Foglight® 8.3.0

Upgrade Guide

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Legend

WARNING: A WARNING icon indicates a potential for property damage, personal injury, or death.

CAUTION: A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT NOTE, **NOTE**, **TIP**, **MOBILE**, or **VIDEO:** An information icon indicates supporting information.

Foglight Upgrade Guide
Foglight Version- 8.3.0

Understand product versions

This guide provides instructions on how to upgrade to the latest version of the Foglight® Management Server and the Foglight Agent Manager. This guide also provides upgrade instructions for the cartridges and cartridge-related components that are included with Foglight 8.3.0. The latest version of the Foglight Management Server is 8.3.0.

This section provides information about important changes made in this release, product versions, and components compatibility:

- Components compatibility
- Compatible cartridges list

Components compatibility

The Foglight code line includes a number of critical changes which require particular attention for customers upgrading from previous versions.This has the following specific impacts on customers upgrading from a lower version.

- Foglight introduced FIPS Compliance mode starting from 5.9.7. Once the FIPS Compliance mode is enabled or disabled during installation, you cannot change it without a complete re-installation of Foglight.
- Foglight Management Servers must be upgraded to version 8.0.x before they can upgrade to the 8.3.0 code line. If the Foglight Management Server is below 8.0.x, the installer may fail.
- All Quest or Quest partner delivered cartridges that have a dependency on the changed components in the data submission handler must be upgraded prior to upgrading to the 8.3.0 code line. A complete list of cartridges is provided in Compatible cartridges list. If there are incompatible Quest or Quest partner delivered cartridges, the installer will fail and display the appropriate error message. Other custom cartridges MAY have a dependency on the server side data handling component that has changed
- Before upgrading to the latest version, Quest recommends you create a Management Server Support Bundle to facilitate future communications with support regarding upgrade failures.
- Customer running High Availability (HA) or Federation are advised to review the following relevant guides prior to upgrade: Federation Field Guide, and High Availability Field Guide.

Compatible cartridges list

When upgrading any of the database cartridges to version 8.3.0, you must first upgrade the Management Server to version 8.3.0, and then directly upgrade the cartridges. Foglight 8.3.0 is backward compatible with Database and Evolve cartridges from version 8.0.x and above. If you upgrade Foglight core to 8.3.0, cartridges from version 8.0.x or above will remain functional. However, you will not have access to any new features introduced in the latest versions.

Foglight Agent Manager, Foglight for Infrastructure, and all database cartridges have been upgraded to version 8. For detailed information, see the relevant Foglight Cartridge Release Notes.

For a complete list of fixes for any of these components, please refer to the release notes that accompany them. If you decide to maintain the version you have of any of the updated components, as opposed to upgrading, you will not acquire the new fixes for that component.

For more details, see these topics:

- Foglight cartridge upgrade issues
- Foglight appliance upgrade issues

Foglight cartridge upgrade issues

Foglight 8.3.0 is not compatible with any of the Foglight Evolve cartridges prior to 7.1.0.

Foglight appliance upgrade issues

The latest version of the Foglight Virtual Appliance is 7.3.0. It can be upgraded to Foglight Evolve 8.1.0.

Best practices

This section guides you through the best practices for upgrading Foglight.

A typical Foglight installation includes at least one Foglight Management Server, at least one Foglight database, a number of Foglight cartridges installed on the server, a number of Foglight Agent Manager installs, and a number of agents. There may also be customizations to the server in the form of custom cartridges.

A new version of Foglight delivers new features to the market and addresses software defects. Customers may choose to upgrade whenever a new version is released, but we neither require nor expect individual customers to take every new version. You should determine which, if any, components you will upgrade based on:

- The features and defect fixes for each component, listed in the release notes for the component;
- The upgrade difficulty notes for each component, provided below. The notes describe the amount of effort and the complexities, if any, that an upgrade of a given component entails.

To assist you in the upgrade decision making process, we provide the upgrade information in a number of ways.

First we describe how the components have changed for the release and the level of difficulty of upgrading each. Then we describe common use cases and explain the components that need to be upgraded in each scenario. Finally, we provide a table that outlines the compatibility of all updated components with older versions of the various components.

For more details, see these topics:

- Foglight Management Server
- Foglight Agent Manager
- Database cartridges
- Infrastructure Management cartridges
- Infrastructure Management cartridges
- Integration cartridges
- Virtualization cartridges
- Upgrade use cases
- Dependency and compatibility matrix
- Prepare for an upgrade
- Upgrade order
- Where to find upgrade information
- Update the Java Runtime Environment

Foglight Management Server

A new release of Foglight typically delivers new features and defect fixes. For information about new features and defect fixes, see the *Foglight Release Notes*.

The upgrade to Foglight 8.3.0 should be straightforward.

Upgrade difficulty: Easy

Expected time: 15 minutes

A server upgrade updates the Management Server to version 8.3.0 and the embedded Agent Manager adapter to version 8.3.0. The act of upgrading the server does not require any client-side agent or Agent Manager upgrades.

Foglight Agent Manager

A new release of the Agent Manager typically delivers new features and defect fixes. For information about new features and defect fixes, see the *Foglight Agent Manager Release Notes*.

For more details, see these topics:

- Embedded Agent Manager
- Agent Manager client installation cartridges

Embedded Agent Manager

An upgrade to the Management Server version 8.3.0 automatically updates the Agent Manager adapter that is embedded in the Management Server to version 8.3.0. The embedded Agent Manager adapter is backward compatible with all previous versions of the Agent Manager client.

Agent Manager client installation cartridges

The JREs for all Agent Manager-supported platforms are updated to a newer version of the Java® Runtime Environment (JRE). Therefore, if you are upgrading from a pre-5.6.2.6 version of the Agent Manager, you must download and install either one or more platform-specific Agent Manager client installation cartridges (*FglAM-<platform>-<version>.car*) or the large all-platform client installation cartridge (*FglAM-all-<version>.car*) before you can push an upgrade to a client. It is not possible to use the patch upgrade cartridge (*FglAM-patch-<version>.car*) for this, because it does not include the JREs.

Upgrade difficulty: Easy

Expected time: 1 minute for a cartridge (depending on the network speed).

