



Junos[®] OS for EX Series Ethernet Switches

User Interfaces on EX Series Switches

Release
12.3



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Release 12.3
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Part 3

Chapter 5

Administration

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Documentation and Release Notes

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Supported Platforms

For the features described in this document, the following platforms are supported:

- EX Series

Using the Examples in This Manual

If you want to use the examples in this manual, you can use the **load merge** or the **load merge relative** command. These commands cause the software to merge the incoming configuration into the current candidate configuration. The example does not become active until you commit the candidate configuration.

If the example configuration contains the top level of the hierarchy (or multiple hierarchies), the example is a *full example*. In this case, use the **load merge** command.

If the example configuration does not start at the top level of the hierarchy, the example is a *snippet*. In this case, use the **load merge relative** command. These procedures are described in the following sections.

Merging a Full Example

To merge a full example, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration example into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following configuration to a file and name the file **ex-script.conf**. Copy the **ex-script.conf** file to the **/var/tmp** directory on your routing platform.

```
system {
  scripts {
    commit {
      file ex-script.xml;
    }
  }
}
interfaces {
  fxp0 {
    disable;
    unit 0 {
      family inet {
        address 10.0.0.1/24;
      }
    }
  }
}
```

2. Merge the contents of the file into your routing platform configuration by issuing the **load merge** configuration mode command:

```
[edit]
user@host# load merge /var/tmp/ex-script.conf
load complete
```

Merging a Snippet

To merge a snippet, follow these steps:

1. From the HTML or PDF version of the manual, copy a configuration snippet into a text file, save the file with a name, and copy the file to a directory on your routing platform.

For example, copy the following snippet to a file and name the file **ex-script-snippet.conf**. Copy the **ex-script-snippet.conf** file to the **/var/tmp** directory on your routing platform.

```
commit {
  file ex-script-snippet.xml; }
```

2. Move to the hierarchy level that is relevant for this snippet by issuing the following configuration mode command:

```
[edit]
user@host# edit system scripts
[edit system scripts]
```

3. Merge the contents of the file into your routing platform configuration by issuing the **load merge relative** configuration mode command:

```
[edit system scripts]
user@host# load merge relative /var/tmp/ex-script-snippet.conf
load complete
```

For more information about the **load** command, see the CLI User Guide.

Documentation Conventions

Table 1 on page xv defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page xv defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the configure command: user@host> configure
Fixed-width text like this	Represents output that appears on the terminal screen.	user@host> show chassis alarms No alarms currently active

Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
<i>Italic text like this</i>	<ul style="list-style-type: none"> Introduces or emphasizes important new terms. Identifies book names. Identifies RFC and Internet draft titles. 	<ul style="list-style-type: none"> A policy <i>term</i> is a named structure that defines match conditions and actions. <i>Junos OS System Basics Configuration Guide</i> RFC 1997, <i>BGP Communities Attribute</i>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: [edit] root@# set system domain-name <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> To configure a stub area, include the stub statement at the [edit protocols ospf area area-id] hierarchy level. The console port is labeled CONSOLE.
< > (angle brackets)	Enclose optional keywords or variables.	stub <default-metric metric>;
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast multicast <i>(string1 string2 string3)</i>
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [community-ids]
Indentation and braces ({ })	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
J-Web GUI Conventions		
Bold text like this	Represents J-Web graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> In the Logical Interfaces box, select All Interfaces. To cancel the configuration, click Cancel.
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select Protocols>Ospf .

Documentation Feedback

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- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>

- Join and participate in the Juniper Networks Community Forum:
<http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

PART 1

Overview

- [Software Overview on page 3](#)
- [User Interfaces on page 7](#)

CHAPTER 1

Software Overview

- [Understanding Software Infrastructure and Processes on page 3](#)

Understanding Software Infrastructure and Processes

Each switch runs the Juniper Networks Junos operating system (Junos OS) for Juniper Networks EX Series Ethernet Switches on its general-purpose processors. Junos OS includes processes for Internet Protocol (IP) routing and for managing interfaces, networks, and the chassis.

The Junos OS runs on the Routing Engine. The Routing Engine kernel coordinates communication among the Junos OS processes and provides a link to the Packet Forwarding Engine.

With the J-Web interface and the command-line interface (CLI) to the Junos OS, you configure switching features and routing protocols and set the properties of network interfaces on your switch. After activating a software configuration, use either the J-Web or CLI user interface to monitor the switch, manage operations, and diagnose protocol and network connectivity problems.

