



CHAPTER 10

Managing Device Operating Systems

This chapter describes how to use the Device OS Management feature in Cisco Data Center Network Manager (DCNM).

The Device OS Management feature allows you to control the operating system installed on Nexus 7000 Series devices that are managed by DCNM. You can create software installation jobs that affect one or more managed devices. DCNM can transfer the software images of operating systems to managed devices using one of several supported protocols. Installation jobs can also use software images already present on managed devices.

This chapter includes the following sections:

- [Information About Device OS Management, page 10-1](#)
- [Licensing Requirements for Device OS Management, page 10-3](#)
- [Prerequisites, page 10-4](#)
- [Guidelines and Limitations for Device OS Management, page 10-4](#)
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- [Configuring Software Installation Jobs, page 10-7](#)
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- [Additional References, page 10-21](#)
- [Feature History for Device OS Management, page 10-22](#)

Information About Device OS Management

The Device OS Management feature allows you to control the software images installed on certain devices that are managed by Cisco DCNM.

This section includes the following topics:

- [Device OS Management Screen, page 10-2](#)
- [Software Installation Jobs, page 10-2](#)
- [File Servers, page 10-3](#)
- [VDC Support, page 10-3](#)

Device OS Management Screen

The Device OS Management screen allows you to view information about the software images used by a managed device. You can also start the Software Installation wizard from the Device OS Management Summary pane.

Software Installation Jobs

The Software Installation Jobs feature allows you to create and monitor software installation jobs. Cisco DCNM provides the Software Installation wizard, which you use to specify all the necessary information for configuring a software installation job.

You can create software installation jobs that affect one or more managed devices. You can use software images that are already in the local file system of the devices or Cisco DCNM can instruct each managed device included in a job to transfer software images to the local file system on the managed device. Your options are as follows:

- **Device file system**—You can use software images that are in the local file system of the devices. You must ensure that the images exist on the devices prior to configuring the installation job.

You can specify a software image for a device type category rather than for a single device; however, the image that you specify must exist on each device in the category in the same location and with the same filename. For example, if you specify `bootflash:/images/n7000-s1-dk9.4.1.2.upg.bin`, the `n7000-s1-dk9.4.1.2.upg.bin` image file must exist in `bootflash:/images` on each device in the device category.

- **File server**—You can use a file server that you have configured in Cisco DCNM. If you use a file server, Cisco DCNM uses the information that you provide when you configure the file server and when you configure the software installation job to assemble a URL that the managed devices in the job can use to retrieve the software images.

Before configuring a software installation job, you should ensure that the software images are on the file server. You must also configure the file server in Cisco DCNM. For more information, see the [“File Servers” section on page 10-3](#).

- **URL**—You can use a URL to specify the image files. The verification that Cisco DCNM performs for a URL varies depending upon the transfer protocol that you use, as follows:

- **FTP**—Cisco DCNM verifies the URL format, that the FTP server in the URL is reachable, and that the specified image file exists on the FTP server. The FTP URL format is as follows:

```
ftp://username@servername/path/filename
```

- **SFTP**—Cisco DCNM verifies the URL format, that the SFTP server in the URL is reachable, and that the image file specified exists on the SFTP server. The SFTP URL format is as follows:

```
sftp://username@servername/path/filename
```

- **TFTP**—You must ensure that the path and image filename are correct. Cisco DCNM verifies the URL format and that the TFTP server in the URL is reachable. The TFTP URL format is as follows:

```
tftp://servername/path/filename
```

- **SCP**—You must ensure that the SCP server is reachable and that the path and image filename are correct. Cisco DCNM verifies the URL format. The SCP URL format is as follows:

```
scp://username@servername/path/filename
```

The Software Installation wizard includes an optional step for verifying the version compatibility of software images with the managed devices. During this step, if a software image was specified by a URL or file server, Cisco DCNM instructs managed devices to copy the software image from the URL or file server to the bootflash file system on the device. If you skip the version compatibility step, Cisco DCNM does not instruct devices to copy software images from URLs or file servers until the installation job begins.

File Servers

The File Servers feature allows you to configure file servers, which you can use for the following purposes:

- Software installation jobs—Cisco DCNM can get software image files from a file server and transfer them to devices included in a software installation job.
- Configuration rollbacks—Cisco DCNM can back up device configurations to a file server when you roll back a device configuration.

