



## Getting Started with CMS

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This chapter describes the Cluster Management Suite (CMS) software:

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**Note**

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For system requirements and for browser and Java plug-in configurations, refer to the release notes. For field-level descriptions of the CMS windows and for procedures for using CMS, refer to the online help.

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**Note**

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This chapter describes the CMS interface used on the Catalyst 3550 switches. Refer to the appropriate switch documentation for descriptions of the web-based management software used on other Catalyst desktop switches, such as the Catalyst 2950, Catalyst 3500 XL, Catalyst 2900 XL, Catalyst 1900, and Catalyst 2820 switches.

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# Features

CMS provides these features (Figure 3-1) for managing switch clusters and individual switches from Web browsers such as Netscape Communicator or Microsoft Internet Explorer:

- Two views of your network that can be displayed at the same time:
  - The Front Panel view displays the front-panel image of a specific switch or the front-panel images of all switches in a cluster. From this view, you can select multiple ports or multiple switches and configure them with the same settings.

When CMS is launched from a command switch, the Front Panel view displays the front-panel images of all switches in the cluster. When CMS is launched from a noncommand switch, the Front Panel view displays only the front panel of the specific switch.



## Note

CMS from a noncommand switch is referred to as *Device Manager* (also referred to as *Switch Manager*). Device Manager is for configuring an individual switch. When you select Device Manager for a specific switch in the cluster, you launch a separate CMS session. The Device Manager interface can vary between the Catalyst switch platforms.

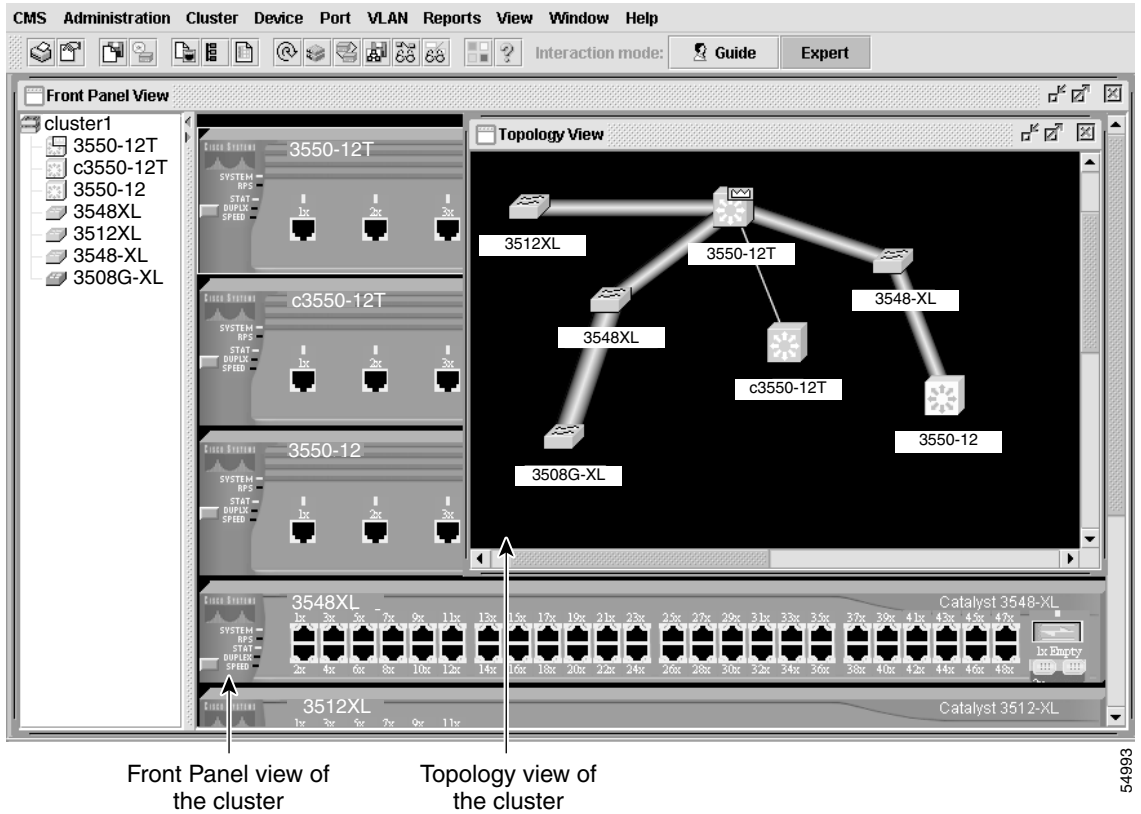
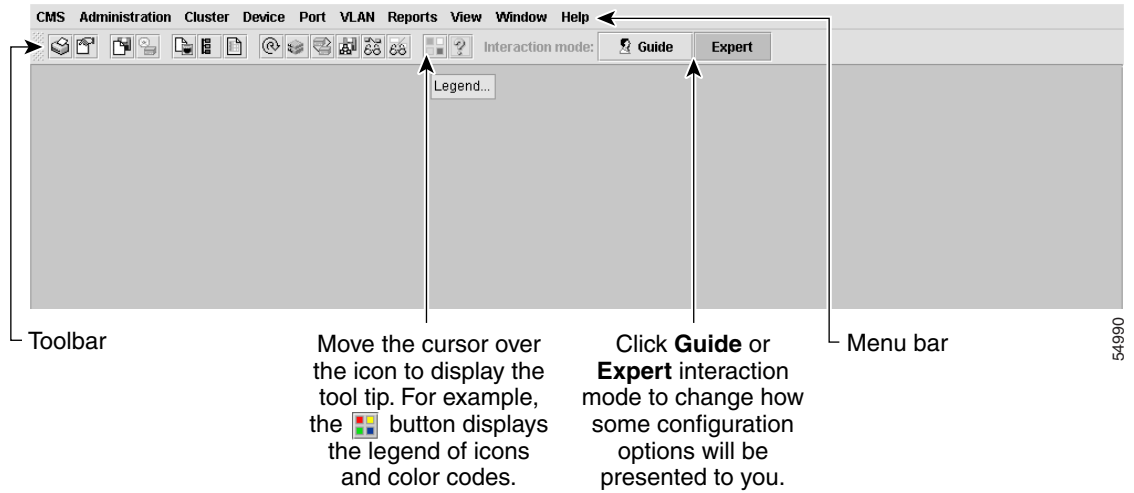
- The Topology view displays a network map that uses icons that represent switch clusters, cluster members, cluster candidates, edge devices, and link types. From this view, you can select multiple switches and configure them to run with the same settings. You can also display link information in the form of link reports and link graphs.
 

This view is available only when CMS is launched from a command switch.
- Menus and toolbar to access configuration and management options:
  - The menu bar provides the complete list of options for managing a single switch and switch clusters.
  - The toolbar provides buttons for commonly used, switch- and cluster-level configuration options, and information windows such as legends and online help.
  - The port-level pop-up menu, in the Front Panel view, provides options specific for configuring and monitoring switch ports.
  - The device-level pop-up menu, in either Front Panel or Topology view, provides switch- and cluster-level configuration and monitoring options.
  - The candidate, member, and link pop-up menus provide options for configuring and monitoring devices and links in the Topology view.

The toolbar and pop-up menus provide quick ways to access frequently used menu bar options.

