

About This Guide

This preface describes who should read the *Software Configuration Guide—Catalyst 5000, 4000, 2948G, 2926G, and 2926 Series Switches*, how it is organized, and its document conventions.

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more up to date than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit comments electronically:

- 1 Click **Feedback** in the toolbar.
- 2 Select **Documentation**.
- 3 Complete the form, click **Submit**, and send it to Cisco Systems.

If you are reading printed documentation that contains a response card, you can complete the card and mail it to Cisco Systems.

We appreciate your comments.

Who Should Read This Guide

This guide is for experienced network administrators who are responsible for configuring and maintaining Catalyst 5000, 4000, 2948G, 2926G, or 2926 series switches.

How This Guide Is Organized

The major sections of this guide are as follows:

| Chapter | Title | Description |
|----------------|---|--|
| Chapter 1 | Product Overview | Presents an overview of the Catalyst 5000, 4000, 2948G, 2926G, and 2926 series switches. |
| Chapter 2 | Command-Line Interfaces | Describes how to use the different command-line interfaces (CLIs). |
| Chapter 3 | Configuring the Supervisor Engine Software | Describes how to perform a baseline configuration of the switch. |
| Chapter 4 | Configuring Ethernet and Fast Ethernet Switching | Describes how to configure Ethernet and Fast Ethernet switching on the switch. |
| Chapter 5 | Configuring Gigabit Ethernet Switching | Describes how to configure Gigabit Ethernet switching on the switch. |
| Chapter 6 | Configuring Fast EtherChannel and Gigabit EtherChannel | Describes how to configure Fast EtherChannel and Gigabit EtherChannel port bundles. |
| Chapter 7 | Configuring Spanning Tree | Describes how to configure the Spanning-Tree Protocol and explains how spanning tree works. |
| Chapter 8 | Configuring Spanning-Tree PortFast, UplinkFast, and BackboneFast | Describes how to configure the spanning-tree PortFast, UplinkFast, and BackboneFast features. |
| Chapter 9 | Configuring VTP | Describes how to configure VLAN Trunk Protocol (VTP) on the switch. |
| Chapter 10 | Configuring VLANs | Describes how to configure virtual LANs (VLANs) on the switch. |
| Chapter 11 | 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 12 | Configuring Dynamic Port VLAN Membership with VMPS | Describes how to configure VLAN Membership Policy Server (VMPS) and dynamic ports on the switch. |
| Chapter 13 | 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 14 | Administering the Switch | Describes how to set the system name, create a login banner, and perform other administrative tasks on the switch. |
| Chapter 15 | Controlling Access to the Switch Using Authentication | Describes how to configure local and TACACS+ authentication on the switch. |
| Chapter 16 | Using Redundant Supervisor Engines | Describes how to install and configure redundant supervisor engines in the Catalyst 5000 series switches. |

| Chapter | Title | Description |
|----------------|---|---|
| Chapter 17 | Modifying the Switch Boot Configuration | Describes how to modify the switch boot configuration, including the BOOT environment variable and the configuration register. |
| Chapter 18 | Working With the Flash File System | Describes how to work with the Flash file system available on some switch platforms. |
| Chapter 19 | Working With System Software Images | Describes how to download and upload system software images. |
| Chapter 20 | Working With Configuration Files | Describes how to create, download, and upload switch configuration files. |
| Chapter 21 | Configuring System Message Logging | Describes how to configure system message logging (syslog) on the switch. |
| Chapter 22 | Configuring DNS | Describes how to configure Domain Name System (DNS) on the switch. |
| Chapter 23 | Configuring CDP | Describes how to configure Cisco Discovery Protocol (CDP) on the switch. |
| Chapter 24 | Configuring NTP | Describes how to configure Network Time Protocol (NTP) on the switch. |
| Chapter 25 | Configuring Broadcast/Multicast Suppression | Describes how to configure hardware and software broadcast/multicast suppression on the switch. |
| Chapter 26 | Configuring Protocol Filtering | Describes how to configure protocol filtering on Ethernet, Fast Ethernet, and Gigabit Ethernet ports. |
| Chapter 27 | Configuring IP Permit List | Describes how to configure IP permit list on the switch. |
| Chapter 28 | Configuring Secure Port Filtering | Describes how to configure secure port filtering on the switch. |
| Chapter 29 | Configuring SNMP | Describes how to configure the Simple Network Management Protocol (SNMP) on the switch. |
| Chapter 30 | Configuring RMON | Describes how to configure Remote Monitoring (RMON) on the switch. |
| Chapter 31 | Configuring SPAN | Describes how to configure the Switch Port Analyzer (SPAN) on the switch. |
| Chapter 32 | Using Switch TopN Reports | Describes how to generate switch TopN reports on the switch. |
| Chapter 33 | Configuring the Network Analysis Module | Describes how to configure the Catalyst 5000 series Network Analysis Module. |
| Chapter 34 | Configuring Multicast Services | Describes how to configure and Cisco Group Management Protocol (CGMP) and Internet Group Management Protocol (IGMP) snooping on the switch. |
| Chapter 35 | Configuring ATM LAN Emulation | Describes how to configure ATM LANE and explains how LANE works. |

