how to silently repair the Qlik Sense installation.

```
Qlik_Sense_setup.exe -s -repair
```

7.4 Silent uninstall

You can silently uninstall the current Qlik Sense installation.

Performing a silent uninstall

1. Select **Start > All Programs > Accessories > Command Prompt**.
The **Command Prompt** window is displayed.
2. In the **Command Prompt** window, navigate to the folder containing the *Qlik_Sense_setup.exe* file.
3. Enter *Qlik_Sense_setup.exe* followed by the silent installation syntax preferred, see *Syntax (page 52)*.

Syntax

```
Qlik_Sense_setup.exe [-silent] [-uninstall] {-log "path\filename"}
```

Options

-silent (or -s)	Trigger the silent mode.
-uninstall	Uninstall the product silently.
-log (or -l)	Log file directory and log file name.



The user must have access to this directory.



If this option is not defined, the log file will be stored with the default name in the default location.

Example:

This example shows how to silently uninstall Qlik Sense.


```
Qlik_Sense_setup.exe -s -uninstall
```

8 Troubleshooting

Problem	Possible cause	Action
<p>One or more Qlik Sense services did not start after installation.</p>	<p>If the repository service is not running none of the other services can start and the repository service cannot start if there is no database.</p> <div data-bbox="596 689 836 1429" style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p> <i>The services are started automatically delayed. This means it can take a while for them all to start after the installation.</i></p> </div>	<p>The services must be restarted or the installation needs to be modified.</p> <ol style="list-style-type: none"> 1. Stop the service and start it again. 2. If the service is not started, repair the installation. 3. If the service is still not starting, modify the installation and change the service credentials user information. 4. If the actions above cannot remedy the problem you need to uninstall and reinstall Qlik Sense. <div data-bbox="868 864 1385 1079" style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p> <i>Check the log files in this location: %ProgramData%\Qlik\Sense\Log\<Service></i></p> </div>
<p>The page is blank when I open the QMC.</p>	<p>There have been multiple DNS entries for your computer (you have been logged on to more than one network), so your <code>host.config</code> file may be pointing to the wrong host name.</p>	<p>Do the following:</p> <ol style="list-style-type: none"> 1. Stop all running services. 2. Delete all certificates related to your installation of Qlik Sense. 3. Open the folder %ProgramData%\Qlik\Sense\. 4. Delete the <code>host.config</code> file. 5. Do a Repair. See <i>Repairing Qlik Sense (page 46)</i>. <p>The host config file is recreated with default settings.</p>

<p>A Windows dialog is displayed when I try to browse to the hub or the QMC.</p>	<p>You are using Windows Server 2012.</p>	<p>Login in the Windows dialog, then you can browse to the hub or the QMC.</p>
<p>Icons in the hub or in the QMC are not displayed correctly.</p>	<p>You are using Windows Internet Explorer.</p>	<p>Add the hub and QMC sites as trusted sites in Windows Internet Explorer. Do the following:</p> <ol style="list-style-type: none"> 1. Open the Windows Internet Explorer Internet options. 2. Select the Security tab. 3. Click on Trusted sites. 4. Click on Sites. 5. Enter the website address for the hub in the text field and click Add. 6. Enter the website address for the QMC in the text field and click Add. 7. Click Close. 8. Refresh the browser window.
<p>The browser displays the Proxy SSL-connection/-certificate is untrustworthy! and the browser asks if you want to make an exception and trust the certificate authority.</p>	<p>The browser doesn't recognize the root certificate as trustworthy since it is not a known certificate authority like Thawte, VeriSign and so on.</p>	<p>Answer yes to the browser question "if you want to make an exception and trust the certificate authority".</p> <p>Also, verify that you have installed a public SSL certificate since you need this to be able to use the default Qlik Sense certificate.</p>
<p>Loading the hub is displayed and I cannot access the hub when using the Safari 7 web browser.</p>		<ol style="list-style-type: none"> 1. Close the Safari web browser process. 2. Access the hub again. The certificate dialog is displayed. 3. Select Show certificate and then Always trust.
<p>I cannot access the hub when using iPad.</p>		<p>Verify that you have installed a public SSL certificate since you need this to be able to use the default Qlik Sense certificate.</p>
<p>The page is blank when I open the QMC or a warning shows that the certificates are used by another software.</p>	<p>The required port is not available, since the port is used by another software. For example VMware, Skype or IIS.</p>	<p>Check the proxy system log file in this location: <i>%ProgramData%\Qlik\Sense\Log\Proxy</i></p> <p>Verify that the proxy is running and that it is able to listen to the required port. By default the prox runs on port 443 and this port needs to be available.</p> <p>Fully shut down any other programs using port 443 and restart the proxy service. Also change the port settings in these programs.</p>

