



## Cisco WAN Manager Operations

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These topics describe how to manage Cisco WAN Manager (CWM) operations by saving and restoring node configuration files, and downloading software and firmware images:

- [Saving and Restoring Configurations](#)
- [Downloading Software and Firmware](#)
- [Deleting Images](#)

### Saving and Restoring Configurations

You can save and restore node configuration files.

The Configuration Save and Restore (CSR) utility saves and restores configurations for the following node platforms:

- Cisco MGX PXM45-based products (Cisco MGX 8880, Cisco MGX 8950, and Cisco MGX 8850 (PXM45))
- Cisco MGX PXM1E-based products (Cisco MGX 8830 and Cisco MGX 8850 (PXM1E))
- Cisco MGX PXM1-based products (Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1))
- Cisco SES PNNI Controller
- Cisco IGX 8400 series
- Cisco BPX 8600 series
- Cisco MGX 8220 products



#### Note

Release 15 of CWM ConfigSave and Restore does not support HP OpenView.

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Each network node stores configuration information in battery RAM (BRAM) or on the controller's hard drive, which depends on the type of node. The node configuration includes service module-related and topology information for trunks, circuit lines, jobs, connections, and so forth. Periodically, you should make a backup copy of the node configuration to facilitate recovery in the event of a node failure. Backup configurations are restored to the node from Cisco WAN Manager (CWM).



#### Note

For Cisco IGX and Cisco BPX nodes, the save and restore capability is a licensed feature. You must use the **cnfswfunc** command on each node where you want to save and restore configurations.

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**Related Topics**

- [“Managing with the Configuration Save and Restore Utility”](#) section on page 10-2
- [“Saving Node Configurations from CWM”](#) section on page 10-3
- [“Saving Node Configurations for Cisco BPX and Cisco IGX Nodes”](#) section on page 10-6
- [“Restoring Node Configurations from CWM”](#) section on page 10-10
- [“Restoring Node Configurations for Cisco BPX or Cisco IGX Nodes”](#) section on page 10-12
- [“Downloading Software and Firmware”](#) section on page 10-12

## Managing with the Configuration Save and Restore Utility

These tasks are used to manage the CSR utility:

- [Launching the Configuration Save and Restore Utility](#)
- [Saving Node Configurations from CWM](#)
- [Saving Node Configurations for Cisco BPX and Cisco IGX Nodes](#)
- [Restoring Node Configurations from CWM](#)
- [Restoring Node Configurations for Cisco BPX or Cisco IGX Nodes](#)

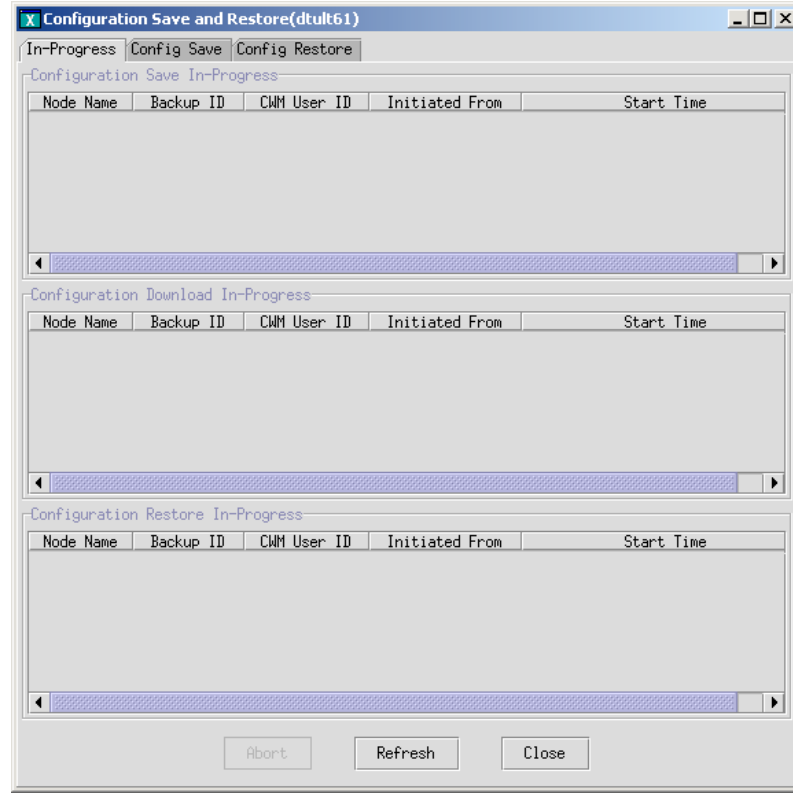
## Launching the Configuration Save and Restore Utility

To launch the Configuration Save and Restore application, you can:

- Choose **Tools > Administration > Configuration Save and Restore** from any application.
- Right-click within any application and choose **Administration > Configuration Save and Restore**.

The Configuration Save and Restore: In-Progress window monitors the current save and restore operations (see [Figure 10-1](#)).

Figure 10-1 Configuration Save and Restore: In Progress Window



### Related Topics

- [“Managing with the Configuration Save and Restore Utility”](#) section on page 10-2
- [“Saving Node Configurations from CWM”](#) section on page 10-3
- [“Restoring Node Configurations from CWM”](#) section on page 10-10
- [“Downloading Software and Firmware”](#) section on page 10-12

## Saving Node Configurations from CWM

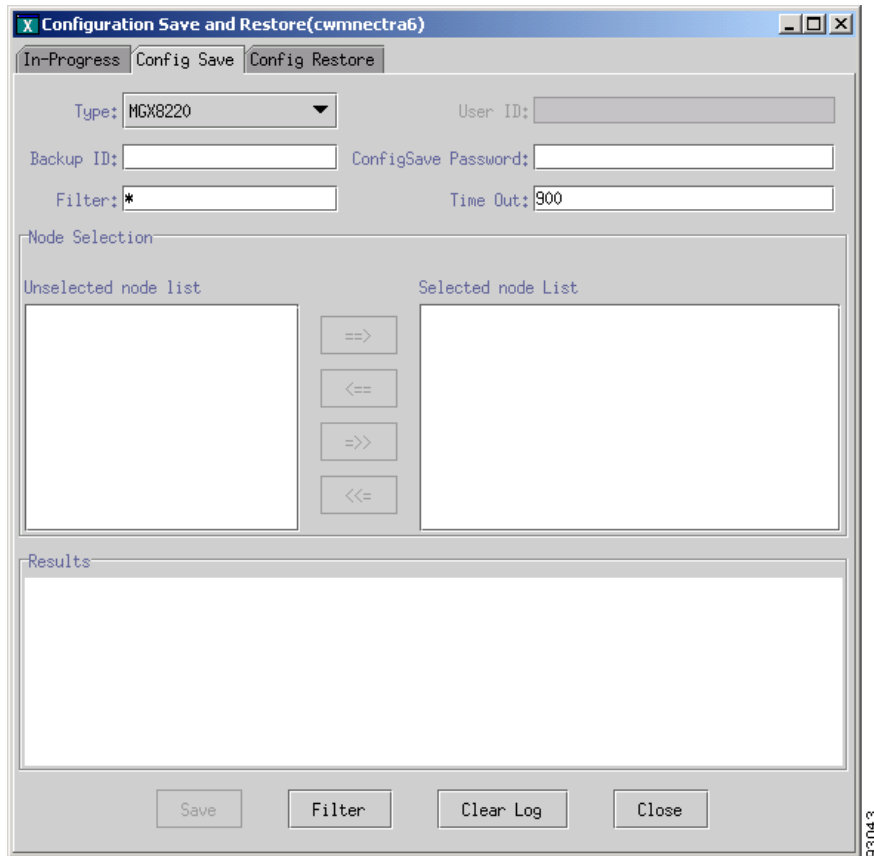
To save node configurations, complete the following procedure:

