

Documentation Reference for Ethernet Routing Switch 3600 Series

Release 6.2 9035403 May 2018

Notice

While reasonable efforts have been made to ensure that the information in this document is complete and accurate at the time of printing, Extreme Networks, Inc. assumes no liability for any errors. Extreme Networks, Inc. reserves the right to make changes and corrections to the information in this document without the obligation to notify any person or organization of such changes.

Documentation disclaimer

"Documentation" means information published in varying mediums which may include product information, operating instructions and performance specifications that are generally made available to users of products. Documentation does not include marketing materials. Extreme Networks shall not be responsible for any modifications, additions, or deletions to the original published version of Documentation unless such modifications, additions, or deletions were performed by or on the express behalf of Extreme Networks. End User agrees to indemnify and hold harmless Extreme Networks. Extreme Networks' agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation, to the extent made by End User.

Link disclaimer

Extreme Networks is not responsible for the contents or reliability of any linked websites referenced within this site or Documentation provided by Extreme Networks. Extreme Networks is not responsible for the accuracy of any information, statement or content provided on these sites and does not necessarily endorse the products, services, or information described or offered within them. Extreme Networks does not guarantee that these links will work all the time and has no control over the availability of the linked pages.

Warranty

Extreme Networks provides a limited warranty on Extreme Networks hardware and software. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Extreme Networks' standard warranty language, as well as information regarding support for this product while under warranty is available to Extreme Networks customers and other parties through the Extreme Networks Support website: http://www.extremenetworks.com/support under the link ""Policies" or such successor site as designated by Extreme Networks. Please note that if You acquired the product(s) from an authorized Extreme Networks Channel Partner outside of the United States and Canada, the warranty is provided to You by said Extreme Networks Channel Partner and not by Extreme Networks.

"Hosted Service" means an Extreme Networks hosted service subscription that You acquire from either Extreme Networks or an authorized Extreme Networks Channel Partner (as applicable) and which is described further in Hosted SAS or other service description documentation regarding the applicable hosted service. If You purchase a Hosted Service subscription, the foregoing limited warranty may not apply but You may be entitled to support services in connection with the Hosted Service as described further in your service description documents for the applicable Hosted Service. Contact Extreme Networks or Extreme Networks Channel Partner (as applicable) for more information.

Hosted Service

THE FOLLOWING APPLIES ONLY IF YOU PURCHASE AN EXTREME NETWORKS HOSTED SERVICE SUBSCRIPTION FROM EXTREME NETWORKS OR AN EXTREME NETWORKS CHANNEL PARTNER (AS APPLICABLE), THE TERMS OF USE FOR HOSTED SERVICES ARE AVAILABLE ON THE EXTREME NETWORKS WEBSITE, <u>https://extremeportal.force.com</u> OR SUCH SUCCESSOR SITE AS DESIGNATED BY EXTREME NETWORKS, AND ARE APPLICABLE TO ANYONE WHO ACCESSES OR USES THE HOSTED SERVICE. BY ACCESSING OR USING THE HOSTED SERVICE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE DOING SO (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THE TERMS OF USE. IF YOU ARE ACCEPTING THE TERMS OF USE ON BEHALF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS OF USE. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT WISH TO ACCEPT THESE TERMS OF USE, YOU MUST NOT ACCESS OR USE THE HOSTED SERVICE OR AUTHORIZE ANYONE TO ACCESS OR USE THE HOSTED SERVICE.

