Progress
FUSE

FUSE HQ

Installing FUSE HQ

Version 3.2
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PROGRESS
S O F T W A R E

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Chapter 1. Installation Prerequisites

Before attempting to install FUSE HQ, decide where you are going to install FUSE HQ components and make sure your systems meets the minimum requirements.

Planning your installation

What is FUSE HQ

FUSE HQ is a tool for monitoring and managing the FUSE infrastructure. With FUSE HQ you can:

- Inventory resources on your network
- Monitor resources
- Send alerts when problems occur
- Control resources

FUSE HQ Components

Before you begin installation of FUSE HQ, you must decide where you will install the following FUSE HQ functional components:

Component	Description
FUSE HQ Server	The central component that controls agents, manages data, and provides a user interface (a browser-based GUI or the HQ Shell, which is a command-line interface.) The server is usually installed on a single machine in the network. See http://fusesource.com/wiki/display/HDOX/HQ+High+Availability+Guide for more information. Note that you can install multiple servers if you want to create a high-availability installation. A high-availabilty installation allows a secondary server to take over when the primary server becomes unavailable.
FUSE HQ Agent	The component that finds resources, gathers data, controls software, and communicates with the server. Agents are installed on the systems in a network that you want to monitor or control. See "FUSE HQ Agent Requirements" on page 11 Note that agents cannot function remotely; they can only monitor resources on the system where they are installed.
FUSE HQ Repository	A database, managed by the Server. It stores FUSE HQ data and is responsible for ensuring data integrity and access. See "FUSE HQ Repository Requirements" on page 12

FUSE HQ Server Requirements

Check this section before you install HQ Server on the machine that will be the central control and management system for FUSE HQ.

Hardware

- 1 GHz or higher Pentium 4, or equivalent (2 × 2.4GHz Pentium Xeon or equivalent recommended)

- 1 GB RAM (4 or more GB recommended)

- 1-5 GB Free Disk Space

Operating systems

- Linux

- Windows XP or 2003 Server

- Solaris 8 or higher

- HP-UX

Web browsers

FUSE HQ supports Firefox 1.5.x and 2.0.x, Safari, and Internet Explorer 6 and 7 browsers. Firefox is the recommended browser.

Java

The FUSE HQ Server is bundled with a JRE and its use is recommended. However, if you prefer to use a JRE (or JDK) that may already be installed on the system, the JRE or JDK should be version 1.5.

IP address

The system where you install the FUSE HQ Server must have a static IP address. A dynamic IP address may disable communication with the FUSE HQ Agent. Check with your system administrator to determine if you need to implement a static IP address on the system where you want to install the FUSE HQ Server.

X windows

On UNIX platforms, FUSE HQ Server requires some of the X libraries to create charts and other graphics in the user interface. Specifically `libXp.so.6` must be installed on the system.

The symptoms of missing X libraries are broken graphics and error messages similar to the following:

```
java.lang.NoClassDefFoundError at
net.hyperic.hq.ui.taglib.NavMapTag._getResourceTree(NavMapTag.java:252)
at
net.hyperic.hq.ui.taglib.NavMapTag.doStartTag(NavMapTag.java:160)
etc . . .
```

FUSE HQ Agent Requirements

Check this section before you install the FUSE HQ Agent on the systems that you want to monitor.

Hardware

- 500 MHz Celeron or higher, or equivalent
- 256 MB RAM
- 500 MB Free Disk Space
- Supported Operating System

Operating systems

- Linux
- Windows XP or 2003 Server
- Solaris 8 or higher
- Mac OS X
- HP-UX
- AIX
- FreeBSD

Java

The FUSE HQ is bundled with a JRE and its use is recommended. However, if you prefer to use a JRE (or JDK) that may already be installed on the system, the JRE or JDK should be version 1.5.

IP address

The system where you install the FUSE HQ Agent must have a static IP address. A dynamic IP address may disable communication with the FUSE HQ Server. Check with your system administrator to determine if you need to implement a static IP address on the system where you want to install the FUSE HQ Agent.

