



# CHAPTER 3

## Upgrading the Application Networking Manager Server Software

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This chapter describes how to upgrade the Application Networking Manager server software to ANM 5.1. This chapter includes the following sections:

- [Information About Upgrading ANM Server Software, page 3-1](#)
- [Preparing to Upgrade ANM Server, page 3-3](#)
- [Installing the Upgrade Software, page 3-4](#)

### Information About Upgrading ANM Server Software

This section provides information about upgrading to ANM server software version 5.1 from a previous version.

[Table 3-1](#) shows the upgrade path that you must follow before you upgrade to the ANM server 5.1 release. If you want to ensure that all network elements (both staged and imported) are migrated, you must deploy network elements that are not yet imported (staged objects). Otherwise, you can choose to import any staged network elements after the upgrade completes.

**Table 3-1** Upgrade Path for ANM 5.1

Current Release	Previous Releases
Upgrade to ANM server 5.1	From ANM server 4.x only.
Upgrade to ANM server 4.3	From ANM server 4.2 or 4.1 only.
Upgrade to ANM server 4.2	From ANM server 4.1 only.

**Table 3-1** Upgrade Path for ANM 5.1 (continued)

Current Release	Previous Releases
Upgrade to ANM server 4.1	<p>From ANM 3.0, ANM 3.1 and ANM 3.2 only.</p> <p><b>Note</b> If you need to upgrade to ANM 3.0 before upgrading to ANM 4.1, when you upgrade the ANM software to version 3.0, the network elements that were already imported into ANM software versions 2.2, 2.1(1), 2.1, or 2.0 will properly migrate. If you need to upgrade to ANM 3.1 before upgrading to ANM 4.1, when you upgrade the ANM software to version 4.1 the network elements that were already imported into ANM software 3.0 will properly migrate.</p> <p><b>Note</b> ANM 3.2 can be upgraded from ANM 3.0 or ANM 3.1.</p>
Upgrade to ANM 3.0, ANM 3.1 and ANM 3.2	<p>From ANM 1.2, requires an intermediate upgrade to ANM 2.2, 2.1(1), 2.1, or 2.0. See the Installation Guide for Application Networking Manager 2.2 and 2.1 for details.</p> <p><b>Note</b> We recommend that you initially upgrade to ANM 2.2 before you upgrade to ANM 3.0 as described in this document.</p>



Table 3-2 contains the ANM upgrade summary.

**Table 3-2** ANM Upgrade Summary

Task	Reference
1. Prepare for the upgrade.	<a href="#">Preparing to Upgrade ANM Server, page 3-3</a>
2. Upgrade the software.	<a href="#">Installing the Upgrade Software, page 3-4</a>
3. Install the ANM server license before you log in to ANM.	<a href="#">Acquiring and Uploading a Cisco Application Networking Manager License, page 4-1</a>

Table 3-3 contains a list of features and their status after the upgrade has occurred. For explanations and information about these features, see the *User Guide for the Cisco Application Networking Manager 5.1*.

**Table 3-3 Post Upgrade Feature Status**

Feature	Upgrade	Upgrade Status
Network Elements	Y	All imported network elements are migrated.
Staged objects (those that were never deployed)	N	<p>If you are upgrading to ANM 3.0 before upgrading to ANM 4.x and then to ANM 5.1, staged objects do not migrate to ANM 3.0 from previous versions of ANM. Perform network element import to add network elements.</p> <p> <b>Note</b> Before the upgrade, ensure that staged objects are deployed or the data will be lost.</p>
Building Blocks	Y	<p>Building Blocks are migrated.</p> <p> <b>Note</b> Beginning with ANM software release 5.1, the building block feature by default is hidden. If you have used the building block feature in the past and want to continue using it after upgrading to ANM 5.1, you must enable it. For more information, see the “<a href="#">Enabling the Building Block Feature</a>” section in the <i>User Guide for the Cisco Application Networking Manager 5.1</i>.</p>
Role Based Access Control (RBAC)	Y	Username, roles, domains, and all relationships are maintained.
User-roles	Y	Custom roles will be retained.
Monitoring Data	N	All monitoring data, including historical data, is lost during an upgrade. For more information, see the “ <a href="#">Preparing to Upgrade ANM Server</a> ” section on page 3-3.

## Preparing to Upgrade ANM Server

If you enabled HTTP on ANM before the upgrade, it is still enabled after the upgrade. If you prefer to use HTTPS to make your connection more secure, change the properties file and restart ANM.

If you restore the ANM database from a backup repository and a virtual context that is in the repository has been removed from the network element, ANM removes that context from the database and the context does not appear in the ANM user interface.