Cisco DCNM supports file servers that use the following protocols:

- FTP
- SFTP
- TFTP

If you use a file server in a software installation job, consider the following items:

- The managed devices included in the job must be able to connect to the file server directly.
- To ensure that software image files transfer as quickly as possible, use a file server that is on the same LAN as the devices included in the software installation job. If the available file servers transfer software image files too slowly, before you create the software installation job, manually copy the files to the devices that you will include in the job and configure the job to use the manually copied files rather than a file server.

VDC Support

Device software images apply to physical devices rather than virtual device contexts (VDCs). When you change the software image on a managed device, all VDCs on the device use the new software image.

Licensing Requirements for Device OS Management

The following table shows the licensing requirements for this feature:

Product	License Requirement
Cisco DCNM	Device OS Management requires a LAN Enterprise license. For information about obtaining and installing a Cisco DCNM LAN Enterprise license, see the <i>Cisco DCNM Installation and Licensing Guide, Release 6.x</i> .
Cisco NX-OS	Device OS Management requires no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For an explanation of the Cisco NX-OS licensing scheme for your platform, see the licensing guide for your platform.

Prerequisites

The Device OS Management feature has the following prerequisites (for a full list of feature-specific prerequisites, see the platform-specific documentation):

- The Device OS Management feature supports only devices that are managed by Cisco DCNM, which means that Cisco DCNM must have successfully discovered the device.
- The Device OS Management feature supports only devices that you have added to the list of Cisco DCNM-licensed devices.
- Devices included in a software installation job must be reachable by Cisco DCNM when a software installation job occurs. Software installation jobs fail for unreachable devices.

Guidelines and Limitations for Device OS Management

The Device OS Management feature has the following configuration guidelines and limitations:

- URLs and file servers used in a software installation job must be reachable by the managed devices included in the job.
- If you use a DNS name in a URL or when you configure a file server, ensure that managed devices using the URL or file server can resolve the DNS name.
- Software installation jobs do not reload connectivity management processors (CMPs). You must manually reload CMPs as needed when a software installation job completes. The status for a completed software installation job includes messages about CMPs that must be reloaded manually. For more information, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x*.
- For Cisco Nexus 7000 series devices that have a single supervisor module, a software installation job does not reload the device. After the installation job completes, to run the newly installed software image on a single-supervisor Cisco Nexus 7000 series device, you must manually reload the device. For more information, see the *Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x*.

Platform Support

The following platforms support this feature but may implement it differently. For platform-specific information, including guidelines and limitations, system defaults, and configuration limits, see the corresponding documentation.

Platform	Documentation
Cisco Nexus 4000 Series switches	Cisco Nexus 4000 Series Switch Documentation
Cisco Nexus 5000 Series switches	Cisco Nexus 5000 Series Switch Documentation
Cisco Nexus 6000 Series switches	Cisco Nexus 6000 Series Switch Documentation
Cisco Nexus 7000 Series switches	Cisco Nexus 7000 Series Switch Documentation

Using the Device OS Management Window

The Device OS Management window allows you to view information about the software images used by a managed device. You can also start the Software Installation Wizard from the Device OS Management Summary pane.

This section includes the following topics:

- [Viewing Device Image Details, page 10-5](#)
- [Installing Software on a Device, page 10-5](#)

Viewing Device Image Details

You can view details about the software image on a managed device.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Device OS Management**.

A table of managed devices appears in the Summary pane. Each row displays software image information about a device. Devices are listed alphabetically.

Step 2 Click the device for which you want to see software image details.

The Details pane displays two sections of information. In addition to displaying the information also shown in the Summary pane, if an installation job is scheduled, the System section displays a message about any scheduled installation job, including a link to the installation job.

The Software Installation Jobs section displays information about future, ongoing, and past installation jobs.



Tip To expand or collapse the System or the Software Installation Jobs sections, double-click the section title.

Step 3 (Optional) To open a scheduled software installation job, in the System section, click the link to the installation job.

The Feature Selector pane changes to the Software Installation Jobs feature. For more information, see the [“Viewing Software Installation Job Details” section on page 10-7](#).