- [Routing Engine and Packet Forwarding Engine on page 3](#)
- [Junos OS Processes on page 4](#)

Routing Engine and Packet Forwarding Engine

A switch has two primary software processing components:

- **Packet Forwarding Engine**—Processes packets; applies filters, routing policies, and other features; and forwards packets to the next hop along the route to their final destination.
- **Routing Engine**—Provides three main functions:
 - Creates the packet forwarding switch fabric for the switch, providing route lookup, filtering, and switching on incoming data packets, then directing outbound packets to the appropriate interface for transmission to the network
 - Maintains the routing tables used by the switch and controls the routing protocols that run on the switch.

- Provides control and monitoring functions for the switch, including controlling power and monitoring system status.

Junos OS Processes

The Junos OS running on the Routing Engine and Packet Forwarding Engine consists of multiple processes that are responsible for individual functions.

The separation of functions provides operational stability, because each process accesses its own protected memory space. In addition, because each process is a separate software package, you can selectively upgrade all or part of the Junos OS, for added flexibility.

[Table 3 on page 4](#) describes the primary Junos OS processes.

Table 3: Junos OS Processes

Process	Name	Description
Chassis process	chassisd	<p>Detects hardware on the system that is used to configure network interfaces.</p> <p>Monitors the physical status of hardware components and field-replaceable units (FRUs), detecting when environment sensors such as temperature sensors are triggered.</p> <p>Relays signals and interrupts—for example, when devices are taken offline, so that the system can close sessions and shut down gracefully.</p>
Ethernet switching process	eswd	<p>Handles Layer 2 switching functionality such as MAC address learning, Spanning Tree protocol and access port security. The process is also responsible for managing Ethernet switching interfaces, VLANs, and VLAN interfaces.</p> <p>Manages Ethernet switching interfaces, VLANs, and VLAN interfaces.</p>
Forwarding process	pfem	<p>Defines how routing protocols operate on the switch. The overall performance of the switch is largely determined by the effectiveness of the forwarding process.</p>
Interface process	dcd	<p>Configures and monitors network interfaces by defining physical characteristics such as link encapsulation, hold times, and keepalive timers.</p>
Management process	mgd	<p>Provides communication between the other processes and an interface to the configuration database.</p> <p>Populates the configuration database with configuration information and retrieves the information when queried by other processes to ensure that the system operates as configured.</p> <p>Interacts with the other processes when commands are issued through one of the user interfaces on the switch.</p> <p>If a process terminates or fails to start when called, the management process attempts to restart it a limited number of times to prevent thrashing and logs any failure information for further investigation.</p>
Routing protocol process	rpd	<p>Defines how routing protocols such as RIP, OSPF, and BGP operate on the device, including selecting routes and maintaining forwarding tables.</p>

- Related Documentation**
- For more information about processes, see *Junos OS Network Operations Guide*
 - For more information about basic system parameters, supported protocols, and software processes, see *Junos OS System Basics Configuration Guide*

CHAPTER 2

User Interfaces

- [CLI User Interface Overview on page 7](#)
- [EX Series Switches Hardware and CLI Terminology Mapping on page 9](#)
- [J-Web User Interface for EX Series Switches Overview on page 9](#)
- [Understanding J-Web Configuration Tools on page 12](#)
- [Understanding J-Web User Interface Sessions on page 13](#)

CLI User Interface Overview

You can use two interfaces to monitor, configure, troubleshoot, and manage a Juniper Networks EX Series Ethernet Switch: the J-Web graphical user interface and the Junos operating system (Junos OS) command-line interface (CLI). Both of these user interfaces are shipped with the switch. This topic describes the CLI. For information about the J-Web user interface, see [“J-Web User Interface for EX Series Switches Overview” on page 9](#).

- [CLI Overview on page 7](#)
- [CLI Help and Command Completion on page 7](#)
- [CLI Command Modes on page 8](#)

CLI Overview

Junos operating system (Junos OS) CLI is a Juniper Networks specific command shell that runs on top of a UNIX-based operating system kernel. The CLI provides command help and command completion.

The CLI also provides a variety of UNIX utilities, such as Emacs-style keyboard sequences that allow you to move around on a command line and scroll through recently executed commands, regular expression matching to locate and replace values and identifiers in a configuration, filter command output, or log file entries, store and archive router files on a UNIX-based file system, and exit from the CLI environment and create a UNIX C shell or Bourne shell to navigate the file system, manage switch processes, and so on.

CLI Help and Command Completion

To access CLI Help, type a question mark (?) at any level of the hierarchy. The system displays a list of the available commands or statements and a short description of each.