- Tools to simplify configuration tasks:
  - Interactive modes—guide mode and expert mode—that control the presentation of some complex configuration options
  - Wizards that require minimal information from you for QoS and IP multicast configuration
  - Comprehensive online help that provides high-level concepts, field-level descriptions of the window, and procedures for performing tasks from the window
- Consistent set of GUI components (such as tabs, buttons, drop-down lists, tables, and so on) for a consistent approach to setting configuration parameters

Figure 3-1 CMS Features



## Front Panel View

The Front Panel view is the best tool for configuring and monitoring a switch or the switches in a cluster. When CMS is launched from a noncommand switch, the Front Panel view displays only the front panel of the specific switch (Figure 3-2). When CMS is launched from a command switch, the Front Panel view displays the front-panel images of all switches in the cluster (Figure 3-3).

Figure 3-2 Front Panel View from a Noncommand Switch

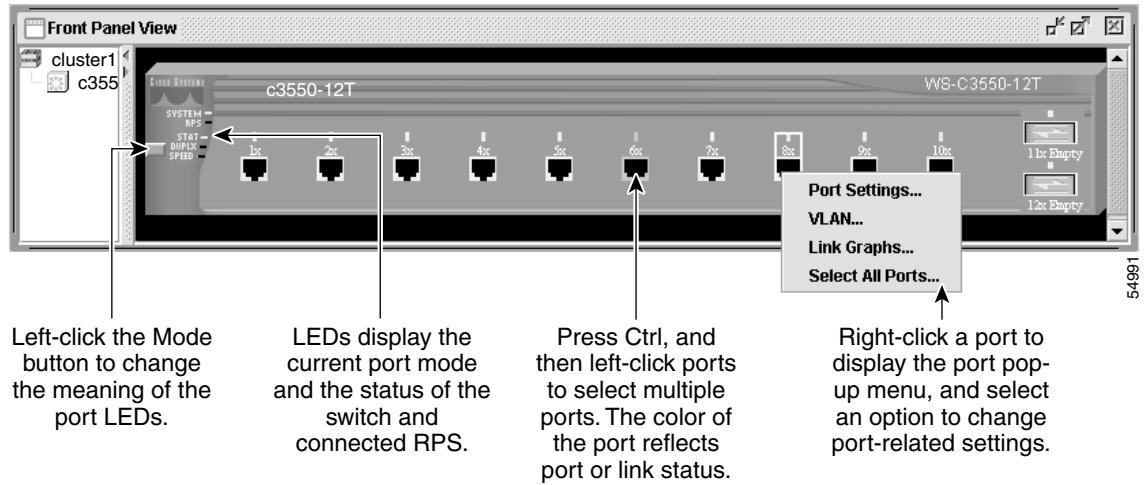
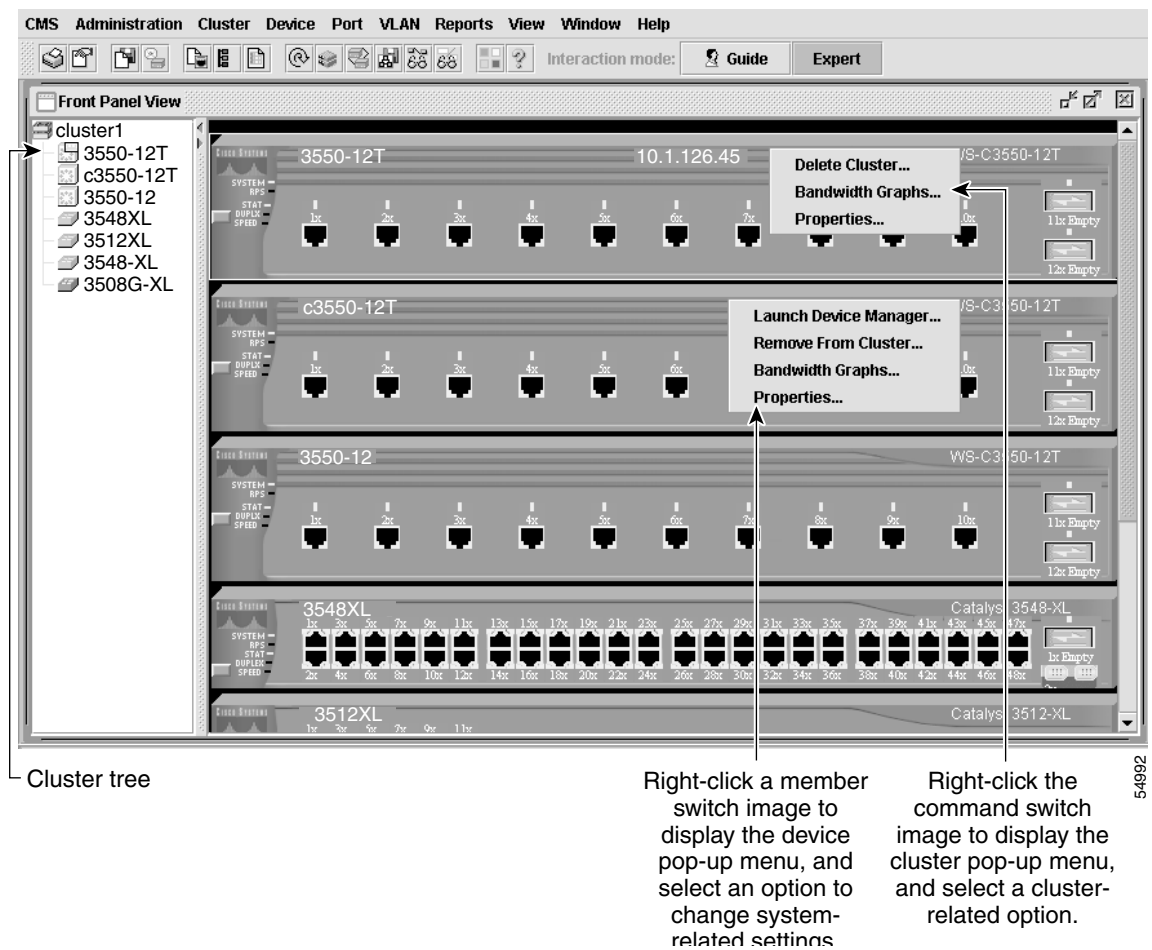


Figure 3-3 Front Panel View from a Command Switch



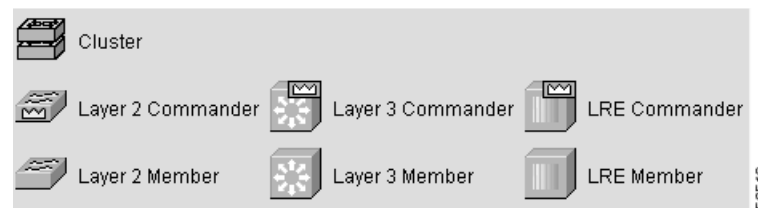
## Cluster Tree

The cluster tree appears in the left frame of the Front Panel view and shows the name of the cluster and a list of its member switches (Figure 3-3). The sequence of the cluster-tree icons (Figure 3-4) mirror the sequence of the front-panel images.

If you want to configure switch- or cluster-level settings on one or more switches, select the appropriate front-panel images. To select a front-panel image, either click the cluster-tree icon or click the corresponding front-panel image. The front-panel image is then highlighted. To select multiple front-panel images, press the **Ctrl** key, and click the cluster-tree icons or the front-panel images.