RELATED TOPICS

- [Installing Software on a Device, page 10-5](#)

Installing Software on a Device

You can install software on a device listed on the Device OS Management Summary pane. Installing software from the Device OS Management Summary pane starts the Software Installation wizard, which allows you to create or modify a software installation job.

BEFORE YOU BEGIN

Ensure that the software images that you want to install are available by one of the options that the Software Installation wizard supports. For more information, see the [“Software Installation Jobs” section on page 10-2](#). The supported options are the following:

- **File server**—If you want to use a file server, ensure that the software images are available on the server. You must also configure the file server in DCNM. For more information, see the [“Adding a File Server” section on page 10-15](#).
- **Device file system**—If you want to use software images that are in the local file system of the devices, you must ensure that the images exist on the devices prior to configuring the installation job.

You can specify a software image for a device type category rather than for a single device; however, the image that you specify must exist on each device in the category in the same location and with the same filename. For example, if you specify `bootflash:/images/n7000-s1-dk9.4.1.2.upg.bin`, the `n7000-s1-dk9.4.1.2.upg.bin` image file must exist in `bootflash:/images` on each device in the device category.

- **URL**—If you want to use a URL to specify the image files, what DCNM verifies for you and what you need to ensure vary depending upon the transfer protocol that you use, as follows:
 - **FTP**—DCNM verifies the URL format, that the FTP server in the URL is reachable, and that the specified image file exists on the FTP server. The FTP URL format is as follows:
`ftp://username@servername/path/filename`
 - **SFTP**—DCNM verifies the URL format, that the SFTP server in the URL is reachable, and that the image file specified exists on the SFTP server. The SFTP URL format is as follows:
`sftp://username@servername/path/filename`
 - **TFTP**—You must ensure that the path and image filename are correct. DCNM verifies the URL format and that the TFTP server in the URL is reachable. The TFTP URL format is as follows:
`tftp://servername/path/filename`
 - **SCP**—You must ensure that the SCP server is reachable and that the path and image filename are correct. DCNM verifies the URL format. The SCP URL format is as follows:
`scp://username@servername/path/filename`

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > Device OS Management**.
A table of managed devices appears in the Summary pane.
- Step 2** Click a device that you want to include in a new software installation job.
- Step 3** From the menu bar, choose **Actions > Install Software**.
The Software Installation wizard dialog box displays the Select Switches step. The device that you selected is listed under Selected Switches.
- Step 4** To use the wizard, see the [“Using the Software Installation Wizard” section on page 10-9](#).
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RELATED TOPICS

- [Viewing Device Image Details, page 10-5](#)

- [Using the Software Installation Wizard, page 10-9](#)
- [Adding a File Server, page 10-15](#)

Configuring Software Installation Jobs

The Software Installation Jobs feature allows you to create and monitor software installation jobs.

This section includes the following topics:

- [Viewing Software Installation Job Details, page 10-7](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Using the Software Installation Wizard, page 10-9](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Viewing Software Installation Job Details

You can view the details of a software installation job, including its status.

BEFORE YOU BEGIN

You must have configured a software installation job before you can view its details.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**.
The Summary pane displays a table of software installation jobs.
- Step 2** Click the software installation job for which you want to view details.
The Details pane displays two sections of information. The General section displays the job ID, the job owner, scheduling information, comments, and installation options.
The Device and Software Images section displays a table of devices included in the job, the software images to be installed on each device, and the status of the installation for the device.



Tip To expand or collapse the General or the Device and Software Images sections, double-click the section title.

RELATED TOPICS

- [Viewing Device Image Details, page 10-5](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)

- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Creating or Editing a Software Installation Job

From the Software Installation Jobs content pane, you can create a software installation job or edit an existing job. Creating or editing a job from the Software Installation Jobs content pane starts the Software Installation wizard, which allows you to create or modify a job.

BEFORE YOU BEGIN

Ensure that the software images that you want to install are available by one of the options that the Software Installation wizard supports. For more information, see the [“Software Installation Jobs” section on page 10-2](#). The supported options are the following:

To ensure that software image files transfer as quickly as possible, use a file server that is on the same LAN as the devices included in the software installation job. If the available file servers transfer software image files too slowly, before you create the software installation job, manually copy the files to the devices that you will include in the job and configure the job to use the manually copied files rather than a file server.