Licenses

THE SOFTWARE LICENSE TERMS AVAILABLE ON THE EXTREME NETWORKS WEBSITE, https://extremeportal.force.com OR SUCH SUCCESSOR SITE AS DESIGNATED BY EXTREME NETWORKS, ARE APPLICABLE TO ANYONE WHO DOWNLOADS, USES AND/OR INSTALLS EXTREME NETWORKS SOFTWARE, PURCHASED FROM EXTREME NETWORKS, INC., ANY EXTREME NETWORKS AFFILIATE, OR AN EXTREME NETWORKS CHANNEL PARTNER (AS APPLICABLE) UNDER A COMMERCIAL AGREEMENT WITH EXTREME NETWORKS OR AN EXTREME NETWORKS CHANNEL PARTNER. UNLESS OTHERWISE AGREED TO BY EXTREME NETWORKS IN WRITING. EXTREME NETWORKS DOES NOT EXTEND THIS LICENSE IF THE SOFTWARE WAS OBTAINED FROM ANYONE OTHER THAN EXTREME NETWORKS, AN EXTREME NETWORKS AFFILIATE OR AN EXTREME NETWORKS CHANNEL PARTNER; EXTREME NETWORKS RESERVES THE RIGHT TO TAKE LEGAL ACTION AGAINST YOU AND ANYONE ELSE USING OR SELLING THE SOFTWARE WITHOUT A LICENSE. BY INSTALLING, DOWNLOADING OR USING THE SOFTWARE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE INSTALLING, DOWNLOADING OR USING THE SOFTWARE (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THESE TERMS AND CONDITIONS AND CREATE A BINDING CONTRACT BETWEEN YOU AND EXTREME NETWORKS, INC. OR THE APPLICABLE EXTREME NETWORKS AFFILIATE ("EXTREME NETWORKS").

Extreme Networks grants You a license within the scope of the license types described below. Where the order documentation does not expressly identify a license type, the applicable license will be a Designated System License as set forth below in the Designated System(s) License (DS) section as applicable. The applicable number of licenses and units of capacity for which the license is granted will be one (1), unless a different number of licenses or units of capacity is specified in the documentation or other materials available to You. "Software" means computer programs in object code, provided by Extreme Networks or an Extreme Networks Channel Partner, whether as stand-alone products, pre-installed on hardware products, and any upgrades, updates, patches, bug fixes, or modified versions thereto. "Designated Processor" means a single stand-alone computing device. "Server" means a set of Designated Processors that hosts (physically or virtually) a software application to be accessed by multiple users. "Instance" means a single copy of the Software executing at a particular time: (i) on one physical machine; or (ii) on one deployed software virtual machine ("VM") or similar deployment.

License type(s)

Designated System(s) License (DS). End User may install and use each copy or an Instance of the Software only: 1) on a number of Designated Processors up to the number indicated in the order; or 2) up to the number of Instances of the Software as indicated in the order, Documentation, or as authorized by Extreme Networks in writing. Extreme Networks may require the Designated Processor(s) to be identified in the order by type, serial number, feature key, Instance, location or other specific designation, or to be provided by End User to Extreme Networks through electronic means established by Extreme Networks specifically for this purpose.

Copyright

Except where expressly stated otherwise, no use should be made of materials on this site, the Documentation, Software, Hosted Service, or hardware provided by Extreme Networks. All content on this site, the documentation, Hosted Service, and the product provided by Extreme Networks including the selection, arrangement and design of the content is owned either by Extreme Networks or its licensors and is protected by copyright and other intellectual property laws including the sui generis rights relating to the protection of databases. You may not modify, copy, reproduce, republish, upload, post, transmit or distribute in any way any content, in whole or in part,

including any code and software unless expressly authorized by Extreme Networks. Unauthorized reproduction, transmission, dissemination, storage, and or use without the express written consent of Extreme Networks can be a criminal, as well as a civil offense under the applicable law.

Virtualization

The following applies if the product is deployed on a virtual machine. Each product has its own ordering code and license types. Note, unless otherwise stated, that each Instance of a product must be separately licensed and ordered. For example, if the end user customer or Extreme Networks Channel Partner would like to install two Instances of the same type of products, then two products of that type must be ordered.