Database cartridges

The following Database cartridges are currently available:

- Foglight for Azure SQL Database
- Foglight for DB2 LUW
- Foglight for Oracle
- Foglight for SQL Server
- Foglight for SAP ASE
- Foglight for MySQL PI
- Foglight for PostgreSQL PI

Foglight for Azure SQL Database

Foglight for Azure SQL Database has been updated to version is 8.3.0.10. For the list of features and defect fixes, see the Foglight for Databases Release Notes.

Upgrade difficulty: Easy

Expected time: 5-15 minutes (varies depending on the size of your environment)

Foglight for DB2 LUW

Foglight for DB2 LUW has been updated to version 8.3.0.10. For a list of features and defect fixes, see the Foglight for Databases Release Notes.

Upgrade difficulty: Easy

Expected time: 5-15 minutes (varies depending on the size of your environment)

Foglight for Oracle

Foglight for Oracle has been updated to version 8.3.0.10. For the list of features and defect fixes, see Foglight for Databases Release Notes.

Upgrade difficulty: Easy

Expected time: 5 - 15 minutes (varies depending on the size of your environment)

Foglight for SQL Server

Foglight for SQL Server has been updated to version 8.3.0.10. For a list of features and defect fixes, see the Foglight for Databases Release Notes.

Upgrade difficulty: Easy

Expected time: 5 - 15 minutes (varies depending on the size of your environment)

Foglight for SAP ASE

Foglight for SAP ASE has been updated to version 8.3.0.10. For a list of features and defect fixes, see the Foglight for Databases Release Notes.

Upgrade difficulty: Easy

Expected time: 5 - 15 minutes (varies depending on the size of your environment)

Foglight for MySQL PI

Foglight for MySQL PI has been updated to version 8.3.0.10. For a list of features and defect fixes, see the Foglight for Databases Release Notes.

Foglight for PostgreSQL PI

Foglight for PostgresSQL PI has been updated to version 8.3.0.10. Version 8.3.0.10 is a new cartridge and it is compatible with Foglight 8.3.0 and PostgresAgent cartridge 8.3.0. For a list of features and defect fixes, see the Foglight for Databases Release Notes.

Infrastructure Management cartridges

The following Infrastructure management cartridges have updated to 8.3.0 in this release:

- Foglight Web Monitor

- Foglight Net Monitor
- Foglight for SNMP

Foglight for Infrastructure

Foglight for Infrastructure has been updated to version 8.3.0. For a list of features and defect fixes, see *Foglight for Infrastructure Release Notes*.

Upgrade difficulty: Easy

Expected time: Approximately 5 minutes

Integration cartridges

The following Integration cartridges have been updated to version 8.3.0:

- Foglight for Integration
- Foglight for NMS Integration

Virtualization cartridges

The following Virtualization (Evolve) cartridges are compatible with Management Server 8.3.0 if they are version 7.1.0 or above:

- Foglight Capacity Director
- Foglight Cost Director
- Foglight Capacity Manager
- Foglight Change Analyzer
- Foglight for Hyper-V
- Foglight Resource Optimizer
- Foglight for Storage Management
- Foglight for VMware
- Foglight for VMware Horizon View
- Foglight for Citrix XenDesktop and XenApp
- Foglight Hybrid Cloud Manager for AWS
- Foglight Hybrid Cloud Manager for Azure
- Foglight Hybrid Cloud Manager for Google Cloud
- Foglight for Container Management
- Foglight for Cloud Migration
- Foglight for Netvault
- Foglight for vCloud Director
- Quest Protect

- Foglight for IBM Cloud Migration Assessment
- Upgrade difficulty: Easy

Expected time: Approximately 5 minutes per cartridge

Upgrade use cases

The following are common upgrade use cases:

- Scenario 1 — New release
- Scenario 2 — New Management Server features or defect fixes
- Scenario 3 — Agent Manager client-side feature dependency or defect fix

Scenario 1 — New release

You notice that there is a new version of Foglight and are wondering if you should upgrade. If you do not have a specific reason to upgrade, we recommend you stay on the version you are running now.

Scenario 2 — New Management Server features or defect fixes

A new release of Foglight typically delivers new features and defect fixes. See the *Foglight Release Notes* for information about new features and defect fixes. We recommend the Management Server upgrade to customers who want one or more of the features or defect fixes in a new release.

Customers who want to take advantage of new features and defect fixes can do so with a simple upgrade to the Management Server. This upgrade is expected to take 15 minutes or less. An upgrade to the server does not introduce any incompatibilities with earlier versions of other Foglight core components; therefore, with the Management Server 8.3.0 upgrade, you should not have to upgrade any other components in your environment.

Scenario 3 — Agent Manager client-side feature dependency or defect fix

A new release of the Agent Manager typically delivers new features and defect fixes. For information about new features and defect fixes, see the *Foglight Agent Manager Release Notes*. Customers who want to take advantage of a new feature or defect fix may consider a move to the latest Agent Manager client.

The 8.3.0 Agent Manager Adapter is updated as part of the Management Server 8.3.0 upgrade, and the new adapter is backward compatible with all earlier versions of the Agent Manager.

Generally, updating the client is not required, but it is recommended to upgrade to receive defect fixes and security updates. An Agent Manager client-side upgrade is required only in the following situations:

- You require one or more of the new 8.3.0 Agent Manager features or defect fixes in your environment. See the *Foglight Agent Manager Release Notes* for details.
- You are planning to install a cartridge that requires version 8.3.0 of the Agent Manager.

Dependency and compatibility matrix

This section provides information on upgrade version compatibility.

The following table presents the upgrade matrix for the key components of Foglight 8.3.0.