**Step 1** Click the **In-Progress** tab to verify that there is no save and restore operation currently in progress.

**Step 2** Click the **Config Save** tab.

Figure 10-2 displays the Configuration Save window.

Figure 10-2 Configuration Save Window



**Step 3** Choose the node type from the **Type** drop-down arrow.

**Step 4** Enter the backup ID in the **Backup** field. The backup ID is used as part of the filename that is created and stored in CWM. The maximum number of characters is less than 255. You must follow the UNIX filename limitation rule.



**Note** For Cisco BPX 8600 and Cisco IGX 8400 series nodes, the maximum number of characters is eight.

**Step 5** Depending upon the node type, enter a username in the User ID field.

The **Save** button is greyed out until a username and password are entered.

The PXM1-based switches (Cisco MGX 8230, Cisco MGX 8250, and PXM1-based Cisco MGX 8850) use TFTP to upload and download configurations. You must enter the correct username in the User ID field.

When you are managing your configuration files for any non-PXM1-based switches, you are required to enter a valid username in the User ID field. For information about the access privileges for Configuration Save and Restore, see [Chapter 2, “Getting Started with Cisco WAN Manager.”](#)

**Step 6** Enter the password in the **ConfigSave Password** field.

The PXM1-based switches (Cisco MGX 8230, Cisco MGX 8250, and PXM1-based Cisco MGX 8850) use TFTP to upload and download configurations. You must enter the correct password in the **ConfigSave Password** field.

When you are managing your configuration files for any non-PXM1-based switches, you are required to enter a valid password in the **ConfigSave Password** field that has sufficient privileges to be able to execute a configuration save operation. For information about the access privileges for Configuration Save and Restore, see [Chapter 2, “Getting Started with Cisco WAN Manager.”](#)

**Step 7** Enter the timeout period in the **Time Out** field.

The timeout defines the period that CWM waits for the save operation to complete. Depending upon the node type, the default is between 900 sec and 5400 sec.

**Step 8** Select a node or nodes from the **Unselected node list** pane.

**Step 9** Use the arrow keys to move the node or nodes over to the **Selected node list** pane.

**Step 10** If there are too many nodes of the same type to select from, enter a character string that defines a subset of the complete list for selection in the **Filter** field.

**Step 11** Click **Save** to initiate the process.

You receive a confirmation message in the **Results** pane, which indicates whether the save operation is initiated properly or not. After several minutes the system confirms a successful operation with the following message:

```
Config Save...done
```



**Note** Depending upon the node type and network load, the save process can take 10 to 20 min to complete.

If you attempt to initiate a configuration save operation on a node that is already saving configurations from a previous attempt, a message indicates that your request conflicts with another request.

For Cisco MGX nodes, you do not need to establish a telnet session for conflicting requests on the same node.

For Cisco BPX and Cisco IGX nodes, if you have downloaded a configuration and executed a configuration save immediately without executing the **runcnf** command first, you must:

- Right-click a node and choose **Administration > Telnet** to establish a telnet session with the node. Or select a node from the Hierarchical Tree and choose **Tools > Administration > Telnet**.
- Enter the **savecnf clear <nodename> <nodename>** command to cancel the existing **savecnf** command by executing the **loadcnf clear** command.

To cancel an existing save operation that originated from CWM:

- Click the **In-Progress** tab.
- Select the entry.
- Click **Abort** to cancel the save operation.

The files are saved to the `usr/users/svplus/ConfigData/<backup ID>_<node name>` directory.

For additional details, click the **In-Progress** tab to display an ongoing summary of the save operation.




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**Note** Cisco has various restore commands for the different switching platforms.

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#### Related Topics

- [“Saving and Restoring Configurations” section on page 10-1](#)
- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Launching the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Saving Node Configurations for Cisco BPX and Cisco IGX Nodes” section on page 10-6](#)
- [“Restoring Node Configurations from CWM” section on page 10-10](#)
- [“Restoring Node Configurations for Cisco BPX or Cisco IGX Nodes” section on page 10-12](#)
- [“Downloading Software and Firmware” section on page 10-12](#)

## Saving Node Configurations for Cisco BPX and Cisco IGX Nodes

You can save node configurations for Cisco BPX or Cisco IGX nodes.

The standard TFTP protocol backs up the Cisco BPX and Cisco IGX node configuration to a network server other than CWM. The network server is any machine that is connected to a LAN attached to the network, a TFTP server and disk, and stores configuration files. The configuration files are saved by using the TFTP method and are restored by using the proprietary method, and so forth. The files are stored in the correct directory with the correct filenames assumed by the proprietary protocol.

For more information about the TFTP Configuration Save and Restore facility and about the **cnfswfunc** command, refer to the *Cisco WAN Switching Command Reference, Release 9.3.30*.




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**Note** The CWM ConfigSave and Restore feature must be enabled on the BPX and IGX nodes. When this option is not enabled, you can not save or restore the configuration from the node.

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#### Procedure

To save a node configuration for Cisco BPX or Cisco IGX nodes, complete the following procedure:

---

- Step 1** Open a terminal window.
- Step 2** When you establish a CLI session, you must:
  - a. Enter the *username* at the prompt.
  - b. Enter the *password* at the prompt.
- Step 3** Enter the **cnfswfunc** command to enable or verify the Configuration Save/Restore function for a Cisco BPX node or Cisco IGX node.
- Step 4** For the Cisco BPX node, enter index number **1** for the Configuration Save/Restore function.  
For the Cisco IGX node, enter index number **4** for the Configuration Save/Restore function.
- Step 5** Enter **e** to enable the Configuration Save/Restore function for both the Cisco BPX and Cisco IGX nodes.




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**Note** While executing the **cnfswfunc** command, you are prompted for a password.

