



Downloading Software and Firmware

Introduction

This chapter provides information for downloading software and firmware, describes where to obtain it, and details the required preparations and procedures for downloading software and firmware from the CWM workstation to a Cisco WAN switch.

The **Image Downloader** is a Java-based application and feature of Release 11 of CWM. The Image Downloader allows you to download software and firmware images, and to monitor the download process, as described at the end of this chapter.

The TFTP/FTP protocol is used to download software and firmware images from the CWM workstation to WAN switches.



Note

A CWM workstation is not required to download the software images. You can download the software images using any machine that can run a FTP client/server process.



Note

CWM Image Download *only* transfers the image file from the CWM workstation to the switch.

Where to Get Switch Images for Downloading

Cisco Connection Online (CCO) provides a web page, **WAN Switching Upgrade Planner**, that provides information about the latest Cisco software product. If you have a Cisco Connection Online account, you can order or download software directly to your system. The URL for CCO software and firmware is:

<http://www.cisco.com/kobayashi/sw-center/wan/wan-planner.shtml>

The WAN Switching Upgrade Planner web page provides links to the following:

- Product Information for WAN Switching Products
- Release Information for WAN Switching Products
- Documentation and Release Notes

- Older Software for WAN Switching Products
- Downloading Cisco WAN Switching Software
- Downloading Cisco WAN Card Firmware

Preparing the IPX/BPX Switch to Download Software or Firmware

Before downloading software and firmware to a switch, use the Switch CLI (Command Line Interface) to execute the following commands. This is required regardless of how the software image transfer will be initiated.



Note The following procedures are applicable to IGX and BPX switches only.

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- Step 1** Access the Switch CLI by attaching a dumb terminal to the switch or telnet to the switch.
When you select the switch node from the CWM Network Topology window and then select the **Node** menu's **Node Admin** option, the CWM software telnets to the switch. A new terminal window is displayed for your use.
- Step 2** Enable the switch to allow downloading. From the Switch CLI, execute the following command:
cnffunc
- Step 3** Use the **Index** column's value for the **Download From Remote StrataView** entry in the following command:
cnffunc <index> e
In the example, *<index>* would be set to **6**. The “e” parameter specifies to enable the function. Once this command is executed, the switch allows downloading from a CWM workstation, provided the latter is connected to another switch in the same network.
- Step 4** Invoke the following command when a redundant processor card is not installed.
cfnodeparm
shows sample output from the **cfnodeparm** command. When a redundant processor card (BCC, NPM, or NPC) is not installed, you should set the parameter indicating the presence of a redundant processor to **No**. In the command output, look for the number corresponding to the **CC Redundancy Cnfged** entry.
- Step 5** Invoke the following command:
cfnodeparm <number> N
When you have a redundant processor card and the value for the parameter **CC Redundancy Cnfged** is **Yes**, you are requesting an image download into both processors (active and redundant).



Note If **CC Redundancy Cnfged** is **Yes** and no redundant processor card is present, the download is suspended.

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- Step 6** Configure the switch to receive software or firmware images from the CWM workstation by invoking the **cnffwswinit** command:
cnffwswinit <IP_addr_CWM_workstation>

**Note**

The step above is required if you are using a CWM workstation to send the download request to the switch.

Downloading Switch Software or Firmware from the CWM Workstation to a Switch

To download images to an MGX, complete the following steps:

- Step 1** Copy IGX or BPX images to the CWM workstation's /usr/users/svplus/images/ipxbpx directory, and MGX images to the /usr/users/svplus/images/mgx directory.
- Step 2** Launch the CWM desktop and login as a user with All access privileges for Topology. The Network Topology window is displayed.
- Step 3** Click on the node icon in the Network Topology window, upon which you want to download the switch software/firmware images, then select **SW/FW Images** from the **Tools** dropdown menu of the Topology menu bar.

The Image DownLoader window is displayed. This window displays a list of the software that is loaded on the CWM workstation (in the /usr/users/svplus/images/ directory) for the type of node selected. Choose the image you wish to download, then select **Download**.

When the download has completed, please telnet to the switch and use the switch CLI to verify and invoke the images.

**Note**

For additional details pertaining to the switches, please refer to the appropriate Cisco switch documentation.

Image Filename Conventions

The following naming conventions are used for software images:

IGX and BPX Conventions

IGX and BPX software images have the following format (where Release is 9.2.0):

```
<Release>.img  
<9.2.0>.img  
<9.2.0>.000  
...  
<9.2.0>.022
```

IGX and BPX firmware images have the following format:

```
<FW Release>.img  
<A.A.02>.img
```

MGX Conventions

The following naming convention is used for software images:

<cardtype>_<A>_ [<C>_<D>].fw

where *<cardtype>* is a name of the card. *<A>*, **, *<C>*, and *<D>* can be a string containing any combination of numerals and characters. *<A>_<C>_<D>* indicates the firmware version number of a given image file. *<C>* and *<D>* are optional. The .fw extension indicates the file is a firmware image.

Monitoring a Download Session on BPX and IGX Nodes

The commands **dsprev** (software) and **dspfwrevs** (firmware) display existing software (or firmware) revisions on a routing network, as well as the revisions currently being downloaded. When these commands are issued at a feeder, revisions on that feeder alone appear on the screen.

You can use the **dsprev** or **dspfwrevs** commands to see when downloading of the software or firmware is complete.