FUSE HQ Repository Requirements

For evaluation and testing purposes, the FUSE HQ Server installation includes a default, built-in database that you can install on the local host. However, for actual deployment of FUSE HQ (particularly in large installations), you should install and configure one of the following databases on a remote host:

• Oracle 9i or 10g

• PostgreSQL 8 or higher

• MySQL 5.0 or higher

See "Preparing the FUSE HQ Repository" on page 13 for more information.

Chapter 2. Preparing the FUSE HQ Repository

Before installing the FUSE HQ Server or Agents, you should prepare a database to serve as a repository for FUSE HQ data.

The Built-in Repository

The built-in repository requires no preparation. It is available as an option when you install theFUSE HQ Server. If you intend to use the built-in repository, go to "Installing the FUSE HQ Server" on page 23.

The built-in database is useful for testing and evaluation purposes. However, for actual deployment of FUSE HQ you should consider setting up an Oracle, PostgreSQL, or MySQL database.

Preparing an Oracle Database

Create an Oracle instance that will be used as the FUSE HQ repository

Ideally, the Oracle server should run a system where no other FUSE HQ components are installed. Install Oracle on the machine you will use, and create a database.

Create the user that will access the database

You can use SQL*Plus to create a user in Oracle. For example:

1. Log into the Oracle instance with SQL*Plus as the system user.

2. Use **CREATE USER** to create a user name and password.

   For example, the following creates a user named **HQUSER** whose password is **HQPASSWORD**:

   ```
   SQL> CREATE USER HQUSER IDENTIFIED BY HQPASSWORD;
   ```

Give the required permissions to the user

For example, use the SQL*Plus GRANT command as follows:

```
SQL> GRANT CONNECT, RESOURCE TO HQUSER;
```

Preparing a PostgreSQL Database

Prerequisites

Preparing a PostgreSQL database for the FUSE HQ repository is relatively complicated and can vary depending on the operating system and other factors. PostgreSQL usually requires a DBA or someone with DBA knowledge for setup and maintenance. You can also find help by consulting the PostgreSQL documentation[1].

This section gives you an idea of the process, based on the following prerequisites:

Operating system	Redhat Enterprise Linux 4
Database	PostgreSQL 8.1
Database IP address	192.168.1.4
HQ Server IP Address	192.168.1.6
Install directory	`/var/lib/pgsql/data/`
Configuration file	`/var/lib/pgsql/data/postgresql.conf`
Host-based authentication file	`/var/lib/pgsql/data/pg_hba.conf`

Note

FUSE HQ automatically creates a language in the PostgreSQL database, but not in PostgreSQL 8.0. You must run the following command on a PostgreSQL 8.0 database:

createlang plpgsql <DATABASE NAME>

The **createlang** executable is located in the `bin` directory of your PostgreSQL installation.

---

[1] http://www.postgresql.org/docs/

Install PostgreSQL

Since the OS is Redhat Linux, you can use the Yellowdog Updater, Modified (YUM) to install the PostgreSQL on the system where you want to create a FUSE HQ Repository. For example:

```
yum install postgresql postgresql-server
```

PostgreSQL installs in the following directories:

```
/etc/init.d/
/usr/bin/
/usr/share/doc
/var/lib/pgsql/
```

Initialize PostgreSQL

Use the following command to run the YUM initialization scripts that set up some basic configuration files:

```
/etc/init.d/postgresql start
```

Create a database with a user account

1. Enter the following at a command prompt on the system where you installed the PostgreSQL server:

   su - postgres

   Do not omit the dash.

   The command prompt changes to **psql** to indicate that you have started the PostgreSQL interactive shell.

2. Using the PostgreSQL shell, create a user with permission to log in and create databases. The following, for example, creates a user named **admin** whose password is **hqadmin**:

   ```
   create role admin with login createdb password 'hqadmin';
   ```

3. Create the database that you will use as the FUSE HQ repository and specify **admin** as the owner. For example:

```
create database "HQ" owner admin;
```

Note that the quotes around "HQ" cause the database name to be in uppercase.