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The following example shows that the Configuration Save/Restore function is enabled on the Cisco BPX node:

```
node TN      Cisco      BPX 8620  9.4.00  Feb. 14 2003 16:36 GMT

Index Status  Function
1      Enabled  Configuration Save/Restore
2      Enabled  ForeSight
3      Disabled Multiple VTs (1 session enabled)
4      Disabled Virtual Trunks
5      Enabled  ABR standard with VSVD
6      Disabled Priority Bumping
7      Disabled Virtual Ports
```

This Command: **cnfswfunc 1 e**

The output of **cnfswfunc** command is different on an Cisco IGX 8400 series switch. The following example shows that the Configuration Save/Restore function is enabled on the Cisco IPX node:

```
node TN      Cisco      IGX 8430  9.4.00  Feb. 14 2003 17:27 GMT

Index Status  Function
1      Disabled Repetitive Pattern Suppression
3      Enabled  Frame Relay
4      Enabled  Configuration Save/Restore
5      Disabled ForeSight
6      Disabled Frame Relay Network-to-Network Interface
7      Disabled Multiple VTs (1 session enabled)
8      Disabled Interface Shelf
9      Enabled  Virtual Trunks
10     Disabled ABR standard with VSVD
```

This Command: **cnfswfunc 4 e**

Next Command:

- Step 6** Enter the **dspcnf** command to check whether a firmware image is loaded on the node. When a firmware image is loaded on the node, the following message appears in the status column from the **dspcnf** command:

```
Reserved for firmware image
```

The following example displays the results from the **dspcnf** command:

```
bpx1      TN      Cisco      BPX 8620  9.3.h1  Mar. 9 2001 15:16 GMT

Node      Backup ID Revision Date/Time (GMT)  Status
-----
bpx1     cisco111 9.3.h1  03/08/01 23:32:16  Save on 172.29.10.72 complete
sw200                                Reserved for firmware image
sw76     cisco111 9.3.j3  03/08/01 23:32:16  Save on 172.29.10.72 complete
magneto  cisco111 9.3.h1  03/08/01 23:32:16  Save on 172.29.10.72 complete
```

Last Command: **dspcnf**

Next Command:

- Step 7** Enter the **savecnf** command to use the same buffers that are used by a loaded firmware image. Therefore, when a firmware image is loaded on the node, the **savecnf** command displays an error.



**Note** The two prerequisites for Cisco BPX and Cisco IGX nodes are that Configuration Save and Restore function is enabled, and the temporary memory is not used by the firmware image.

**Step 8** Enter the `getfwrev <card_type> 0.0 <node>` command on the node to remove the loaded firmware image. Specify `0.0` as the firmware revision level.

Replace `<card_type>` with the card to load the revision.

Replace `<node>` with the node to load the revision.



**Note** Before using the `savecnf` command, you must clean up the loaded firmware images.

**Step 9** Enter the `savecnf [backup_id | clear] [nodename | *] [CWM_nodename | *] <destination IP> <T> <pathname>` command to save the node configuration and to upload the files to a CWM or a TFTP network server where they are stored on disk.

The following example is shown:

```
bpx1          TN      Cisco          BPX 8620  9.3.h1    Mar. 9 2001  15:16 GMT

Node      Backup ID Revision Date/Time (GMT)  Status
-----
nmsbpx14 C051598  9.3.h1    03/08/01 23:32:16 Saving on SV+ at nmsbpx14
nmssigx28                               Reserved for firmware image
nmssigx27 C051598  9.3.h1    03/08/01 23:32:16 Save on SV+ at nmssigx27 complete
nmsbpx13                               Clear
nmsbpx12                               Save/Restore feature unavailable
Last Command: savecnf C051598 nmsbpx14 nmsbpx14 172.29.23.25

Next Command:
```

Table 10-1 lists the parameter definitions for the `savecnf` command.

**Table 10-1 savecnf Command Parameter Definitions**

Name	Description
backup ID	Specifies the partial name to identify the configuration file to be saved. The name must be 1-8 alphanumeric characters, and the first character must be alphabetic. Configuration names are case-sensitive.
clear	Specifies an optional parameter that clears the buffer space in RAM of any old configuration files before the new configuration snapshot is taken. <b>Note</b> You must explicitly clear the buffer before it is loaded with a new file.
nodename	Specifies the name of the node that needs to have the configuration saved. The wildcard option, specified by an asterisk (*), is used in place of nodename to indicate all nodes are to have their configuration saved.  A directory with the name <code>/usr/users/svplus/&lt;backup_id&gt;_Cfgdir</code> is created under <code>/usr/users/svplus/ConfigData/&lt;backup_id&gt;_Nodename</code> directory.



Table 10-1 *savecnf* Command Parameter Definitions (continued)

Name	Description
CWM nodename	<p>Specifies the name of the node that has the CWM attached. The node name identifies the gateway node of the destination CWM for the configuration save. As an option, an asterisk (*) indicates that the CWM IP address identifies the destination CWM.</p> <p><b>Note</b> The value for <i>&lt;CWM nodename&gt;</i> parameter is dependent on the configuration in network.conf file of CWM.</p> <p>When the last field in a /usr/users/svplus/network.conf file entry is set to <i>nwip_on</i>, the <i>&lt;CWM nodename&gt;</i> parameter is the same node where the <b>savecnf</b> command is executed. For example, where <i>&lt;CWM nodename&gt;</i> is specified as <i>nmsbpx14</i> and the node where the <b>savecnf</b> command is being run is also <i>nmsbpx14</i>.</p> <p>When the last field in a /usr/users/svplus/network.conf file entry is set to <i>nwip_off</i>, the <i>&lt;CWM nodename&gt;</i> parameter is the gateway node name. The gateway node name is specified as the third field in a /usr/users/svplus/network.conf file entry of CWM. For example, the <b>savecnf</b> command saves the configuration of node <i>nmsbpx14</i> on the CWM workstation, where the IP address is 172.29.23.25, and is connected to the gateway node <i>nmsbpx13</i>.</p> <p>The following example is shown:</p> <p>Last Command: <b>savecnf</b> C051598 nmsbpx14 nmsbpx13 172.29.23.25</p>
destination IP	<p>Specifies an optional parameter for the IP address of the CWM or TFTP network server that is used as the source for the configuration restore.</p> <p><b>Note</b> This parameter is when an asterisk (*) is entered for CWM Nodename.</p> <p>When more than two CWM workstations are connected to the network, you specify the <i>&lt;destination IP&gt;</i> parameter that identifies the CWM workstation where the configuration save is done.</p> <p><b>Note</b> You cannot invoke a save configuration of all nodes by specifying an "*" (asterisk) as the third parameter to the <b>savecnf</b> command when <i>nwip_on</i> is configured in the /usr/users/svplus/network.conf file.</p>
T	Specifies an optional parameter for TFTP that is used for data transfer instead of the CWM proprietary protocol.
pathname	Specifies a new optional parameter that is configured when TFTP is being used for data transfer. The directory path name indicates where the backup files are stored.

**Step 10** Save the configuration of all routing nodes when *nwip\_off* is configured in the /usr/users/svplus/network.conf file.