- **File server**—If you want to use a file server, ensure that the software images are available on the server. You must also configure the file server in DCNM. For more information, see the [“Adding a File Server” section on page 10-15](#).
- **Device file system**—If you want to use software images that are in the local file system of the devices, you must ensure that the images exist on the devices prior to configuring the installation job.

You can specify a software image for a device type category rather than for a single device; however, the image that you specify must exist on each device in the category in the same location and with the same filename. For example, if you specify `bootflash:/images/n7000-s1-dk9.4.1.2.upg.bin`, the `n7000-s1-dk9.4.1.2.upg.bin` image file must exist in `bootflash:/images` on each device in the device category.

- **URL**—If you want to use a URL to specify the image files, what DCNM verifies for you and what you need to ensure vary depending upon the transfer protocol that you use, as follows:
 - **FTP**—DCNM verifies the URL format, that the FTP server in the URL is reachable, and that the specified image file exists on the FTP server. The FTP URL format is as follows:
`ftp://username@servername/path/filename`
 - **SFTP**—DCNM verifies the URL format, that the SFTP server in the URL is reachable, and that the image file specified exists on the SFTP server. The SFTP URL format is as follows:
`sftp://username@servername/path/filename`
 - **TFTP**—You must ensure that the path and image filename are correct. DCNM verifies the URL format and that the TFTP server in the URL is reachable. The TFTP URL format is as follows:
`tftp://servername/path/filename`
 - **SCP**—You must ensure that the SCP server is reachable and that the path and image filename are correct. DCNM verifies the URL format. The SCP URL format is as follows:


```
scp://username@servername/path/filename
```

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**. The Summary pane displays a table of software installation jobs.
- Step 2** Do one of the following:
- If you want to create a job, from the menu bar, choose **Actions > New**.
 - If you want to edit a job, in the Summary pane, click the job, and then, from the menu bar, choose **Actions > Edit**.
- The Software Installation wizard dialog box displays the Select Switches step.
- Step 3** To use the wizard, see the [“Using the Software Installation Wizard”](#) section on page 10-9.
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RELATED TOPICS

- [Using the Software Installation Wizard, page 10-9](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)
- [Adding a File Server, page 10-15](#)

Using the Software Installation Wizard

You can use the Software Installation wizard to configure a new software installation job or make changes to an existing software installation job.

BEFORE YOU BEGIN

Start the Software Installation wizard, from one of the following places:

- Device OS Management—See the “Installing Software on a Device” section on page 10-5.
- Software Installation Jobs—See the “Creating or Editing a Software Installation Job” section on page 10-8.

DETAILED STEPS

Step 1 In the Software Installation wizard dialog box, follow these steps for each device that you want to include in the installation job:

- a. Under Available Switches, click the device.
- b. Click **Add**.



Tip To remove a device from the job, under Selected Switches, click the device and then click **Remove**.

Step 2 Click **Next**.

The Software Installation wizard dialog box displays the Specify Software Images step. Devices are categorized by the physical device type. You can specify software images for each device individually or for an entire category of devices of the same physical type.

Step 3 For each device or physical device category, specify a kickstart image and a system image. To do so, follow these steps once for the Kickstart Image field and again for the System Image field:

- a. In the applicable image field, click to activate the field and then click the **more** button.
The Software Image Browser dialog box appears.
- b. Specify the location of the file for the software image to be installed. To do so, choose one of the following options:
 - **File Server**—If you choose this option, you must pick a file server from the Repository list, navigate to the folders on the file server, and select the software image file.
 - **Switch File System**—If you choose this option, you must navigate to the file system on a device and select the software image file.

If you are specifying a software image for a device type category, the image specified must exist on each device in the category in the same location and with the same filename.

- **URL**—If you choose this option, enter the URL in the URL field. If the transfer protocol that you use includes a username in the URL, in the Password field type the password for the username in the URL.

c. Click **OK**.

If you specified a URL, Cisco DCNM verifies the URL.

The Software Image Browser dialog box closes. The applicable image field displays the software image that you chose.

Step 4 (Optional) If you do not want the Software Installation wizard to verify that the selected kickstart and system software images are compatible with a device, check the **Skip Version Compatibility** check box in the row of the device.