| Chapter | Title | Description |
|------------|--|---|
| Chapter 36 | Configuring ATM PVCs and PVCs with Traffic Shaping | Describes how to configure permanent virtual connection (PVC)-supported VLANs on the ATM modules. |
| Chapter 37 | Configuring Multiprotocol Over ATM | Describes how to configure MPOA on ATM modules and routers. |
| Chapter 38 | Configuring the ATM Fabric Integration Module | Describes how to configure ATM-fabric integration module. |
| Chapter 39 | Configuring InterVLAN Routing | Describes how to configure interVLAN routing on the Route Switch Module (RSM), an external Cisco router, and the Catalyst 8510 CSR. |
| Chapter 40 | Maintaining and Administering the RSM | Describes how to perform maintenance and administrative tasks on the RSM. |
| Chapter 41 | Configuring the Layer 3 Fabric Integration Module | Describes how to configure Layer 3-fabric integration module. |
| Chapter 42 | Configuring Multilayer Switching | Describes how to configure IP Multilayer Switching (MLS). |
| Chapter 43 | Configuring NetFlow Data Export | Describes how to configure NetFlow Data Export (NDE). |
| Chapter 44 | Configuring FDDI/CDDI Switching | Describes how to configure Fiber Distributed Data Interface (FDDI) and Copper Distributed Data Interface (CDDI) switching. |
| Chapter 45 | Configuring FDDI 802.10 Trunks | Describes how to configure FDDI IEEE 802.10 VLAN trunks. |
| Chapter 46 | Configuring Token Ring Switching | Describes how to configure Token Ring switching on the Token Ring modules. |
| Chapter 47 | Configuring Token Ring Filters | Describes how to configure Token Ring filters on the Token Ring modules. |

Document Conventions

Note Throughout this publication, the phrase “Catalyst 5000 series switches” refers to the Catalyst 5002, Catalyst 5000, Catalyst 5505, Catalyst 5509, and Catalyst 5500 switches unless otherwise noted.

Note Throughout this publication, the phrase “Catalyst 4000 series switches” refers to the Catalyst 4003 and Catalyst 4912G switches.

Note Throughout this publication, the phrase “Catalyst 2948G series switches” refers to the Catalyst 2948G switch.

Note Throughout this publication, the phrase “Catalyst 2926G series switches” refers to the Catalyst 2926GS and Catalyst 2926GL switches unless otherwise noted.

Note Throughout this publication, the phrase “Catalyst 2926 series switches” refers to the Catalyst 2926T and Catalyst 2926F switches unless otherwise noted.

Command descriptions use these conventions:

| | |
|----------------------|---|
| boldface font | Commands and keywords are in boldface . |
| <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 <i>screen font</i> . |
| boldface screen font | Information you must enter is in boldface screen font . |
| <i>italic screen font</i> | Arguments for which you supply values are in <i>italic screen font</i> . |
| → | 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. |
| [] | 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.

Related Documentation

The following publications are available for the Catalyst 5000, 4000, 2948G, 2926G, and 2926 series switches:

- Quick Installation Guides—Available for the Catalyst 5002, Catalyst 5000/5005, Catalyst 5509, Catalyst 5500, and Catalyst 2926/2926G
- *Catalyst 5000 Series Installation Guide*
- *Catalyst 5000 Series Supervisor Engine Installation Guide*
- *Catalyst 5000 Series Module Installation Guide*
- *Catalyst 4003 Installation Guide*
- *Catalyst 4912G Installation Guide*
- *Catalyst 2948G Series Installation Guide*
- *Catalyst 2926 Series and Catalyst 2926G Series Installation Guide*
- *Catalyst 5000 Series Quick Software Configuration*
- *Software Configuration Guide—Catalyst 5000, 4000, 2948G, 2926G, and 2926 Series Switches*
- *Command Reference—Catalyst 5000, 4000, 2948G, 2926G, and 2926 Series Switches*
- *System Message Guide—Catalyst 5000, 4000, 2948G, 2926G, and 2926 Series Switches*
- *Enterprise MIB User Quick Reference* (online)
- *Release Notes for Catalyst 5000 Series Supervisor Engine Software Release 4.x*
- *Release Notes for Catalyst 4000 Series Supervisor Engine Software Release 4.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 campus switch router (CSR) documentation—Use these publications to help you install and configure Catalyst 8500 series CSR 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/—This URL has an up-to-date list of online resources for the Catalyst 5000 series switches.

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.