The following example shows that the configuration is saved for all routing nodes on the CWM workstation with the 172.29.23.25 IP address, and the CWM gateway node is specified as *nmsbpx13*. The configuration is saved in the /usr/users/svplus/C051598\_Cfgdir directory.

```
Last Command: savecnf C051598 * nmsbpx13 172.29.23.25
```

```
Next Command:
```

**Related Topics**

- [“Saving and Restoring Configurations” section on page 10-1](#)
- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Launching the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Saving Node Configurations from CWM” section on page 10-3](#)
- [“Restoring Node Configurations from CWM” section on page 10-10](#)
- [“Downloading Software and Firmware” section on page 10-12](#)

## Restoring Node Configurations from CWM

You can restore node configurations that are used to transfer the configuration data file to the switch and to restore all of the configurations that are based on the data.

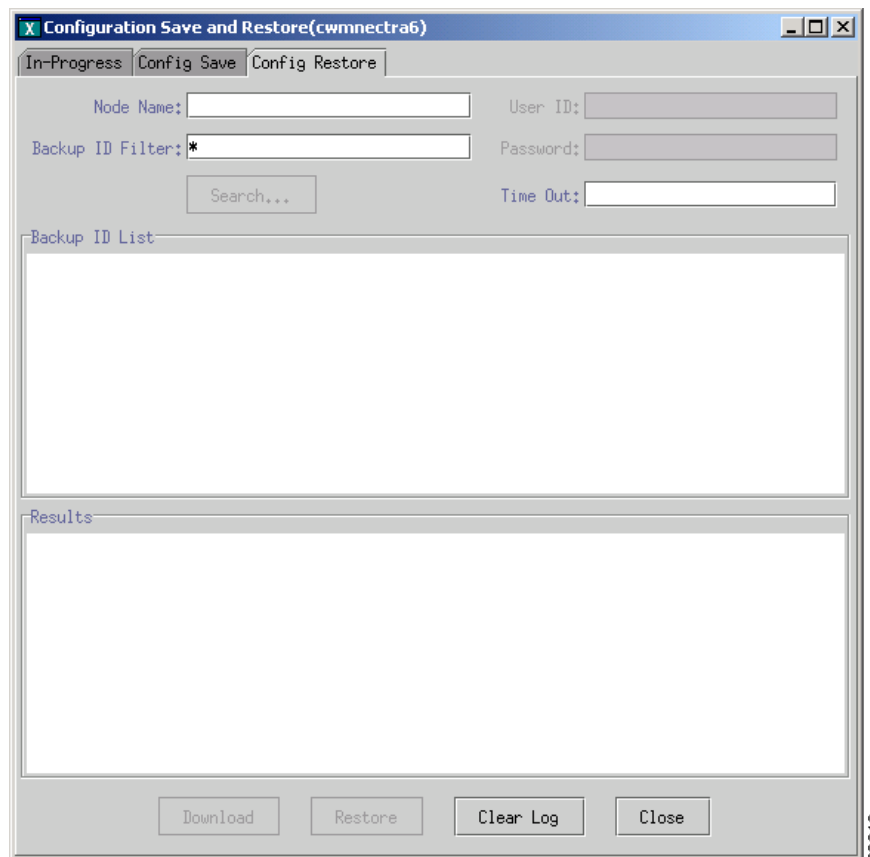
**Procedure**

To restore node configurations, complete the following procedure:

- 
- Step 1** Click the **In-Progress** tab to verify that there is no save or restore operation currently in progress.
- Step 2** Click the **Config Restore** tab.

[Figure 10-3](#) displays the Configuration Restore window.

Figure 10-3 Configuration Restore window



**Step 3** Enter the name of the node in the **Node Name** field.

**Step 4** Click **Search** to display the choices from the backup ID list.

You can restrict the backup IDs that are displayed by using the **Backup ID Filter** option.

**Step 5** Choose the backup ID from the **Backup ID List** pane.

**Step 6** Depending upon the node type, enter a username in the **User ID** field.

The **Restore** button is greyed out until a username and password are entered.

The PXM1-based switches (Cisco MGX 8230, Cisco MGX 8250, and PXM1-based Cisco MGX 8850) use TFTP to upload and download configurations. You must enter the correct username in the User ID field.

When you are managing your configuration files for any non-PXM1-based switches, you are required to enter a valid username in the User ID field.

**Step 7** Enter the password in the **Password** field.

The PXM1-based switches (Cisco MGX 8230, Cisco MGX 8250, and PXM1-based Cisco MGX 8850) use TFTP to upload and download configurations. You must enter the correct password in the **Password** field.

When you are managing your configuration files for any non-PXM1-based switches, you are required to enter a valid password in the **Password** field that has sufficient privileges to be able to execute a configuration restore operation. For information about the access privileges for Configuration Save and Restore, see [Chapter 2, “Getting Started with Cisco WAN Manager.”](#)

- Step 8** Enter the timeout period in the **Time Out** field.
- The timeout defines the period that CWM waits for the save operation to complete. Depending upon the node type, the default is between 900 sec and 5400 sec.
- Step 9** Click **Restore** to initiate the download of the selected configuration file to the target node.
- Step 10** Monitor the restore process from the **Results** pane. A successful restore is confirmed by the following message in the **Results** pane:

```
Config Restore...done
```

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#### Related Topics

- [“Saving and Restoring Configurations” section on page 10-1](#)
- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
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- [“Downloading Software and Firmware” section on page 10-12](#)

## Restoring Node Configurations for Cisco BPX or Cisco IGX Nodes

To restore the node configuration for Cisco BPX or Cisco IGX nodes, use the **restorecnf** command. For more information about the **restorecnf** command and other related commands, refer to the *Cisco WAN Switching Command Reference, Release 9.3.30*.

#### Related Topics

- [“Saving and Restoring Configurations” section on page 10-1](#)
- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Launching the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Saving Node Configurations from CWM” section on page 10-3](#)
- [“Saving Node Configurations for Cisco BPX and Cisco IGX Nodes” section on page 10-6](#)
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- [“Downloading Software and Firmware” section on page 10-12](#)

## Downloading Software and Firmware

These tasks are used to download and upgrade software and firmware from the CWM workstation to a Cisco WAN switch:

- [Locating Switch Images for Downloading](#)
- [Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware](#)
- [Image Filename Conventions](#)
- [Managing with the Image Download](#)

Cisco IGX and Cisco BPX nodes maintain the primary version of the network operating software in RAM of the active controller card. If redundant controllers are installed, the standby controller maintains a secondary version, which may or may not be the same release level as the primary. The primary version of the operating software can typically be the same release level on all nodes in the network.

All Cisco IGX and Cisco BPX card modules also have card and version specific firmware, which is stored in flash memory on the front card. If applicable, firmware upgrades are downloaded to the switch controller card, and distributed to the other cards within that switch. Cisco IGX and Cisco BPX nodes do not provide long-term storage of firmware images on the controller card.