**Tip**

The Next button remains unavailable until you have specified a kickstart image and a system image for each device included in the software installation job.

Step 5 Click **Next**.

If you specified a URL or a software image repository for the location of software images, Cisco DCNM instructs the devices in the job to retrieve the images from the specified locations.

If any device does not have enough space in its local file system to receive the software image files, a dialog box provides you the option to free up space on the device.

Step 6 If you receive a warning about insufficient space on the device, do one of the following:

- If you want to delete files from devices, click **Yes**. Use the Delete Files dialog box to explore the local file system of devices and delete unwanted files. When you are done, click **OK** and then click **Next**.
- If you want to remove the device from the job, click **No**, click **Back**, and return to [Step 3](#).
- If you want to exit the Software Installation wizard, click **No** and then click **Cancel**.

Unless you chose to skip the version compatibility check for every device in the installation job, the Software Installation wizard dialog box displays the Pre-installation Checks step. The Version Compatibility Check column indicates whether a device passed or failed the check.

Step 7 If the Software Install wizard dialog box displays the Pre-installation Checks step, follow these steps:

- a. If any device failed the version compatibility check, do one of the following:
 - If you want to change the software image files specified for a device, click **Back** and return to [Step 3](#).
 - If you want the job to proceed by not installing software on devices that failed the version compatibility check, check the **Skip devices with version compatibility failure** check box.
- b. Click **Next**.

The Software Installation wizard dialog box displays the Installation Options and Schedule step.

Step 8 (Optional) If you want the job to save the current configuration or delete the current configuration on each device, follow these steps:

- a. Check the **Installation Options** check box.
- b. If you want the job to copy the running configuration to the startup configuration on each device, click the **Save Running Configuration to Startup before Installation** radio button. After the installation job, devices in the job will have the same configuration that they did prior to the job, unless the installation is an upgrade or downgrade that modifies the running configuration.
- c. If you want the job to delete the startup configuration on each device, click the **Erase Startup Configuration before Installation** radio button. After the installation job completes, devices in the job will have only the default running configuration.

Step 9 Under Schedule, do one of the following:

- If you want the software installation job to start immediately after you complete the wizard, click the **Install Now** radio button.
- If you want to specify a date and time for the start of the software installation job, click the **Schedule Installation** radio button and then use the **Date and Time** field to specify when the job should begin.

Step 10 (Optional) In the Comments field, enter a comment about the installation job.

- Step 11** Under Execution Mode, do one of the following:
- If you want the installation job to run on one device at a time before it begins on the next device included in the job, click the **Sequential** radio button.
 - If you want the installation job to start at the same time on all the devices included in the job, click the **Concurrent** radio button.
- Step 12** (Optional) If you want the software installation job to save the log data for failed installations, check the **Archive logs from switches on DCNM server upon installation failure** check box.
- Step 13** Click **Finish**.
- If you specified a date and time for the job under Schedule, the wizard closes and the job appears in the Summary pane.
- If you clicked the Install Now radio button under Schedule, the Software Installation Status dialog box displays information about each device in the job and the job status.
- Step 14** If the Software Installation Status dialog box appears, do one of the following:
- If you want to close the dialog box and allow the job to run, click **Run in Background**.
 - If you want to abort software installation on one or more devices, for each device, click the device and click **Abort Selected**.
 - If you want to abort software installation for all devices, click **Abort All**.



Tip If you abort software installation on all devices, click **Close** to close the dialog box.

RELATED TOPICS

- [Installing Software on a Device, page 10-5](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Rescheduling a Software Installation Job

You can change the scheduled date and time of a software installation job.

BEFORE YOU BEGIN

The software installation job that you want to reschedule must have a status of Scheduled. You cannot reschedule aborted or completed jobs.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**.

The Summary pane displays a table of software installation jobs.

Step 2 In the Summary pane, click the job that you want to reschedule.

The Details pane displays information about the job.

Step 3 (Optional) From the Details tab, expand the **General** section, if necessary.

Step 4 Use the **Scheduled At** field to specify when the job should begin.

Step 5 From the menu bar, choose **File > Deploy** to save the change to the job schedule.

RELATED TOPICS

- [Viewing Software Installation Job Details, page 10-7](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Deleting a Software Installation Job

You can delete a software installation job, regardless of its state. In the Summary pane for Software Installation Jobs, completed and aborted jobs remain until you delete them.