4. Enter **\q** to exit the PostgreSQL shell.

Configure PostgreSQL to accept network connections

1. In the PostgreSQL configuration file, `/var/lib/pgsql/data/postgresql.conf`, change the default commented listen address entry to:

```
listen_addresses = '*'
```

This causes PostgreSQL to listen to all network interfaces, not just the local loopback address.

2. Add these lines to `/var/lib/pgsql/data/pg_hba.conf`, the Host-base Authentication (HBA) file:

```
TYPE   DATABASE USER CIDR-ADDRESS    METHOD

local all      all                   ident sameuser

host  all      all  192.168.1.6/32 password
```

See the PostgreSQL 8.2.12 Documentation[2] for more information.

Tune PostgreSQL for FUSE HQ

1. In the `postgresql.conf` file, edit or add the following parameters:

```
fsync=false
shared_buffers=10000
work_mem=2048
statement_timeout=30000
```

2. (Optional) Configure the database so that FUSE HQ can monitor it by adding the following parameters to the `postgresql.conf` file:

```
stats_start_collector = true
stats_block_level = true
stats_row_level = true
stats_reset_on_server_start = false
```

Although database monitoring is not required, it is recommended.

Preparing a MySQL Database

Create a database and a user account

After you connect to a MySQL server, issue the following commands:

```
create user 'hqadmin'@'localhost' identified by '<passwd>';
create database hq;
grant all on hq.* to 'hqadmin'@'localhost';
```

> ### 📄 Note
>
> The assumption here is that a MySQL server is installed and running on the system that is hosting the FUSE HQ Repository.

Configure MySQL

Edit the MySQL configuration file to match the settings that follow. The configurtation file is `/etc/my.cnf` on UNIX, and `my.ini` on Windows.

> ### 📄 Note
>
> Many of the settings mentioned in this section are based on the assumption that you are using the InnoDB storage engine[3] for MySQL. The values are suggestions. You can experiment with other InnoDB and other parameter values in order to achieve the best performance on your system.

1. (Optional) Enable the full query log so that every query (even ones with incorrect syntax) that the Server receives is logged. This is useful for debugging, but it is usually disabled in production use.

   Be sure to change the paths given here to match your environment:

   ```
   log-error = /home/mysql/log/mysqld.err
   log = /home/mysql/log/mysql_general.log
   ```

---

[3] http://dev.mysql.com/doc/refman/4.1/en/innodb-parameters.html

2. Enable the printing of warnings to the error log file, for example:

```
log_warnings
server-id = 1
```

If you have any problem with MySQL, you should enable logging of warnings and examine the error log for possible explanations.

3. Set the default storage engine to InnoDB and set other parameter values:

```
default-storage_engine=innodb
bulk_insert_buffer_size = 32M
join_buffer_size = 8M
max_heap_table_size = 256M
tmp_table_size = 256M
max_tmp_tables = 48
myisam_sort_buffer_size = 256M
```

4. Set logging parameters:

```
innodb_flush_log_at_trx_commit = 0
innodb_log_buffer_size = 64M
innodb_log_file_size = 256M
```

Note that setting `innodb_flush_log_at_trx_commit` to `0` allows the best performance but risks data loss if the server crashes. The log buffer is written to the log file and flushed to disk approximately once per second. If the value is `1`, the log buffer is written to the log file and flushed to disk at every transaction commit. If the value is `2`, the log buffer is written to the log file at every transaction commit, but the flush to disk only occurs once per second.

5. Set the size of the buffer pool:

```
innodb_buffer_pool_size = 256M
```

If you have a large installation, you should probably increase this value. If your have a system dedicated to the MySQL server, for example, you might set this value to about 80% of total memory.

Backing Up Your Repository

You should back up your repository database on a regular basis. Note that there is a backup script, **db-archive.sh**, in the FUSE HQ installer's `bin` directory. However, you should consider implementing automatic backups. Consult with your DBA for more information.