If the cluster has many switches, you might need to scroll down the window to display the rest of front-panel images. Instead of scrolling, you can also click an icon in the cluster tree to select the corresponding front-panel image and display it.

**Figure 3-4 Cluster-Tree Icons**



**Note**

Long-Reach Ethernet (LRE) is the technology used in the Catalyst 2900 LRE XL switches. Refer to the Catalyst 2900 XL and Catalyst 3500 XL documentation set about these switches and the LRE technology.

The cluster tree also displays the status of the member switches (Table 3-1). For example, a yellow switch icon in the cluster tree means that particular switch is overheating or that the fan is broken.

**Table 3-1 Cluster Tree Icon Colors**

Color	Device Status
Green	Switch is operating normally.
Yellow	A system fault exists, such as the internal fan is not operating.
Red	Switch is not powered up, has lost power, or the command switch is unable to communicate with the member switch.

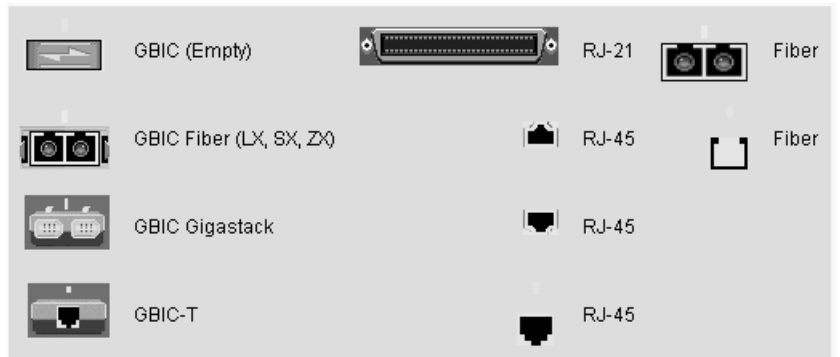
Complete descriptions of the icons and icon colors are available by selecting **Help > Legend**.

## Front-Panel Images

Use the front-panel images for visual switch management from a remote station. The LEDs on these images are updated at user-configurable polling intervals, making them as useful as the LEDs on the actual switches themselves. To change the polling intervals, select **CMS > Preferences**.

Figure 3-5 shows the port icons as they appear in the front-panel images.

**Figure 3-5** Port Icons



The following sections provide complete descriptions of the Catalyst 3550 LED images. Similar descriptions of these LEDs are provided in the *Catalyst 3550 Multilayer Switch Hardware Installation Guide*.

## System LED

The system LED shows whether the system is receiving power and functioning properly. Table 3-2 lists the LED colors and their meanings.

**Table 3-2** System LED

Color	System Status
Cyan (off)	System is not powered up.
Green	System is operating normally.
Amber	System is receiving power but is not functioning properly.

## Redundant Power System LED

The Redundant Power System (RPS) LED shows the RPS status. [Table 3-3](#) lists the LED colors and their meanings.



### Note

[Table 3-3](#) describes the RPS LED colors on the Catalyst 3550 switches. These switches use the Cisco RPS 300 (model PWR300-AC-RPS-N1). Other Catalyst switches use the Cisco RPS 600 (model PWR600-AC-RPS). Refer to the appropriate switch documentation for RPS descriptions specific for the switch.

**Table 3-3 RPS LED**

Color	RPS Status
Black (off)	RPS is off or is not installed.
Green	RPS is connected and operational.
Blinking green	RPS is backing up another switch in the stack.
Amber	RPS is connected but not functioning. These conditions could exist: <ul style="list-style-type: none"> <li>• The RPS could be in standby mode. To put the RPS in Active mode, press the Standby/Active button on the RPS, and the LED should turn green. If it does not, one of these other two conditions could exist.</li> <li>• One of the RPS power supplies could be down. Contact Cisco Systems.</li> <li>• The RPS fan could have failed. Contact Cisco Systems.</li> </ul>
Blinking amber	Internal power supply of the switch is down, and redundancy is lost. The switch is a operating on the RPS.

## Port Modes and LEDs

The port modes (Table 3-4) determine the type of information displayed through the port LEDs. When you change port modes, the meaning of the port LED colors also changes.



### Note

The bandwidth utilization mode (UTL LED) is not displayed on the front-panel images. Select **Reports > Bandwidth Graphs** to display the total bandwidth in use by the switch. Refer to the switch hardware installation guide for information about using the UTL LED.

To select or change a mode, click the Mode button until the desired mode LED is green.

**Table 3-4 Port Modes**

Mode LED	Description
STAT	Link status of the ports. Default mode.
DUPLX	Duplex setting on the ports.
SPEED	Speed setting on the ports.

Table 3-5 describes the meaning of the port LED colors after you change the port mode.

**Table 3-5 Port LEDs**

Port Mode	Port LED Color	Description
STAT (port status)	Cyan (off)	No link.
	Green	Link present.
	Amber	Link fault. Error frames can affect connectivity, and errors such as excessive collisions, CRC errors, and alignment and jabber errors are monitored for a link-fault indication.  Port is not forwarding. Port was disabled by management, by an address violation, or was blocked by Spanning Tree Protocol (STP).  <b>Note</b> After a port is reconfigured, the port LED can remain amber for up to 30 seconds as STP checks the switch for possible loops.
	Brown	No link and port is administratively shut down.
DUPLX (port duplex mode)	Cyan (off)	Port is operating in half-duplex mode.
	Green	Port is operating in full-duplex mode.
SPEED (port speed)	Cyan (off)	Port is operating at 10 Mbps or no link.
	Green	Port is operating at 100 Mbps (10/100 ports), 155 Mbps (ATM ports), or 1000 Mbps (fixed Gigabit port).
	Blinking green	Port is operating at 1000 Mbps (10/100/1000 ports).

# Topology View

The Topology view is the tool through which connected switch clusters, cluster candidates, and neighboring edge devices are displayed. Also displayed is link information between the devices in the topology. From the topology, you can:

- Double-click a cluster icon (double-switch icon) to display cluster members.
- Add and remove cluster members.

The Topology view provides two levels of detail of the network topology:

- In the cluster view (Figure 3-6), a specific switch cluster is shown in detail, where switches and cluster-capable devices connected to the command switch display as cluster members or candidates.
- In the neighbors view (Figure 3-7), clusters are collapsed and represented as double-switch icons with links to candidate switches, other switch clusters, and edge devices.

You can toggle between the cluster and neighbors view by selecting **View > Toggle Topology Neighbors**.