Cisco MGX nodes do not use network-switching software as on the Cisco IGX and Cisco BPX nodes. The Cisco MGX nodes use firmware that controls shelf and card operation. The Cisco MGX controller retains a copy of firmware for service modules, and upgrades are downloaded from a management station.

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

The CWM Image Download downloads software and firmware images, and monitors the download process.

**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.

## Locating Switch Images for Downloading

Cisco Connection Online (CCO) provides a web page, WAN Switching Upgrade Planner, which 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 located at <http://www.cisco.com/kobayashi/sw-center/wan/wan-planner.shtml>.

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

- Product Information for WAN Switching Products
- Release Information for WAN Switching Products
- Documentation and Release Notes
- Previous Software for WAN Switching Products
- Downloading Cisco WAN Switching Software
- Downloading Cisco WAN Card Firmware

**Related Topics**

- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Downloading Software and Firmware” section on page 10-12](#)
- [“Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware” section on page 10-14](#)
- [“Downloading Switch Software or Firmware from the CWM Workstation to a Switch” section on page 10-18](#)
- [“Cisco IGX and Cisco BPX Conventions” section on page 10-19](#)
- [“Cisco MGX Conventions” section on page 10-19](#)

- “Managing with the Image Download” section on page 10-20
- “Deleting Images” section on page 10-24

## Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware

To prepare the Cisco BPX and Cisco IGX switch to download software or firmware, complete the following procedure:



### Note

This procedure is applicable only to Cisco IGX and Cisco BPX switches and is required regardless of how the software image transfer is initiated.

- Step 1** Access the switch CLI by attaching a dumb terminal to the switch or telnet to the switch. Right-click a Cisco IGX or Cisco BPX node from the CWM application window and choose **Administration > Telnet** to telnet to the switch. A terminal window is displayed.
- Step 2** When you establish a CLI session, you must:
- Enter the *username* at the prompt.
  - Enter the *password* at the prompt.
- Step 3** Enter the **cnffunc** command to enable the switch for downloading.
- Step 4** For a Cisco BPX node, enter index value **6** for the Download From Remote Cisco StrataView Plus function.  
For a Cisco IGX node, enter index value **8** for the Download From Remote CWM function.
- Step 5** For a Cisco BPX node, enter **e** to enable the Download From Remote Cisco StrataView Plus function.  
For a Cisco IGX node, enter **e** to enable the Download From Remote CWM function.
- Once the **cnffunc** command is executed, the switch allows downloading from a CWM workstation, provided the latter is connected to another switch in the same network.

The following example is used for the Cisco BPX node:

```
node TN      Cisco          BPX 8620  9.4.00   Feb. 14 2003 16:36 GMT

Index Status      Function
-----
1      Enabled   Automatic TRK Loopback Test on Local/Remote Alarms
2      Enabled   User Command Logging
3      Enabled   Automatic Card Reset on Hardware Error
4      Enabled   Card Error Record Wraparound
5      Disabled  Card Test After Failure
6      Enabled   Download From Remote Cisco StrataView Plus
7      Disabled  Logging of conn events in local event log
8      Disabled  Logging of conn events in Cisco StrataView Plus event log
9      Disabled  Force Download From a Specific IP address
```

This Command: **cnffunc 6 e**

Next Command:

The following example is used for the Cisco IGX node:

```
node TN      Cisco      IGX 8430  9.4.00  Feb. 14 2003 17:27 GMT

  Index Status   Function

1      Enabled   Automatic CLN/PLN Loopback Test on Local/Remote Alarms
2      Enabled   FDP Loopback button
3      Enabled   User Command Logging
4      Enabled   Automatic Card Reset on Hardware Error
5      Enabled   TXR Model D Download
6      Enabled   Card Error Record Wraparound
7      Disabled  Card Test After Failure
8      Enabled   Download From Remote CWM
9      Disabled  Logging of conn events in local event log
10     Disabled  Logging of conn events in CWM event log
11     Disabled  Logging SVC Connection Events
12     Disabled  Force Download From a Specific IP address
13     Disabled  CDP WinkStart Signalling
14     Enabled   Logging of Bus Diagnostic Events in local event log
15     Enabled   Automatic Card Reset after Burnfw for CBI cards
16     Disabled  Logging of router state events in CWM event log
```

This Command: **cnffunc 8 e**

Next Command:

**Step 6** Enter the **cnfnodeparm** command when a redundant processor card is not installed.

Press **Return** to continue.

**Step 7** For the Cisco BPX node, enter the parameter index **15** for the CC Redundancy Cnfged entry.

For the Cisco IGX node, enter the parameter index **16** for the CC Redundancy Cnfged entry.

**Step 8** When a redundant processor card (BCC, NPM, or NPC) is not installed, enter **N** to set the parameter that indicates the presence of a redundant processor to No for both the Cisco BPX and Cisco IGX nodes.

The following example is used for the Cisco BPX node:

```
node TN      Cisco      BPX 8620  9.4.00  Feb. 14 2003 16:36 GMT

1  Update Initial Delay [ 5000] (D)  16 Stats Memory (x 100KB) [ 132] (D)
2  Update Per-Node Delay [30000] (D)  17 Standby Update Timer [ 10] (D)
3  Comm-Break Test Delay [30000] (D)  18 Stby Updts Per Pass [ 150] (D)
4  Comm-Break Test Offset [ 10] (D)  19 Gateway ID Timer [ 30] (D)
5  Network Timeout Period [ 1700] (D)  20 GLCON Alloc Timer [ 30] (D)
6  Network Inter-p Period [ 4000] (D)  21 Comm Fail Delay [ 60] (D)
7  NW Sliding Window Size [ 1] (D)  22 Nw Hdlr Timer (msec) [ 50] (D)
8  Num Normal Timeouts [ 7] (D)  23 SAR CC Transmit Rate [ 560] (D)
9  Num Inter-p Timeouts [ 3] (D)  24 SAR High Transmit Rate [ 280] (D)
10 Num Satellite Timeouts [ 6] (D)  25 SAR Low Transmit Rate [ 56] (D)
11 Num Blind Timeouts [ 4] (D)  26 SAR VRAM Cngestn Limit [ 7680] (D)
12 Num CB Msg Timeouts [ 5] (D)  27 SAR VRAM Cell Discard [ 256] (D)
13 Comm Fail Interval [10000] (D)  28 ASM Card Cnfged [ Y] (Y/N)
14 Comm Fail Multiplier [ 3] (D)  29 TFTP Grant Delay (sec) [ 1] (D)
15 CC Redundancy Cnfged [ Y] (Y/N)  30 TFTP ACK Timeout (sec) [ 10] (D)
31 TFTP Write Retries [ 3] (D)  46 Max Htls Rebuild Count [ 100] (D)
32 SNMP Event logging [ Y] (Y/N)  47 Htls Counter Reset Time[ 1000] (D)
33 Job Lock Timeout [ 60] (D)  48 Send Abit early [ N] (Y/N)
34 Max Via LCONs [50000] (D)  49 Abit Tmr Multiplier M [ 0] (D)
35 Max Blind Segment Size [ 3570] (D)  50 Abit Tmr Granularity N [ 3] (D)
36 Max XmtMemBlks per NIB [ 3000] (D)  51 FBTC with PDPolicing [ N] (Y/N)
37 Max Mem on Stby Q (%) [ 33] (D)  52 CommBrk Hop Weight [ 25] (D)
38 Stat Config Proc Cnt [ 1000] (D)  53 CB Fail Penalty Hops [ 2] (D)
39 Stat Config Proc Delay [ 2000] (D)  54 Auto BXM upgrade [ Y] (Y/N)
```

```

40 Enable Degraded Mode [ Y ] (Y/N) 55 LCN reprgrm batch cnt [ 100] (D)
41 Trk Cell Rtng Restrict [ Y ] (Y/N) 56 Dnld LanIP or NwIP [ Nw] (Lan/Nw)
42 Enable Feeder Alert [ N ] (Y/N) 57 IP Relay gateway node [ 0] (D)
43 Reroute on Comm Fail [ N ] (Y/N) 58 Max LAN Window (sec) [ 60] (D)
44 Auto Switch on Degrade [ Y ] (Y/N) 59 Max LAN Packets/Window [18000] (D)
45 Max Degraded Aborts [ 100] (D) 60 Extended Cline Object [ N] (Y/N)