To complete a command, statement, or option that you have partially typed, press the Tab key or the Spacebar. If the partially typed letters uniquely identify a command, the complete command name appears. Otherwise, a beep indicates that you have entered an ambiguous command and the possible completions are displayed. This completion feature also applies to other strings, such as filenames, interface names, usernames, and configuration statements.

CLI Command Modes

The CLI has two modes, operational mode and configuration mode.

In operational mode, you enter commands to monitor and troubleshoot switch hardware and software and network connectivity. Operational mode is indicated by the > prompt—for example, **user@switch>**.

In configuration mode, you can define all properties of the Juniper Networks Junos operating system (Junos OS), including interfaces, VLANs, Virtual Chassis information, routing protocols, user access, and several system hardware properties.

To enter configuration mode, enter the **configure** command: .

```
user@switch> configure
```

Configuration mode is indicated by the # prompt, and includes the current location in the configuration hierarchy—for example:

```
[edit interfaces ge-0/0/12]  
user@switch#
```

In configuration mode, you are actually viewing and changing the candidate configuration file. The candidate configuration allows you to make configuration changes without causing operational changes to the current operating configuration, called the active configuration. When you commit the changes you added to the candidate configuration, the system updates the active configuration. Candidate configurations enable you to alter your configuration without causing potential damage to your current network operations.

To activate your configuration changes, enter the **commit** command.

To return to operational mode, go to the top of the configuration hierarchy and then quit—for example:

```
[edit interfaces ge-0/0/12]  
user@switch# top  
[edit]  
user@switch# exit
```

You can also activate your configuration changes and exit configuration mode with a single command, **commit and-quit**. This command succeeds only if there are no mistakes or syntax errors in the configuration.



TIP: When you commit the candidate configuration, you can require an explicit confirmation for the commit to become permanent by using the **commit**

confirmed command. This is useful for verifying that a configuration change works correctly and does not prevent management access to the switch. After you issue the `commit confirmed` command, you must issue another `commit` command within the defined period of time (10 minutes by default) or the system reverts to the previous configuration.

**Related
Documentation**

- [EX Series Switch Software Features Overview](#)
- [Junos OS CLI User Guide](#)

EX Series Switches Hardware and CLI Terminology Mapping

The terms used to describe hardware components in EX Series switches documentation are sometimes different from the terms used in the Junos OS command line interface (CLI).

See the following topics to map the hardware terms used in EX Series switches documentation to the corresponding terms used in the CLI:

- [EX2200 Switch Hardware and CLI Terminology Mapping](#)
- [EX3200 Switch Hardware and CLI Terminology Mapping](#)
- [EX4200 Switch Hardware and CLI Terminology Mapping](#)
- [EX4500 Switch Hardware and CLI Terminology Mapping](#)
- [EX6210 Switch Hardware and CLI Terminology Mapping](#)
- [EX8208 Switch Hardware and CLI Terminology Mapping](#)
- [EX8216 Switch Hardware and CLI Terminology Mapping](#)

**Related
Documentation**

- [EX2200 Switches Hardware Overview](#)
- [EX3200 Switches Hardware Overview](#)
- [EX4200 Switches Hardware Overview](#)
- [EX4500 Switches Hardware Overview](#)
- [EX6210 Switch Hardware Overview](#)
- [EX8208 Switch Hardware Overview](#)
- [EX8216 Switch Hardware Overview](#)

J-Web User Interface for EX Series Switches Overview

You can use two interfaces to monitor, configure, troubleshoot, and manage a Juniper Networks EX Series Ethernet Switch: the J-Web graphical user interface and the Juniper Networks Junos operating system (Junos OS) command-line interface (CLI). Both of these user interfaces are shipped with the switch. This topic describes the J-Web interface.

You can navigate the J-Web interface, scroll pages, and expand and collapse elements as you do in a typical Web browser interface. For information about the CLI user interface, see [“CLI User Interface Overview” on page 7](#).

To access the J-Web interface for the switch, your management device requires the following software:

- Supported browsers—Microsoft Internet Explorer version 7.0 and Mozilla Firefox version 3.0



NOTE: Other browser versions might not work on the switch. The browser and the network must support receiving and processing HTTP 1.1 GZIP compressed data.

- Language support—English-version browsers
- Supported OS—Microsoft Windows XP Service Pack 3

Each page of the J-Web interface is divided into panes.

- Top pane—Displays system identity information and links.
- Main pane—Location where you monitor, configure, diagnose (troubleshoot), and manage (maintain) the switch by entering information in text boxes, making selections, and clicking buttons.
- Side pane—Displays suboptions of the Monitor, Configure, Troubleshoot, or Maintain task currently displayed in the main pane. Click a suboption to access it in the main pane.

