



CHAPTER 13

Maintaining Software Images

Manually upgrading your devices to the latest software version can be error prone and time consuming. Prime NCS (WAN) simplifies the version management and routine deployment of software updates to your devices by helping you plan, schedule, download, and monitoring software image updates.

Prime NCS (WAN) stores all the software images for the devices in your network. The images are stored according to the image type and version.

Before you can upgrade software images, your devices must be configured with SNMP read-write community strings that match the community strings entered when the device was added to Prime NCS (WAN).

Setting Image Management and Distribution Preferences

You can specify image management preferences such as whether to reboot devices after successfully upgrading a software image, and whether images on Cisco.com should be included during image recommendation of the device.

Because collecting software images can slow the data collection process, by default, Prime NCS (WAN) does not collect and store device software images when it gathers inventory data from devices.

To change the default behavior and to specify additional image management preferences:

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- Step 1** Choose **Administration > System > Image Management**.
 - Step 2** Enter your Cisco.com user name and password so you can access software images from the cisco.com web site.
 - Step 3** To have Prime NCS (WAN) automatically retrieve and store device images when it collects device inventory data, check **Collect images along with inventory collection**.
 - Step 4** Select other options as necessary. Rest your cursor on the information icon to view details about the options.
 - Step 5** Click **Save**.
 - Step 6** Choose **Operate > Software Image Management > Image Dashboard** to view all the software images retrieved by Prime NCS (WAN). The images are organized by image type and stored in the corresponding software image group folder.
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Using the Software Image Dashboard

The software image dashboard displays the top software images used in your network and allows you to change image requirements, see the devices on which an image is running, and distribute images.

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- Step 1** Choose **Operate > Software Image Management > Image Dashboard**.
- Step 2** Click on a software image name to display details about the image.
- Step 3** You can perform the following actions:
- Change image requirements. See [Changing Software Image Requirements](#).
 - View the devices on which the software image is running.
 - Distribute the image. See [Distributing Software Images](#).
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Importing Software Images

It can be helpful to have a baseline of your network images by importing images from the devices in your network. You can also import software images from Cisco.com and store them in the image repository.

By default, Prime NCS (WAN) does not automatically retrieve and store device images when it collects device inventory data. (You can change this preference as described in [Setting Image Management and Distribution Preferences](#).)

To import a software image:

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- Step 1** Choose **Operate > Software Image Management**.
- Step 2** Click **Import**.
- Step 3** Specify the source from where to import the software image:
- Device—Click on a device from the Collection Options field from which to import an image.
 - Cisco.com—Provide your Cisco.com login credentials to import an image from Cisco.com. You must choose the device platform from which to retrieve the image, the image version, and the feature package.
 - URL—Specify a URL from where to import an image.
 - File—Browse to a file location from where to import an image.
- Step 4** Specify Collection Options and when to import the image file. You can run the job immediately or schedule it to run at a later time.



Note The image import job is non-repetitive.

- Step 5** Click **Submit**.
- Step 6** Choose **Tools > Task Manager > Jobs Dashboard** to view details for the image management job.
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Changing Software Image Requirements

To change the RAM, Flash, and boot ROM requirements that a device must meet in order for a software image to be distributed to the device:

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- Step 1** Choose **Operate > Software Image Management**.
- Step 2** Navigate to and select the software image for which you want to change requirements, then click **Image Details**.
- Step 3** Change any of the following fields:
- Minimum RAM (MB)—Minimum RAM that must be available on the device to store this image.
 - Minimum Flash (MB)—Minimum Flash that must be available on the device to store this image.
 - Minimum Boot ROM Version—Minimum boot ROM version required on the device to store this image.
- Step 4** Click **Save**. Your changes are saved in the software version in which you made the change.
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Distributing Software Images

You can distribute a software image to a device or set of similar devices in a single deployment. Prime NCS (WAN) verifies that the device and software image are compatible.

