Preface

This preface describes who should read the *Catalyst 6500 Series Switch Software Configuration Guide*, how it is organized, and its document conventions.

Audience

This publication is for experienced network administrators who are responsible for configuring and maintaining Catalyst 6500 series switches.

Organization

Note This publication includes the information that previously was in the *Catalyst 6000 Family Multilayer Switch Feature Card (12.x) and Policy Feature Card Configuration Guide*.

This publication is organized as follows:

Chapter	Title	Description
Chapter 1	Product Overview	Presents an overview of the Catalyst 6500 series switches.
Chapter 2	Command-Line Interfaces	Describes how to use the command-line interface (CLI).
Chapter 3	Configuring the Switch IP Address and Default Gateway	Describes how to perform a baseline configuration of the switch.
Chapter 4	Configuring Ethernet, Fast Ethernet, Gigabit Ethernet, and 10-Gigabit Ethernet Switching	Describes how to configure Ethernet, Fast Ethernet, and Gigabit Ethernet switching.
Chapter 5	Configuring Ethernet VLAN Trunks	Describes how to configure Inter-Switch Link (ISL) and IEEE 802.1Q VLAN trunks on Fast Ethernet and Gigabit Ethernet ports.
Chapter 6	Configuring EtherChannel	Describes how to configure Fast EtherChannel and Gigabit EtherChannel port bundles.
Chapter 7	Configuring IEEE 802.1Q Tunneling and Layer 2 Protocol Tunneling	Describes how to configure 802.1Q tunneling.

Chapter	Title	Description
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, BackboneFast, and Loop Guard	Describes how to configure the spanning tree PortFast, UplinkFast, and BackboneFast features.
Chapter 10	Configuring VTP	Describes how to configure VLAN Trunk Protocol (VTP) on the switch.
Chapter 11	Configuring VLANs	Describes how to configure VLANs on the switch.
Chapter 12	Configuring InterVLAN Routing	Describes how to configure interVLAN routing on the MSFC.
Chapter 13	Configuring CEF for PFC2	Describes how to configure Cisco Express Forwarding for Policy Feature Card 2 (CEF for PFC2).
Chapter 14	Configuring MLS	Describes how to configure Multilayer Switching (MLS).
Chapter 15	Configuring NDE	Describes how to configure NetFlow Data Export (NDE).
Chapter 16	Configuring Access Control	Describes how to configure access control lists (ACLs).
Chapter 17	Configuring GVRP	Describes how to configure GARP VLAN Registration Protocol (GVRP) on the switch.
Chapter 18	Configuring Dynamic Port VLAN Membership with VMPS	Describes how to configure dynamic port VLAN membership on the switch using the VLAN Management Policy Server (VMPS).
Chapter 19	Checking 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 20	Administering the Switch	Describes how to set the system name, create a login banner, and perform other administrative tasks on the switch.
Chapter 21	Configuring the Switch Access Using AAA	Describes how to configure authentication, authorization, and accounting (AAA) to monitor and control access to the CLI.
Chapter 22	Configuring Redundancy	Describes how to install and configure redundant supervisor engines and MSFCs in the Catalyst 6500 series switches.
Chapter 23	Modifying the Switch Boot Configuration	Describes how to modify the switch boot configuration, including the BOOT environment variable and the configuration register.
Chapter 24	Working With the Flash File System	Describes how to work with the Flash file system.
Chapter 25	Working with System Software Images	Describes how to download and upload system software images.
Chapter 26	Working with Configuration Files	Describes how to create, download, and upload switch configuration files.
Chapter 27	Configuring System Message Logging	Describes how to configure system message logging (syslog).
Chapter 28	Configuring DNS	Describes how to configure Domain Name System (DNS).
Chapter 29	Configuring CDP	Describes how to configure Cisco Discovery Protocol (CDP).
Chapter 30	Configuring UDLD	Describes how to configure the UniDirectional Link Detection (UDLD) protocol.
Chapter 31	Configuring NTP	Describes how to configure Network Time Protocol (NTP).
Chapter 32	Configuring Broadcast Suppression	Describes how to configure hardware and software broadcast suppression.