The layout of the panes allows you to quickly navigate through the interface. [Table 4 on page 10](#) summarizes the elements of the J-Web interface.

The J-Web interface provides CLI tools that allow you to perform all of the tasks that you can perform from the Junos OS command-line interface (CLI), including a CLI Viewer to view the current configuration, a CLI Editor for viewing and modifying the configuration, and a Point & Click CLI editor that allows you to click through all of the available CLI statements.

Table 4: J-Web Interface

J-Web Interface Element	Description
Main Pane	
Top Pane	
Host	The hostname of the switch.
Logged in as: username	The user name you used to log in to the switch.

Table 4: J-Web Interface (*continued*)

J-Web Interface Element	Description
Main Pane	
Commit Options	<p>A set of options using which you can configure committing multiple changes with a single commit.</p> <ul style="list-style-type: none"> • Commit—Commits the candidate configuration of the current user session, along with changes from other user sessions. • Compare—Displays the XML log of pending configurations on the device. • Discard—Discards the candidate configuration of the current user session, along with changes from other user sessions. • Preference—Indicates your choice of committing all configurations changes together or committing each configuration change immediately. The two commit options are: <ul style="list-style-type: none"> • Commit changes immediately—Sets the system to force an immediate commit on every page after every configuration change. • Validate changes until explicit commit—Loads all configuration changes for an accumulated single commit. If there are errors in loading the configuration, the errors are logged. This is the default mode. <p>NOTE: There are some pages on which configuration changes must be committed immediately. For such pages, if you configure the commit options for a single commit, the system displays warning notifications that remind you to commit your changes immediately. An example for such a page is Switching.</p>
Help	<p>Displays links to information on help and the J-Web interface.</p> <ul style="list-style-type: none"> • Help Contents—View context-sensitive help topics. • About—Displays information about the J-Web interface, such as the version number.
Logout	Ends your current login session with the switch and returns you to the login page.
Taskbar	<p>Menu of J-Web main options. Click the tab to access an option.</p> <ul style="list-style-type: none"> • Dashboard—Displays a high-level, graphical view of the chassis and status of the switch. It displays system health information, alarms, and system status. • Configure—Configure the switch, and view configuration history. • Monitor—View information about configuration and hardware on the switch. • Maintain—Manage files and licenses, upgrade software, and reboot the switch. • Troubleshoot—Run diagnostic tools to troubleshoot network issues.
Help (?) icon	Displays useful information—such as the definition, format, and valid range of an option—when you move the cursor over the question mark.
Red asterisk (*)	Indicates a required field.

Table 4: J-Web Interface (*continued*)

J-Web Interface Element	Description
Main Pane	
Icon legend	<p>(Applies to the Point & Click CLI editor only) Explains icons that appear in the user interface to provide information about configuration statements:</p> <ul style="list-style-type: none"> • C—Comment. Move your cursor over the icon to view a comment about the configuration statement. • I—Inactive. The configuration statement does not apply for the switch. • M—Modified. The configuration statement has been added or modified. • *—Mandatory. The configuration statement must have a value.
Task Pane	
Configuration hierarchy	<p>(Applies to the Junos OS CLI configuration editor only) Displays the hierarchy of committed statements in the switch configuration.</p> <ul style="list-style-type: none"> • Click Expand all to display the entire hierarchy. • Click Hide all to display only the statements at the top level. • Click plus signs (+) to expand individual items. • Click minus signs (-) to hide individual items.

Related Documentation

- Using the Commit Options to Commit Configuration Changes (J-Web Procedure)
- EX Series Switch Software Features Overview
- EX3200 Switches Hardware Overview
- EX4200 Switches Hardware Overview
- Connecting and Configuring an EX Series Switch (J-Web Procedure)
- [CLI User Interface Overview on page 7](#)

Understanding J-Web Configuration Tools

The J-Web graphical user interface (GUI) allows you to monitor, configure, troubleshoot, and manage the switching platform by means of a Web browser with Hypertext Transfer Protocol (HTTP) or HTTP over Secure Sockets Layer (HTTPS) enabled. The J-Web interface provides access to all the configuration statements supported by the switch.

The J-Web interface provides three methods of configuring the switch:

- Configure menu
- Point & Click CLI Editor
- CLI Editor

[Table 5 on page 13](#) gives a comparison of the three methods of configuration.