Table 1. Upgrade matrix for key Foglight components

Item	Version Supported in Foglight 8.3.0	Version Recommended for New Management Server 8.3.0 Installations	Version Recommended for Management Server 8.3.0 Upgrades
Agent Manager client	8.0.0 and later	8.3.0	8.3.0
Foglight for Infrastructure	8.0.0 and later	8.3.0	8.3.0

Prepare for an upgrade

Preparing for a Foglight upgrade is straightforward, but may be time-consuming. Before upgrading you should consider the following:

1. If you are upgrading the Management Server, back up your Performance Investigator (PI) repository.
2. Support recommends restarting the Foglight Agent Managers (FglAM) prior to the upgrade. This can be accomplished through Windows services or the Linux/Windows command line, or by utilizing the restart functionality in the Agent Managers panel. Doing so can help ensure that there are no issues with specific agents that could later impede the efficient shutdown of the Agent Manager in the background during cartridge upgrades.
   If the Agent Manager does not shut down and restart promptly, please contact Support for assistance in reviewing the FglAM log file for potential shutdown issues caused by stuck process threads.
3. It is also recommended to stop the Foglight service in order to shut down the Foglight application. The wizard performs this task automatically, but manually shutting it down is considered a better practice.
4. Create a support bundle from your Management Server. For information on how to do this, see the “Managing Support Bundles” section in *Foglight Administration and Configuration Guide*.
5. If you are upgrading the Management Server, back up the file system in which Foglight is installed. For information on how to do this, see the “Backing up Foglight” section in the *Foglight Administration and Configuration Help*.
6. If you are upgrading the Management Server, back up your database. For information on how to do this, see the “Backing up Foglight” section in the *Foglight Administration and Configuration Help*.

Upgrade order

IMPORTANT: Consult the sections above to decide which components, if any, you will be upgrading.

Foglight components should be upgraded in the following order:

1. Some cartridges must be upgraded prior to upgrading the Management Server. For more information, see Components compatibility on page 7.
2. Management Server, if necessary
3. Cartridges, if necessary

4 Agent Manager, if necessary

5 New agents, if necessary

Step 2 may require some time, because agents may need time to reconnect.

In some cases, a successful step 2 may require one or more cartridge upgrades. Where special instructions are required, they are documented in this guide.

Only perform steps 4 and 5 after the system has stabilized.

Where to find upgrade information

For information on how to upgrade the Management Server, see *Upgrade the Foglight Management Server*.

For information on how to upgrade the Agent Manager, see *Upgrade the Foglight Agent Manager*.

For information on how to upgrade Foglight cartridges, see:

- *Upgrade the Application Monitoring cartridges*
- *Upgrade the Database cartridges*
- *Upgrade the End User Management cartridges*
- *Upgrading the Infrastructure Management cartridges*
- *Upgrade the Integration cartridges*
- *Upgrade the cartridges in a federated or High Availability (HA) environment*

Update the Java Runtime Environment

Both the Management Server and the Agent Manager require a Java® Runtime Environment. Quest Software Inc. tests and bundles each Foglight release with versions of the JRE that are compatible with the Management Server and the Agent Manager. Quest audits the security bulletins from Oracle® that are related to those versions of the JRE. If Quest determines that any of the bulletins are applicable to the Management Server or Agent Manager code, Quest releases a security update with the necessary fixes incorporated.

Quest recommends that you use the JRE versions bundled with the Foglight release, because Quest cannot guarantee that other versions of the JRE will perform correctly. However, Quest recognizes that you may have particularly stringent security requirements that require you to use a different version of the JRE.

Starting with Foglight 7.3, the JRE needs to be Java 17. If you want to upgrade a version of the JRE, Quest will make the effort, in good faith, to support the upgrade, as long as it meets the following guidelines:

- The new JRE must be on the same major release branch, and the upgrade must update no more than the 4th set of digits in the version number (for example, 17.0.x).
- You must use the following JRE upgrade process for the Agent Manager:
  a Stop the Agent Manager.
  b In the *jre* subdirectory of your Agent Manager installation directory, create a new directory named for the version number of the JRE to which you want to upgrade, with components separated by periods (for example, 17.0.8).
  c Unpack the new JRE into that directory.
  d Restart the Agent Manager, which will look for and use the newest JRE available to it.
- You must use the following JRE upgrade process for the Management Server.
  a Stop the Management Server.
  b Rename *<foglight_home>/jre* to *<foglight_home>/jre.bak*.

c Create a new *<foglight_home>/jre* directory.

d Unpack the new JRE into the new *<foglight_home>/jre* directory.

e Restart the Management Server.

- For problem replication:

  a You must advise Quest technical support that you are on a non-standard JRE.

  b Quest will first try to reproduce problems on our bundled version of the JRE.

  c Quest will then try to reproduce problems on the version of the JRE to which you upgraded.

  d If Quest cannot replicate the problem on either the bundled version or the specific version of the JRE to which you upgraded, you may be asked to return our bundled version of the JRE.

Upgrade the Foglight Management Server

This section provides information about the following topics:

- Migrate to Windows SSO from VSJ SSO
- Upgrade the Management Server
- Oracle database users

Migrate to Windows SSO from VSJ SSO

If you were using the VSJ SSO implementation in earlier versions of Foglight, you must migrate to the new Windows OS-based SSO.

To migrate to Windows OS-based SSO from VSJ SSO:

1. Make a backup of the *vsj.properties* file before you upgrade Foglight. You can find this file in the following location:
   `<foglight_home>/server/default/deploy-foglight/console.war/WEB-INF/vsj.properties`
2. Upgrade Foglight to the latest version.
3. If there is no keytab file configured in the VSJ SSO, create the keytab file first using the `ktpass` command, as described in “Configure Active Directory to support Windows Single Sign-on” section in the Foglight online help.
4. Edit the *krb5-auth.config* file to set the properties described in the following table.

   Table 4. VSJ properties and the corresponding krb5-auth.config properties

vsj.properties	krb5-auth.config
`idm.princ`	Principal
`idm.keytab`	Keytab
`idm.ad.qualifyUserPrincipal`	QualifyUserPrincipal

5. Edit the *krb5.config* file. Set the realm name to the *vsj.properties* `idm.realm` value.

Upgrade the Management Server

Follow the procedures in this section to upgrade an earlier version of the Management Server to version 8.3.0 .

IMPORTANT: You can upgrade directly to version 8.3.0 from version 8.0.x. To upgrade from earlier versions, first upgrade to a supported intermediate version.