Third Party Components

"Third Party Components" mean certain software programs or portions thereof included in the Software or Hosted Service may contain software (including open source software) distributed under third party agreements ("Third Party Components"), which contain terms regarding the rights to use certain portions of the Software ("Third Party Terms"). As required, information regarding distributed Linux OS source code (for those products that have distributed Linux OS source code) and identifying the copyright holders of the Third Party Components and the Third Party Terms that apply is available in the products, Documentation or on Extreme Networks' website at:http://www.extremenetworks.com/support/policies/software licensing or such successor site as designated by Extreme Networks. The open source software license terms provided as Third Party Terms are consistent with the license rights granted in these Software License Terms, and may contain additional rights benefiting You, such as modification and distribution of the open source software. The Third Party Terms shall take precedence over these Software License Terms, solely with respect to the applicable Third Party Components to the extent that these Software License Terms impose greater restrictions on You than the applicable Third Party Terms.

The following applies only if the H.264 (AVC) codec is distributed with the product. THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE <u>HTTP://WWW.MPEGLA.COM</u>.

Service Provider

THE FOLLOWING APPLIES TO EXTREME NETWORKS CHANNEL PARTNER'S HOSTING OF EXTREME NETWORKS PRODUCTS OR SERVICES. THE PRODUCT OR HOSTED SERVICE MAY USE THIRD PARTY COMPONENTS SUBJECT TO THIRD PARTY TERMS AND REQUIRE A SERVICE PROVIDER TO BE INDEPENDENTLY LICENSED DIRECTLY FROM THE THIRD PARTY SUPPLIER. AN EXTREME NETWORKS CHANNEL PARTNER'S HOSTING OF EXTREME NETWORKS PRODUCTS MUST BE AUTHORIZED IN WRITING BY EXTREME NETWORKS AND IF THOSE HOSTED PRODUCTS USE OR EMBED CERTAIN THIRD PARTY SOFTWARE, INCLUDING BUT NOT LIMITED TO MICROSOFT SOFTWARE OR CODECS, THE EXTREME NETWORKS CHANNEL PARTNER IS REQUIRED TO INDEPENDENTLY OBTAIN ANY APPLICABLE LICENSE AGREEMENTS, AT THE EXTREME NETWORKS CHANNEL PARTNER'S EXPENSE, DIRECTLY FROM THE APPLICABLE THIRD PARTY SUPPLIER.

WITH RESPECT TO CODECS, IF THE EXTREME NETWORKS CHANNEL PARTNER IS HOSTING ANY PRODUCTS THAT USE OR EMBED THE G.729 CODEC, H.264 CODEC, OR H.265 CODEC, THE EXTREME NETWORKS CHANNEL PARTNER ACKNOWLEDGES AND AGREES THE EXTREME NETWORKS CHANNEL PARTNER IS RESPONSIBLE FOR ANY AND ALL RELATED FEES AND/OR ROYALTIES. THE G.729 CODEC IS LICENSED BY SIPRO LAB TELECOM INC. SEE WWW.SIPRO.COM/CONTACT.HTML. THE H.264 (AVC) CODEC IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO: (I) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (II) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION FOR H.264 (AVC) AND H.265 (HEVC) CODECS MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE <u>HTTP://</u> WWW.MPEGLA.COM.

Compliance with Laws

You acknowledge and agree that it is Your responsibility for complying with any applicable laws and regulations, including, but not limited to laws and regulations related to call recording, data privacy, intellectual property, trade secret, fraud, and music performance rights, in the country or territory where the Extreme Networks product is used.

Preventing Toll Fraud

"Toll Fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there can be a risk of Toll Fraud associated with your system and that, if Toll Fraud occurs, it can result in substantial additional charges for your telecommunications services.

Security Vulnerabilities

Information about Extreme Networks' security support policies can be found in the Global Technical Assistance Center Knowledgebase at https://gtacknowledge.extremenetworks.com/.

Downloading Documentation

For the most current versions of Documentation, see the Extreme Networks Support website: $\underline{http://}$

documentation.extremenetworks.com, or such successor site as designated by Extreme Networks.

Contact Extreme Networks Support

See the Extreme Networks Support website:http:// www.extremenetworks.com/support for product or Hosted Service notices and articles, or to report a problem with your Extreme Networks product or Hosted Service. For a list of support telephone numbers and contact addresses, go to the Extreme Networks Support website:http://www.extremenetworks.com/support/contact/ (or such successor site as designated by Extreme Networks), scroll to the bottom of the page, and select Contact Extreme Networks Support.

