



# Preface

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This preface describes who should read the *Catalyst 5000 Family Software Configuration Guide*, how it is organized, and its document conventions.

## Audience

This guide is for experienced network administrators who are responsible for configuring and maintaining Catalyst enterprise LAN switches.

## Organization

The major sections of this guide are as follows:

Chapter	Title	Description
<b>Part 1—Getting Started</b>		
Chapter 1	<a href="#">Product Overview</a>	Presents an overview of the Catalyst enterprise LAN switches.
Chapter 2	<a href="#">Using the Command-Line Interface</a>	Describes how to use the different command-line interfaces (CLIs).
Chapter 3	<a href="#">Configuring the Switch IP Address and Default Gateway</a>	Describes how to perform a baseline configuration of the switch.
Chapter 4	<a href="#">Using Redundant Supervisor Engines</a>	Describes how to install and configure redundant supervisor engines in the Catalyst 5000 family switches.
<b>Part 2—Configuring Ethernet Switching</b>		
Chapter 5	<a href="#">Configuring Ethernet and Fast Ethernet Switching</a>	Describes how to configure Ethernet and Fast Ethernet switching on the switch.
Chapter 6	<a href="#">Configuring Gigabit Ethernet Switching</a>	Describes how to configure Gigabit Ethernet switching on the switch.
Chapter 7	<a href="#">Configuring Fast EtherChannel and Gigabit EtherChannel</a>	Describes how to configure Fast EtherChannel and Gigabit EtherChannel port bundles.

Chapter	Title	Description
<b>Part 3—Configuring Spanning Tree</b>		
Chapter 8	Configuring Spanning Tree	Describes how to configure the Spanning Tree Protocol and explains how spanning tree works.
Chapter 9	Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast	Describes how to configure the spanning tree PortFast, UplinkFast, and BackboneFast features.
<b>Part 4—Configuring VLANs and VLAN Trunks</b>		
Chapter 10	Configuring VTP	Describes how to configure VLAN Trunk Protocol (VTP) on the switch.
Chapter 11	Configuring VLANs	Describes how to configure virtual LANs (VLANs) on the switch.
Chapter 12	Configuring VLAN Trunks on Fast Ethernet and Gigabit Ethernet Ports	Describes how to configure Inter-Switch Link (ISL) and IEEE 802.1Q VLAN trunks on Fast Ethernet and Gigabit Ethernet ports.
Chapter 13	Configuring Dynamic Port VLAN Membership with VMPS	Describes how to configure VLAN Membership Policy Server (VMPS) and dynamic ports on the switch.
Chapter 14	Configuring GVRP	Describes how to configure GARP VLAN Registration Protocol (GVRP) on the switch.
<b>Part 5—Directing and Filtering Traffic</b>		
Chapter 15	Configuring QoS	Describes how to configure quality of service (QoS).
Chapter 16	Configuring Multicast Services	Describes how to configure Cisco Group Management Protocol (CGMP), Internet Group Management Protocol (IGMP) snooping, and GARP Multicast Registration Protocol (GMRP) on the switch.
Chapter 17	Configuring Broadcast/Multicast Suppression	Describes how to configure hardware and software broadcast/multicast suppression on the switch.
Chapter 18	Configuring Port Security	Describes how to configure port security on the switch.
Chapter 19	Configuring the IP Permit List	Describes how to configure IP permit list on the switch.
Chapter 20	Configuring Protocol Filtering	Describes how to configure protocol filtering on Ethernet, Fast Ethernet, and Gigabit Ethernet ports.
<b>Part 6—Monitoring and Managing the Switch</b>		
Chapter 21	Checking Port Status and Connectivity	Describes how to display information about modules and switch ports and how to check connectivity using ping, Telnet, and IP traceroute.
Chapter 22	Configuring CDP	Describes how to configure Cisco Discovery Protocol (CDP) on the switch.
Chapter 23	Using Switch TopN Reports	Describes how to generate switch TopN reports on the switch.