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**.

The Summary pane displays a table of software installation jobs.

Step 2 In the Summary pane, click the job that you want to delete.

The Details pane displays information about the job.

Step 3 From the menu bar, choose **Actions > Delete**.

A Warning dialog box displays a confirmation message.

Step 4 Click **Yes**.

The job is removed from the summary pane. You do not need to save your changes.

RELATED TOPICS

- [Viewing Software Installation Job Details, page 10-7](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Adding or Changing Comments for a Software Installation Job

You can add or change the comments associated with a software installation job.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**.
The Summary pane displays a table of software installation jobs.
- Step 2** In the Summary pane, click the job for which you want to add or change comments.
The Details pane displays information about the job.
- Step 3** (Optional) From the Details tab, expand the **General** section, if necessary.
- Step 4** In the Comments field, enter your comments.
- Step 5** From the menu bar, choose **File > Deploy** to save the change to the job schedule.
-

RELATED TOPICS

- [Viewing Software Installation Job Details, page 10-7](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Changing Installation Options for a Software Installation Job, page 10-14](#)

Changing Installation Options for a Software Installation Job

You can change the installation options associated with a software installation job. Installation options allow you to specify whether Cisco DCNM should save the running configuration of devices, delete the startup configuration, or take no action on the configuration of devices prior to installing the software.

DETAILED STEPS

- Step 1** From the Feature Selector pane, choose **Device OS Management > Software Installation Jobs**.
The Summary pane displays a table of software installation jobs.
- Step 2** In the Summary pane, click the job for which you want to add or change comments.
The Details pane displays information about the job.
- Step 3** (Optional) From the Details tab, expand the **General** section, if necessary.
- Step 4** If you want devices in the software installation job to have only the default device configuration after the installation job completes, follow these steps:
- a. Check the **Installation Options** check box.
 - b. If you want the job to delete the startup configuration on each device, click the **Erase Startup Configuration before Installation** radio button.

- Step 5** If you want devices in the software installation job to have the same running configuration after the installation job completes, follow these steps:
- Check the **Installation Options** check box.
 - If you want the job to copy the running configuration to the startup configuration on each device, click the **Save Running Configuration to Startup before Installation** radio button.
- Step 6** If you want the devices in the software installation job to use their current startup configuration as their running configuration after the software installation job completes, uncheck the **Installation Options** check box.
- Step 7** From the menu bar, choose **File > Deploy** to save the change to the job schedule.
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RELATED TOPICS

- [Viewing Software Installation Job Details, page 10-7](#)
- [Creating or Editing a Software Installation Job, page 10-8](#)
- [Rescheduling a Software Installation Job, page 10-12](#)
- [Deleting a Software Installation Job, page 10-13](#)
- [Adding or Changing Comments for a Software Installation Job, page 10-14](#)

Configuring File Servers

The File Servers feature allows you to configure files servers, which you can use for the following purposes:

- Software installation jobs—DCNM can get software image files from a file server and transfer them to devices included in a software installation job.
- Configuration rollbacks—DCNM can back up device configurations to a file server when you roll back a device configuration.

This section includes the following topics:

- [Adding a File Server, page 10-15](#)
- [Changing a File Server, page 10-17](#)
- [Deleting a File Server, page 10-17](#)

Adding a File Server

You can add a file server to Cisco DCNM.

BEFORE YOU BEGIN

Gather the following information about the file server:

- Server IP address or hostname



Note If you use the hostname, it must be registered with the DNS server that the Cisco DCNM server is configured to use.