Trademarks

The trademarks, logos and service marks ("Marks") displayed in this site, the Documentation, Hosted Service(s), and product(s) provided by Extreme Networks are the registered or unregistered Marks of Extreme Networks, Inc., its affiliates, its licensors, its suppliers, or other third parties. Users are not permitted to use such Marks without prior written consent from Extreme Networks or such third party which may own the Mark. Nothing contained in this site, the Documentation, Hosted Service(s) and product(s) should be construed as granting, by implication, estoppel, or otherwise, any license or right in and to the Marks without the express written permission of Extreme Networks or the applicable third party.

Extreme Networks is a registered trademark of Extreme Networks, Inc.

All non-Extreme Networks trademarks are the property of their respective owners. Linux[®] is the registered trademark of Linus Torvalds in the U.S. and other countries.

For additional information on Extreme Networks trademarks, please see: <u>http://www.extremenetworks.com/company/legal/</u>

Contents

Chapter 1: Preface	5
Purpose	. 5
Training	5
Providing Feedback to Us	5
Getting Help	. 5
Extreme Networks Documentation	6
Subscribing to Service Notifications	6
Chapter 2: New in this document	8
Chapter 3: Roadmap	. 9
Customer documentation packaging	9
Product fundamentals	9
Installation and commissioning1	10
Upgrades and Patches1	11
Operations1	11
Administration and Security 1	11
Fault and Performance Management 1	12
Chapter 4: Information quality 1	13
Chapter 5: Text conventions	14
Angle brackets 1	14
Bold or Bold Courier text 1	14
Braces1	14
Brackets1	15
Ellipses1	15
Plain Courier text1	15
Separator 1	16
Vertical bar 1	16
cr convention 1	16

Chapter 1: Preface

Purpose

The Documentation Reference explains the organization of Extreme Networks technical documentation. You can use this document to understand where you can find specific types of information in the customer documentation suite.

Training

Ongoing product training is available. For more information or to register, you can access the Web site at <u>www.extremenetworks.com/education/</u>.

Providing Feedback to Us

We are always striving to improve our documentation and help you work better, so we want to hear from you! We welcome all feedback but especially want to know about:

- Content errors or confusing or conflicting information.
- Ideas for improvements to our documentation so you can find the information you need faster.
- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team about this document, please contact us using our short <u>online feedback form</u>. You can also email us directly at <u>internalinfodev@extremenetworks.com</u>

Getting Help

If you require assistance, contact Extreme Networks using one of the following methods:

- GTAC (Global Technical Assistance Center) for Immediate Support
 - Phone: 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: <u>www.extremenetworks.com/support/contact</u>

- Email: <u>support@extremenetworks.com</u>. To expedite your message, enter the product name or model number in the subject line.
- <u>GTAC Knowledge</u> Get on-demand and tested resolutions from the GTAC Knowledgebase, or create a help case if you need more guidance.
- <u>The Hub</u> A forum for Extreme customers to connect with one another, get questions answered, share ideas and feedback, and get problems solved. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.
- <u>Support Portal</u> Manage cases, downloads, service contracts, product licensing, and training and certifications.

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- · Any related RMA (Return Material Authorization) numbers

Extreme Networks Documentation

To find Extreme Networks product guides, visit our documentation pages at:

Current Product Documentation

Archived Documentation (for previous

versions and legacy products)

Release Notes

www.extremenetworks.com/documentation/ www.extremenetworks.com/support/documentation-

www.extremenetworks.com/support/release-notes

Open Source Declarations

Some software files have been licensed under certain open source licenses. More information is available at: www.extremenetworks.com/support/policies/software-licensing.

archives/

Subscribing to Service Notifications

Subscribe to receive an email notification for product and software release announcements, Vulnerability Notices, and Service Notifications.

About this task

You can modify your product selections at any time.