Chapter 3. Installing the FUSE HQ Server

*You install the FUSE HQ Server on a system that you want to use to manage and monitor FUSE HQ. You download and unpack the installation files. Then you run the installer (the **setup** script) to complete the installation.*

Downloading a FUSE HQ Server Installation Package

Finding installation packages

Go to the FUSE HQ download web page[1] to obtain an installation package for FUSE HQ Server:

Downloading an installation package

On the download web page, select the installation package that matches the system where you intend to install FUSE HQ Server. The choices are:

- AMD64 Linux
- Mac OS X
- No JRE
- Solaris
- Windows
- Linux

> 📄 **Note**
>
> If you already have a JRE that you want to use, download the No JRE package. However, be sure that your JAVA_HOME environment variable is set to point to the particular JRE you want FUSE HQ to run on.

When you attempt to download an installation package, you will be prompted for a user name and password. If you do not have an account, you can create one by following the link on the login page.

When you see the **File Download** dialog, save the file (a .zip or a.tar.gz file) to a directory where you can unpack it. Unpack the file using the appropriate utility (WinZip, **tar**, **gunzip**, etc.).

> 📄 **Note**
>
> On some Solaris systems, the default version of tar is incompatible with FUSE HQ installation packages. When tar is incompatible, unpacking will be incomplete and you may see checksum errors. The solution is to install GNU tar. See the instructions for installing GNU tar[2] for more information.

---

[1] http://fusesource.com/products/fuse-hq/download-fuse-hq
[2] http://sunsolarisadmin.blogspot.com/2007/03/how-to-install-gnu-tar-in-solaris.html

Running the FUSE HQ Server Installer

The installer script

The FUSE HQ Server Installer is a script called **setup.bat** on Windows platforms and **setup.sh** on non-Windows platforms. You run the installer on the system that you want to use to manage and monitor FUSE HQ.

Choosing the install mode

Before you begin, you should decide which install mode to run. You specify the install mode as an argument to the **setup** command. The mode arguments are listed in Table 3.1.

Table 3.1. Installation Mode Arguments for the setup Command

Argument	Installation Mode
<no argument>	Quick install mode. It installs the FUSE HQ components with default settings, including the built-in repository.
-postgresql	Quick install mode when using a PostgreSQL database as a repository, which should be created prior to the Server installation. See instructions for preparing a PostgreSQL database. This mode asks for database connection information but uses defaults for everything else.
-oracle	Quick install mode when using an Oracle database as a repository, which should be created prior to the Server installation. See instructions for preparing an Oracle database. This mode asks for database connection information but uses defaults for everything else.
-mysql	Quick install mode when using a MySQL database as a repository, which should be created prior to the Server installation. See instructions for preparing a MySQL database. This mode asks for MySQL database connection information but uses defaults for everything else. See instructions for preparing a MySQL database on page 20 and copying the MySQL JDBC driver.

Argument	Installation Mode
-full	Full install mode. The installer prompts for almost everything: ports to use, administrator user name and password, repository to use, etc.

Copying the MySQL JDBC driver to the installer bin directory

If you plan to use MySQL as a repository, you must copy the MySQL JDBC driver JAR file to the `fuse-hq-installer\installer-4.1-fuse\bin` directory.

Running the installer

After you unpack the FUSE HQ download, open a command line interpreter (**cmd.exe** on Windows) or a command shell (for example, **/bin/sh** on UNIX). Navigate to the `fuse-hq-installer` directory and run **setup** on the command line. For example, the following command would start the installer in full install mode:

```
setup -full
```

When you run the installer, the first information you see is the *FUSE HQ Clickwrap License Agreement*. If you accept the terms of the agreement, you can proceed with the installation by selecting the components you want to install.

> ## Note
>
> If you see a message stating that `tools.jar` cannot be found, ignore it. This message occurs when the `JAVA_HOME` variable does not reference a JRE that is part of a JDK. This condition does not affect the installer.

Choosing components

When you get past the license agreement, the installer asks which components you wish to install. Select at least one of the following components:

Component	Number	Description
FUSE HQ Server	1	The central component that controls agents, manages data, and provides a user interface.
FUSE HQ Shell	2	A command-line interface for the FUSE HQ Server. Installation is optional but should be considered if you need command-line access (for example, to run scripts). Since is capable of connecting to the FUSE HQ Server remotely, it can be installed anywhere.
FUSE HQ Agent	3	A component that monitors the system it is installed on. It reports to and is managed by the FUSE HQ Server. The FUSE HQ Agent is installed on one or many systems and can be installed on the same system that is running the FUSE HQ Server.