Ideally, you should create a backup just before performing an upgrade. For more information on creating a backup, see the *Foglight Administration and Configuration Help*. If you have encounter any problems during the upgrade process, contact Quest Support.

It is important that you see Upgrade a Management Server in a federated environment if you are upgrading the Management Server in a Federated environment.

It is important that you see Upgrade the Management Server in a High Availability (HA) environment if you are upgrading the Management Server in an HA environment.

It is important that you see Upgrade the Management Server with an Oracle RAC database if you are upgrading the Management Server installed with an Oracle RAC database.

To upgrade the Management Server:

1 Stop the Management Server. The Management Server may take a few minutes to shut down. Verify that all Management Server processes have stopped before starting the installer.

To ensure that all processes have been stopped, perform one of the following checks:

> **NOTE:** The default installation folder is included in the commands. If Foglight is installed in an alternate location at your site, please substitute the appropriate folder name for the default installation folder name.

UNIX®:

```
ps -ef | grep Foglight
```

> **NOTE:** If Foglight is running as a daemon, this command displays that information instead of the path to the Management Server executable.

Windows®:

Use the Task Manager to verify that the `fms.exe` process has stopped.

> **NOTE:** If your Management Server uses an external database, do not stop the database. It is important that it continue to run during the upgrade.

2 If you have customized the Management Server configuration files (such as *<foglight_home>/config/server.config or <foglight_home>/config/log.config, <foglight_home>/config/jgroups-config.properties, or <foglight_home>/config/federation.config*), back up these files so that you can verify the correct ports are configured after the upgrade is completed. If you have never customized these files, proceed to the next step.

3 Ensure that all the cartridges are version 7.3.x or higher before upgrading the Management Server.

4 **Optional:** The JRE on disk is replaced completely during a Management Server upgrade. Any existing certificates are retained in *$fmshome/state/backup/<previous-fms-version>/jre/lib/security/cacerts*.

Your custom settings are restored automatically after upgrade of the Management Server.

5 Upgrade the Management Server using the appropriate installer. The installer detects the earlier version of the Management Server. Ensure that your Management Server has been upgraded

> **NOTE:** It is possible to upgrade a 32-bit installation to a 64-bit installation by simply using the 64-bit version of the installer, provided that the OS is 64-bit.

6 Follow the on-screen upgrade instructions. As mentioned previously, the installer detects the earlier version of the Management Server.

For step-by-step assistance, see the appropriate Foglight Installation and Setup Guide for the database and platform you are running.

> **NOTE:** The database upgrade may be time-consuming if you have a large topology.

> **IMPORTANT:** The upgrade checks the permissions on the database's dbms_lob package. If the check fails, run GRANT EXECUTE ON dbms_lob TO public using the sysdba user 'sys' to resolve the issue and then continue with the upgrade.

Known Issue: If you are running an external database, the database upgrade portion of the Management Server upgrade may fail for one of the following reasons:

- The database connection parameters are incorrect.
- The database is not running.

The installer explains any problems encountered while upgrading an external database. This step can be canceled by clicking **Ignore** and continuing.

If, for any reason, the database upgrade cannot be successfully performed within the installer itself, you can perform the database upgrade afterwards by running the following command:

```
<foglight_home>\bin\foglight_db_upgrade.[bat|sh]
```

NOTE: The database upgrade must be performed before you start the Management Server.

7 **Optional:** You can upgrade the currently installed cartridges (except for the cartridges listed in Step 3) in one easy step before starting the Management Server. To do this, place the new versions of the cartridges into the folder *<foglight_home>/upgrade/cartridge*. The cartridges are then installed automatically when the Management Server starts up.

NOTE: This method of upgrading cartridges does not apply to Foglight for Oracle, Foglight for SQL Server, Cartridge for DB2, or Cartridge for Sybase.

The newly installed cartridges replace their respective older versions and previous versions are deleted, which means you cannot revert back to them.

8 If you backed up the configuration files mentioned in Step 2, compare the customizations to determine if they are still necessary, especially for the following customization files. If required, reapply these files before starting the Management Server.

- *<foglight_home>/config/server.config*
- *<foglight_home>/config/jgroups-config.properties*
- *<foglight_home>/config/federation.config*
- *<foglight_home>/config/datasource/datasource-oracle.properties*

9 Start the new Management Server by typing the following command:

UNIX®:

```
./bin/fms --start
```

Windows®:

```
<foglight_home>\bin\fms.exe
```

10 The ability to send all generated reports to declared email recipients is enabled by default. If you do not want reports to be sent out by default, manually disable the Email Reports Sample rule. For more information on rules, see “Using Foglight Rules to Report on Bottlenecks” in the *Foglight Administration and Configuration Guide.*

11 Log into Foglight through the browser interface by entering http://<yourserver>:<port> in your web browser, where <port> is the applicable port at your location (the default is 8080).

After you have logged into Foglight, the Management Server and the Agent Manager both attempt to reach a steady state. Be patient as it will take some time for this to complete. It may also take some time if you have a large topology.

IMPORTANT: If, after upgrading, you experience unusual or unexpected browser interface behavior (for example, unusual page layout), try logging out of Foglight, clearing the browser’s cache, restarting the browser, and then logging back into Foglight. In most cases, this will correct the problem. In rare cases, proxies and firewalls inappropriately cache JavaScript, and therefore you may need to clear their caches as well.

12 Look at the Agent Status page (*Dashboards* > *Administration* > *Agents* > *Agent Status*) to see the number of agents that are connected. Wait until this count reaches a steady state before proceeding. You may need to refresh the page to see the complete list.

Do not stop/start/activate/deactivate any of the agents manually from the Agent Status page while waiting for the count to reach a steady state. If you do, it will increase the time required for the agent connection state to stabilize and, consequently, increase your wait time.

The estimated time for this activity to complete is one hour, depending on the complexity (number of agents) in the environment.

If you encounter any problems while upgrading your Management Server, contact Quest Support for assistance.