```

This Command: `cnfnodeparm 15 N`

Next Command:

The following example is used for a Cisco IGX node:

```

node TN      Cisco      IGX 8430 9.4.00 Feb. 14 2003 17:27 GMT

1 Update Initial Delay [ 5000] (D) 16 CC Redundancy Cnfged [ Y ] (Y/N)
2 Update Per-Node Delay [30000] (D) 17 MT3 Pass Through Relay [ Y ] (Y/N)
3 Comm-Break Test Delay [30000] (D) 18 Nw Pkt Tx Rate (pps) [ 500] (D)
4 Comm-Break Test Offset [ 10] (D) 19 Stats Memory (x 100KB) [ 130] (D)
5 Network Timeout Period [ 1700] (D) 20 Standby Update Timer [ 10] (D)
6 Network Inter-p Period [ 4000] (D) 21 Stby Updts Per Pass [ 150] (D)
7 NW Sliding Window Size [ 1] (D) 22 Gateway ID Timer [ 30] (D)
8 Num Normal Timeouts [ 7] (D) 23 GLCON Alloc Timer [ 30] (D)
9 Num Inter-p Timeouts [ 3] (D) 24 Comm Fail Delay [ 60] (D)
10 Num Satellite Timeouts [ 6] (D) 25 Nw Hdlr Timer (msec) [ 100] (D)
11 Num Blind Timeouts [ 4] (D) 26 CBUS Delay (msec) [ 20] (D)
12 Num CB Msg Timeouts [ 2] (D) 27 SNMP Event logging [ Y ] (Y/N)
13 Comm Fail Interval [10000] (D) 28 TFTP Grant Delay (sec) [ 1] (D)
14 Comm Fail Multiplier [ 3] (D) 29 TFTP ACK Timeout (sec) [ 10] (D)
15 Temperature Threshold [ 50] (D) 30 TFTP Write Retries [ 3] (D)
31 FRP Link Status Alarm [ Y ] (Y/N) 46 Modem polling timer [ 1] (D)
32 Job Lock Timeout [ 60] (D) 47 Verify CBA for non-FRP [ N ] (Y/N)
33 Max Via LCONs [20000] (D) 48 Send Abit early [ N ] (Y/N)
34 Max Blind Segment Size [ 3570] (D) 49 Abit Tmr Multiplier M [ 0] (D)
35 Max XmtMemBlks per NIB [ 3000] (D) 50 Abit Tmr Granularity N [ 3] (D)
36 Max Mem on Stby Q (%) [ 33] (D) 51 CommBrk Hop Weight [ 25] (D)
37 Trk Cell Rtng Restrict [ Y ] (Y/N) 52 CB Fail Penalty Hops [ 2] (D)
38 Stat Config Proc Cnt [ 1000] (D) 53 Dnld LanIP or NwIP [ Lan] (Lan/Nw)
39 Stat Config Proc Delay [ 2000] (D) 54 IP Relay gateway node [ 0] (D)
40 Enable Degraded Mode [ Y ] (Y/N) 55 Max LAN Window (sec) [ 60] (D)
41 Enable Rrt on Comm Fail [ N ] (Y/N) 56 Max LAN Packets/Window [18000] (D)
42 Auto Switch on Degrade [ Y ] (Y/N)
43 Max Degraded Aborts [ 100] (D)
44 Max Htls Rebuild Count [ 100] (D)
45 Htls Counter Reset Time[ 1000] (D)

```

This Command: `cnfnodeparm 16 N`

Next Command:

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.

**Step 9** Enter the `cnffwswinit <IP_addr_CWM_workstation>` command to configure the switch to receive software or firmware images from the CWM workstation.



Replace the `<IP_addr_CWM_workstation>` parameter with the IP address of the CWM machine that initiates a firmware or software download.



**Note** This is required if you are using a CWM workstation to send the download request to the switch.

The following example is shown for a Cisco BPX node:

```
This Command: cnffwswinit
```

```
Enter FW/SW Initiator SV+ IP addr(192.0.0.0):
```

#### Related Topics

- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Downloading Software and Firmware” section on page 10-12](#)
- [“Monitoring a Download Session on Cisco BPX and Cisco IGX Nodes” section on page 10-17](#)
- [“Downloading Switch Software or Firmware from the CWM Workstation to a Switch” section on page 10-18](#)
- [“Cisco IGX and Cisco BPX Conventions” section on page 10-19](#)
- [“Cisco MGX Conventions” section on page 10-19](#)
- [“Managing with the Image Download” section on page 10-20](#)
- [“Deleting Images” section on page 10-24](#)

## Monitoring a Download Session on Cisco BPX and Cisco IGX Nodes

The **dsprevs** (software) command and **dspfwrev** (firmware) command 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 **dsprevs** command or **dspfwrev** command to see when downloading of the software or firmware is complete.

