



## Upgrading Your Device Software

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As the network administrator, you need to upgrade all routers and switches on your network from Cisco IOS Release 11.3 to the new IOS Release 12.0 or later, using images that reside in Cisco.com. Before you can upgrade, you might need to generate a purchase order.

### What You Need—Prerequisites

In this scenario, you will use these applications:

- Software Management
- Change Audit

Before you can upgrade devices, make sure that these tasks have been completed:

- A baseline of your software library is created (select **Resource Manager Essentials > Software Management > Library > Add Images** and use **Network** as the source).
- The images in your software library are synchronized with the images running in your network (select **Resource Manager Essentials > Administration > Software Management > Schedule Synchronization Job**).

- You have received Cisco.com login privileges. If you do not have a user account and password on Cisco.com, contact your channel partner or enter a request on the standard Cisco.com web site (www.cisco.com).
- A Browse Bugs Job was scheduled (select **Resource Manager Essentials > Administration > Software Management > Schedule Browse Bugs Job**). This job helps you identify bugs that may be present in the software images running on the devices in your network.

For a complete description of the required tasks, refer to the online help.

## How To Do It—Procedures

To upgrade devices:

1. [Perform the CCO Upgrade Analysis](#)
2. [Retrieve Software Images from CCO](#)
3. [Schedule the Software Image Upgrade](#)
4. [Track the Upgrade](#)

The purpose of this scenario is to show you how you can use specific applications to perform these tasks. This will help you understand how to use the applications to perform similar tasks in your network.

## Perform the CCO Upgrade Analysis

Performing an upgrade analysis ensures that the device meets the prerequisites for a software image upgrade. The upgrade analysis report displays RAM, Flash memory, or boot ROM upgrades needed to upgrade to a software image. It also displays Telnet information you need to configure in the Inventory application. For Catalyst switches, the report also displays upgrade path restrictions.

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- Step 1** Select **Resource Manager Essentials > Software Management > Distribution > CCO Upgrade Analysis**.

The Select Filtering Criteria dialog box appears.

- Step 2** Select any or all of the following, then click **Next**:
- *Images newer than running image*—only images that were released later than the images on your devices.
  - *Same image feature subset as running image*—all subsets for your devices. Select this if you do not want to limit your list to the current subsets.
  - *General deployment*—images with GD status.
  - *Latest maintenance release*—the most recent maintenance release.
- The Select Devices dialog box appears.
- Step 3** Select the views and devices to display, then click **Next**.
- If your Cisco.com username and password have not been added to the database, the Login for Cisco.com dialog box appears. Enter your Cisco.com username and Cisco.com password to update the user profile, then click **Next**.
- The Image Selection dialog box displays the images running on the selected devices, the images available on Cisco.com, and match the filtering criteria set in [Step 2](#).
- Step 4** Select images, then click **Finish**.
- The Upgrade Analysis Report displays upgrade recommendations.
- Step 5** You can switch between List Format and Table Format by clicking the appropriate button at the top of the report.
- Step 6** Click **Close**.
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## Retrieve Software Images from CCO

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- Step 1** Select **Resource Manager Essentials > Software Management > Library > Add Images**.
- The Select Image Source dialog box appears.
- Step 2** Select **CCO**, then click **Next**.
- The Select Devices dialog box appears.

**Step 3** Either:

- Enter the names of the devices for which you want to add images to your library, then click **Next**.
- or
- Select a view from the Views column that contains devices you want to upgrade, select the devices from the Devices column, then click **Next**.

If your Cisco.com username and password have not been added to the database, the Login for Cisco.com dialog box appears. Enter your Cisco.com username and Cisco.com password to update the user profile, then click **Next**.

**Step 4** Select the device/platform, software version, image subset and image to add to the library, then click **Next**.

The Select Images to Add to Library dialog box verifies whether the device has enough memory for the selected image.

- If the device does not have enough memory, the word “Fail” appears in the Pass/Fail column.
- If the device has enough memory to run the selected software image, the word “Pass” appears in the Pass/Fail column and you can perform the download.



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**Note** You can perform a download regardless of the pass/fail status. An image that fails on one device might work on another, so you might want to add it to the image library.

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**Step 5** Make sure the Download check box is selected, then click **Next**.

The Verify Images to Add to Library dialog box appears.

**Step 6** Verify that the information is correct, then click **Schedule Download** or **Download Now**.

If you click **Download Now**, Essentials downloads the image. The Add-to-Library Summary dialog box appears. Click **Browse Library** to see the image in the library.

If you click **Schedule Download**, the Job Control Information dialog box appears.

- a. Enter the job description and optional e-mail address, schedule the job, then click **Finish**.

The Image Import Summary dialog box appears.