You can select multiple components by entering component numbers separated by commas. For example, the following shows how you would select the FUSE HQ Server and Shell:

```
Choose which software to install:
  1: FUSE HQ Server
  2: FUSE HQ Shell
  3: FUSE HQ Agent
You may enter multiple choices, separated by commas.

  1,2
```

Specifying the installation path

Next, the installer prompts you to specify where to create the directories where the components will be installed. Either press **ENTER** to accept the default or type a path name. The following shows the path prompts on a Windows system:

```
HQ server installation path [default 'C:\Program Files']:
HQ shell installation path [default 'C:\Program Files']:
HQ agent installation path [default 'C:\Program Files']:
```

Completing the installation

What happens next, depends on which installation mode you chose:

- If you chose to do a quick install, the installation completes with all the default configuration settings. You can view the installation log, hq-install.log in

  ..\fuse-hq-installer\installer-*version_number*-fuse.

- If you chose to do a quick install with one of the external repository options (**-postgresql**, **-oracle**, or **-mysql**), the installer will prompt you to enter a JDBC connection URL, a user name, and a password. Then, the installation completes with all the default configuration settings.

  The installer offers a default JDBC connection URL, which you can use if you installed the repository on the same system as the FUSE HQ Server.

  The user name and password should refer to an account that has administrative privileges. The instructions in "Preparing the FUSE HQ Repository" on page 13 describe how to create administrative accounts in all three types of repository.

- If you chose a full install, the installer prompts you for configuration settings.

When the installation completes, you can install FUSE HQ Agents on the systems you want to monitor, or you can start the FUSE HQ Server and Agents that you already installed.

FUSE HQ Server Configuration Settings

If you run the installer using the -full option, the installer prompts you for configuration settings in the order shown in Table 3.2.

Table 3.2. Configuration Settings for the FUSE HQ Server

Setting	Default	Description
HTTP port	7080	The port the FUSE HQ Server's web-based GUI uses for HTTP communications.
HTTPS port	7443	The port the FUSE HQ Server's web-based GUI uses for secure HTTPS communications.
JNP port	2099	The port the FUSE HQ Server uses for the JNP service.
Mbean port	9093	The port the FUSE HQ Server uses for the Mbean Server .
GUI URL	http://*hostname*:_*http_port*	The URL FUSE HQ Agents will use to send alert notifications to the web-based GUI. (You can change this value on the FUSE HQ Server **Administration** screen.)
FUSE HQ Server's email address	hqadmin@*hostname*	The `From` address on alert notification emails sent by the FUSE HQ Server. Note that most email servers will not deliver mail without a valid domain name in the `From` field.
Backend database	HQ Built-in Database	The type of database that the FUSE HQ Server will use as a repository. If you choose anything other than the default built-in database, the installer will prompt you for a JDBC connection URL, a user name, and a password. If you choose the built-in database, the installer will prompt you for a port number. The default is 9432.
Administrator's user name	hqadmin	The user name of the original FUSE HQ administrator.
Administrator's password	hqadmin	The password of the original FUSE HQ administrator.
Administrator's address	hqadmin@*hostname*	The email address assigned to the initial FUSE HQ administrator. Alert notifications are sent to this address if the Administrator is configured to receive alert notifications.

The installer saves your settings in a file named `hq-server-install.conf` in the *install_dir*/data directory. You can open and view this file in a text editor after the installation completes.

Chapter 4. Installing FUSE HQ Agents

After installing the FUSE HQ Server, install FUSE HQ Agents on the systems that you want to monitor. Agent-only installations are accomplished by unpacking downloads.

Downloading a FUSE HQ Agent Installation Package

Finding installation packages

Go to the FUSE HQ download web page[1] to obtain an installation package for the FUSE HQ Agent.