#### Related Topics

- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Downloading Software and Firmware” section on page 10-12](#)
- [“Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware” section on page 10-14](#)
- [“Downloading Switch Software or Firmware from the CWM Workstation to a Switch” section on page 10-18](#)
- [“Cisco IGX and Cisco BPX Conventions” section on page 10-19](#)
- [“Cisco MGX Conventions” section on page 10-19](#)
- [“Managing with the Image Download” section on page 10-20](#)
- [“Deleting Images” section on page 10-24](#)

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

To download images to a Cisco MGX node, complete the following steps:

- 
- Step 1** To establish a telnet session with the node:
- Right-click a node and choose **Administration > Telnet**.
  - Select a node from the Hierarchical Tree and choose **Tools > Administration > Telnet**.
- Step 2** From the Telnet window:
- Enter **cd C:/FW** command to change to the node directory to verify the software and firmware images are present on the node for any particular card.
  - Enter the **cp** command to copy the images to one of the following CWM workstation directories:
    - Cisco IGX or Cisco BPX images: /usr/users/svplus/images/ipxbpx directory
    - For Cisco MGX images: /usr/users/svplus/images/mgx directory
- By using a workstation with FTP client software, you can also transfer the switch images to the switch directory.
- Step 3** Launch the CWM desktop. For more information about launching the CWM desktop, see [Chapter 2, “Getting Started with Cisco WAN Manager.”](#)
- Step 4** Login as a user with All access privileges for Topology. The CWM Launch Center is displayed. You can use any CWM application window to select the node for downloading the switch software and firmware.
- Step 5** Click the node icon in the Network Monitor window where you want to download the switch software and firmware images.
- Step 6** Choose **Tools > Administration > Image Download** to display the Image DownLoader window (see [Figure 10-4](#)).
- The Image DownLoader window displays a list of the software that is loaded on the CWM workstation in the /usr/users/svplus/images/ directory for the selected node type.
- Step 7** Select the image you want to download.
- Step 8** Click **Download**. Once the download commences, a message appears in the **Results** pane.
- Step 9** Once the download is finished, complete the following steps to verify that the downloaded image is present:
- Establish a telnet session to the node.
  - Display the contents of the C:/FW directory.




---

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

---

### Related Topics

- [“Managing with the Configuration Save and Restore Utility” section on page 10-2](#)
- [“Downloading Software and Firmware” section on page 10-12](#)
- [“Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware” section on page 10-14](#)

- [“Monitoring a Download Session on Cisco BPX and Cisco IGX Nodes”](#) section on page 10-17
- [“Cisco IGX and Cisco BPX Conventions”](#) section on page 10-19
- [“Cisco MGX Conventions”](#) section on page 10-19
- [“Managing with the Image Download”](#) section on page 10-20
- [“Deleting Images”](#) section on page 10-24

## Image Filename Conventions

The naming conventions for the Cisco IGX, Cisco BPX, and Cisco MGX nodes are used for software images.

### Related Topics

- [“Cisco IGX and Cisco BPX Conventions”](#) section on page 10-19
- [“Cisco MGX Conventions”](#) section on page 10-19
- [“Deleting Images”](#) section on page 10-24

## Cisco IGX and Cisco BPX Conventions

Cisco IGX and Cisco BPX software images have the following format, for example, Release 9.2.0:

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

Cisco IGX and Cisco BPX firmware images have the following format:

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

### Related Topics

- [“Image Filename Conventions”](#) section on page 10-19
- [“Cisco MGX Conventions”](#) section on page 10-19
- [“Deleting Images”](#) section on page 10-24

## Cisco MGX Conventions

The following naming convention is used for software images:

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

Replace *<cardtype>* with the name of the card.

*<A>*, *<B>*, *<C>*, and *<D>* is a string that contains any combination of numerals and characters. *<A>\_<B>\_<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.

**Related Topics**

- “Image Filename Conventions” section on page 10-19
- “Cisco IGX and Cisco BPX Conventions” section on page 10-19
- “Deleting Images” section on page 10-24

## Managing with the Image Download

These tasks are used to manage the Image Download:

- [Launching the Image Download](#)
- [Image Download Access Tabs](#)
- [Processing the Downloaded Image](#)

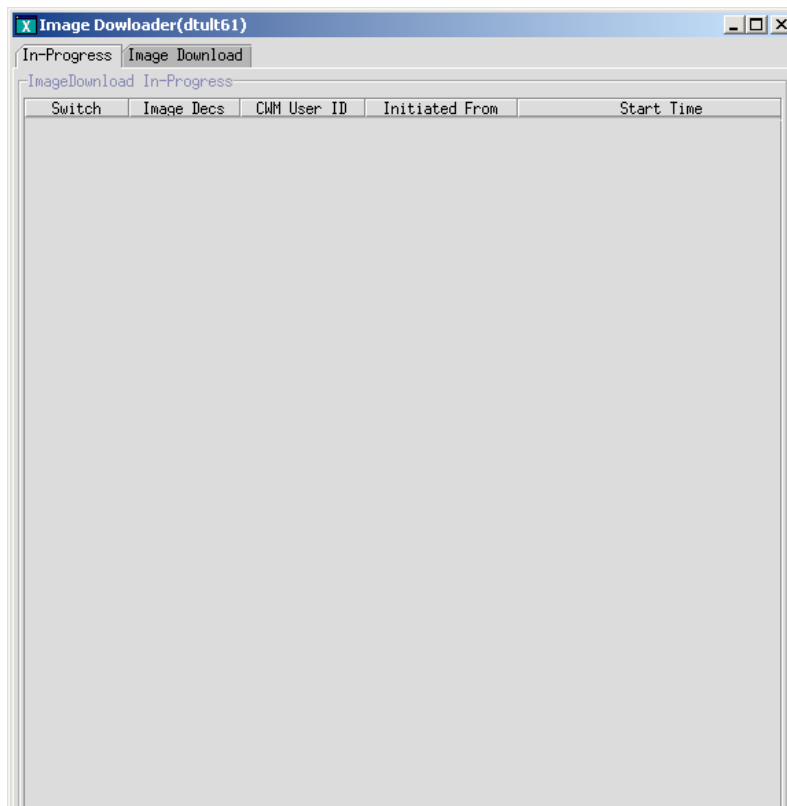
### Launching the Image Download

To launch the Image Download application, you can:

- Choose **Tools > Administration > Image Download** from any application.
- Right-click within any application and choose **Administration > Image Download**.

Figure 10-4 displays the Image Download window.

**Figure 10-4** *In-Progress View*



**Note**

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

**Related Topics**

- “Managing with the Image Download” section on page 10-20
- “Image Download Access Tabs” section on page 10-21
- “Processing the Downloaded Image” section on page 10-21
- “Deleting Images” section on page 10-24

## Image Download Access Tabs

Table 10-2 describes the access tabs that you need for the image download process.

**Table 10-2 Image Download Access Tabs**

Access Tabs	Task
In-Progress	Contains information about the on-going image download processes
Image Download	Downloads the chosen image(s) to the chosen switch(s).