During the upgrade process, the entire ANM configuration and the ANM user/domain settings are upgraded. Monitoring data is lost during an upgrade. If you want to save the monitoring data, use the Historical Data Export feature (Monitor > Settings > Historical Data Export) to export the current monitoring data to an external data store *before* you perform an upgrade.

# Installing the Upgrade Software

You can upgrade ANM in either standalone mode or High Availability (HA) mode with or without a Red Hat operating system upgrade. This section includes the following topics:

- [Upgrading an ANM Server Operating in Standalone Mode, page 3-4](#)
- [Upgrading ANM Servers Operating in HA Mode, page 3-6](#)

## Upgrading an ANM Server Operating in Standalone Mode

This procedure shows how to upgrade the software on an ANM server operating in standalone mode. The procedure includes upgrading the ANM server software to release 5.1 and optionally, upgrading the Red Hat operating system.

### Guidelines and Restrictions

This topic includes the following guidelines and restrictions:

- During the ANM upgrade, MySQL is automatically installed. If your system contains a different version of MySQL than the one used by ANM, it is replaced with the version used by ANM during installation.
- You can use backup file taken from a 32-bit Server Edition when upgrading to ANM 5.1 operating in a 64-bit Server Edition either in standalone or HA mode.
- At the end of the upgrade process, you must install the ANM license that is applicable to the upgraded server. If the backup you use during the upgrade process belongs to a different host, you must install the appropriate license because an ANM license is tied to the server's MAC address.



### Caution

As the root user, you can adversely affect your operating environment if you are unaware of the effects of the commands that you use. If you are an inexperienced Linux user, you should limit your activities as the root user to the tasks described in this procedure.

### Procedure

**Step 1** Log into the server as the root user (see the [“Becoming the Root User”](#) section on page 1-5) and create an ANM backup to restore the ANM inventory at the end of the upgrade procedure by doing one of the following:

- To create a backup from ANM server, enter the following command from the ANM server command line:

```
/opt/CSCOanm/bin/anm-tool backup path/backup_filename
```

where *path/backup\_filename* is the name of the backup, including the path information.

- To create a backup from ANM Virtual Appliance, enter the following command from the ANM Virtual Appliance ADE-OS command line:

```
anm-tool save-inventory disk:backup_filename
```

where *backup\_filename* is the name of the backup that is saved to disk: on ANM Virtual Appliance.



**Note** The special characters allowed in the file name are as follows:  
! , @ , \$ , % , ^ , \_ , + , = , { , } , [ , ] , : , , , (comma) , ? .

- Step 2** Copy the backup file to a safe, remote (nonlocal) location, such as a different computer, a USB flash or external drive, or CD-RW disk.
- Step 3** Uninstall ANM by entering the following command:  
**/opt/CSCOanm/bin/anm-tool uninstall**
- Step 4** When prompted to preserve the current list of ANM users, enter one of the following:
- **Yes**—The current list of users is saved on the server for use with the subsequent ANM installation.
  - **No**—The current list of users is not saved.



**Note** These users are the anm and anm-mysql Linux user accounts that are created on the Linux filesystem during the installation of ANM; they are not the user accounts that are used to log in to ANM. If you have local custom scripts based on the user IDs of these Linux user accounts, you should preserve these user accounts to avoid having to remap them after performing an ANM upgrade.

When the uninstallation is complete, the /opt/CSCOanm directory RPMs and application files are deleted.

- Step 5** (Optional) Install Red Hat Enterprise Linux following the procedure described in the [“Red Hat Operating System Installation Tips”](#) section on page A-1. Skip this step if you are upgrading the ANM server software only.
- Step 6** Copy the ANM backup file that you created in [Step 1](#) to the ANM server.
- Step 7** Insert the ANM 5.1 CD-ROM into the drive of the Linux server and mount to the /cdrom directory.
- Step 8** Change your directory to the /cdrom directory or the directory to which you mounted the CD and start the upgrade by entering the following command:  
**./anm-5.1.bin upgrade path/backup\_filename**  
where *path/backup\_filename* is the path and filename of the backup that you copied to the ANM server.  
The installation and upgrade begins and status messages appear on your login window. When the Done prompt appears, the upgrade script has finished, which includes restoring the ANM inventory using the backup.
- Step 9** Unmount the CD-ROM.
- Step 10** If the backup file used to restore the ANM server configuration was created on another ANM server or on ANM Virtual Appliance, perform the following steps:
- a. Install the appropriate license for the server. Skip this step if the backup was created from the server you just upgraded (see the [“Using ANM License Manager to Manage ANM Server or Demo Licenses”](#) section in the *User Guide for the Cisco Application Networking Manager 5.1* or in the online help).
  - b. If the port information and configuration attributes of the backup are different than the values of the original ANM server configuration, you need to modify the port information and configuration attributes to match the original ANM server configuration (see the [“Changing Configuration Attributes After Installing Cisco Application Networking Manager”](#) section on page 4-6).