Image Downloader

The **Image Downloader** is a feature of Release 11 of CWM that allows you to download software and firmware images. Select **Tools** from the CWM Network Topology's tool bar and then select **SW/fw** **Images** from the drop down menu to launch the Image Downloader application.

The Image Downloader GUI contains two tab views: **In-Progress** and **Image Download**. The **In-Progress** tab view, shown in Figure 12-1, contains information about the on going image download processes.

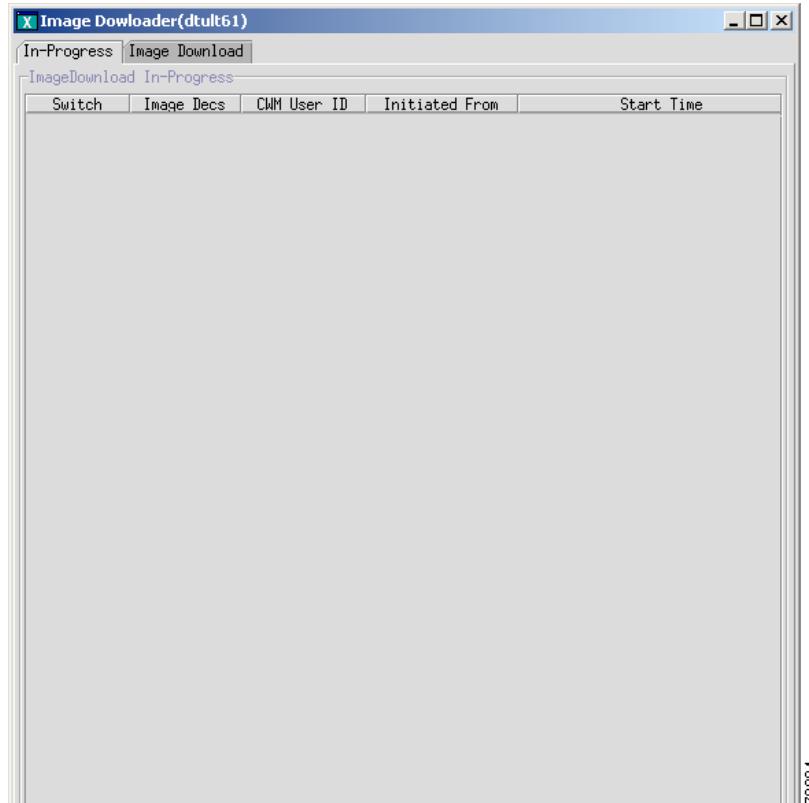
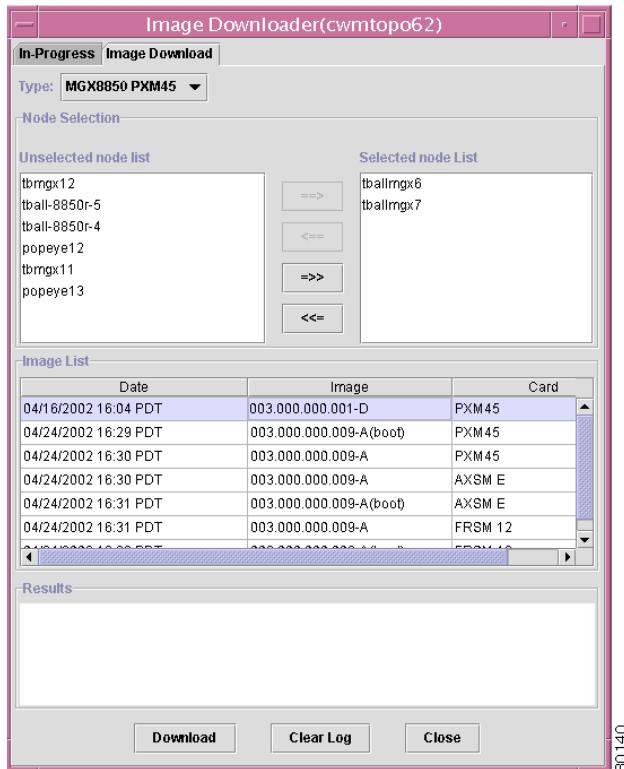
Figure 12-1 In Progress View

Figure 12-2 shows the **Image Download** view allows a user to process the image downloaded. In the **Image Download** tab view, a user can do the following:

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- Step 1** Select/change the platform using the type combo box. The node list boxes will list out all of the available nodes for the selected platform.
- Step 2** Click on the "==>" button to select the highlighted item(s) from the "Unselected node list" to the "Selected node list",
- or, click on the "<==" button to deselect the highlighted item(s) from the "Selected node list" back to the "Unselected node list"
 - or, click on the "=>>" button to select **ALL** the items from the "Unselected node list" to the "Selected node list"
 - or, click on the "<<=" button to deselect **ALL** the items from the "Selected node list" back to the "Unselected node list"
- Step 3** Select the available image(s) from the "Image List" table and the click on the **Download** button. The selected image(s) will be downloaded to the switch node(s) listed in the "Selected node list", and the result(s) will be displayed at the Result area.
- Step 4** Click on the **Clear Log** button to wipe out the message(s) in the Result area.
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Image Downloader**Figure 12-2 Image Download View**

The Download feature is used to transfer the configuration data file from CWM workstation to the switch; the Restore feature is used to transfer the configuration data file to the switch and to restore all of the configurations that are based on this data.