Figure 3-6 Topology View of a Cluster

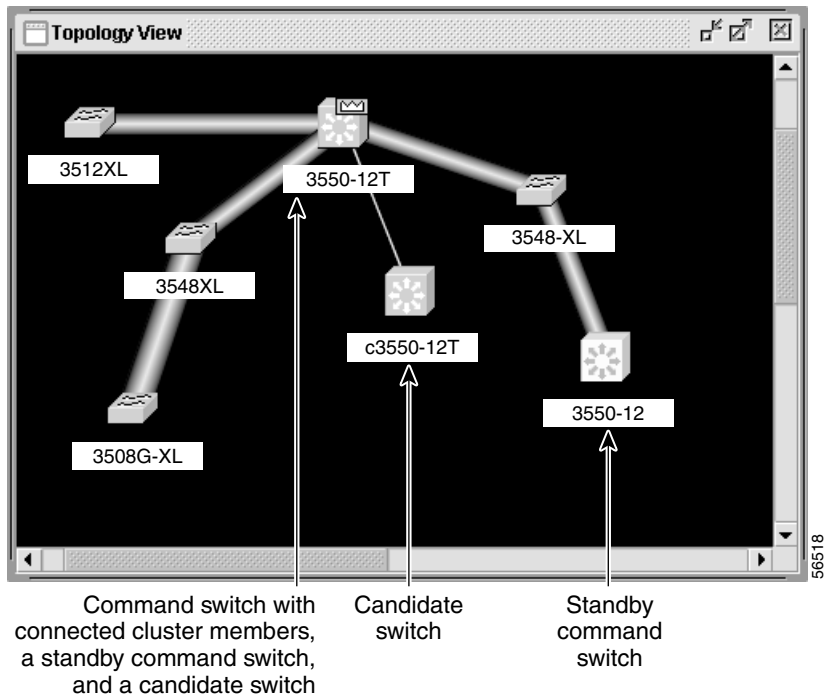
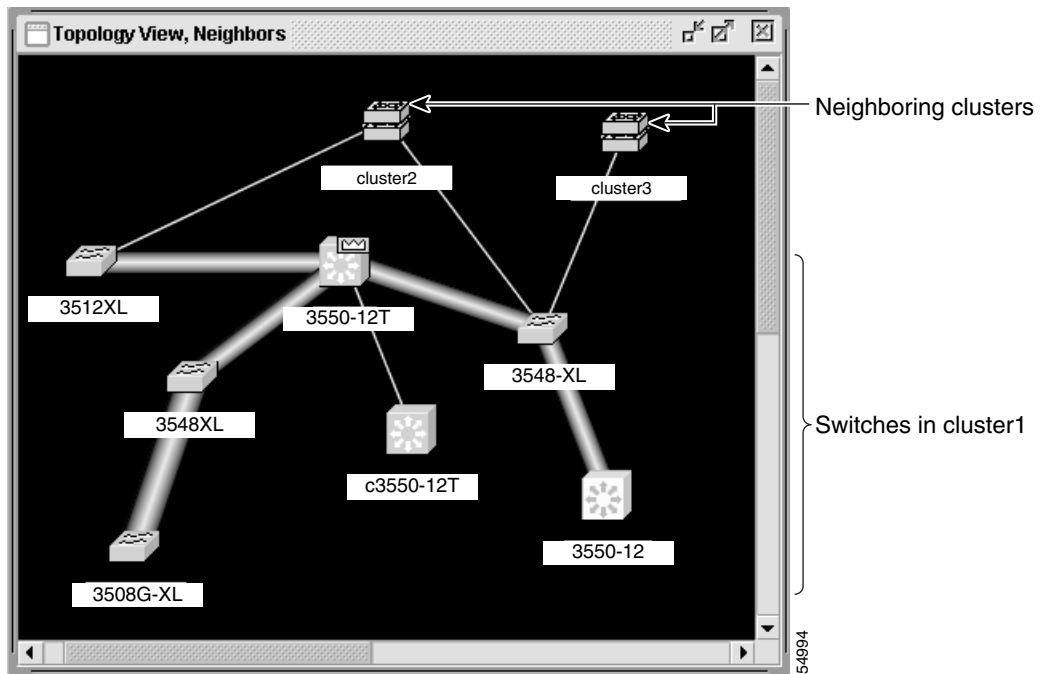


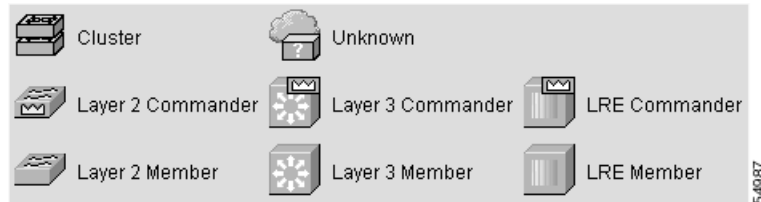
Figure 3-7 Topology View of Neighboring Devices



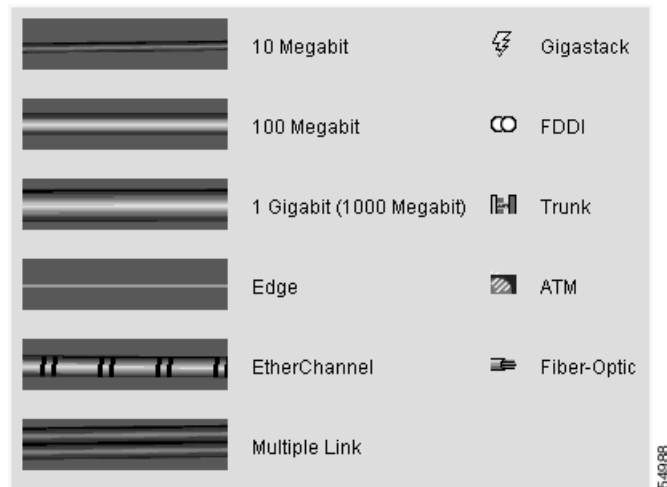
## Topology Icons

The Topology view uses the same set of device icons (Figure 3-8) used in the Front Panel view cluster tree. It also uses an unknown device icon and a set of link icons (Figure 3-9) to show the link type and status between two devices.

**Figure 3-8 Topology-View Device Icons**



**Figure 3-9 Topology-View Link Icons**



The Topology view also displays the status of the devices and links (Table 3-6 and Table 3-7). For example, a red link icon means that the connection is blocked.

**Table 3-6 Device Icon Colors**

Icon Color	Color Meaning
Green	Device is up.
Yellow	Fault indication.
Red	Device is down.

**Table 3-7 Link Icon Colors**

Link Color	Color Meaning
Green	Active link
Red	Blocked link

## Device Labels

The Topology view displays device information by using *device labels*, which can be the cluster and switch names or the switch MAC addresses and the link type between the devices. You can toggle the label display by selecting **View > Toggle Topology Labels**. The color of a device label shows the cluster membership of the device (Table 3-8).

**Table 3-8 Device Label Colors**

Label Color	Color Meaning
Green	A cluster member, either a member switch or the command switch.
Cyan	A candidate switch that is qualified to become a cluster member.
Gray	A standby command switch.
Yellow	An unknown edge device that cannot become a cluster member.

# Menus and Toolbar

The configuration and monitoring options for configuring switches and switch clusters are available from the menu bar, toolbar, and the Front-Panel and Topology view pop-up menus.

## Menu Bar

The menu bar provides the complete list of options for managing a single switch and switch cluster. The menu bar is the same whether the Front-Panel or Topology view is displayed or not.

However, options displayed from the menu bar can vary:

- When you launch CMS from a command switch, the menu bar provides options for all features supported by the cluster members. For example, features such as CGMP, LRE profile configuration, port security, and Switch Port Analyzer (SPAN) appear in the menu bar only if the cluster has the non-Catalyst 3550 switches that support these features. If the cluster has only Catalyst 3550 switches, these features would not appear. (Refer to the release notes for the Catalyst switches that can be part of a switch cluster with the Catalyst 3550 switches.)

If you launched CMS from a specific switch, the menu bar displays the features supported only by that switch.