Table 5: Switching Platform Configuration Interfaces

Tool	Description	Function	Use
Configure menu	<p>Web browser pages for setting up the switch quickly and easily without configuring each statement individually.</p> <p>For example, use the Virtual Chassis Configuration page to configure the Virtual Chassis parameters on the switch.</p>	<p>Configure basic switch platform services:</p> <ul style="list-style-type: none"> • Interfaces • Switching • Virtual Chassis • Security • Services • System Properties • Routing 	Use for basic configuration.
Point & Click CLI editor	<p>Web browser pages divided into panes in which you can do any of the following:</p> <ul style="list-style-type: none"> • Expand the entire configuration hierarchy and click a configuration statement to view or edit. The main pane displays all the options for the statement, with a text box for each option. • Paste a complete configuration hierarchy into a scrollable text box, or edit individual lines. • Upload or download a complete configuration. • Roll back to a previous configuration. • Create or delete a rescue configuration. 	<p>Configure all switching platform services:</p> <ul style="list-style-type: none"> • System parameters • User Accounting and Access • Interfaces • VLAN properties • Virtual Chassis properties • Secure Access • Services • Routing protocols 	Use for complete configuration if you are not familiar with the Junos OS CLI or prefer a graphical interface.
CLI editor	<p>Interface in which you do any of the following:</p> <ul style="list-style-type: none"> • Type commands on a line and press Enter to create a hierarchy of configuration statements. • Create an ASCII text file that contains the statement hierarchy. • Upload a complete configuration, or roll back to a previous configuration. • Create or delete a rescue configuration. 	<p>Configure all switching platform services:</p> <ul style="list-style-type: none"> • System parameters • User Accounting and Access • Interfaces • VLAN properties • Virtual Chassis properties • Secure Access • Services • Routing protocols 	Use for complete configuration if you know the Junos OS CLI or prefer a command interface.

Related Documentation

- [Understanding J-Web User Interface Sessions on page 13](#)
- [J-Web User Interface for EX Series Switches Overview on page 9](#)
- [Connecting and Configuring an EX Series Switch \(J-Web Procedure\)](#)
- [Configuration Files Terms](#)

Understanding J-Web User Interface Sessions

You establish a J-Web session with the switch through an HTTP-enabled or HTTPS-enabled Web browser. The HTTPS protocol, which uses 128-bit encryption, is available only in domestic versions of the Juniper Networks Junos operating system (Junos

OS). To use HTTPS, you must have installed a certificate on the switch and enabled HTTPS. See [Generating SSL Certificates to Be Used for Secure Web Access](#).

When you attempt to log in through the J-Web interface, the switch authenticates your username with the same methods used for Telnet and SSH.

If the switch does not detect any activity through the J-Web interface for 15 minutes, the session times out and is terminated. You must log in again to begin a new session.

To explicitly terminate a J-Web session at any time, click **Logout** in the top pane.

**Related
Documentation**

- [J-Web User Interface for EX Series Switches Overview on page 9](#)
- [Configuring Management Access for the EX Series Switch \(J-Web Procedure\)](#)

PART 2

Configuration

- [Configuration Tasks on page 17](#)
- [Statement Hierarchies on page 21](#)

CHAPTER 3

Configuration Tasks

- Using the J-Web CLI Terminal on page 17
- Starting the J-Web Interface on page 19

Using the J-Web CLI Terminal

The J-Web CLI terminal provides access to the Junos OS command-line interface (CLI) through the J-Web interface. The functionality and behavior of the CLI available through the CLI Terminal page is the same as that of the Junos OS CLI available through the switch console. The CLI terminal supports all CLI commands and other features such as CLI help and autocompletion. Using the CLI terminal page, you can fully configure, monitor, and manage the switch.

This topic covers:

- Configuring the Web Browser on page 17
- Setting Domain Name, Hostname, and Name Server on page 18
- Enabling SSH on your system on page 18
- Sample Configuration on an EX Series Switch on page 18

Configuring the Web Browser

Configure your Web browser as follows:

- Install Java Runtime Environment (JRE) version 1.4 or later on your system. JRE is a software package that must be installed on the client system to run Java applications. You can download the latest version of JRE from the Java software website <http://www.java.com/>. Installing JRE installs Java plug-ins, which once installed, load automatically and transparently to render Java applets.



NOTE: By default Mozilla Firefox has blocked JRE versions earlier than 1.6.0_31 and 1.7.0 through 1.7.0_2. However, Mozilla Firefox users can still click Add-ons > Plugin to enable Java.

- Set your browser to support and enable Java applets. To know more about checking the status of java applets in your browser see http://java.com/en/download/help/enable_browser.xml.

Setting Domain Name, Hostname, and Name Server

Configure the domain name and hostname of the switch on your system. Ensure that the DNS server setting is correct. DNS name resolution must happen properly. Ensure that there is connectivity between the client and the management device.

