



Preface

This preface describes who should read this document, how it is organized, and its conventions. The preface also tells you how to obtain Cisco documents, as well as how to obtain technical assistance.

Audience

This guide is for experienced network administrators who are responsible for configuring and maintaining Catalyst 4500 series switches.

Organization

This guide is organized into the following chapters:

Chapter	Title	Description
Chapter 1	Product Overview	Presents an overview of the Cisco IOS software for the Catalyst 4500 series switches
Chapter 2	Command-Line Interfaces	Describes how to use the CLI
Chapter 3	Configuring the Switch for the First Time	Describes how to perform a baseline configuration of the switch
Chapter 4	Administering the Switch	Describes how to administer the switch.
Chapter 5	Configuring the Cisco IOS In Service Software Upgrade Process	Describes how to configure ISSU on the switch.
Chapter 6	Configuring Interfaces	Describes how to configure non-layer-specific features on Fast Ethernet, Gigabit Ethernet, and 10-Gigabit Ethernet interfaces
Chapter 7	Checking Port Status and Connectivity	Describes how to check module and interface status
Chapter 8	Configuring Supervisor Engine Redundancy Using RPR and SSO	Describes how to configure RPR and SSO on the Catalyst 4507R and 4510R switches
Chapter 9	Configuring Cisco NSF with SSO Supervisor Engine Redundancy	Describes how to configure supervisor engine redundancy using Cisco nonstop forwarding (NSF) with stateful switchover (SSO).

Chapter	Title	Description
Chapter 10	Environmental Monitoring and Power Management	Describes how to configure power management and environmental monitoring features
Chapter 11	Configuring Power over Ethernet	Describes how to configure Power over Ethernet (PoE)
Chapter 12	Configuring the Catalyst 4500 Series Switch with Cisco Network Assistant	Describes how to install and configure Network Assistant and Embedded CiscoView
Chapter 13	Configuring VLANs, VTP, and VMPS	Describes how to configure VLANs, VTP, and VMPS.
Chapter 14	Configuring IP Unnumbered Interface	Describes how to configure IP Unnumbered support.
Chapter 15	Configuring Layer 2 Ethernet Interfaces	Describes how to configure interfaces to support Layer 2 features, including VLAN trunks
Chapter 16	Configuring SmartPort Macros	Describes how to configure SmartPort macros
Chapter 17	Configuring STP and MST	Describes how to configure the Spanning Tree Protocol (STP) and the Multiple Spanning Tree (MST) protocol and explains how they work.
Chapter 19	Configuring Resilient Ethernet Protocol	Describes how to configure Resilient Ethernet Protocol (REP).
Chapter 20	Configuring Optional STP Features	Describes how to configure the spanning-tree PortFast, UplinkFast, BackboneFast, and other STP features
Chapter 21	Configuring EtherChannel	Describes how to configure Layer 2 and Layer 3 EtherChannel port bundles
Chapter 22	Configuring IGMP Snooping and Filtering	Describes how to configure Internet Group Management Protocol (IGMP) snooping
Chapter 23	Configuring IPv6 MLD Snooping	Describes how to configure IPv6 MLD Snooping.
Chapter 24	Configuring 802.1Q and Layer 2 Protocol Tunneling	Describes how to configure 802.1Q and Layer 2 protocol Tunneling
Chapter 25	Configuring CDP	Describes how to configure the Cisco Discovery Protocol (CDP)
Chapter 26	Configuring LLDP and LLDP-MED	Describes how to configure Link Layer Discovery Protocol (LLDP).
Chapter 27	Configuring UDLD	Describes how to configure the UniDirectional Link Detection (UDLD) protocol
Chapter 28	Configuring Unidirectional Ethernet	Describes how to configure unidirectional Ethernet
Chapter 29	Configuring Layer 3 Interfaces	Describes how to configure interfaces to support Layer 3 features
Chapter 30	Configuring Cisco Express Forwarding	Describes how to configure Cisco Express Forwarding (CEF) for IP unicast traffic
Chapter 31	Configuring Unicast Reverse Path Forwarding	Describes how to configure Unicast Reverse Path Forwarding.