**Note**

[Table 3-9](#) describes the menu bar options from a Catalyst 3550 command switch and when the cluster only contains Catalyst 3550 member switches. Options available only from a Catalyst 3550 member or standalone switch are specifically identified. Options that support guide mode and wizards are also specifically identified.

- Cluster management options are available only from a CMS session launched from a command switch. However, the option for enabling a command switch is only available from a CMS session launched from a command-capable switch.

Table 3-9 Menu Bar

Menu Bar Options	Task
<b>CMS</b>	
Page Setup	Set default document printer properties to be used when printing from CMS.
Print Preview	View the way the CMS window or help file appears when printed.
Print	Print a CMS window or help file.
Guide Mode/Expert Mode	Select which interaction mode to use when you select a configuration option.
Preferences	Set CMS display properties, such as polling intervals, the default views to open at startup, and the color of administratively shutdown ports.
<b>Administration</b>	
IP Addresses	Configure IP information for a switch.
SNMP	Enable and disable Simple Network Management Protocol (SNMP), enter community strings, and configure end stations as trap managers.
System Time	Configure the system time or configure the Network Time Protocol (NTP).
HTTP Port	Configure the HTTP port.
Console Baud Rate	Change the baud rate for the switch console port.
MAC Addresses	Enter dynamic, secure, and static addresses into a switch address table. You can also define the forwarding behavior of static addresses.
ARP	Display the device Address Resolution Protocol (ARP) table, and configure the ARP cache timeout setting.
Save Configuration	Save the configuration for the cluster or a switch.
Software Upgrade	Upgrade the software for the cluster or a switch.
System Reload	Reboot the software on a switch.
<b>Cluster</b>	
Create Cluster (from a Device Manager session on a command-capable switch that does not yet belong to a cluster)	Designate a command switch, and name a cluster.
Delete Cluster	Delete a cluster.
Add to Cluster	Add a candidate to a cluster.
Remove from Cluster	Remove a member from a cluster.
Standby Commanders	Create an Hot Standby Router Protocol (HSRP) standby group to provide command-switch redundancy.
Hop Count	Enter the number of hops away that a command switch looks for members.

Table 3-9 Menu Bar (continued)

Menu Bar Options	Task
<b>Device</b>	
Launch Device Manager	Launch Device Manager for a specific switch.
Host Name	Change the host name of a switch.
STP	Display and configure STP parameters for a switch.
IGMP Snooping	Enable and disable Internet Group Management Protocol (IGMP) snooping and IGMP Immediate-Leave processing on the switch. Join or leave multicast groups and configure multicast routers.
ACL (guide mode available)	Create and maintain access control lists (ACLs), and attach ACLs to specific ports.
QoS	Display submenu options to enable and disable quality of service (QoS) and to configure or modify these parameters: <ul style="list-style-type: none"> <li>• Trust settings</li> <li>• Queue configuration on ports</li> <li>• QoS maps</li> <li>• QoS classes (guide mode available)</li> <li>• QoS aggregate policers (guide mode available)</li> <li>• QoS policies (guide mode available)</li> <li>• QoS statistics</li> </ul>
QoS Wizard	Optimize a selected device for transmitting video traffic.
IP Routing (guide mode available)	Display submenu options to configure or modify these parameters: <ul style="list-style-type: none"> <li>• IP routing protocols</li> <li>• Static routing</li> <li>• Equal- and unequal-cost routing</li> </ul>
IP Multicast Wizard	Provide minimum information to configure IP multicast routing on a device so that it can forward multicast packets as a part of a multicast tree.
IP Multicast Routing	Enable and configure multicast routing.
Router Redundancy (guide mode available)	Add a switch to or remove a switch from an HSRP group.
Fallback Bridging	Create a fallback bridging group, modify a group, delete a group, or view its details.

Table 3-9 Menu Bar (continued)

Menu Bar Options	Task
<b>Port</b>	
Port Settings	Display and configure port parameters on a switch.
Port Search	Search for a port through its description.
EtherChannels	Group ports into logical units for high-speed links between switches.
Protected Port	Configure a port to prevent it from receiving bridged traffic from another port on the same switch.
Flooding Control	Block the normal flooding of unicast and multicast packets, and enable the switch to block packet storms.
<b>VLAN</b>	
VLAN	Display VLAN membership, assign ports to VLANs, and configure Inter-Switch Link (ISL) and 802.1Q trunks. Display and configure the VLAN Trunk Protocol (VTP) for interswitch VLAN membership.
VMPS	Configure the VLAN Membership Policy Server (VMPS).
VLAN Maps	Create a VLAN map, and attach it to a VLAN.
<b>Reports</b>	
Inventory	Display the device type, software version, IP address, and other information about a switch.
Port Statistics	Display port statistics.
Bandwidth Graphs	Display graphs that plot the total bandwidth in use by the switch.
Link Graphs	Display a graph showing the bandwidth being used for the selected link.
Link Reports	Display the link report for two connected devices. If one device is an unknown device or candidate, only the cluster member side of the link displays.
QoS Reports	Display QoS reports of incoming or outgoing traffic for specific device interfaces.
QoS Graphs	Display QoS graphs of incoming or outgoing traffic for specific device interfaces.
Router Reports	Display reports with an excerpt from the routing table on the switch and the attributes of the HSRP group in which the switch participates.
Fallback Bridging	Display a report of all fallback bridging groups and their attributes.

Table 3-9 Menu Bar (continued)

Menu Bar Options	Task
<b>View</b>	
<b>Note</b> The topology and toggle options are not available from the Device Manager menu bar.	
Refresh	Update the views with the latest status.
Front Panel	Display the Front Panel view.
Arrange Front Panel	Rearrange the order in which switches appear in the Front Panel view.
Topology	Display the Topology view.
Automatic Topology Layout	Request CMS to rearrange the topology layout.
Save Topology Layout	Save to Flash memory the presentation of the cluster icons that you arranged in the Topology view.
Toggle Topology Neighbors	Toggle between showing a high-level topology view or a cluster-specific topology view.
Toggle Topology Labels	Toggle the icon (device) labels to display switch names and IP or MAC addresses and connected port numbers.
<b>Window</b>	List the open windows in your CMS session.
<b>Help</b>	
Overview	Provide an overview of the CMS interface.
What's New	Provide a description of the new CMS features.
Help For Active Window	Display the help for the active open window. This is the same as clicking <b>Help</b> from the active window.
Contents	List all of the available online help topics.
Legend	Display the legend that describes the icons, labels, and links.
About	Display the CMS version number.

## Toolbar

The toolbar buttons display commonly used switch- and cluster-level configuration options and information windows such as legends and online help. Hover the cursor over an icon to display the feature. [Table 3-10](#) describes, from left to right on the toolbar, the windows.


**Note**

The topology and toggle options are not available from the Device Manager menu bar.