You can set the domain name, hostname, and the DNS name server either through the J-Web interface or the CLI:

- To set through the J-Web interface:

See Configuring System Identity for an EX Series Switch (J-Web Procedure) for more information.

- To set through the CLI:

```
set system domain-name domain-name
```

```
set system host-name host-name
```

```
set system name-server dns-ip-address
```

Enabling SSH on your system

SSH provides a secure method of logging in to the switch, and encrypting traffic so that it is not intercepted. If SSH is not enabled on the system, the CLI terminal page displays the error message:

To enable SSH on your system, do the following:

```
set system services ssh
```

Sample Configuration on an EX Series Switch

1. Type the **configure** command to enter the configuration mode:

```
user@switch> configure
```

2. Log in as host:

```
user@switch# set system host-name host
```

3. Configure the encrypted password; for example:

```
user@switch# set system root-authentication encrypted-password  
"$1$mr3D4eVf$mc7y54e6hk4JulpwWPao6."
```

4. Map the hostname to the IP address:

```
user@switch# set system static-host-mapping host inet 10.9.221.31
```

5. Configure the IP address for the DNS server:

```
user@switch# set system name-server 10.0.220.1
```

6. Enable the system services by using:

```
set system services:user@switch# set system services ssh
```

7. Select **Troubleshoot > CLI Terminal**. The password window is displayed.
8. Enter the password, and click **OK**. The CLI Terminal window appears on the J-Web page.



NOTE: If you exit from the CLI terminal, the connection is lost. Click **CLI Terminal** if you want to connect again.

Related Documentation

- [CLI User Interface Overview on page 7](#)
- [Understanding J-Web Configuration Tools on page 12](#)

Starting the J-Web Interface

You can use the J-Web graphical interface to configure and manage the EX Series switch.

To start the J-Web interface:

1. Launch your HTTP-enabled or HTTPS-enabled Web browser.

To use HTTPS, you must have installed a certificate on the switch and enabled HTTPS.

2. After **http://** or **https://** in your Web browser, type the hostname or IP address of the switch and press **Enter**.

The J-Web login page appears.

3. On the login page, type your username and password, and click **Log In**.

To correct or change the username or password you typed, click **Reset**, type the new entry or entries, and click **Log In**.



NOTE: The default username is **root** with no password. You must change this during initial configuration or the system does not accept the configuration.

The Chassis Dashboard information page appears.

To explicitly terminate a J-Web session at any time, click **Logout** in the top pane.

Related Documentation

- [J-Web User Interface for EX Series Switches Overview on page 9](#)
- [Dashboard for EX Series Switches](#)

CHAPTER 4

Statement Hierarchies

- [\[edit access\] Configuration Statement Hierarchy on EX Series Switches on page 24](#)
- [\[edit accounting-options\] Configuration Statement Hierarchy on EX Series Switches on page 27](#)
- [\[edit chassis\] Configuration Statement Hierarchy on EX Series Switches on page 28](#)
- [\[edit class-of-service\] Configuration Statement Hierarchy on EX Series Switches on page 31](#)
- [\[edit ethernet-switching-options\] Configuration Statement Hierarchy on EX Series Switches on page 34](#)
- [\[edit event-options\] Configuration Statement Hierarchy on EX Series Switches on page 37](#)
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- [\[edit forwarding-options\] Configuration Statement Hierarchy on EX Series Switches on page 41](#)
- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)
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- [\[edit interfaces interface-range\] Configuration Statement Hierarchy on EX Series Switches on page 56](#)
- [\[edit interfaces lo\] Configuration Statement Hierarchy on EX Series Switches on page 63](#)
- [\[edit interfaces me\] Configuration Statement Hierarchy on EX Series Switches on page 66](#)
- [\[edit interfaces vlan\] Configuration Statement Hierarchy on EX Series Switches on page 69](#)
- [\[edit interfaces vme\] Configuration Statement Hierarchy on EX Series Switches on page 72](#)
- [\[edit interfaces xe\] Configuration Statement Hierarchy on EX Series Switches on page 75](#)
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- [\[edit snmp\] Configuration Statement Hierarchy on EX Series Switches on page 189](#)
- [\[edit system\] Configuration Statement Hierarchy on EX Series Switches on page 196](#)
- [\[edit virtual-chassis\] Configuration Statement Hierarchy on EX Series Switches on page 209](#)
- [\[edit vlans\] Configuration Statement Hierarchy on EX Series Switches on page 211](#)