- Transfer protocol that the server provides. Cisco DCNM supports the following transfer protocols:
 - FTP
 - SFTP
 - TFTP
- Username and password that Cisco DCNM should use to access the server.
- The base directory on the server. All files and directories that Cisco DCNM needs to access must be available under this directory.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > File Servers**.
The Contents pane displays a table of file servers.
- Step 2** From the menu bar, choose **Actions > New File Server**.
A new row appears in the Contents pane, with the cursor in the Server Name/IP Address field.
- Step 3** In the Server Name/IP Address field, enter the IP address or hostname of the file server.
- Step 4** Double-click the **Protocol** field and choose the protocol from the list that appears. Supported protocols are as follows:
- FTP
 - SFTP
 - TFTP
- Step 5** If the file server requires authentication, double-click the **User Credentials** field and enter the username and password for the server. If you want Cisco DCNM to remember the password, check the **Save Password** check box.
- Step 6** Double-click the Base Directory field.
The Software Image Browser dialog box appears.
- Step 7** Explore the server file system and choose the directory that Cisco DCNM should use as the base directory. All files and directories that Cisco DCNM needs to access must be located under this directory. By default, the root directory of the server is the base directory.
- Step 8** (Optional) Double-click the Comment field and enter your comments.
- Step 9** From the menu bar, choose **File > Deploy** to save the change to the job schedule.
-

RELATED TOPICS

- [Changing a File Server, page 10-17](#)
- [Deleting a File Server, page 10-17](#)

Changing a File Server

You can change the user credentials, base directory, and comments of a file server.

**Note**

You cannot change the values in the Server Name/IP Address or Protocol fields. If you need to change these values, delete the file server and create a file server with the new values.

BEFORE YOU BEGIN

If you are changing the user credentials or base directory, determine what the new user credentials or base directory should be.

DETAILED STEPS

-
- Step 1** From the Feature Selector pane, choose **Device OS Management > File Servers**.
The Contents pane displays a table of file servers.
- Step 2** In the table, locate the row for the file server that you want to change.
- Step 3** Perform the following items to change the file server entry as needed:
- If you want to change the user credentials, double-click the **User Credentials** field for the file server and enter or clear the username and password for the server. If you want Cisco DCNM to remember the password, check the **Save Password** check box.
 - If you want to change the base directory, double-click the **Base Directory** field and use the Software Image Browser dialog box to choose the directory that Cisco DCNM should use as the base directory.
 - If you want to change the comments, double-click the **Comments** field and enter your comments.
- Step 4** From the menu bar, choose **File > Deploy** to save the file server changes.
-

RELATED TOPICS

- [Adding a File Server, page 10-15](#)
- [Deleting a File Server, page 10-17](#)

Deleting a File Server

You can delete a file server.

BEFORE YOU BEGIN

Ensure that the file server is specified in the Archival Settings feature as the file server for configuration rollback. For more information, see the [“Configuring the Rollback File Server Setting” section on page 11-45](#).

DETAILED STEPS

Step 1 From the Feature Selector pane, choose **Device OS Management > File Servers**.

The Contents pane displays a table of file servers.

Step 2 In the table, click the row for the file server that you want to delete.

Step 3 From the menu bar, choose **Actions > Delete**.



Note If the file server is specified in the Archival Settings feature as the file server for a configuration rollback, a dialog box informs you that the file server cannot be deleted. For more information, see the [“Configuring the Rollback File Server Setting”](#) section on page 11-45.

The file server is removed from the summary pane. You do not need to save your changes.

RELATED TOPICS

- [Adding a File Server, page 10-15](#)
- [Changing a File Server, page 10-17](#)

Field Descriptions for Device OS Management

This section includes field descriptions for the three features available in the Feature Selector drawer for Device OS Management:

- [Field Descriptions for Device OS Management, page 10-18](#)
- [Field Descriptions for Software Installation Jobs, page 10-19](#)
- [Field Descriptions for the File Servers Contents Pane, page 10-20](#)

Field Descriptions for Device OS Management

This section includes the following field descriptions for the Device OS Management feature:

- [Device: Details: System Section, page 10-18](#)
- [Device: Details: Software Installation Jobs Section, page 10-19](#)

Device: Details: System Section

Table 10-1 Device: Details: System Section

Field	Description
System	
Device Name	<i>Display only.</i> Name of the managed device.
IP Address	<i>Display only.</i> IP address that Cisco DCNM uses to connect to the managed device.

Table 10-1 Device: Details: System Section (continued)

Field	Description
Model	<i>Display only.</i> Hardware model name of the managed device.
Redundancy Supervisor	<i>Display only.</i> Whether the device has a secondary supervisor module.
Software	
System Version	<i>Display only.</i> Release number of the system image currently installed on the managed device.
System Image	<i>Display only.</i> Filename of the system image currently installed on the managed device.
Kickstart Image	<i>Display only.</i> Filename of the kickstart image currently installed on the managed device.