**Table 3-10** *Toolbar Buttons*

Toolbar Option	Task
Print	Print a CMS window or help file.
Preferences	Set CMS display properties, such as polling intervals, the views to open at CMS startup, and the color of administratively shutdown ports.
Save Configuration	Save the configuration for the cluster or a switch.
Software Upgrade	Upgrade the software for the cluster or a switch.
Port Settings	Display and configure port parameters on a switch.
VLAN	Display VLAN membership, assign ports to VLANs, and configure ISL and 802.1Q trunks.
Inventory	Display the device type, software version, IP address, and other information about a switch.
Refresh	Update the views with the latest status.
Front Panel	Display the Front Panel view.
Topology	Display the Topology view.
Save Topology Layout	Save to Flash memory the presentation of the cluster icons that you arranged.
Toggle Topology Neighbors	Toggle between showing a high-level topology view or a cluster-specific topology view.
Toggle Topology Labels	Toggle the icon (device) labels to display switch names and IP or MAC addresses and connected port numbers.
Legend	Display the legend that describes the icons, labels, and links.
Help For Active Window	Display the help for the active open window. This is the same as clicking <b>Help</b> from the active window.

## Front Panel View Pop-Up Menus

The following pop-up menus are available in the Front Panel view.

### Port Pop-Up Menu

You can display all port configuration windows from the **Port** menu on the menu bar, or you can display commonly used port configuration windows from the port pop-up menu (Table 3-11).

To display the port pop-up menu, click a specific port image, and right-click.

**Table 3-11 Port Pop-Up Menu**

Pop-Up Menu Option	Task
Port Settings	Display and configure port settings.
VLAN	Define the VLAN mode for a port or ports and add ports to VLANs. Not available for the Catalyst 1900 and Catalyst 2820 switches.
Link Graphs	Display a graph showing the bandwidth being used for the selected link.
Select All Ports	Select all ports on the switch for global configuration.

### Device Pop-Up Menu

You can display all switch- and cluster-level configuration windows from the menu bar, or you can display commonly used configuration windows from the device pop-up menu (Table 3-12).

To display the device pop-up menu, click the switch icon from the cluster tree or the front-panel image itself, and right-click.



**Note**

The device pop-up menu for a command switch is different from the member switch device pop-up menu.

**Table 3-12 Device Pop-Up Menu**

Pop-Up Menu Option	Task
Delete Cluster (from a command switch)	Delete a cluster.
Launch Device Manager (from a member switch)	Launch Device Manager for the switch.
Remove from Cluster (from a member switch)	Remove a member from a cluster.
Bandwidth Graphs	Display graphs that plot the total bandwidth in use by the switch.
Properties	Display information about the device and port on either end of the link and the state of the link.

## Topology View Pop-Up Menus

The following pop-up menus are available in the Topology view.

### Link Pop-Up Menu

You can display reports and graphs for a specific link displayed in the Topology view (Table 3-13). To display the link pop-up menu, click the link icon, and right-click.

If multiple links are configured between two devices, when you click the link icon and right-click, the Multilink Decomposer window appears. Click the link icon in this window, and right-click to display the link pop-up menu specific for that link.

**Table 3-13 Link Pop-Up Menu**

Pop-Up Menu Option	Task
Link Report	Display the link report for two connected devices. If one device is an unknown device or candidate, only the cluster member side of the link displays.
Link Graph	Display a graph showing the bandwidth being used for the selected link.
Properties	Display information about the device and port on either end of the link and the state of the link.

### Device Pop-Up Menus

You can display a device pop-up menu specific to the selected device icon in the Topology view:

- Cluster (Table 3-14)
- Command switch (Table 3-15)
- Member switch (Table 3-16)
- Candidate switch without an IP address (Table 3-17)
- Candidate switch with an IP address (Table 3-18)
- Neighboring device (Table 3-19)

To display a device pop-up menu, click an icon, and right-click.

**Table 3-14 Device Pop-Up Menu of a Cluster Icon**

Pop-Up Menu Option	Task
Expand (cluster)	Toggle between showing a high-level topology view or a cluster-specific topology view.
Properties	Display information about the device and port on either end of the link and the state of the link.

**Table 3-15 Device Pop-Up Menu of a Command-Switch Icon**

Pop-Up Menu Option	Task
Collapse (cluster)	Toggle between showing high-level or a cluster-specific topology views.
Host Name	Change the host name of a switch.
Properties	Display information about the device and port on either end of the link and the state of the link.

**Table 3-16 Device Pop-Up Menu of a Member-Switch Icon**

Pop-Up Menu Option	Task
Collapse (cluster)	Toggle between showing high-level or a cluster-specific topology views.
Remove from Cluster	Remove a member from a cluster.
Host Name	Change the host name of a switch.
Clear Fault	Acknowledge that a cluster member had lost connectivity and then reestablished connectivity with the cluster (for example, the member switch temporarily lost power).
Launch Device Manager	Launch Device Manager for a switch.
Properties	Display information about the device and port on either end of the link and the state of the link.

**Table 3-17 Device Pop-Up Menu of a Candidate-Switch Icon (When the Candidate Switch Does Not Have an IP Address)**

Pop-Up Menu Option	Task
Add to Cluster	Add a candidate to a cluster.
Properties	Display information about the device and port on either end of the link and the state of the link.

**Table 3-18 Device Pop-Up Menu of a Candidate-Switch Icon (When the Candidate Switch Has an IP Address)**

Pop-Up Menu Option	Task
Add to Cluster	Add a candidate to a cluster.
Device Manager	Launch Device Manager for a switch.
Properties	Display information about the device and port on either end of the link and the state of the link.

**Table 3-19 Device Pop-Up Menu of a Neighboring-Device Icon**

Pop-Up Menu Option	Task
Device Web Page	Access the web management interface of the device.
Disqualification Code	Display the reason why the device could not join the cluster.

# Interaction Modes

You can change the interaction mode of CMS to either guide mode or expert mode. Guide mode displays the parameters of a feature in a step-by-step manner and provides information about the parameter. Expert mode displays a configuration window in which you configure the parameters for a feature.

Guide mode is not available for all features. The person icon next to these menu bar options means that guide mode is available on that option:

- ACLs
- QoS classes, policers, and policies
- IP routing, static routing, and equal- and unequal-cost routing
- Router redundancy

If **Expert Mode** is selected and you want to use guide mode, you must click **Guide Mode** before selecting an option from the menu bar, tool bar, or pop-up menu. If you change the interaction mode after selecting a configuration option, the mode change does not take effect until you select another configuration option.

## Guide Mode

Guide mode is for users who want a step-by-step approach to completing a specific configuration task. When you click **Guide Mode**, and then select a menu bar option that supports guide mode, CMS displays a specific parameter of the feature with information about the parameter field. To configure the feature, you provide information based on what CMS requests in each guide-mode step until you click **Finish** in the last step. Clicking **Cancel** any time during guide mode closes and ends the configuration task without applying any changes.

## Expert Mode

Expert mode is for users who prefer to display all the parameter fields of a feature in a single CMS window. Information about the parameter fields are provided from the **Help** button on the window.

## Wizards

Wizards simplify the task of QoS and IP multicast configuration. Similar to guide mode, wizards provide a step-by-step approach to completing a specific configuration task. Unlike guide mode, a wizard does not prompt you to provide information for all of the feature parameters. Instead, it prompts you to provide minimal information and then uses the default settings of the remaining parameters to set up QoS or IP multicast default configurations.