[edit access] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit access]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit access\] Hierarchy Level on page 24](#)
- [Unsupported Statements in the \[edit access\] Hierarchy Level on page 26](#)

Supported Statements in the [edit access] Hierarchy Level

The following hierarchy shows the **[edit access]** configuration statements supported on EX Series switches:

```
access {
  address-assignment {
    abated-utilization percentage;
    abated-utilization-v6 percentage;
    high-utilization percentage;
    high-utilization-v6 percentage;
    pool pool-name {
      family inet {
        dhcp-attributes {
          boot-file filename;
          boot-server hostname;
          domain-name domain-name;
          grace-period seconds;
          maximum-lease-time (seconds | infinite);
          name-server {
            address;
          }
        }
        netbios-node-type (b-node | h-node | m-node | p-node);
        option option-index (array (byte | flag | integer | ip-address | short | string |
          unsigned-integer | unsigned-short) [ type-values ] | byte 8-bit-value |
          flag (false | off | on | true) | integer signed-32-bit-value | ip-address address |
          short signed-16-bit-value | string text-string | unsigned-integer 32-bit-value |
          unsigned-short 16-bit-value);
        router {
          address;
        }
      }
      server-identifier ipv4-address;
      tftp-server hostname;
      wins-server {
```

```

        address;
    }
}
host hostname {
    hardware-address mac-address;
    ip-address ip-address;
}
network ip-prefix </prefix-length>;
range name {
    high upper-limit;
    low lower-limit;
}
}
link pool-name;
}
}
address-pool pool-name {
    address address-or-prefix;
    address-range <low lower-limit> <high upper-limit>;
}
profile profile-name {
    accounting {
        accounting-stop-on-access-deny;
        accounting-stop-on-failure;
        coa-immediate-update;
        immediate-update;
        order (radius | none);
        statistics (time | volume-time);
    }
}
authentication-order (ldap | password | radius);
client client-name {
    chap-secret chap-secret;
    firewall-user {
        password password;
    }
    no-rfc2486;
    pap-password password;
}
radius {
    accounting-server server-address;
    attributes {
        exclude [exclude-options];
        ignore [ignore-options];
    }
    authentication-server server-address;
}
radius-options (Access) {
    revert-interval (Access RADIUS) interval;
}
session-options {
    client-group [group-names];
    client-idle-timeout minutes;
    client-session-timeout minutes;
}
radius-options (Access) {

```

```

    revert-interval (Access RADIUS) interval;
  }
radius-server server-address {
  port port-number;
  retry attempts;
  routing-instance instance-name;
  secret password;
  source-address address;
  timeout minutes;
}
}

```

Unsupported Statements in the [edit access] Hierarchy Level

All statements in the [edit access] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 6: Unsupported [edit access] Configuration Statements on EX Series Switches

Statement	Hierarchy Level
<i>NOTE:</i> Variables, such as <i>filename</i> , are not shown in the statements or hierarchies.	
aaa	[edit access terminate-code]
administrative-reset	[edit access terminate-code aaa shutdown]
authentication-denied	[edit access terminate-code aaa deny]
client-request	[edit access terminate-code aaa dhcp]
compliance	[edit access ppp-options]
deny	[edit access terminate-code aaa]
dhcp	[edit access terminate-code]
group-profile	[edit access]
ike	[edit access profile client]
initiate-dead-peer-detection	[edit access profile client ike]
lost-carrier	[edit access terminate-code dhcp]
nak	[edit access terminate-code dhcp]
nas-logout	[edit access terminate-code dhcp]
no-offers	[edit access terminate-code dhcp]

Table 6: Unsupported [edit access] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy Level
no-resources	[edit access terminate-code aaa deny]
ppp-options	[edit access]
preference	[edit access profile client ike reverse-route]
remote-reset	[edit access terminate-code aaa shutdown]
rfc	[edit access ppp-options compliance]
reverse-route	[edit access profile client ike]
server-request-timeout	[edit access terminate-code aaa deny]
shutdown	[edit access terminate-code aaa]
terminate-code	[edit access]

- Related Documentation**
- Example: Connecting a RADIUS Server for 802.1X to an EX Series Switch
 - Configuring 802.1X RADIUS Accounting (CLI Procedure)
 - Security Features for EX Series Switches Overview

[edit accounting-options] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit accounting-options]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit accounting-options\] Hierarchy Level on page 27](#)
- [Unsupported Statements in the \[edit accounting-options\] Hierarchy Level on page 28](#)

