



## Preface

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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	<a href="#">Product Overview</a>	Presents an overview of the Cisco IOS software for the Catalyst 4500 series switches
Chapter 2	<a href="#">Command-Line Interfaces</a>	Describes how to use the CLI
Chapter 3	<a href="#">Configuring the Switch for the First Time</a>	Describes how to perform a baseline configuration of the switch
Chapter 4	<a href="#">Configuring Interfaces</a>	Describes how to configure non-layer-specific features on Fast Ethernet and Gigabit Ethernet interfaces
Chapter 5	<a href="#">Checking Port Status and Connectivity</a>	Describes how to check module and interface status
Chapter 6	<a href="#">Configuring Supervisor Engine Redundancy Using RPR and SSO</a>	Describes how to configure RPR and SSO on the Catalyst 4507R and 4510R switches
Chapter 8	<a href="#">Understanding and Configuring VLANs</a>	Describes how to set up and modify VLANs
Chapter 9	<a href="#">Configuring Dynamic VLAN Membership</a>	Describes how to configure dynamic VLAN membership
Chapter 10	<a href="#">Configuring Layer 2 Ethernet Interfaces</a>	Describes how to configure interfaces to support Layer 2 features, including VLAN trunks

Chapter	Title	Description
Chapter 11	<a href="#">Configuring SmartPort Macros</a>	Describes how to configure SmartPort macros
Chapter 12	<a href="#">Understanding and Configuring STP</a>	Describes how to configure the Spanning Tree Protocol (STP) and explains how spanning tree works
Chapter 13	<a href="#">Configuring STP Features</a>	Describes how to configure the spanning-tree PortFast, UplinkFast, BackboneFast, and other STP features
Chapter 14	<a href="#">Understanding and Configuring Multiple Spanning Trees</a>	Describes how to configure the Multiple Spanning Tree (MST) protocol and explains how it works
Chapter 15	<a href="#">Understanding and Configuring EtherChannel</a>	Describes how to configure Layer 2 and Layer 3 EtherChannel port bundles
Chapter 16	<a href="#">Configuring IGMP Snooping and Filtering</a>	Describes how to configure Internet Group Management Protocol (IGMP) snooping
Chapter 17	<a href="#">Configuring 802.1Q and Layer 2 Protocol Tunneling</a>	Describes how to configure 802.1Q and Layer 2 protocol Tunneling
Chapter 18	<a href="#">Understanding and Configuring CDP</a>	Describes how to configure the Cisco Discovery Protocol (CDP)
Chapter 19	<a href="#">Configuring UDLD</a>	Describes how to configure the UniDirectional Link Detection (UDLD) protocol
Chapter 20	<a href="#">Configuring Unidirectional Ethernet</a>	Describes how to configure unidirectional Ethernet
Chapter 21	<a href="#">Configuring Layer 3 Interfaces</a>	Describes how to configure interfaces to support Layer 3 features
Chapter 22	<a href="#">Configuring Cisco Express Forwarding</a>	Describes how to configure Cisco Express Forwarding (CEF) for IP unicast traffic
Chapter 23	<a href="#">Understanding and Configuring IP Multicast</a>	Describes how to configure IP Multicast Multilayer Switching (MMLS)
Chapter 24	<a href="#">Configuring Policy-Based Routing</a>	Describes how to configure policy-based routing
Chapter 25	<a href="#">Understanding and Configuring VTP</a>	Describes how to configure the VLAN Trunking Protocol
Chapter 26	<a href="#">Configuring VRF-lite</a>	Describes how to configure multiple VPN routing/forwarding (multi-VRF) instances in customer edge (CE) devices
Chapter 27	<a href="#">Configuring QoS</a>	Describes how to configure quality of service (QoS)
Chapter 28	<a href="#">Configuring Voice Interfaces</a>	Describes how to configure multi-VLAN access ports for use with Cisco IP phones
Chapter 29	<a href="#">Understanding and Configuring 802.1X Port-Based Authentication</a>	Describes how to configure 802.1X port-based authentication
Chapter 30	<a href="#">Configuring Port Security</a>	Describes how to configure the port security feature
Chapter 31	<a href="#">Configuring DHCP Snooping and IP Source Guard</a>	Describes how to configure DHCP snooping and display DHCP snooping information

Chapter	Title	Description
Chapter 32	<a href="#">Understanding and Configuring Dynamic ARP Inspection</a>	Describes how to configure Dynamic ARP Inspection
Chapter 33	<a href="#">Configuring Network Security with ACLs</a>	Describes how to configure ACLs, VACLs, and MACs
Chapter 34	<a href="#">Configuring Private VLANs</a>	Describes how to set up and modify private VLANs
Chapter 35	<a href="#">Port Unicast and Multicast Flood Blocking</a>	Describes how to configure unicast flood blocking on the Catalyst 4500 series switches
Chapter 36	<a href="#">Configuring Port-Based Traffic Control</a>	Describes how to configure storm control suppression on the Catalyst 4500 series switches
Chapter 37	<a href="#">Environmental Monitoring and Power Management</a>	Describes how to configure environmental monitoring, power redundancy, and inline power features
Chapter 38	<a href="#">Configuring SPAN and RSPAN</a>	Describes how to configure the Switched Port Analyzer (SPAN)
Chapter 39	<a href="#">Configuring NetFlow Statistics Collection</a>	Describes how to configure NetFlow statistics gathering
Appendix A	<a href="#">Acronyms</a>	Defines acronyms used in this book