Wizards for these features are available:

- QoS wizard to configure ports with QoS priorities for video traffic
- IP multicast wizard to configure IP multicast routing on a device so that it can forward multicast packets as a part of a multicast tree

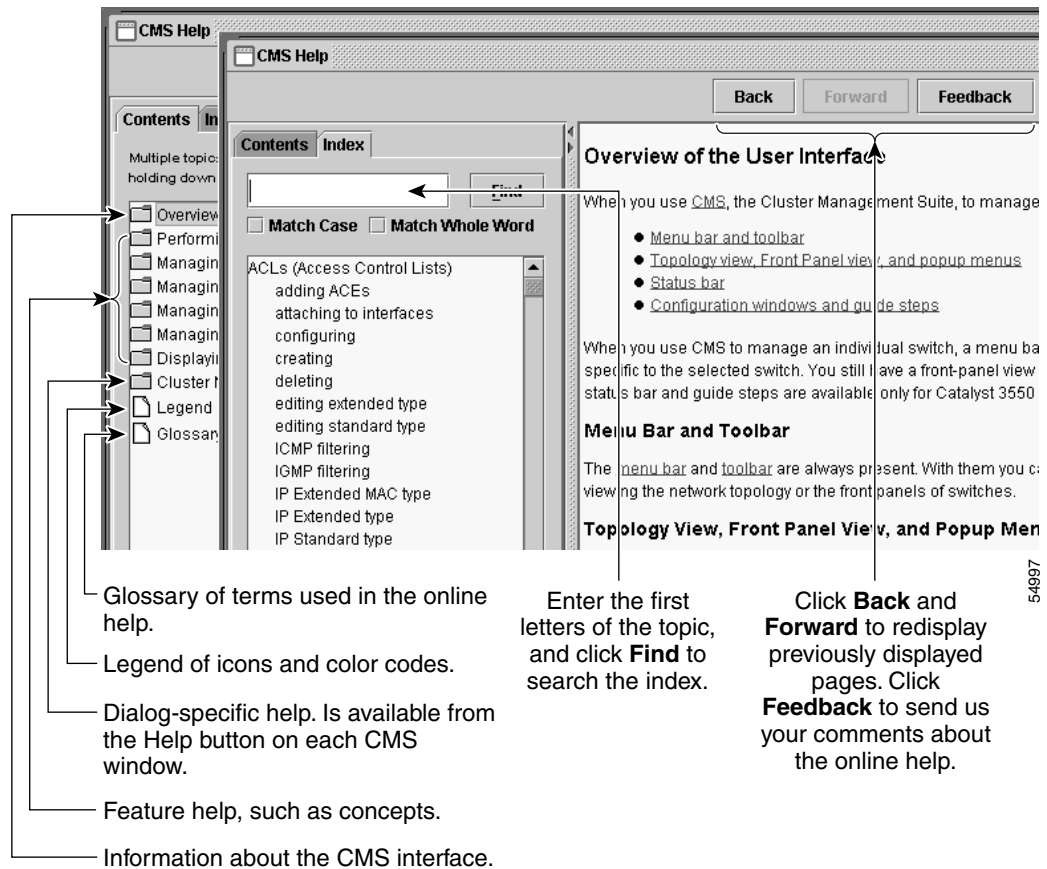
# Online Help

CMS provides comprehensive online help to assist you in understanding and performing configuration and monitoring tasks from the CMS windows (Figure 3-10).

- Feature help, available from all menu bars by selecting **Help > Contents**, provides background information and concepts on the features
- Dialog-specific help, available from the Help button on the CMS windows, provides procedures for performing tasks
- Index of help topics

You can send us feedback about the information provided in the online help. Click **Feedback** to display a simple online form. After completing the form, click **Submit** to send your comments to Cisco. We appreciate and value your comments.

Figure 3-10 Help Contents and Index



- Glossary of terms used in the online help.
- Legend of icons and color codes.
- Dialog-specific help. Is available from the Help button on each CMS window.
- Feature help, such as concepts.
- Information about the CMS interface.

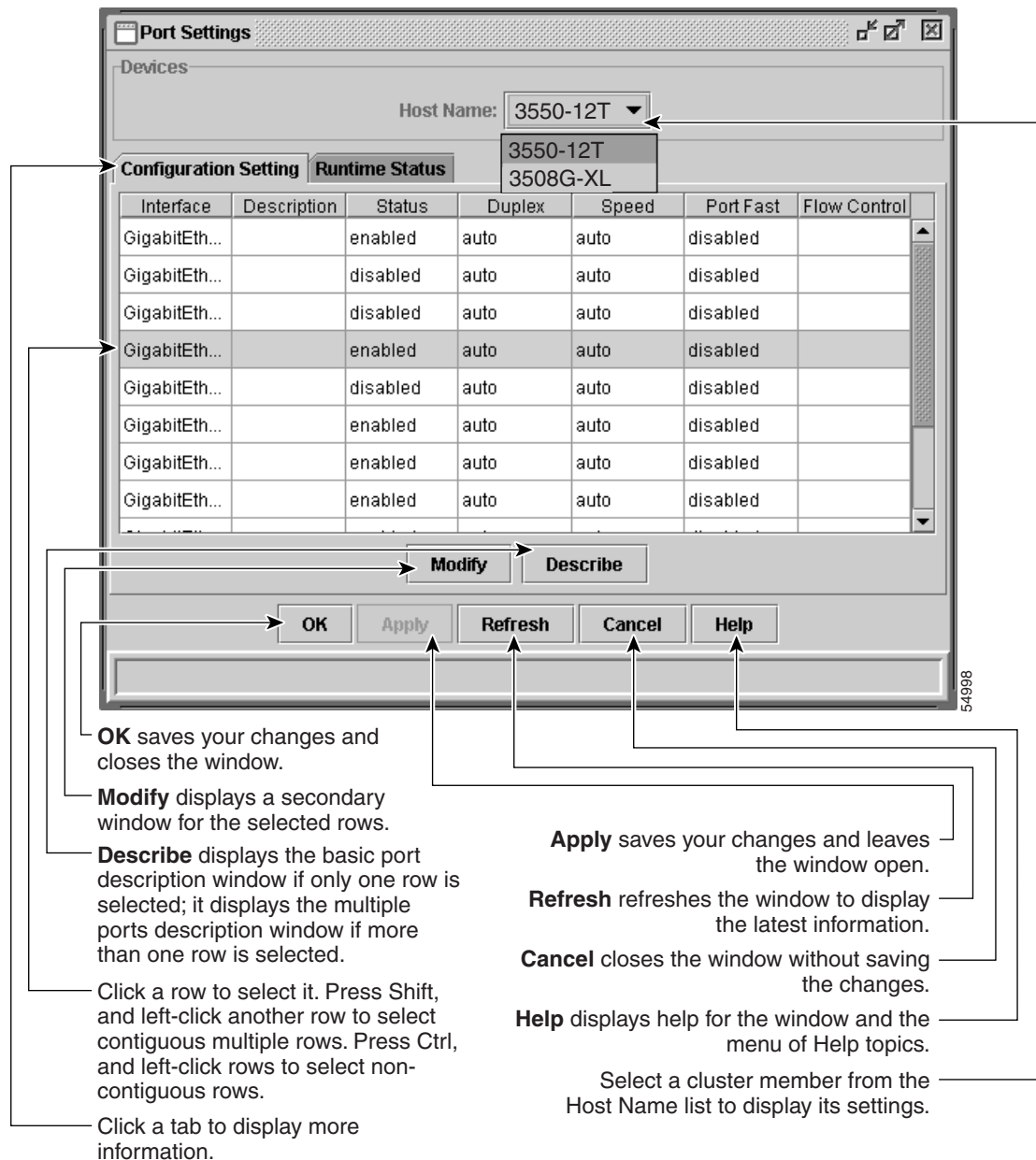
Enter the first letters of the topic, and click **Find** to search the index.