Downloading an installation package

On the download web page, select the installation package that matches the system where you intend to install the FUSE HQ Agent. The choices for Agent-only installs are:

- AMD64 Linux
- Mac OS X
- No JRE - UNIX
- No JRE - Windows
- Solaris
- Windows
- Linux
- HP UX
- AIX

If you intend to install both a FUSE HQ Server and Agent, choose one of the packages described in "Downloading an installation package" on page 24

When you attempt to download an installation package, you will be prompted for a user name and password. If you do not have an account, you can create one by following the link on the login page.

When you see the **File Download** dialog, save the file to the directory where you want to install the FUSE HQ Agent. On Windows, for example, Agents are often installed in a folder created under `C:\Program Files`, but there is no requirement to use any particular installation directory. However, you must install the FUSE HQ Agent on the system that you want to monitor. Agents cannot monitor remote systems

📄 **Note**

If you already have a JRE that you want to use, download the No JRE package. However, be sure that your `JAVA_HOME` environment variable is set correctly. If you have a particular JRE you want FUSE HQ to run on, you can set the `HQ_JAVA_HOME` environment variable.

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[1] http://fusesource.com/products/fuse-hq/download-fuse-hq

FUSE HQ Agent Installations

Agent-only installations

When the FUSE HQ Agent installation package is downloaded to a suitable directory, unpack the file using the appropriate utility (WinZip, **tar**, **gunzip**, etc.). Unpacking completes the installation. It is not necessary to run an installer.

📄 Note

On some Solaris systems, the default version of tar is incompatible with FUSE HQ installation packages. When tar is incompatible, unpacking will be incomplete and you may see checksum errors. The solution is to install GNU tar. See the instructions for installing GNU tar[2] for more information.

After unpacking the installation package, you will see the following files and folders:

`agent.properties`	`jre`
`background.bat`	`lib`
background.sh	`log`
`data`	`pdk`
`hq-agent.exe`	`product_connectors`
`hq-agent.sh`	`rcfiles`
`jaas.config`	`tmp`

You will run either **hq-agent.exe** or **hq-agent.sh** to start the agent. At initial startup, you will be prompted for configuration information. See "Running the FUSE HQ Server and the FUSE HQ Agent" on page 35 for more information.

Complete installations

You can also install a FUSE HQ Agent when you run the installer (**setup**) that comes with FUSE HQ Server packages. See "Running the FUSE HQ Server Installer" on page 25 for more information.

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[2] http://sunsolarisadmin.blogspot.com/2007/03/how-to-install-gnu-tar-in-solaris.html

Chapter 5. Running the FUSE HQ Server and the FUSE HQ Agent

When installation is complete, start the FUSE HQ Server and Agents. The initial startup of the FUSE HQ Agent prompts for configuration information.

Starting and Stopping the FUSE HQ Server

Starting and stopping the FUSE HQ Server on Windows systems

The FUSE HQ Server can be started on Windows after establishing it as a service. To establish the FUSE HQ Server as a service, run the following after installation is complete :

```
install_directory\bin\hq-server.exe -i
```

When the command completes, you will be able start and stop the FUSE HQ Server and the built-in database from the Services control panel.(**Start>Programs>Administrative Tools>Services**)

Note

If you are using something other than the built-in database for the FUSE HQ Repository, be sure to start the database before starting the FUSE HQ Server.

Starting and stopping the FUSE HQ Server on non-Windows systems

On non-Windows system, start the FUSE HQ Server by running the following script:

```
install_directory/bin/hq-server.sh start
```

The script displays some startup information on stdout, and then runs in the background. The web-based component of the FUSE HQ Server displays startup progress information until it is completely started. For detailed startup information, see the following log file:

```
install_directory/logs/server.log
```

To stop the FUSE HQ Server on non-Windows systems, run the following:

```
install_directory/bin/hq-server.sh stop
```

Starting and Stopping the FUSE HQ Agent

Starting the FUSE HQ Agent on Windows systems

To start the FUSE HQ Agent for the first time on Windows, open a command line interpreter (**cmd.exe**). Navigate to the directory where you installed the FUSE HQ Agent and run the following command:

```
hq-agent.exe
```

Do not run **hq-agent.exe** by double-clicking on it in Windows Explorer.

When you start a FUSE HQ Agent for the first time, the startup process prompts you for the configuration settings shown in Table 5.1.