## Related Documentation

Although their Release Notes are unique, the 4 platforms (Catalyst 4500, Catalyst 4900, Catalyst ME 4900, and Catalyst 4900M) use the same *Software Configuration Guide*, *Command Reference Guide*, and *System Message Guide*. Refer to the following home pages for additional information:

- Catalyst 4500 Series Switch Documentation Home  
<http://www.cisco.com/go/cat4500/docs>
- Catalyst 4900 Series Switch Documentation Home  
<http://www.cisco.com/go/cat4900/docs>
- Cisco ME 4900 Series Ethernet Switches Documentation Home  
[http://www.cisco.com/en/US/products/ps7009/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7009/tsd_products_support_series_home.html)

## Hardware Documents

Installation guides and notes including specifications and relevant safety information are available at the following URLs:

- *Catalyst 4500 Series Switches Installation Guide*  
<http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/installation/guide/78-14409-08/4500inst.html>
- *Catalyst 4500 E-series Switches Installation Guide*  
<http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/catalyst4500e/installation/guide/Eseries.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](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*  
[http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/hardware/regulatory/compliance/78\\_13233.html](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](http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_installation_guides_list.html)
- Catalyst 4900 and 4900M hardware installation information is available at:  
[http://www.cisco.com/en/US/products/ps6021/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6021/prod_installation_guides_list.html)
- Cisco ME 4900 Series Ethernet Switches installation information is available at:  
[http://www.cisco.com/en/US/products/ps7009/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7009/prod_installation_guides_list.html)

## Software Documentation

Software release notes, configuration guides, command references, and system message guides are available at the following URLs:

- Catalyst 4500 release notes are available at:  
[http://www.cisco.com/en/US/products/hw/switches/ps4324/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_release_notes_list.html)
- Catalyst 4900 release notes are available at:  
[http://www.cisco.com/en/US/products/ps6021/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps6021/prod_release_notes_list.html)
- Cisco ME4900 4900 Series Ethernet Switch release notes are available at:  
[http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/release/note/OL\\_11511.html](http://www.cisco.com/en/US/docs/switches/lan/catalyst4500/release/note/OL_11511.html)

Software documents for the Catalyst 4500 Classic, Catalyst 4500 E-Series, Catalyst 4900, and Cisco ME 4900 Series Ethernet Switches are available at the following URLs:

- *Catalyst 4500 Series Software Configuration Guide*  
[http://www.cisco.com/en/US/products/hw/switches/ps4324/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps4324/products_installation_and_configuration_guides_list.html)
- *Catalyst 4500 Series Software Command Reference*  
[http://www.cisco.com/en/US/products/hw/switches/ps4324/prod\\_command\\_reference\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_command_reference_list.html)
- *Catalyst 4500 Series Software System Message Guide*  
[http://www.cisco.com/en/US/products/hw/switches/ps4324/products\\_system\\_message\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/switches/ps4324/products_system_message_guides_list.html)

## Cisco IOS Documentation

Platform-independent Cisco IOS documentation may also apply to the Catalyst 4500 and 4900 switches. These documents are available at the following URLs:

- Cisco IOS configuration guides, Release 12.x  
[http://www.cisco.com/en/US/products/ps6350/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6350/products_installation_and_configuration_guides_list.html)
- Cisco IOS command references, Release 12.x  
[http://www.cisco.com/en/US/products/ps6350/prod\\_command\\_reference\\_list.html](http://www.cisco.com/en/US/products/ps6350/prod_command_reference_list.html)  
You can also use the Command Lookup Tool at:  
<http://tools.cisco.com/Support/CLILookup/cltSearchAction.do>
- Cisco IOS system messages, version 12.x  
[http://www.cisco.com/en/US/products/ps6350/products\\_system\\_message\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6350/products_system_message_guides_list.html)  
You can also use the Error Message Decoder tool at:  
<http://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi>
- For information about MIBs, refer to:  
<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

## Conventions

This document uses the following typographical conventions:

Convention	Description
<b>boldface font</b>	Commands, command options, and keywords are in <b>boldface</b> .
<i>italic font</i>	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.
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> .
<b>boldface screen font</b>	Information you must enter verbatim 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> .
→	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**

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

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Cautions use the following conventions:

**Caution**

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

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## 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*.

## Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.