Chapter	Title	Description
Chapter 33	Configuring Layer 3 Protocol Filtering	Describes how to configure protocol filtering on Ethernet, Fast Ethernet, and Gigabit Ethernet ports.
Chapter 34	Configuring the IP Permit List	Describes how to configure the IP permit list.
Chapter 35	Configuring Port Security	Describes how to configure secure port filtering.
Chapter 36	Configuring 802.1x Authentication	Describes how to configure 802.1x authentication.
Chapter 37	Configuring Unicast Flood Blocking	Describes how to configure unicast flood blocking.
Chapter 38	Configuring SNMP	Describes how to configure SNMP.
Chapter 39	Configuring RMON	Describes how to configure Remote Monitoring (RMON).
Chapter 40	Configuring SPAN and RSPAN	Describes how to configure the Switch Port Analyzer (SPAN) and Remote SPAN (RSPAN).
Chapter 41	Using Switch TopN Reports	Describes how to generate switch TopN reports.
Chapter 42	Configuring Multicast Services	Describes how to configure Internet Group Management Protocol (IGMP) snooping, GARP Multicast Registration Protocol (GMRP), and Router Group Management Protocol (RGMP).
Chapter 43	Configuring QoS	Describes how to configure Quality of Service (QoS).
Chapter 44	Using Automatic QoS	Describes how to use the automatic QoS configuration features.
Chapter 45	Configuring ASLB	Describes how to configure accelerated server load balancing (ASLB).
Chapter 46	Configuring the Switch Fabric Modules	Describes how to configure the Switch Fabric Modules.
Chapter 47	Configuring a VoIP Network	Describes how to configure a Voice-over-IP (VoIP) network.
Appendix A	Acronyms	Lists acronyms used in this publication.

Related Documentation

The following publications are available for the Catalyst 6500 series switches:

- *Catalyst 6500 Series Switch Module Installation Guide*
- *Catalyst 6500 Series Switch Command Reference*
- *ATM Software Configuration and Command Reference—Catalyst 5000 Family and Catalyst 6000 Family Switches*
- *System Message Guide—Catalyst 6500 Series, Catalyst 4000 Family, Catalyst 2948G, and Catalyst 2980G Switches*
- *Release Notes for Catalyst 6500 Series Switch Software Release 7.x*
- Cisco IOS Configuration Guides and Command References—Use these publications to help you configure the Cisco IOS software that runs on the MSFC, MSM, and ATM modules.
- For information about MIBs, refer to this URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Conventions

Note Throughout this publication, except where noted, the term *supervisor engine* is used to refer to both Supervisor Engine 1 and Supervisor Engine 2.

This publication uses the following conventions:

Convention	Description
boldface font	Commands, command options, and keywords are in **boldface**.
italic font	Arguments for which you supply values are in *italics*.
[ ]	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` font	Terminal sessions and information the system displays are in `screen` font.
`boldface screen` font	Information you must enter is in **`boldface screen`** font.
italic screen font	Arguments for which you supply values are in *italic screen* font.
⟶	`This pointer highlights an important line of text in an example.`
^	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.

Notes use the following conventions:

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

Cautions use the following 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

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

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

http://www.cisco.com/cisco/web/psa/default.html?mode=prod

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco web sites can be accessed from this URL:

http://www.cisco.com/web/siteassets/locator/index.html

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have 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.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

http://www.cisco.com/go/subscription

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/web/ordering/root/index.html

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/web/ordering/root/index.html

- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) 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. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments to 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: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

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

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com 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

To obtain customized information and service, you can self-register on Cisco.com at this URL:

http://www.cisco.com

Technical Assistance Center

The Cisco 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 website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- 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.

Cisco TAC Website

You can use the Cisco TAC website 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 website, 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 website. Some services on the Cisco TAC website require 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://tools.cisco.com/RPF/register/register.do

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

http://www.cisco.com/en/US/support/index.html

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

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/en/US/support/tsd_cisco_worldwide_contacts.html

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.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems as well as ordering and customer support services. Access the *Cisco Product Catalog* at this URL:

  http://www.cisco.com/en/US/products/index.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide,* and the *Internetworking Design Guide.* For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:

  http://www.cisco.com/web/about/ac123/ac114/about_cisco_packet_magazine.html

- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:

  http://www.cisco.com/web/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:

  http://www.cisco.com/web/learning/index.html