Table 5.1. Configuration Settings for the FUSE HQ Agent

Setting	Default	Description
Server IP Address	none	The IP address of the system running the FUSE HQ Server. If the FUSE HQAgent is on the same host as the Server, you can use 127.0.0.1 which allows communication on the loopback interface. If the Server is running on a remote host you can run **ping** to get the IP address.
Secure communications	no	Specify if HTTPS should be used for secure communications between FUSE HQ Server and Agent. Saying **no** improves performance. Secure communication is not always necessary (for example, when the FUSE HQ Agent and Server are on a private network).
Server port	7080 or 7443	The port the FUSE HQ Agent uses to communicate with the Server. If secure communication was specified, an HTTPS port (default 7443) must be supplied. Otherwise, an HTTP port (default 7080) must be supplied.
HQ login	hqadmin	The username of an HQ user. The default, hqadmin, is based on the assumption that you used that username for the administrative account when you configured the FUSE HQ Server. However, the hqadmin account has permissions to create platforms, servers, and services on the Server. For security reasons, you may want to use a more restrictive account.
HQ password	none	The password for the specified username.
Agent IP Address	Detected IP Address	The IP address of the system running the FUSE HQ Agent. If the FUSE HQAgent is on the same host as the Server, you can use 127.0.0.1 which allows communication on the loopback interface.

Setting	Default	Description
		If there is a firewall between the FUSE HQ Server and Agent, use the IP address of the firewall. Note that the firewall must be configured to forward FUSE HQ Agent traffic to the correct location. Also note that IP addresses must be static for systems running a FUSE HQ Server or an Agent. In FUSE HQ, IP addresses are referenced in configuration files. If the IP address was dynamic and it changed, the configuration file would not be updated to reference the new address.
Agent Port	2144	The port the FUSE HQ Server uses to communicate with the Agent. Note that this port number is the value of the $agent.setup.agentPort$ configuration parameter, which is passed to the Server at startup and which the Server will use to communicate with the Agent. However, there is another configuration parameter, $agent.listenPort$, which is not passed to the Server. It is the port that the Agent actually uses to receive communications. By default, the value of $agentPort$ is identical to the value of $listenPort$ (2144). So the Server is sending to the same port that the Agent is using to receive. You might set $agentPort$ and $listenPort$ to different values if a firewall or proxy intervenes between the Server and Agent. In that case, the firewall or proxy must be configured to receive messages on $agentPort$ and forward them to $listenPort$. You can set these FUSE HQ Agent configuration parameters in the `agent.properties` file, which is located in the Agent's installation directory.

An alternative to configuring each Agent during initial startup is to create and copy an `agent.properties` file to each install location. See for more information.

Stopping the FUSE HQ Agent on Windows systems

Stopping (and starting) the FUSE HQ Agent can be managed from the Windows Service Manager. To establish the FUSE HQ Agent as a service, run the following after the first startup of the Agent:

```
hq-agent.exe -i
```

Starting the FUSE HQ Agent on non-Windows systems

To start the FUSE HQ Agent on a non-Windows system, open a command shell. Navigate to the directory where you installed the FUSE HQ Agent and run the following command:

```
hq-agent.sh start
```

When you start a FUSE HQ Agent for the first time, the startup process prompts you for the configuration settings shown in Table 5.1 on page 37.

When a FUSE HQ Agent is running, use the following command to display status information:

```
hq-agent.sh status
```

Stopping the FUSE HQ Agent on non-Windows systems

To stop the FUSE HQ Agent on a non-Windows system, open a command shell. Navigate to the directory where you installed the FUSE HQ Agent and run the following command:

```
hq-agent.sh stop
```

Automatic FUSE HQ Agent configuration

If you enter connection configuration information in an `agent.properties` file before initial startup, the FUSE HQ Agent starts without prompting you for the information. If you are installing multiple Agents, it is useful to have an `agent.properties` file that you can copy and paste to each installation directory. You will avoid entering the same information during every initial startup.

On Windows systems, an `agent.properties` file is in the folder where the FUSE HQ agent is installed. On non-Windows systems, you might find an `agent.properties` file in a `~/.hq` directory.