- b. Click **Browse Job Status** to view the job status.
- c. If the job status is “Pending for Import”, click the Job ID, then in the lower pane, click the image link.

The Verify Image Type dialog box appears.

- d. Click **Next**.

A message notifies you that the job will take a while.

- e. Click **OK**.

The Confirm Images dialog box appears.

- f. Verify the details and click **Next**.

The Edit System Image Attributes dialog box appears.

- g. Click **Finish**.

The Add-to-Library Summary dialog box appears.

- h. Click **Browse Library** to see the image in the library.
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## Schedule the Software Image Upgrade

You have downloaded the required software images to your software library and are now prepared to set up your upgrade. Since you are the system administrator, you have permissions to perform this function.

As a general rule, schedule your upgrades so you do not compromise your device path. For example, if you have three devices on a path, and device A depends on device B, and device B depends on device C, you reboot from the bottom of the path so that device C is the first to reboot, device B is the second, and device A is the third.

**Note**

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The recommended maximum number of devices you should schedule per job is 12. More than 12 devices out of service at a time could affect your network performance adversely.

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To schedule the software image upgrade:

**Note**

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This procedure describes the device-centric mode of image distribution, where you select the devices first and then distribute suitable images to them. If you select Resource Manager Essentials > Software Management > Distribution > Distribute By Images, you can select an image first and then distribute it to suitable devices. See the Essentials online help for details.

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**Step 1** Select **Resource Manager Essentials > Software Management > Distribution > Distribute By Devices**.

The Select Device Type dialog box appears.

**Step 2** Select **Cisco IOS**, then click **Next**.

The Select Cisco IOS Devices dialog box appears.

**Step 3** Select **Device Family**, **Current Cisco IOS Versions**, and **Boot ROM Version** from the View windows, click **Query** to add the items to the Devices list, then select the devices.

- Step 4** Click **Next**.
- If your Cisco.com username and password have not been added to the database, the Cisco.com login dialog box appears. Enter your Cisco.com username and Cisco.com password to update the user profile, then click **Next**.
- If you do not want to include images from Cisco.com in the recommended images list, click **Skip**. The Recommended Image Upgrade dialog box appears.
- Step 5** To view the running status of the selected devices (Running image, Flash details, and so on), click **Details**.
- The Details report appears.
- Click **Close**.
- Step 6** Select the devices to upgrade.
- Step 7** For each device, select the desired image upgrade. Deselect check boxes for any devices you do not want to upgrade, then click **Next**.
- The system prompts for confirmation.
- Step 8** Click **OK** to continue.
- The Verify Image Upgrade dialog box appears.
- Step 9** Check the verification status, make any necessary changes by going back to the Recommended Image Upgrade dialog box, then click **Next**.
- The Distribution Sequence dialog box appears if more than one device has been selected for upgrade.
- Step 10** Move the upgrades up or down the distribution sequence list as desired, then click **Next**.
- The Job Control Information dialog box appears.
- Step 11** Enter the job description and optional e-mail address, schedule the job, then click **Next**.
- The Work Order Report appears.
- Step 12** Click **Finish**.
- The Distribute Image Summary dialog box appears.

- Step 13** Click **Browse Job Status** to see the job status.  
The Job Status window appears.
- Step 14** Click the Job ID to see the job details.  
The Job Details report appears.  
This report has two parts:
- The top part contains current job information, device information, and the Work Order report.
  - The bottom part contains either the schedule change dialog box or the job log file, depending on the state of the job.
- You can optionally change the schedule, then close the report.
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You can select a software image, temporarily store it on the remote stage device, and then use this stored image to upgrade suitable devices in your network.

This feature is helpful when the Resource Manager Essentials server and the devices are distributed across a WAN. For details, see the Essentials online help.

## Track the Upgrade

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- Step 1** Select **Resource Manager Essentials > Change Audit > Search Change Audit**.  
The Change Audit—Filter Options dialog box appears.
- Step 2** Select the views and devices, then click **Next**.  
A second Change Audit—Filter Options dialog box appears.
- Step 3** Select **All** from the Application drop-down list box; then select **Custom**.
- Step 4** Enter the date and time the upgrade was to occur, then click **Finish**.  
The Change Audit—Searching report appears.

- Step 5 Select highlighted **Details** text in the View Details column to view the details of a particular device.
  - Step 6 Select highlighted **More Records** text in the Grouped Records column to view records that stem from the same event.
  - Step 7 Click **Close**.
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## Where You Should End Up—Verification

Verify your device software images have been upgraded by viewing the Software Upgrade report. Select **Resource Manager Essentials > 24-Hour Reports > Software Upgrade Report**.

Where You Should End Up—Verification