**Related Topics**

- “Managing with the Image Download” section on page 10-20
- “Launching the Image Download” section on page 10-20
- “Processing the Downloaded Image” section on page 10-21

## Processing the Downloaded Image

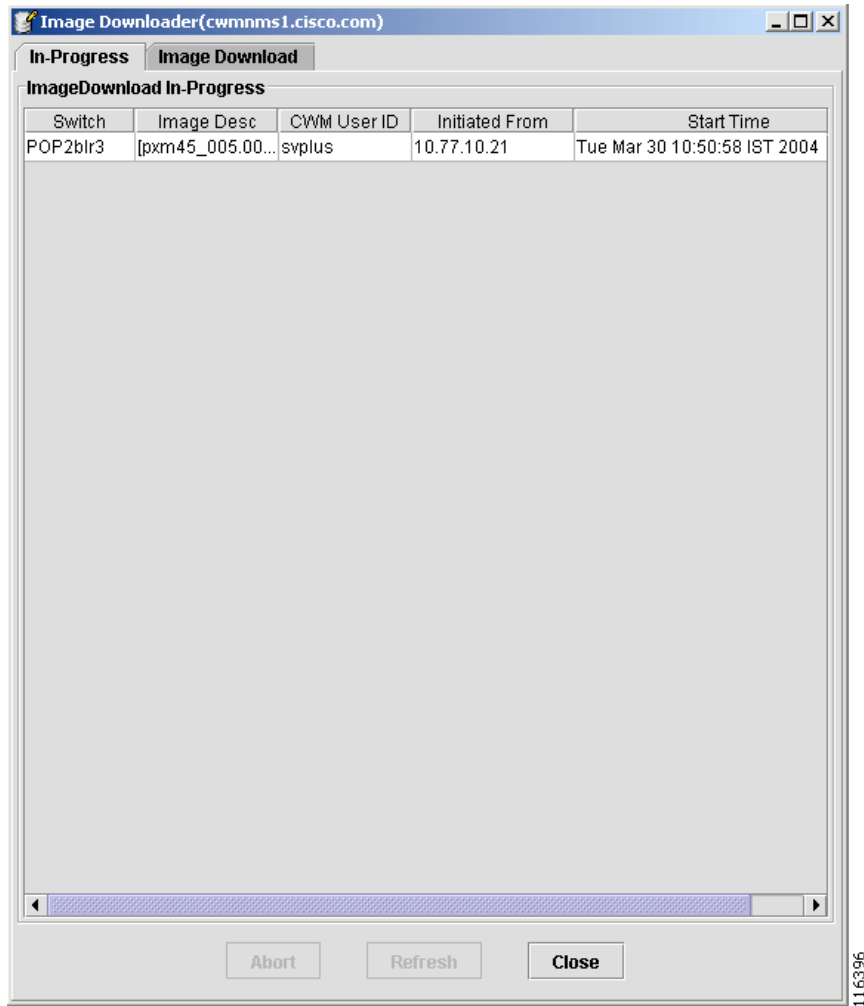
The downloaded image process is used to transfer the configuration data file from CWM workstation to the switch.

**Procedure**

To process the downloaded image, complete the following procedure:

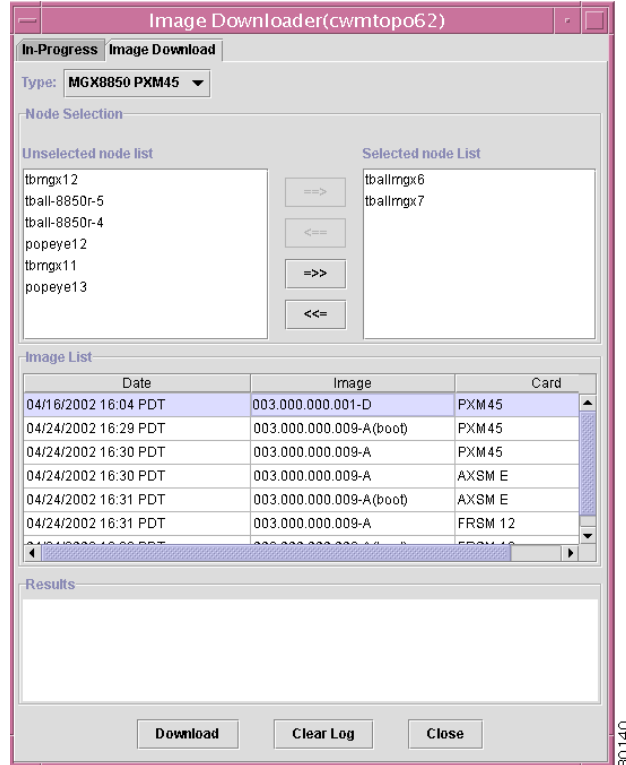
- 
- Step 1** Click the **In-Progress** tab to view the image download already in progress (see [Figure 10-5](#)).

Figure 10-5 Image Download In-Progress



**Step 2** Click the **Image Download** tab to display the Image Download window (see [Figure 10-6](#)).

Figure 10-6 Image Download View



- Step 3** Choose the node from the **Type** drop-down arrow that lists all of the available nodes for the selected platform.
- Step 4** Click ==> to move the chosen item(s) from the **Unselected node list** pane to the **Selected node list** pane. You can:
- Click <== to deselect the highlighted item(s) from the **Selected node list** pane back to the **Unselected node list** pane.
  - Click ==>> to select **ALL** the items from the **Unselected node list** pane to the **Selected node list** pane.
  - Click <<== to deselect **ALL** the items from the **Selected node list** pane back to the **Unselected node list** pane.
- Step 5** Choose the available image(s) from the **Image List** area.
- Step 6** Click **Download**.
- The chosen image(s) are downloaded to the switch node(s) that are listed in the Selected node list pane. The result(s) are displayed at the **Results** area.



**Note** The message confirms only that the download request is received at the target switch; it does not indicate that the process is continuing properly.

- Step 7** Click **Clear Log** to clear the message(s) in the Result area.

**Related Topics**

- [“Managing with the Image Download” section on page 10-20](#)
- [“Launching the Image Download” section on page 10-20](#)
- [“Image Download Access Tabs” section on page 10-21](#)
- [“Deleting Images” section on page 10-24](#)

## Deleting Images

You can delete unwanted or obsolete software and firmware images from CWM.

Software and firmware images are deleted from the network management station for the following reasons:

- After the network is upgraded
- After the network is determined to be stable
- If a corrupt version of software or firmware is detected

**Procedure**

If the CWM disk space has reached capacity, complete the following procedure:

---

**Step 1** Right-click the node within any CWM application window and choose **Administration > Telnet** to telnet to the switch. A terminal window is displayed.

**Step 2** When you establish a CLI session, you must:

- Enter the *username* at the prompt.
- Enter the *password* at the prompt.

**Step 3** Enter the **su** command to become the superuser. The following example shows the login to the *root* account:

```
tballraker18% su root
Password:
#
```

**Step 4** Enter the **cd** command to change the directory to `/usr/users/svplus/images/ipxbpx` as shown in the following example:

```
# cd /usr/users/svplus/images/ipxbpx
#
```

**Step 5** Enter the **rm** command to remove the filename.

The following example shows the removal of the firmware revision file:

```
# rm -r 9103B.*
#
```

---

**Related Topics**

- [“Saving and Restoring Configurations” section on page 10-1](#)
- [“Downloading Software and Firmware” section on page 10-12](#)



- [“Locating Switch Images for Downloading” section on page 10-13](#)
- [“Preparing the Cisco BPX and Cisco IGX Switch to Download Software or Firmware” section on page 10-14](#)