<p>The page is blank when I open the QMC, using normal HTTP instead of HTTPS even though I have allowed HTTP in the proxy settings.</p>	<p>The use of HTTP is allowed in proxy but the default port 80 is not available.</p>	<p>Check the proxy system log file in this location: <code>%ProgramData%\Qlik\Sense\Log\Proxy</code></p> <p>Make sure port 80 is available, for example by stopping IIS on Windows. Alternatively use another port for HTTP.</p>
<p>400 Bad request is displayed.</p>	<p>The REST HTTP request to the proxy or the repository is incorrectly formatted.</p>	<p>Correct the formatting of the REST HTTP request.</p>
<p>403 Forbidden is displayed.</p>	<p>There are too many root certificates on a machine (> ~300). Therefore the Qlik Sense services are not allowed to communicate.</p>	<p>Remove any unused root certificates. See also the following Microsoft help documentation: http://support.microsoft.com/kb/933430 and http://support.microsoft.com/kb/2801679</p>
<p>404 Not found is displayed.</p>	<p>The URL refers to a non-existing resource.</p>	<p>Modify the URL.</p>
<p>405 Method not allowed is displayed.</p>	<p>The URL refers to a non-existing REST function.</p>	<p>Modify the URL.</p>
<p>I can access the hub, but I see no streams at all.</p>	<p>The user has no access type.</p>	<p>Allocate user access or include the user in a login access group.</p>
<p>I can access the hub, but I cannot see the streams I want to.</p>	<p>The user has no access to the stream.</p>	<p>Give the user access by the security rules.</p>
<p>The start page displays a number next to Engine, Repository, Proxy or Scheduler.</p>	<p>The service is down.</p>	<p>Check the log file in this location: <code>%ProgramData%\Qlik\Sense\Log\<Service></code></p>
<p>When using Microsoft Windows Server 2008 R2 and Windows 8.1 the short-cuts don't load the QMC or the hub when using Internet Explorer 10 or Internet Explorer 11.</p>	<p>The Internet Explorer security settings are blocking the short cuts.</p>	<p>Add <code>https://<machinename>/</code> to the local intranet zone in Internet Explorer's settings: <i>Internet options/Security tab/Local intranet:Sites/Advanced.</i></p>
<p>I want to change the default Windows user account, that is used to run Qlik Sense.</p>	<p>-</p>	<p>To modify the Qlik Sense installation:</p> <ol style="list-style-type: none"> 1. Open the Control Panel and select Uninstall a program.

		<ol style="list-style-type: none"> 2. Select Qlik Sense from the list of programs and click Change. 3. Select Modify in the Qlik Sense setup dialog. <p>The Windows user account can also be changed manually. This is done by modifying the user account that is used to run the Qlik Sense services and the user account that is used to access the folder where the Qlik Sense logs are stored. The default path to the Qlik Sense log folder is</p> <p><i>%ProgramData%\Qlik\Sense\Log\<Service></i></p> <p>.</p>
<p>Internal server error 500 is displayed.</p>	<p>An unidentified error has occurred.</p>	<p>Check the system log files in the following locations:</p> <ul style="list-style-type: none"> • <i>%ProgramData%\Qlik\Sense\Log\Proxy</i> • <i>%ProgramData%\Qlik\Sense\Log\Repository</i> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> <p> <i>If the error message is displayed repeatedly, please contact your Qlik Sense representative and provide the system log files.</i></p> </div>
<p>Unable to get the custom properties definitions is displayed when starting the QMC.</p>	<p>Failed to retrieve the custom property data from the repository.</p>	<p>Restart the QMC.</p>
<p>I have recreated a node in the QMC (created, deleted and then created it again) but the node is not getting online. There is a warning message in the log: “Node disabled (most probable cause is having been unregistered from a cluster). Aborting startup...”.</p>	<p>Deleted nodes are not allowed to be restarted and reused in a multi-node environment.</p>	<ol style="list-style-type: none"> 1. Delete the node in the QMC. 2. Uninstall the software from the node. See <i>Uninstalling Qlik Sense (page 47)</i> 3. Reinstall the software on the node. 4. Create the node again in the QMC.

For additional troubleshooting of Qlik Sense, refer to section **Troubleshooting** in the Managing a Qlik Sense Site document.

9 Installing custom connectors

You can install additional connectors to retrieve data from custom data sources not supported by a generic Qlik Sense installation. Custom connectors can be obtained from third-party developers or created by using the Qlik QVX SDK.



Qlik Sense connectors are executed with the same access rights as Qlik Sense. This means that you need to consider security aspects before installing a connector, as the connector automatically will gain access to the same resources as Qlik Sense, which could be exploited by a malign connector.

9.1 Required files

The connector solution should contain the following files that you need to install:

- `<ConnectorName>.exe` or `.dll` and all supporting files
- `web` folder containing `.js`, `.html`, `.css` files and other web interface related components of the solution (if the connector user interface is adapted for Qlik Sense).

9.2 Installation procedure

When you are ready to install your connector, do the following:

1. Create a new folder with the same name as the connector solution (for example, `QvEventLogConnector`) in the Custom Data folder of Qlik Sense. If the Custom Data folder does not exist, you need to create it as well.

The Custom Data folder is:

32-bit connectors: `C:\Program Files (x86)\Common Files\Qlik\Custom Data`.

64-bit connectors: `C:\Program Files\Common Files\Qlik\Custom Data`.

Example:

`C:\Program Files (x86)\Common Files\Qlik\Custom Data\QvEventLogConnector`

2. Copy the connector solution files (listed in *Required files (page 58)*) into the folder you created in the previous step.

The connector is now ready to use in Qlik Sense.

9.3 Using connectors that are not adapted for Qlik Sense

If you want to use an existing connector that has not been adapted for Qlik Sense there are some limitations to consider. As the user interface for connecting and selecting data is not adapted it is not possible to create a data connection and select data in the script editor.

The workaround is as follows:

1. Use the script editor in QlikView 11 to connect using the connector and select the data you need.
2. Copy the script code that was generated by the connector, including **CUSTOM CONNECT**, **LOAD** and **SQL SELECT** statements.
3. Paste the script code into the Qlik Sense script.
4. Run the script to load data into Qlik Sense.

See also:

- 📄 [Qlik QVX SDK help files](#)