The following shows the startup entries that you must edit, along with their default values:

```
agent.setup.camIP=localhost
agent.setup.camPort=7080
agent.setup.camSSLPort=7443
agent.setup.camSecure=no
agent.setup.camLogin=hqadmin
agent.setup.camPword=hqadmin
agent.setup.agentIP=*default*
agent.setup.agentPort=*default*
```

Chapter 6. Upgrading FUSE HQ

You can upgrade to a more recent version of FUSE HQ without loosing data or configuration information.

Upgrading the FUSE HQ Server

Running the FUSE HQ Server installer

When you run the FUSE HQ Server installer in upgrade mode, you install a new FUSE HQ Server and use the configuration information from the previously installed Server.

To upgrade the FUSE HQ Server, you must perform the following steps:

1. Backup the repository

   This step is not necessary if you are using the built-in database. See "Backing up the repository" on page 43) for more information.

2. Stop the database server for the repository.

3. Stop the existing FUSE HQ Server if it is running.

   See "Starting and stopping the FUSE HQ Server on Windows systems" on page 36 or "Starting and stopping the FUSE HQ Server on non-Windows systems" on page 36 for more information.

4. Download and unpack the installation package.

   See "Downloading a FUSE HQ Server Installation Package" on page 24 for more information.

5. Run the installer in upgrade mode.

   On Windows, you run **setup.bat -upgrade**. On non-Windows systems, you run **setup.sh -upgrade**.

6. When prompted by the installer enter the full pathname of the current FUSE HQ Server and the location where the new Server should be installed. Note that you should not install the new Server in the same directory that contains the old Server.

7. Archive save the directory where the old FUSE HQ Server is installed in case you need to revert to the older version.

After successfully completing the upgrade, you should be able to start the repository and run the new FUSE HQ Server.

Backing up the repository

You are not required to backup the repository if you are using the built-in database. The installer automatically creates a copy of the built-in database and places the copy in the new install location.

If the repository is not the built-in database, it will be upgraded in place . Therefore, you should backup the database before the upgrade so you can restore the repository from the backup.

📄 **Note**

If you are running an Oracle database as a repository, you may see one of the following errors:

Error updating EAM_SERVICE.SERVICE_TYPE_ID: java.sql.SQLException: ORA-02296: cannot enable (HQDBUSER.) - null values found

Error executing statement desc=[null] SQL=[ALTER TABLE eam_stat_errors DROP CONSTRAINT rt_errs_fk_rstat CASCADE] java.sql.SQLException: ORA-02443: Cannot drop constraint - nonexistent constraint

Do the following to fix the problem:

1. Restore the repository from the backup.

2. Run the following SQL command:

   DELETE FROM EAM_SERVICE WHERE SERVICE_TYPE_ID IS NULL;

3. Copy `db-upgrade.xml` to the following directory:

   fuse-hq-installer/installer-3.0.x-EE/data/db-upgrade.xml

   Replace the existing file.

4. Re-run the upgrade.

Upgrading the FUSE HQ Agent

Preserving configuration information

You can use configuration parameters from the previous installation of the FUSE HQ Agent, as long as you login as the same user and the upgraded Agent has the same install path.

Many configuration parameters are stored in an `agent.properties` file. You can copy this file from your previous FUSE HQ Agent installation to use the same configuration for your upgraded Agent. See "Automatic FUSE HQ Agent configuration" on page 40 for more information.

In addition, if you are using custom plugins, you can use the existing `../hq-plugins` directory (one up from the installation directory) to preserve your plugins.

Upgrade procedure

To upgrade a FUSE HQ Agent:

1. Stop the FUSE HQ Agent service. See "Stopping the FUSE HQ Agent on Windows systems" on page 39 or "Stopping the FUSE HQ Agent on non-Windows systems" on page 39.

2. Download the Agent-only package. See "Downloading a FUSE HQ Agent Installation Package" on page 32 for more information..

3. Unpack the Agent-only package.

4. Start the new Agent. See "Starting and Stopping the FUSE HQ Agent" on page 37 for more information.