

# Preface

This preface describes the audience, organization, and conventions of this publication, and provides information on how to obtain related documentation.

# Audience

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

# Organization

This publication is organized as follows:

Chapter	Title	Description
Chapter 1	Command-Line Interface	Describes the Catalyst 4500 series switch CLI.
Chapter 2	Cisco IOS Commands for the Catalyst 4500 Series Switches	Lists all Catalyst 4500 series Cisco IOS commands alphabetically and provides detailed information on each command.
Appendix A	Abbreviations	Defines the acronyms used in this publication.

# **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

### **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/g uide/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.ht ml

- 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
- 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
- Catalyst 4900 and 4900M hardware installation information is available at: 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

## **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

- Catalyst 4900 release notes are available at: 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

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

- Catalyst 4500 Series Software Command Reference 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

## **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

• Cisco IOS command references, Release 12.x

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

You can also use the Error Message Decoder tool at:

http://www.cisco.com/pcgi-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 these conventions:

Convention	Description
boldface font	Boldface text indicates commands and keywords that you enter literally as shown.
<i>italic</i> font	<i>Italic</i> text indicates arguments for which you supply values.
[ <b>x</b> ]	Square brackets enclose an optional element (keyword or argument).

Convention	Description
	A vertical line indicates a choice within an optional or required set of keywords or arguments.
$[\mathbf{x} \mid y]$	Square brackets enclosing keywords or arguments separated by a vertical line indicate an optional choice.
$\{\mathbf{x} \mid y\}$	Braces enclosing keywords or arguments separated by a vertical line indicate a required choice.
[x {y   z}]	Braces and a vertical line within square brackets indicate a required choice within an optional element.
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 <b>boldface</b> screen font.
<i>italic screen</i> font	Arguments for which you supply values are in <i>italic screen</i> font.
٨	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.

Notes use this convention:

Note

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

Cautions use this convention:



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

# **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).

### **License Issues**

The OpenSSL toolkit stays under a dual license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts. Actually both licenses are BSD-style Open Source licenses. In case of any license issues related to OpenSSL please contact openssl-core@openssl.org.

### **OpenSSL License:**

Copyright © 1998-2007 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- **1.** Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
- **3.** All advertising materials mentioning features or use of this software must display the following acknowledgment: "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)".
- 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
- **5.** Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.
- 6. Redistributions of any form whatsoever must retain the following acknowledgment:

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

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

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

#### **Original SSLeay License:**

Copyright © 1995-1998 Eric Young (eay@cryptsoft.com). All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

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

This library is free for commercial and non-commercial use as long as the following conditions are adhered to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed. If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used. This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- **3.** All advertising materials mentioning features or use of this software must display the following acknowledgement:

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

The word 'cryptographic' can be left out if the routines from the library being used are not cryptography-related.

**4.** If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)".

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The license and distribution terms for any publicly available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution license [including the GNU Public License].

# **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 an RSS feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service. Cisco currently supports RSS Version 2.0.

Notices