Procedure

- 1. In an Internet browser, go to <u>http://www.extremenetworks.com/support/service-notification-form/</u>.
- 2. Type your first and last name.
- 3. Type the name of your company.
- 4. Type your email address.
- 5. Type your job title.
- 6. Select the industry in which your company operates.
- 7. Confirm your geographic information is correct.
- 8. Select the products for which you would like to receive notifications.
- 9. Click Submit.

Chapter 2: New in this document

There are no new feature changes in this document.

Chapter 3: Roadmap

Use this section to find the correct document for the task you need to perform.

Customer documentation packaging

Extreme Networks technical documents are organized according to job functions. Following are the job functions:

- Product fundamentals on page 9
- Installation and commissioning on page 10
- <u>Upgrades and Patches</u> on page 11
- Operations on page 11
- <u>Administration and Security</u> on page 11
- Fault and Performance Management on page 12

Product fundamentals

Product fundamentals documentation includes product overview and information that applies to all areas of the product.

Table 1: ERS 3600 Series product fundamentals documents

Document title	Description
Regulatory Reference for Ethernet Routing Switch 3600 Series	Provides regulatory information and precautionary messages.
Documentation Reference for Ethernet Routing Switch 3600 Series	Provides an overview of the documentation suite.
Using CLI and EDM on Ethernet Routing Switch 3600 Series	Describes user interfaces and information about feature licensing, if applicable.

Table continues...

Document title	Description
CLI Commands Reference for Ethernet Routing Switch 3600 Series	Provides default values and proper syntax for the Command Line Interface (CLI) commands.
Locating the documentation for Ethernet Routing Switch 3600 Series	This document provides information about locating the switch documentation and software.

Installation and commissioning

Installation and Commissioning documentation includes information that supports initial installation and commissioning (initial configuration) activities, including preparation, processes, safety requirements, and instructions for rollback procedures.

Table 2: ERS 3600 installation and commissioning documents
--

Document title	Description
Quick Start Configuration for Ethernet Routing Switch 3600 Series	Provides information and procedures to introduce the switch to the network and perform basic configuration tasks.
Installing Ethernet Routing Switch 3600 Series	This document provides instructions to install the switch in an equipment rack (individually or in a stack) or on a shelf. It also provides instructions to perform the initial IP configuration on the switch using CLI, BootP, or the IP.CFG file. It also provides instructions to verify the switch status using the frontpanel LEDs.
Installing Transceivers and Optical Components on Ethernet Routing Switch 3600 Series	Provides instructions to install small form factor pluggable (SFP) transceivers, 10 Gigabit small form factor pluggable transceivers, and includes specification for these hardware components.
Installation Job Aid for Ethernet Routing Switch 3600 Series	Provides instructions to install the switch in an equipment rack or on a shelf and prepare for network connectivity, as well as instructions to configure stacking.
Configuring Systems on Ethernet Routing Switch 3600 Series	This document provides instructions to perform basic configuration of the switch including procedures to configure the switch IP address after hardware installation. It also provides instructions to configure system-level features such as stacking, feature licensing, Simple Network Time Protocol, BootP, Domain Name System, PoE, and LLDP.

Upgrades and Patches

Upgrades and Patches documentation includes information to upgrade software and hardware components.

Table 3: 3600 Series upgrades and patches documents

Document title	Description
Release Notes for Ethernet Routing Switch 3600 Series	Describes new features and important information about the latest release. Release Notes includes a list of known issues (including workarounds where appropriate) and a list of fixed issues.

Operations

Operations documents include information that supports tasks related to configuration (postcommissioning) of services or applications, routine maintenance of hardware or software, and accounting or billing activities.

Table 4: ERS 3600 Series operations documents

Document title	Description
Configuring VLANs, Spanning Tree, and Multi-Link Trunking on Ethernet Routing Switch 3600 Series	Provides procedures and conceptual information to configure Layer 2; can include VLANs, Spanning Tree, Link Aggregation Control Protocol, and Multi-Link Trunking.
Configuring IP Routing and Multicast on Ethernet Routing Switch 3600 Series	Provides procedures and conceptual information to configure IP routing features, including static routes, Proxy ARP, DHCP Relay, and UDP forwarding. It also provides procedures and conceptual information to manage multicast traffic using IGMP snooping.
Configuring Quality of Service on Ethernet Routing Switch 3600 Series	Provides procedures and conceptual information to configure Quality of Service.