Device: Details: Software Installation Jobs Section

Table 10-2 Device: Details: Software Installation Jobs Section

Field	Description
Job ID	<i>Display only.</i> Identification number of the job.
Owner	<i>Display only.</i> Cisco DCNM user who created the installation job.
Software Image and Version	<i>Display only.</i> Name of the system image specified in the job.
Scheduled At	<i>Display only.</i> Date and time that the installation job is scheduled to occur.
Completed At	<i>Display only.</i> Date and time that the installation job occurred. If the job has not completed, this field is blank.
Status	<i>Display only.</i> Status of the installation job. If the job is ongoing, failed, or successful, you can expand the status and see more information about the job.
Comment	<i>Display only.</i> Text of any comments added to the installation job.

Field Descriptions for Software Installation Jobs

This section includes the following field descriptions for the Software Installation Jobs feature:

- [Installation Job: Details: General Section, page 10-19](#)
- [Installation Job: Details: Devices and Software Images Section, page 10-20](#)

Installation Job: Details: General Section

Table 10-3 Installation Job: Details: General Section

Field	Description
General	
Job ID	<i>Display only.</i> Identification number of the job.

Table 10-3 Installation Job: Details: General Section (continued)

Field	Description
Owner	<i>Display only.</i> Cisco DCNM user who created the installation job.
Scheduled At	Date and time that the installation job is scheduled to occur. If the job has not yet occurred, this field is configurable.
Completed At	<i>Display only.</i> Date and time that the installation job occurred. If the job has not completed, this field is blank.
Status	<i>Display only.</i> Status of the installation job.
Comment	Text entered by Cisco DCNM users.
Installation Options	
Installation Options	Whether the installation job affects the startup configuration. By default, this check box is unchecked.
Save Running Configuration to Startup before Installation	Specifies that the installation job copies the running configuration of each device in the job to its startup configuration prior to installing the software image.
Erase Startup Configuration before Installation	Specifies that the installation job erases the startup configuration of each device in the job prior to installing the software image.

Installation Job: Details: Devices and Software Images Section

Table 10-4 Installation Job: Details: General Section

Field	Description
Device	<i>Display only.</i> Name of the managed device.
Platform	<i>Display only.</i> Hardware model name of the managed device.
Kickstart Image	<i>Display only.</i> Filename of the kickstart image currently installed on the managed device.
System Image	<i>Display only.</i> Filename of the system image currently installed on the managed device.

Field Descriptions for the File Servers Contents Pane

Table 10-5 File Servers Contents Pane

Field	Description
Server Name/IP Address	DNS name or IP address of the file server. If you use the file server in a software installation job, ensure that devices in the job can connect to the name or address that you specify. This field is editable only when you create the file server entry. You cannot edit it after saving your changes to the Cisco DCNM server.

Table 10-5 File Servers Contents Pane (continued)

Field	Description
Protocol	Transfer protocol supported by the server. Valid values are as follows: <ul style="list-style-type: none">• FTP• SFTP• TFTP This field is editable only when you create the file server entry. You cannot edit it after saving your changes to the Cisco DCNM server.
User Credentials	Username and password required to access the file server.
Base Directory	Directory that Cisco DCNM should consider as the root directory on the server. Directories specified for software installation jobs using this server will be relative to this directory.
Comment	Text entered by Cisco DCNM users.

Additional References

For additional information related to the Device OS Management feature, see the following sections:

- [Related Documents, page 10-22](#)
- [Standards, page 10-22](#)

Related Documents

Related Topic	Document Title
Upgrading and downgrading Cisco NX-OS software using the command-line interface on Cisco Nexus 7000 Series switches	<i>Cisco Nexus 7000 Series NX-OS Software Upgrade and Downgrade Guide, Release 5.x</i>

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

Feature History for Device OS Management

[Table 10-6](#) lists the release history for this feature.

Table 10-6 Feature History for Device OS Management

Feature Name	Releases	Feature Information
Device OS Management	5.2(1)	No change from Release 5.1.
Device OS Management	5.1(1)	No change from Release 5.0.
Device OS Management	5.0(2)	Support was added for Cisco Nexus 4000 Series Switches and Cisco Nexus 5000 Series Switches.