For more information, see these topics:

- Host services compatibility
- Start the embedded Agent Manager
- Upgrade a Management Server in a federated environment
- Upgrade the Management Server in a High Availability (HA) environment
- Upgrade the Management Server with an Oracle RAC database

Host services compatibility

A new installation of, or upgrade to, version 8.3.0 of the Management Server does not automatically create HostServices for every discovered host. If you want that functionality, install and enable the Service Compatibility Cartridge (<foglight_home>*/compat/cartridge/Core-HostServices-Compatibility-8_3_0.car*).

If you have already installed and enabled the Service Compatibility Cartridge through a previous upgrade to or after a fresh installation of version 5.5.2, 5.5.4, 5.5.5, or 5.5.8, then the cartridge continues to be active after an upgrade to version 8.3.0, and this manual step is not necessary.

Start the embedded Agent Manager

The Management Server version 8.3.0 includes an embedded Agent Manager version 8.3.0. After installing the new Management Server 8.3.0, the embedded Agent Manager starts up by default.

Upgrade a Management Server in a federated environment

The procedure for upgrading a Federation Master and Federated Child(ren) is the same as described in Upgrade the Management Server. There are a few items in particular that should be noted when working in a Federated environment.

NOTE: Foglight for Automation is not supported when Foglight is configured to use the Federation Master or High Availability features. This limitation will be addressed in a future release. For more information, see the *Foglight Release Notes*.

Upgrade sequence

To upgrade your Federation servers to 8.3.0, follow the appropriate procedure below.

IMPORTANT: You must upgrade your Federation Master before the Federated Children. Otherwise, the Federation Master may fail to start after an upgrade.

NOTE: Configuration of *SecurityToken* through the federation.config file (adopted in Foglight 5.7.5.8 and before) was removed in Foglight 5.9.x. Therefore, configuring an SSL for Federation is required when you upgrade the Federation environment to version 8.3.0, if your Federation environment configures *SecurityToken* before.

When upgrading the Management Server:

1. Shut down and upgrade the Federation Master.
2. Shut down and upgrade each Federated Child, one by one.
3. Restart the Federation Master.
4. (Optional) If you have enabled *SecurityToken* in the configuration file (`$fmshome/config/federation.config`), you must configure an SSL for communication on Federation Master and Children. For more information, see the *Security settings* section in the *Foglight Federation Field Guide*.
5. Restart the each Federated Child, one by one.

Upgrade the Management Server in a High Availability (HA) environment

The procedure for upgrading the servers in an HA environment is the same as described in Upgrade the Management Server. There are a few items in particular that should be noted when working in an HA environment. These are:

1. All HA members should be stopped before any of them is upgraded. Each HA member should then be upgraded individually and sequentially.
2. All HA-related communications have been encrypted after upgrading your server to 8.3.0 . For more information about the HA encryption, refer to the *Security considerations for HA configuration* section in the *Foglight High Availability Field Guide*.
3. Foglight for Automation is not supported when Foglight is configured to use the Federation Master or High Availability features.This limitation will be addressed in a future release. For more information, see the Foglight Release Notes.

NOTE: If you are upgrading cartridges in an HA environment, see Upgrade cartridges in a High Availability environment.

Upgrade the Management Server with an Oracle RAC database

This section provides instructions for upgrading Oracle® RAC-based installations and any other environments where the Management Server *oracle-ds.xml* files were customized. The *oracle-ds.xml* file was replaced by the *datasource-oracle.properites* file in the Management Server 5.9.x, so the Management Sever merges the connection URL and connection properties during the upgrade.

If you encounter the warning message "`A special configuration has been found in <backup_oracle_datasource>, please manually merge your configuration from this file to <new_oracle_datasource> and then click Next to continue with the upgrade.`" during the upgrade, open the backup of *$fmshome/state/backup/<version>/server/jboss/conf/oracle-ds.xml* where lists the configured connection properties, and then add these connection properties manually to the *$fmshome/config/datasource/datasource-oracle.properties* file. For example, you see the following line in the oracle-ds.xml file, `<connection-property name="oracle.jdbc.implicitStatementCacheSize">${oracle.jdbc.implicitStatementCacheS`

ize:50}</connection-property>", open the *datasource-oracle.properties* file and add this line "*db.oracle.jdbc.implicitStatementCacheSize=50*".

NOTE: Make sure to add the *db.* prefix before the original *connection-property name*, when you add the connection properties in the new *datasource-oracle.properties* file.

To upgrade the Management Server with an Oracle RAC database:

1. Shut down the Management Server.
2. Save the *oracle-ds.xml* and *server.config* files.

   TIP: The Management Server backs up the previous *oracle-ds.xml* and *server.config* files after the upgrade. You may find the backup files under *$fmshome/state/backup/<version>/server/jboss/conf/oracle-ds.xml* and *$fmshome/state/backup/<version>/config/server.config*.
3. Run the upgrade installer.
4. Check the Management Server logs for upgrade-related errors.
5. If successful, restart the Management Server with the usual options.

Oracle database users

A Management Server 8.3.0 using an Oracle® database makes use of stored procedures in the Oracle database. Starting with Foglight 5.6.2, the procedures are created automatically during the upgrade process. To allow the upgrade process to create the stored procedures, a DBA user must first assign the `CREATE PROCEDURE` privilege to the database user used by Foglight.

To assign the CREATE PROCEDURE privilege to the database user:

- Execute the following command:

  `GRANT CREATE PROCEDURE TO` *<foglight>*

  where *<foglight>* is the name of the database user used by the Foglight application

If the upgrade process is run without assigning the `CREATE PROCEDURE` privilege to the Oracle database user, the database upgrade will fail with the following error:

```
The Oracle database user has not been assigned the CREATE PROCEDURE privilege.
```

Once the `CREATE PROCEDURE` privilege is assigned to the database user, the database upgrade process can be run manually by invoking the *foglight_db_upgrade* script.

Upgrade the Foglight Agent Manager

This section describes the procedure for upgrading the Foglight Agent Manager (FglAM). The latest version of the Agent Manager is 8.3.0.

Remote updates of the Agent Manager are deployed from the Management Server. Local access to Agent Manager clients is typically not required to perform an upgrade.

IMPORTANT: You cannot use the Agent Manager installer to upgrade. You must upgrade the Agent Manager through the Foglight Cartridge Inventory dashboard.