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- Step 1** Choose **Operate > Software Image Management**.
- Step 2** Select the software image(s) you want to distribute, then click **Distribute**.
- Step 3** By default, the devices for which the selected image is applicable are shown. Check **Show All Devices** to see all the devices available in Prime NCS (WAN), or from the Device Groups list, select the device(s) which are running the image you selected.



Note If you check **Show All Devices**, all devices are displayed even if the software image you selected is not applicable for all the devices.

- Step 4** Click the image name in Distribute Image Name field to change your selection and pick a new image, then click **Save**.
- Step 5** To change the location on the device in which to store the software image, click the value displayed in Distribute Location field, select a new location, then click **Save**.
- The Status and Status Message fields display the validity of the selections you made. For example, if the status is green, there is adequate space available to store the image on the specified location on the device.
- Step 6** Specify Distribution Options. You can change the default options in **Administration > System > Image Management**.
- Step 7** Specify schedule options, then click **Submit**.



Note The distribute image job is non-repetitive.

- Step 8** Choose **Tools > Task Manager > Jobs Dashboard** to view details for the image management job.

Distributing Software Images from Cisco.com

- Step 1** Choose **Operate > Software Image Management**.
- Step 2** Navigate to and select the software image for which you want to change requirements, then click **Image Details**.
- Step 3** Expand Device Details, select a device or devices on which to distribute the image, then click **Distribute**.



Note Only the devices that are running the specific software image you modified are displayed as selection choices.

- Step 4** Choose one of the following image sources:
- **Recommend Image from Cisco.com** to select an image available on Cisco.com. Specify options, then click **Start Recommendation**, then skip to Step 6.
 - **Select Image from Local Repository** to select an image stored locally. Then, under Local Repository:
 - Select **Show All Images** to display all images available in the Prime NCS (WAN) repository.
 - Uncheck **Show All Images** to display the software images applicable to the selected device.
- Step 5** Select the image to distribute, then click **Apply**. The device name, IP address, and image details appear.
- Step 6** Click the image name in Distribute Image Name field to change your selection and pick a new image, then click **Save**.
- Step 7** To change the location on the device in which to store the software image, click the value displayed in Distribute Location field, select a new location, then click **Save**.
- The Status and Status Message fields display the validity of the selections you made. For example, if the status is green, there is adequate space available to store the image on the specified location on the device.
- Step 8** Specify Distribution Options. You can change the default options in **Administration > System > Image Management**.
- Step 9** Specify schedule options, then click **Submit**.

Viewing Recommended Software Images

You can view the recommended software image for a single device, and then import or distribute that image. If you want to distribute a software image to multiple devices, see [Distributing Software Images](#).

- Step 1** Choose **Operate > Device Work Center**, then select a device for which you want to view the recommended software image.

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- Step 2** Click the **Image** tab.
- Step 3** Scroll down to Recommended Images to view the recommended image for the device you selected. Prime NCS (WAN) gathers the recommended images from both Cisco.com and from the local repository.
- Step 4** You can import the recommended image (see [Importing Software Images](#)) or distribute (see [Distributing Software Images](#)) the recommended image.
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Analyzing Software Image Upgrades

Prime NCS (WAN) can generate an Upgrade Analysis report to help you determine prerequisites for a new software image deployment. These reports analyze the software images to determine the hardware upgrades (boot ROM, Flash memory, RAM, and boot Flash, if applicable) required before you can perform the software upgrade.

The Upgrade Analysis report answers the following questions:

- Does the device have sufficient RAM to hold the new software?
- Is the device's Flash memory large enough to hold the new software?
- Do I need to add Telnet access information for the device?

To run the Upgrade Analysis report:

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- Step 1** Choose **Operate > Software Image Management**.
- Step 2** Click **Upgrade Analysis**.
- Step 3** Choose the source of the software image you want to analyze:
- Local repository
 - Cisco.com. You must enter for your Cisco.com login credentials.
- Step 4** Select the devices on which to analyze the software image.
- Step 5** Select the image(s) to analyze for the selected devices.
- Step 6** Click **Run Report**.
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