Click **Back** and **Forward** to redisplay previously displayed pages. Click **Feedback** to send us your comments about the online help.

# CMS Window Components

CMS windows use consistent techniques to present configuration information. Figure 3-11 shows the components of a typical CMS window. The Describe button in this figure is available only from the Port Settings window.

Figure 3-11 CMS Window Components



## Host Name List

The Host Name drop-down list lists the cluster member names. To display or change the configuration of a specific switch in a cluster, select the switch name.

Only switches that support the selected menu option are listed in the Host Name list. For example, the Host Name list on the VLAN window would not display Catalyst 1900 and Catalyst 2820 switches even though they are part of the cluster. Switch-specific features (such as the LRE profile configuration) are available from the menu bar only when the appropriate switch (such as the Catalyst 2912-LRE or Catalyst 2924-LRE XL switch) is a member switch.

Refer to the release notes for the Catalyst switches that can be part of a switch cluster with the Catalyst 3550 switches.

## Tabs, Lists, and Tables

Some CMS windows have *tabs* that present different sets of information. Tabs are arranged like folder headings across the top of the window. Click the tab to display its information.

Listed information can often be changed by selecting an item from a list. To change the information, select one or more items, and click **Modify**. Changing multiple items is limited to those items that apply to at least one of the selections.

Some CMS windows present information in a table format. You can edit the information in these tables.

**Note**

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You can resize the width of the columns to display the column headings, or you can hover your cursor over the heading to display a pop-up description of the column.

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## Buttons

These are the most common buttons that you use to change the information in a CMS window:

- **OK**—Save any changes made in the window and close the window. If no changes have been made, the window closes. If CMS detects errors in your input, the window remains open. For more information about error detection, see the [“Error Checking” section on page 3-27](#).
- **Apply**—Save any changes made in the window and leave the window open. If no changes have been made, the Apply button is disabled.
- **Refresh**—Update the CMS window with the latest status of the device. Unsaved changes are lost.
- **Cancel**—Do not save any changes made in the window and close the window.
- **Help**—Display procedures on performing tasks from the window.
- **Modify**—Display the secondary window for changing information on the selected item or items. You usually select an item from a list or table and click **Modify**.

## Accessing CMS

You must know the IP address and password of the specific switch or command switch to access CMS. You can assign this information to the switch in these ways:

- Using the setup program, as described in the release notes.
- Manually assigning an IP address and password, as described in the [“Assigning Switch Information” section on page 4-2](#) and the [“Preventing Unauthorized Access to Your Switch” section on page 6-1](#).

Considerations for assigning this information to a command switch and cluster members are described in the [“IP Addresses” section on page 5-13](#) and [“Passwords” section on page 5-14](#).

Accessing CMS also requires meeting the software requirements, including browser and Java plug-in configurations, described in the release notes.



### Note

Copies of the CMS pages you display are saved in your browser memory cache until you exit the browser session. A password is not required to redisplay these pages, including the Cisco Systems Access page. You can access the CLI by clicking **Monitor the router - HTML access to the command line interface** from a cached copy of the Cisco Systems Access page. To prevent unauthorized access to CMS and the CLI, exit your browser to end the browser session.

This procedure assumes you have met the software requirements (including browser and Java plug-in configurations) and have assigned IP information and a password to the switch or command switch, as described in the release notes.

To access CMS, follow these steps:

- 
- Step 1** Enter the switch IP address in the browser **Location** field (Netscape Communicator) or **Address** field (Microsoft Internet Explorer).
  - Step 2** Enter the switch password when prompted.
  - Step 3** Click **Web Console**.

If you access CMS from a standalone or cluster member switch, Device Manager appears. If you access CMS from a command switch, you can display the Front Panel and Topology views.

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For information about managing passwords in switch clusters, see the [“Passwords” section on page 5-14](#).

## HTTP Access to CMS

CMS is accessed through Hypertext Transfer Protocol (HTTP), which allows switch management from a standard web browser. The default HTTP port is 80. If you change the HTTP port, you must include the new port number when you enter the IP address in the browser **Location** or **Address** field (for example, `http://10.1.126.45:184` where 184 is the new HTTP port number).

# Verifying Your Changes

CMS provides notification cues to help you track and confirm the changes you make.

## Change Notification

A green border around a field means that you made an unsaved change to the field. Previous information in that field is displayed in the window status bar. When you save the changes or if you cancel the change, the green border disappears.

**Note**

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Change notification is not available in lists and tables.

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## Error Checking

A red border around a field means that you entered invalid data in the field. An error message also displays in the window status bar. When you enter valid data in the field, a green border replaces the red border until you either save or cancel the change.

If there is an error in communicating with the switch or if you make an error while performing an action, a pop-up dialog notifies you about the error.

## Saving Your Changes

The front-panel images and CMS windows always display the *running configuration* of the switch. When you make a configuration change to a switch or switch cluster, the change becomes part of the running configuration. The change *does not* automatically become part of the config.txt file in Flash memory, which is the *startup configuration* used each time the switch restarts. If you do not save your changes to Flash memory, they are lost when the switch restarts.

To save all configuration changes to Flash memory, you must select **Administration > Save Configuration**.

**Note**

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Catalyst 1900 and Catalyst 2820 switches automatically save configuration changes to Flash memory as they occur.

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**Tips**

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As you make cluster configuration changes (except for changes to the Topology view and in the Preferences window), make sure you periodically save the configuration. The configuration is saved on the command and member switches.

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# Using Different Versions of Web-Based Switch Management Software

Cluster command switches can manage a mix of Catalyst switches. However, certain models of the Catalyst desktop switches support different versions of web-based management software; thus, the interfaces can differ.

Also keep in mind that when you select a front-panel image or switch icon and then select **Device > Device Manager** from the menu bar, a new CMS session is launched, and the CMS version for that switch is displayed.

- The Catalyst 1900 and Catalyst 2820 switches use an older version of *Switch Manager*. Cluster management options are not available on these switches.
- The Catalyst 2950, Catalyst 3500 XL, and Catalyst 2900 XL switches use a CMS version specific to those switches. CMS on these switches includes Visual Switch Manager (VSM), Cluster Manager, Cluster Builder, and Cluster View.
- The Catalyst 3550 switches use a CMS version specific to those switches. This CMS version provides enhancements not available from the CMS versions on other switches. The Front Panel view, Topology view, and Device Manager might appear similar but are not the same as VSM, Cluster Manager, Cluster Builder, and Cluster View.

Refer to the appropriate switch documentation for descriptions of the web-based management software used on other Catalyst desktop switches, such as the Catalyst 2950, Catalyst 3500 XL, Catalyst 2900 XL, Catalyst 1900, and Catalyst 2820 switches.

Refer to the release notes for the list of Catalyst desktop switches that are cluster-compatible and their software versions.

## Where to Go Next

The rest of this guide provides descriptions of the software features and general switch administration.

Refer to the online help for CMS procedures and window descriptions. Refer to the release notes for hardware and software requirements, including required browser versions, and for procedures for installing the required browser plug-in, configuring your browser, and accessing CMS.