For more details, see these topics:

- Upgrade the Agent Manager
- Upgrade concentrators
- Upgrade installations with multiple state instances
- Agent Manager upgrade issues

Upgrade the Agent Manager

To upgrade the Agent Manager to the latest version:

1. Navigate to **Dashboards > Administration > Cartridges > Cartridge Inventory**.
2. On the Installed Cartridges tab of the Cartridge Inventory dashboard, click **Install Cartridge**.
3. In the Install Cartridge dialog box, click **Browse** to locate the .car file you require to upgrade the Agent Manager.
4. Ensure that the **Enable on Install** box is selected.

   IMPORTANT: If the Enable on Install box is not selected, you must manually enable many different cartridges that are contained in the upgrade .car file you are deploying.
5. Click **Install Cartridge** to install the latest version of the Agent Manager upgrade .car file on the Management Server. Do not delete any of the old .car files.

   A progress message appears and, after a few moments, the **Operation(s) Complete** message box appears, indicating success.
6. Click **OK** to close the message box.
7. On the navigation panel, click **Dashboards** > **Administration** > **Agents** > **Agent Managers**.

   The Agent Managers dashboard lists connected Agent Managers.
8. Select one or more Agent Managers that you want to upgrade. If you are selecting more than one Agent Manager, they must have the same operating system name.
9. Click Upgrade.

   The **Deploy Agent Package** dialog box opens.
10. From the Package list, select the version to which you want to upgrade, and then click Deploy.

It may take some time for the upgrade process to complete. The more Agent Managers you upgrade, the longer it takes. Once the upgrade is complete, the Agent Manager restarts.

After the “Agent deployment was successful.” message and a green checkmark appear in the **Deploying Agent Package** box (that is, after the Agent Managers have restarted), you must wait a few additional minutes for the version number of the affected Agent Manager to be updated.

11 On the Agent Managers page, click Refresh.

The version number for the Agent Manager you have modified is updated to the new number, for example 8.3.0.

Upgrade concentrators

When the Agent Manager is deployed using concentrators, all of the concentrators need to be upgraded before the downstream clients are upgraded. Otherwise, when a downstream client is restarted, it sends its upstream concentrator messages in an unknown format, making communication between the two impossible.

Consequently, the Upgrade button on the Agent Hosts dashboard is disabled for downstream clients until all of the upstream concentrators have been upgraded to the latest version.

See the *Foglight Agent Manager Installation Guide* for more information about running Agent Managers as concentrators.

Upgrade installations with multiple state instances

When upgrading an Agent Manager installation that has multiple state instances running, all the state instances must be upgraded simultaneously, otherwise the upgrade process fails with errors.

You must use one of the following upgrade options:

- Option 1: Select all hosts in the Agent Manager installation-set when initiating the upgrade.
- Option 2: If the hosts must be upgraded individually, deactivate all of the Foglight 4 based agents running on the Agent Manager hosts that have already been upgraded in the installation-set.

Once you finish upgrading the Agent Manager hosts, restart each of the agents that were deactivated.

NOTE: There is currently a know issue related to this type of installation. For details, see FglAM vm.config file migration fails under multi-state installations.

Agent Manager upgrade issues

Agent Manager upgrades for multiple state instances may fail in certain situations. A detailed description of this issue and a workaround is provided in FglAM vm.config file migration fails under multi-state installations.

FglAM *vm.config* file migration fails under multi-state installations

Description

When upgrading a multi-state Foglight Agent Managers that share “bin” directories, some of the agent managers become unresponsive as the states are running out of memory. “Out of memory” messages appear in the logs. In addition, error messages like the following appear in the agent manager log:

```
Foglight_Agent_Manager\state\default\config\client.config does not exist and will
not be loaded.
Foglight_Agent_Manager\state\default\config\baseline.jvmargs.config does not exist
and will not be loaded.
```

Workaround:

1 Locate the *client.config* and *baseline.jvmargs.config* files.

Two new files are deployed to the state config directory during a FglAM upgrade. Locate these files (*client.config* and *baseline.jvmargs.config*) within the FglAM stat

e instance that was upgraded.

As these file instances may already contain transferred values from the legacy *vm.config*, you need to review each of the settings in both of these files in order to ensure that these configuration options apply to the FglAM state instance that they are being copied into.

2 Note that the *vm.config* settings were migrated.

The legacy *vm.config* file has be replaced with two new config files. The settings in this file have been split between the new *client.config* and the *baseline.jvmargs.config* files.

3 Migrate the *vmparameter.x* from *vm.config* to *baseline.jvmargs.config*.

Locate the *vm.config* file within the config state directory instance of FglAM. At the bottom of the file there is a section for defining `vmparameter.x = "";` values. Copy over the `vmparameter.x` settings from the legacy *vm.config* here into the *baseline.jvmargs.config* file.

4 Validate the settings in *client.config* with *vm.config* values.

Review all of the options declared in the *vm.config* with those of the *client.config* you have copied over. The *client.config* is a super-set of properties from the *vm.config* (with the exception that the `vmparameter` values are no longer defined here). So each property that exists in the *vm.config* should also exist in the *client.config*. Ensure that each of the common config values in the *client.config* file matches the values in the *vm.config*. If they are different, then update the *client.config* to match.

5 Migrate the *java.vm* config option.

If the *java.vm* config option was set in the *vm.config*, then update the *java.vm* option in the new *client.config*. When transferring this value over, ensure that the path value is quoted and back-slashes escaped. For example:

Windows:

```
java.vm = "C:\\shared_java_vms\\1.5\\jre";
```

Unix:

```
java.vm = "/opt/shared_java_vms/1.5/jre";
```

6 Once migration is complete, and you have validated that all config settings are in their new locations, delete the *vm.config* file and restart the FglAM process.

Upgrade the Database cartridges

This section explains how to upgrade an earlier version of a database monitoring cartridge to the latest version. For details, refer to the following topics:

- Upgrade Foglight for DB2 LUW
- Upgrade Foglight for Oracle
- Upgrade Foglight for SQL Server
- Upgrade Foglight for SAP ASE
- Upgrade Foglight for Azure SQL Database

For more information about upgrade and compatibility for specific catridges, refer to the related Release Notes.