<b>Chapter</b>	<b>Title</b>	<b>Description</b>
Chapter 24	<a href="#">Configuring UDLD</a>	Describes how to configure the UniDirectional Link Detection (UDLD) protocol on the switch.
Chapter 25	<a href="#">Configuring SNMP</a>	Describes how to configure the Simple Network Management Protocol (SNMP) on the switch.
Chapter 26	<a href="#">Configuring RMON</a>	Describes how to configure Remote Monitoring (RMON) on the switch.
Chapter 27	<a href="#">Configuring SPAN</a>	Describes how to configure the Switch Port Analyzer (SPAN) on the switch.
Chapter 28	<a href="#">Configuring the Network Analysis Module</a>	Describes how to configure the Catalyst 5000 family Network Analysis Module.
<b>Part 7—Administering the Switch</b>		
Chapter 29	<a href="#">Administering the Switch</a>	Describes how to set the system name, create a login banner, and perform other administrative tasks on the switch.
Chapter 30	<a href="#">Configuring Switch Access Using AAA</a>	Describes how to configure local and TACACS+ authentication on the switch.
Chapter 31	<a href="#">Modifying the Switch Boot Configuration</a>	Describes how to modify the switch boot configuration, including the BOOT environment variable and the configuration register.
Chapter 32	<a href="#">Using the Flash File System</a>	Describes how to work with the Flash file system available on some switch platforms.
Chapter 33	<a href="#">Working with System Software Images</a>	Describes how to download and upload system software images.
Chapter 34	<a href="#">Working with Configuration Files</a>	Describes how to create, download, and upload switch configuration files.
Chapter 35	<a href="#">Configuring System Message Logging</a>	Describes how to configure system message logging (syslog) on the switch.
Chapter 36	<a href="#">Configuring DNS</a>	Describes how to configure Domain Name System (DNS) on the switch.
Chapter 37	<a href="#">Configuring NTP</a>	Describes how to configure Network Time Protocol (NTP) on the switch.
<b>Part 8—Configuring FDDI/CDDI and Token Ring Switching</b>		
Chapter 38	<a href="#">Configuring FDDI/CDDI Switching</a>	Describes how to configure Fiber Distributed Data Interface (FDDI) and Copper Distributed Data Interface (CDDI) switching.
Chapter 39	<a href="#">Configuring FDDI 802.10 Trunks</a>	Describes how to configure FDDI IEEE 802.10 VLAN trunks.
Chapter 40	<a href="#">Configuring Token Ring Switching</a>	Describes how to configure Token Ring switching on the Token Ring modules.
Chapter 41	<a href="#">Configuring Token Ring Filters</a>	Describes how to configure Token Ring filters on the Token Ring modules.

# Related Documentation

The following publications are available for the Catalyst enterprise LAN switches:

- Quick Installation Guides—Available for the Catalyst 5002, Catalyst 5000/5005, Catalyst 5509, Catalyst 5500, and Catalyst 2926/2926G
- *Catalyst 5000 Family Installation Guide*
- *Catalyst 5000 Family Supervisor Engine Installation Guide*
- *Catalyst 5000 Family Module Installation Guide*
- *Quick Software Configuration—Catalyst 5000 Family, 4000 Family, 2948G, and 2980G Switches*
- *Catalyst 5000 Family Command Reference*
- *Layer 3 Switching Software Configuration Guide—Catalyst 5000 Family, 4000 Family, 2926 Series, and 2980G Switches*
- *ATM Software Configuration Guide and Command Reference—Catalyst 5000 Family and 6000 Family Switches*
- *System Message Guide—Catalyst 6000 Family, 5000 Family, 4000 Family, 2948G, and 2980G Switches*
- *Release Notes for Catalyst 5000 Family Supervisor Engine Software Release 6.x*

Other useful publications are as follows:

- LightStream 1010 ATM switch documentation—Use these publications to help you install and configure LightStream 1010 ATM switch components in the Catalyst 5500 chassis.
- Catalyst 8500 series documentation—Use these publications to help you install and configure Catalyst 8500 series CSR or MSR components in the Catalyst 5500 chassis.
- Cisco IOS Configuration Guides and Command References—Use these publications to help you configure the Cisco IOS software that runs on the RSM, ATM modules, LightStream 1010 ASP, and Catalyst 8500 series CSR SRP.
- [http://www.cisco.com/warp/public/627/5000\\_resources/](http://www.cisco.com/warp/public/627/5000_resources/)—This URL has an up-to-date list of online resources for the Catalyst 5000 series switches.

# Conventions

Throughout this publication, these conventions are used when referring to switch platforms:

- Catalyst enterprise LAN switches—Refers to the Catalyst 5000 switches.
- Catalyst 5000 family switches—Refers to the Catalyst 5002, Catalyst 5000, Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches.
- Catalyst 5000 series switches—Refers to the Catalyst 5002 and Catalyst 5000 switches.
- Catalyst 5500 series switches—Refers to the Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches.

Command descriptions use these conventions:

<b>boldface font</b>	Commands and keywords are in <b>boldface</b> .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[ ]	Elements in square brackets are optional.
{x   y   z}	Alternative keywords are grouped in braces and separated by vertical bars.
[x   y   z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.

Screen examples use these conventions:

screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
<b>boldface screen font</b>	Information you must enter is in <b>boldface screen font</b> .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.
<...output truncated...>	Indicates that screen output not relevant to the example was removed to save space and preserve clarity.

Notes use these conventions:



**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Cautions use these conventions:



**Caution**

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

# Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com>

Translated documentation is available at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:  
[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

You can submit comments electronically on Cisco.com. In the Cisco Documentation home page, click the **Fax** or **Email** option in the “Leave Feedback” section at the bottom of the page.

You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Document Resource Connection  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

# Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com is a highly integrated Internet application and a powerful, easy-to-use tool that provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

If you want to obtain customized information and service, you can self-register on Cisco.com. To access Cisco.com, go to this URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://www.cisco.com/register/>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.