- c. If the backup was created on an ANM server configured to operate in HA mode, you must set the configuration to standalone mode by doing the following:
  1. Enter the following command:
 

```
/opt/CSCOanm/bin/anm-tool -ha=0 configure
```

 A series of prompts appears.
  2. At the “Check existing configuration files?” prompt, enter **n** (no). Leave all other options at their default values unless you need to modify any of them.
  3. At the “Commit these values?” prompt, enter **y** (yes).

**Step 11** Clear the browser cache on all client devices before accessing the ANM GUI to avoid possible issues with the GUI function buttons being inaccessible.

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## Upgrading ANM Servers Operating in HA Mode

This procedure shows how to upgrade the software on two ANM servers operating in HA mode. The procedure includes upgrading the ANM server software to release 5.1 and optionally, upgrading the Red Hat operating system.

### Guidelines and Restrictions

This topic includes the following guidelines and restrictions:

- During the ANM upgrade, MySQL is automatically installed. If your system contains a different version of MySQL than the one used by ANM, it is replaced with the version used by ANM during installation.
- You can use a backup file taken from a 32-bit Server Edition when upgrading to ANM 5.1 operating in a 64-bit Server Edition either in standalone or HA mode.
- At the end of the upgrade process, you must install the ANM license that is applicable to the upgraded server. If the backup you use during the upgrade process belongs to a different host, you must install the appropriate license because an ANM license is tied to the MAC address of a server.



### Caution

As the root user, you can adversely affect your operating environment if you are unaware of the effects of the commands that you use. If you are an inexperienced Linux user, you should limit your activities as the root user to the tasks described in this procedure.

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### Procedure

- Step 1** Log into your current running version of ANM and make sure that active and standby ANM servers are synchronized. See the ANM context sensitive online help for more information.
- Step 2** From the standby ANM server, log into the server as the root user (see the [“Becoming the Root User”](#) section on page 1-5) and perform the following steps:
  - a. Create an ANM backup to restore the ANM inventory at the end of the upgrade procedure by entering the following command from the ANM server command line:
 

```
/opt/CSCOanm/bin/anm-tool backup path/backup_filename
```

 where *path/backup\_filename* is the name of the backup, including the path information.



**Note** We recommend that you use a backup created from the server being upgraded; however, you can use a backup created from another ANM server running the same version ANM.

- b. Copy the backup file to a safe, remote (nonlocal) location, such as a different computer, a USB flash or external drive, or CD-RW disk.
- c. Uninstall ANM by entering the following command:

```
/opt/CSCOanm/bin/anm-tool uninstall
```

- d. When prompted to preserve the current list of ANM users, enter one of the following:
  - **Yes**—The current list of users is saved on the server for use with the subsequent ANM installation.
  - **No**—The current list of users is not saved.



**Note** These users are the `anm` and `anm-mysql` Linux user accounts that are created on the Linux filesystem during the installation of ANM; they are not the user accounts that are used to log in to ANM. If you have local custom scripts based on the user IDs of these Linux user accounts, you should preserve these user accounts to avoid having to remap them after performing an ANM upgrade.

When the uninstall is complete, the `/opt/CSCOanm` directory and all associated RPM's and application files are deleted.

- e. (Optional) Install Red Hat Enterprise Linux following the procedure described in the “[Red Hat Operating System Installation Tips](#)” section on page A-1. Skip this step if you are upgrading the ANM server software only.
- f. Copy the ANM backup file that you created in Step 2a to the ANM server.

**Step 3** From the active ANM server, log into the server as the root user and perform the following steps:

- a. Repeat Steps 2a to 2f.
- b. Insert the ANM 5.1 CD-ROM into the drive of the Linux server and mount to the `/cdrom` directory.
- c. Change your directory to the `/cdrom` directory or the directory to which you mounted the CD by entering the following command:

```
./anm-5.1.bin upgrade path/backup_filename
```

where `path/backup_filename` is the path and filename of the backup that you copied to the ANM server.

The installation and upgrade begins and status messages appear in your login window. When the Done prompt appears, the upgrade script has finished, which includes restoring the ANM inventory using the backup.

- d. If the backup you used during the upgrade process belongs to a different host, install the appropriate license for the server. Skip this step if the backup was created on the server you just upgraded.
- e. Unmount the CD-ROM.

**Step 4** From the standby ANM server, repeat Steps 3b to 3e to upgrade the standby server.

- Step 5** Clear the browser cache on all client devices before accessing the ANM GUI to avoid possible issues with the GUI function buttons being inaccessible.
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