Upgrade Foglight for DB2 LUW

The latest version of Foglight for DB2 LUW is 8.3.0.x, which requires Management Server version 7.1.5 (or later) and Agent Manager version 7.1.5 (or later).

To upgrade Foglight for DB2 LUW to version 8.3.0.x:

1. Upgrade the Management Server to version 8.3.0 or later.
2. Install version 8.3.0.x of the cartridge as you would install a new cartridge. Do not delete the older version of the .car file. Install version 8.3.0 over the older version.

   NOTE: Using the integrated installer to upgrade to Foglight version 7.1.5 (or later) with the updated cartridge requires a Foglight Management Server restart.

For complete cartridge upgrade and installation instructions, see the *Foglight for DB2 LUW User and Reference Guide*.

NOTE: Foglight for DB2 LUW does not support the upgrade method of placing the new version in the folder *<foglight_home>/upgrade/cartridge/*.

The Foglight for Infrastructure agent is not created in the following scenarios:

- If the agent is configured to use an IP address instead of the host name.
- If the agent was not configured to monitor the operating system prior to the upgrade.
- If the agent's host is currently monitored by the legacy Cartridge for Operating Systems (prior to version 5.6.4).

Upgrade Foglight for Oracle

The latest version of Foglight for Oracle is 8.3.0.x. A direct upgrade to Foglight for Oracle 8.3.0.x is only available from version 7.1.5 or later. Customers that are running earlier versions of the product must first upgrade to version

7.1.5 and then upgrade to version 8.3.0.x.

NOTE: Foglight for Infrastructure agent will not be created in the following scenarios:

- If the agent is configured to use an IP address instead of the host name
- If the agent was not configured to monitor the operating system prior to the upgrade
- If the agent's host is currently monitored by the legacy Cartridge for Operating Systems (prior to version 5.6.4)

Foglight for Oracle 8.3.0.x requires Management Server version 8.3.0 and Agent Manager version 8.3.0.

To upgrade Foglight for Oracle to version 8.3.0.x:

- Install version 8.3.0.x of the cartridge as you would a new Foglight for Oracle cartridge. Do not delete the older version of the .car file. Install version 8.3.0.x over the older version.

For cartridge installation instructions, see the *Foglight for Databases Deployment Guide*.

Once you have upgraded the cartridge, to deploy the agent package, navigate to the Global View dashboard and follow the upgrade wizard instructions. For a procedure describing how to deploy the agent package, see the *Foglight for Oracle User Guide*.

NOTE: Foglight for Oracle does not support the upgrade method of placing the new version in the folder *<foglight_home>/upgrade/cartridge/*.

IMPORTANT: If you are upgrading to the current version of Foglight for Oracle in a Federation architecture, the upgrade should be applied first to the Federated Children and then to the Federation Master. If the Federation Master is upgraded first, it will display incorrect information regarding the number of instances being monitored in the Status Summary section.

Upgrade Foglight for SQL Server

The latest version of Foglight for SQL Server is 8.3.0.x.

A direct upgrade to Foglight for SQL Server 8.3.0.x is only available from version 7.1.5 or later. Customers that are running earlier versions of the product must first upgrade to version 7.1.5 and then upgrade to version 8.3.0.x.

NOTE: Foglight for Infrastructure agent will not be created in the following scenarios:

- If the agent is configured to use an IP address instead of the host name
- If the agent was not configured to monitor the operating system prior to the upgrade
- If the agent's host is currently monitored by the legacy Cartridge for Operating Systems (prior to version 5.6.4)

Foglight for SQL Server 8.3.0.x requires Management Server version 8.3.0 and Agent Manager version 8.3.0.

To upgrade Foglight for SQL Server to version 8.3.0.x:

- Install version 8.3.0.x of the cartridge as you would a new Foglight for SQL Server cartridge. Do not delete the older version of the .car file. Install version 8.3.0.x over the older version.

For cartridge installation instructions, see the *Foglight for Databases Deployment Guide*.

Once you have upgraded the cartridge, to deploy the agent package, navigate to the Global View dashboard and follow the upgrade wizard instructions. For a procedure describing how to deploy the agent package, see the *Foglight for SQL Server User Guide*.

NOTE: Foglight for SQL Server does not support the upgrade method of placing the new version in the folder *<foglight_home>/upgrade/cartridge/*.

IMPORTANT: If you are upgrading to the current version of Foglight for SQL Server in a Federation architecture, the upgrade should be applied first to the Federated Children and then to the Federation Master. If the Federation Master is upgraded first, it will display incorrect information regarding the number of instances being monitored in the Status Summary section.

Upgrade Foglight for SAP ASE

The latest version of Foglight for SAP ASE (formerly Foglight for Sybase) is 8.3.0.x. However, due to architectural changes in Foglight for SAP ASE 5.9.7.20, legacy cartridge versions cannot be upgraded to version 5.9.7.20 or later. You may install the new SAP ASE cartridge on the same FMS instance as the old cartridge. The new Sybase cartridge must use a different FglAM than the legacy cartridge. Both FglAMs may be installed on the same FMS.

Upgrade Foglight for Azure SQL Database

The latest version of Foglight for Oracle is 8.3.0.x. Direct upgrades to this version are supported from versions 7.1.x and later.

Upgrading the Infrastructure Management cartridges

This section explains how to upgrade earlier versions of the Infrastructure and Evolve cartridges to the current version.

It applies to the following cartridges:

- Foglight for Active Directory
- Foglight for Exchange
- Foglight for Office 365
- Foglight for Infrastructure
- Foglight Change Analyzer
- Foglight for Hyper-V
- Foglight Resource Optimizer
- Foglight for Storage Management cartridge
- Foglight for VMware
- Foglight for VMware Horizon View
- Foglight for Citrix XenDesktop and XenApp
- Foglight for Container Management
- Foglight Hybrid Cloud Manager
- Foglight Capacity Director
- Foglight Cost Director
- Foglight Cloud Migration
- Quest Protect
- Foglight for vCloud Director
- Foglight for NetVault

The latest version of Foglight Evolve is 8.1.0. You can upgrade to version 8.1.0 directly from Foglight Evolve 7.3.0.