Administration and Security

Administration and Security documentation includes information that supports tasks that operations personnel perform that relate to network administration or product security, including the configuration and management of systems data and users. The documentation also includes the management and protection of resources from unauthorized or detrimental access and use.

Document title	Description
Configuring Security on Ethernet Routing Switch 3600 Series	Provides procedures and conceptual information to administer and configure security features, including MAC-based security, RADIUS, EAPOL, IPv6 First Hop Security (FHS), and SSH.

Table 5: ERS 3600 Series administration and security documents

Fault and Performance Management

Fault and Performance Management documents include information that supports the tasks that operations personnel perform that relate to managing or preventing faults, troubleshooting, and monitoring and improving the performance of the network or product.

Table 6: ERS 3600 Series fault and performance management documents

Document title	Description
Configuring System Monitoring on Ethernet Routing Switch 3600 Series	Provides information and system diagnostics tools including syslog, Remote Monitoring, port mirroring, and displaying ports and chassis statistics.
Logs Reference for Ethernet Routing Switch 2000, 3000, 4000, 5000 Series and Virtual Services Platform 7000 Series	Provides information about the various log messages generated by the system.
Troubleshooting Ethernet Routing Switch 3600 Series	Describes common problems and error messages and the techniques to resolve them.

Chapter 4: Information quality

Extreme Networks technical documents are tested by subject matter experts (SMEs) throughout the product development lifecycle. SMEs from Design, Product Verification (PV), Product Line Management (PLM), and other stakeholder groups, all contribute to document quality.

On a limited basis, Extreme Networks releases technical documents in the early stages of development that have not completed all testing milestones. Documents that have not completed testing bear a Draft identification to indicate that the content they contain can change as the product is refined and document testing is completed. Draft documents are not widely available.

Chapter 5: Text conventions

This chapter describes the text conventions used in this document.

Angle brackets

When you see angle brackets in a command string they indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when you enter the command

Example

If the command syntax is ping <ip_address>, then you enter the following:

```
ping 192.32.10.12
```

Bold or Bold Courier text

Bold or Bold Courier text indicates command names, options, and text that you must enter.

Example

Use the info command.

Example

Enter show ip {alerts | routes}.

Example

Procotols, IP identifies the IP command on the Protocols menu.

Braces

Braces ({}) indicate required elements in syntax descriptions where more than one option is available.

You must choose only one option.

Do not type the braces when you enter the command.

Example

If the command syntax is **stack** oper-mode {**Pure** | **Hybrid**}, you must enter one of the following:

- stack oper-mode Pure
- stack oper-mode Hybrid

Brackets

Brackets ([]) indicate optional elements in syntax descriptions. Do not type the brackets when you enter the command.

Example

If the command syntax is **show** ip **interfaces** [-alerts] you can enter one of the following:

- show ip interfaces
- show ip interfaces -alerts

Ellipses

An ellipsis (...) indicates that you repeat the last element of the command as needed.

Example

```
If the command syntax is ethernet/2/1 [<parameter> <value>] ... you enter the following:
```

ethernet/2/1 and as many parameter-value pairs as you need.

Plain Courier text

Plain Courier text indicates system output.

Example

Prompts and system messages like the following are presented in plain Courier text.

Set Trap Monitor Filters

Separator

A separator (>) is used to define menu paths.

Example

The following illustrates the IP command on the Protocols menu.

```
Protocols > IP
```

Vertical bar

A vertical bar (|) separates choices for command keywords and arguments.

Enter only one choice.

Do not type the vertical line when you enter the command.

Example

If the command syntax is **show** ip {alerts | routes}, you enter one of the following:

- show ip alerts
- show ip routes

cr convention

In CLI procedures, when you see <cr> as an option for a command, you can press the Enter key on your keyboard to execute the command.