Chapter	Title	Description
Chapter 32	Configuring IP Multicast	Describes how to configure IP Multicast Multilayer Switching (MMLS)
Chapter 33	Configuring Policy-Based Routing	Describes how to configure policy-based routing
Chapter 34	Configuring VRF-lite	Describes how to configure multiple VPN routing/forwarding (multi-VRF) instances in customer edge (CE) devices
Chapter 35	Configuring Quality of Service	Describes how to configure quality of service (QoS)
Chapter 36	Configuring Voice Interfaces	Describes how to configure voice interfaces
Chapter 37	Configuring Private VLANs	Describes how to set up and modify private VLANs
Chapter 38	Configuring 802.1X Port-Based Authentication	Describes how to configure 802.1X port-based authentication
Chapter 39	Configuring Port Security	Describes how to configure port security and trunk port security
Chapter 40	Configuring Control Plane Policing	Describes how to protect your Catalyst 4500 series switch using control plane policing (CoPP)
Chapter 41	Configuring DHCP Snooping, IP Source Guard, and IPSG for Static Hosts	Describes how to configure DHCP snooping and IP Source Guard
Chapter 42	Configuring Dynamic ARP Inspection	Describes how to configure Dynamic ARP Inspection
Chapter 43	Configuring Network Security with ACLs	Describes how to configure ACLs, VACLs, and MACLS
Chapter 44	Port Unicast and Multicast Flood Blocking	Describes how to configure unicast flood blocking
Chapter 45	Configuring Storm Control	Describes how to configure storm control suppression
Chapter 46	Configuring SPAN and RSPAN	Describes how to configure the Switched Port Analyzer (SPAN)
Chapter 47	Configuring System Message Logging	Describes how to configure system message logging.
Chapter 48	Configuring SNMP	Describes how to configure the Simple Network Management Protocol (SNMP).
Chapter 49	Configuring NetFlow	Describes how to configure NetFlow statistics gathering
Chapter 51	Configuring RMON	Describes how to configure Remote Network Monitoring (RMON).
Chapter 52	Performing Diagnostics	Describes various types of diagnostics on the Catalyst 4500 series switch.
Chapter 53	Configuring WCCP Version 2 Services	Describes how to configure the Catalyst 4500 series switches to redirect traffic to cache engines (web caches) using the Web Cache Communication Protocol (WCCP), and describes how to manage cache engine clusters (cache farms).

Chapter	Title	Description
Chapter 54	ROM Monitor	Describes the ROM Monitor.
Chapter 55	Configuring MIB Support	Describes how to configure configure SNMP and MIB support.
Chapter 56	Configuring Ethernet CFM and OAM	Describes how to configure Ethernet OAM and CFM.
Chapter 57	Configuring Y.1731 (AIS and RDI)	Describes how to configure Y.1731.
Appendix A	Acronyms and Abbreviations	Defines acronyms and abbreviations used in this book

Related Documentation

The following publications are available for the Catalyst 4500 series switches:

- Catalyst 4500 Series Switch Documentation Home
<http://www.cisco.com/go/cat4500/docs>
- *Catalyst 4500 Series Switches Installation Guide* (DOC-7814409=)
<http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/installation/guide/78-14409-08/4500inst.html>
- For information about individual switching modules and supervisors refer to the *Catalyst 4500 Series Module Installation Guide* at:
http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/module/guide/mod_inst.html
- *Regulatory Compliance and Safety Information for the Catalyst 4500 Series Switches* at:
http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/regulatory/compliance/78_13233.html
- Installation notes for specific supervisor engines or for accessory hardware are available at:
http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_installation_guides_list.html

Cisco IOS configuration guides and command references—Use these publications to help you configure Cisco IOS software features not described in the preceding publications:

- *Configuration Fundamentals Configuration Guide*
- *Configuration Fundamentals Command Reference*
- *Interface Configuration Guide*
- *Interface Command Reference*
- *Network Protocols Configuration Guide*, Part 1, 2, and 3
- *Network Protocols Command Reference*, Part 1, 2, and 3
- *Security Configuration Guide*
- *Security Command Reference*
- *Switching Services Configuration Guide*
- *Switching Services Command Reference*

- *Voice, Video, and Fax Applications Configuration Guide*
- *Voice, Video, and Fax Applications Command Reference*
- *Cisco IOS IP Configuration Guide*
- Cisco IOS IP Command Reference

The Cisco IOS configuration guides and command references are at <http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/index.htm>

For information about MIBs, refer to <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

Software Documentation

The abilities of your switch and the modules supported depend greatly on the software you have installed. Each software release typically has each of the following:

- The release note appropriate to your software version. Release notes are at: http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_release_notes_list.html
- The software configuration guide appropriate to your software version. Software configuration guides are at: http://www.cisco.com/en/US/products/hw/switches/ps4324/products_installation_and_configuration_guides_list.html
- The command reference appropriate to your software version. Command references are at: http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_command_reference_list.html
- The system message guide appropriate to your software version. System message guides are at: http://www.cisco.com/en/US/products/hw/switches/ps4324/products_system_message_guides_list.html

You may want to bookmark the guides appropriate to your software release.

- For information about MIBs, go to the following URL: <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

Conventions

This document uses the following typographical conventions:

Convention	Description
boldface font	Commands, command options, and keywords are in boldface .
<i>italic</i> font	Command arguments for which you supply values are in <i>italics</i> .
[]	Command elements in square brackets are optional.
{ x y z }	Alternative keywords in command lines are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

Convention	Description
string	A nonquoted set of characters. Do not use quotation marks around the string because the string will include the quotation marks.
screen font	System displays are in <i>screen font</i> .
boldface screen font	Information you must enter verbatim 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.
^	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.

Commands in Task Tables

Commands listed in task tables show only the relevant information for completing the task and not all available options for the command. For a complete description of a command, refer to the command in the *Catalyst 4500 Series Switch Cisco IOS Command Reference*.

Notices

The following notices pertain to this software license.

OpenSSL/Open SSL Project

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).

This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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The implementation was written so as to conform with Netscapes SSL.

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