Foglight Server 8.3.0 is compatible with Foglight Evolve 8.1.0.

Upgrade the Integration cartridges

Follow the procedure in this section to upgrade an earlier version of an integration cartridge to the latest version.

Upgrade Foglight for Integration

The latest version of Foglight for Integration is version 8.3.0.

Foglight for Integration 8.3.0 requires Management Server 8.3.0 or later.

To upgrade Foglight for Integration:

- Install version 8.3.0 of the cartridge as you would a new Foglight for Integration. Do not delete the older version of the .car file.

For cartridge installation instructions, see “Installing Foglight cartridges” in the *Foglight* Administration and Configuration Help.

Once you have upgraded the cartridge, deploy the agent package. For a procedure describing how to deploy an agent package using the browser interface, see Appendix: Deploying an agent package using the browser interface.

Upgrade the cartridges in a federated or High Availability (HA) environment

This section provides procedures for:

- Upgrade cartridges in a federated environment
- Upgrade cartridges in a High Availability environment

Upgrade cartridges in a federated environment

Cartridge upgrades in a Federated environment need to be handled differently than typical cartridge upgrades. To maintain the Federated topology, you must disconnect/reconnect the queries as part of the upgrade procedure.

You must also ensure that the required cartridges are being upgraded in a Federated environment. For example, you may determine the following:

- Federated Child # 1 requires upgrades to the Foglight for Infrastructure and Foglight for Oracle.
- Federated Child # 2 requires upgrades to the Foglight for Infrastructure and Foglight for SQL Server.

In this example, after upgrading the two Federated Children, you need to upgrade the Foglight for Infrastructure, Foglight for Oracle, and Foglight for SQL Server on the Federation Master.

The procedure outlined below describes the required sequence of steps.

To upgrade cartridges in a Federated environment:

1. Disable the topology synchronization in the Federation Master by commenting out all child server URLs (the `FederationURLs` in the federation.config file).
2. Upgrade one or more cartridges on the stand-alone Management Servers (Federated Children).

   NOTE: All Federated Children that need to be upgraded must be upgraded before uncommenting the URLs in the *federation.config* file.
3. Upgrade same cartridges on the single, central Management Server (Federation Master).
4. Uncomment the child server URLs in the federation.config file.

Upgrade cartridges in a High Availability environment

When upgrading cartridges in an HA environment, if both the primary and the secondary Management Servers are running, you only need to install each cartridge you want to upgrade on the primary Management Server. The cartridges are then copied over to the secondary Management Server automatically.

The management log reports on the copying of the cartridges.

Appendix: Deploying an agent package using the browser interface

This section explains how to deploy an agent package using the browser interface. This method is an alternative to using the command-line interface.

In Foglight, you can use the command-line interface to deploy an agent package for an upgraded cartridge, or you can use the browser interface.

Before you can deploy an agent package on a machine, you must first install the Agent Manager and the relevant agent package on that machine.

Use the Agent Managers dashboard to deploy one agent package at a time, or to deploy the agent package to multiple hosts. You can also deploy agent packages to a single host from the Agent Status page.

NOTE: On the Agent Managers dashboard, you can deploy an agent package to multiple hosts, as long as the hosts you select are running the same operating system.

Deploying an agent package through the Agent Managers dashboard

To deploy an agent package to one or more monitored hosts:

1. On the navigation panel, under **Dashboards**, select **Administration > Agents > Agent Managers**.
2. On the Agent Managers dashboard, select one or more hosts from the list.
3. Click **Deploy Agent Package** in the toolbar.

   NOTE: In order to select the host, the Foglight Agent Manager must be up and running on the monitored host.

   The **Deploy Agent Package** dialog wizard opens.
4. Select the agent packages that you want to deploy to the hosts you selected.

   The entries that appear in the **Agent Packages** list include only those agent packages whose platform is compatible with the platform of the hosts you selected in Step 2. For example, if the host runs a particular Windows OS, the list contains only the agent packages that include the agent processes that can run on that Windows OS.

   NOTE: You can only deploy those agent packages whose cartridges have already been installed on the Foglight Management Server.

   Optional — To see all packages that are available for deployment, including those are not compatible with the selected hosts, select **Show Packages for All Platforms**.

   IMPORTANT: Do not deploy any agent packages that are not compatible with the host's platform. Deploying incompatible agent packages on top of existing compatible agent packages deletes the existing agents which can cause unpredictable results.

   Click **Next**.
5. On the **Summary** page, review the choices you have made. Click **Finish**.

The task appears in the **Tasks** list. Use the Tasks list to follow the progress and determine the status of the task.

Deploying an agent package through the Agent Status dashboard

To deploy an agent package to a monitored host using the Agent Status dashboard:

1. On the navigation panel, under **Dashboards**, select **Administration > Agents > Agent Status**.
2. On the Agent Status dashboard, click **Deploy Agent Package** in the toolbar.

   The **Deploy Agent Package** dialog wizard opens.
3. In the Deploy Agent Package dialog box, on the **Host Selector page,** select the monitored host to which you want to deploy the agent package.

   > **NOTE:** In order to select the host, the Foglight Agent Manager must be up and running on the monitored host.

   Click **Next**.
4. Ensure that the agent package the you want to deploy appears on the **Agent Packages** page.

   The entries that appear in the list include only those agent packages whose platform is compatible with the platform of the host you selected in Step 3. For example, if the host runs a particular Windows OS, the list contains only the agent packages that include the agent processes that can run on that Windows OS.

   > **NOTE:** You can only deploy those agent packages whose cartridges have already been installed on the Foglight Management Server.

   Optional — To see all packages that are available for deployment, including those are not compatible with the selected hosts, select **Show Packages for All Platforms**.

   > **IMPORTANT:** Do not deploy any agent packages that are not compatible with the host's platform. Deploying incompatible agent packages on top of existing compatible agent packages deletes the existing agents which can cause unpredictable results.

   Click **Next**.
5. On the **Summary** page, review the choices you have made. Click **Finish**.

   The task appears in the **Tasks** list. Use the Tasks list to follow the progress and determine the status of the task.

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