Supported Statements in the [edit accounting-options] Hierarchy Level

The following hierarchy shows the **[edit accounting-options]** configuration statements supported on EX Series switches:

```
accounting-options {  
  class-usage-profile profile-name {  
    destination-classes destination-class-name;  
    file filename;  
    interval minutes;  
    source-classes source-class-name;  
  }  
  file {  
    archive-sites site-url {  
      password password;  
    }  
    files number;  
    size bytes;  
    start-time time;  
    transfer-interval minutes;  
  }  
  filter-profile profile-name {  
    counters counter-name;  
    file filename;  
    interval minutes;  
  }  
  interface-profile profile-name {  
    fields [interface-profile-fields];  
    file file-name;  
    interval minutes;  
  }  
  mib-profile profile-name {  
    file filename;  
    interval minutes;  
    object-names [mib-object-names];  
    operation [snmp-operations];  
  }  
  routing-engine-profile profile-name {  
    fields [field-names];  
    file filename;  
    interval minutes;  
  }  
}
```

Unsupported Statements in the [edit accounting-options] Hierarchy Level

All statements in the [edit accounting-options] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- Network Management Configuration Guide
 - SNMP MIBs and Traps Reference

[edit chassis] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit chassis] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit chassis\] Hierarchy Level on page 29](#)
- [Unsupported Statements in the \[edit chassis\] Hierarchy Level on page 30](#)

Supported Statements in the [edit chassis] Hierarchy Level

The following hierarchy shows the **[edit chassis]** configuration statements supported on EX Series switches:

```
chassis {
  aggregated-devices {
    ethernet {
      device-count number;
    }
  }
  alarm {
    ethernet {
      link-down (ignore | red | yellow);
    }
    management-ethernet {
      link-down (ignore | red | yellow);
    }
  }
  auto-image-upgrade;
  fpc slot-number {
    pic pic-number {
      sfpplus {
        pic-mode mode;
        tunnel-port port-number tunnel-services;
      }
    }
    power (off | on);
    power-budget-priority priority;
  }
  lcd-menu {
    fpc slot-number {
      menu-item (menu-name | menu-option);
      disable;
    }
  }
  nssu {
    upgrade-group group-name {
      fpcs (slot-number | [list-of-slot-numbers]);
      member member-id {
        fpcs (slot-number | [list-of-slot-numbers]);
      }
    }
  }
}
```

```

    }
  }
  psu {
    redundancy {
      n-plus-n;
    }
  }
  redundancy {
    failover (on-disk-failure | on-loss-of-keepalives);
    graceful-switchover;
    keepalive-time seconds;
  }
  routing-engine {
    on disk-failure
    disk-failure-action action;
  }
}
vrf-mtu-check;
}

```

Unsupported Statements in the [edit chassis] Hierarchy Level

All statements in the [edit chassis] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 7: Unsupported [edit chassis] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>filename</i> , are not shown in the statements or hierarchies.	
container-devices	[edit chassis]
link-down	[edit chassis container-devices]
no-multi-rate	[edit chassis fpc pic]
pic-mode	[edit chassis fpc pic shdsl]
power-budget-priority	[edit chassis fpc]
q-pic-large-buffer	edit chassis fpc pic]
shdsl	[edit chassis fpc pic]

Related Documentation

- Configuring Aggregated Ethernet Links (CLI Procedure)
- Upgrading Software Using Automatic Software Download
- Configuring the LCD Panel on EX Series Switches (CLI Procedure)
- Configuring Graceful Routing Engine Switchover in a Virtual Chassis (CLI Procedure)
- Configuring Power Supply Redundancy (CLI Procedure)

- Configuring the Power Priority of Line Cards (CLI Procedure)
- Configuring Line-Card Upgrade Groups for Nonstop Software Upgrade (CLI Procedure)

[\[edit class-of-service\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit class-of-service]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview

This topic lists:

- [Supported Statements in the \[edit class-of-service\] Hierarchy Level on page 31](#)
- [Unsupported Statements in the \[edit class-of-service\] Hierarchy Level on page 33](#)

Supported Statements in the [edit class-of-service] Hierarchy Level

The following hierarchy shows the **[edit class-of-service]** configuration statements supported on EX Series switches:

```
class-of-service {
  classifiers {
    (dscp | dscp-ipv6 | exp | ieee-802.1 | inet-precedence) classifier-name {
      forwarding-class class-name {
        loss-priority (high | low | medium-high | medium-low) {
          code-points [ aliases ] [ 6 bit-patterns ];
        }
      }
      import (classifier-name | default);
    }
  }
  code-point-aliases {
    (dscp | dscp-ipv6 | exp | ieee-802.1 | inet-precedence) {
      alias-name bits;
    }
  }
  congestion-notification-profile profile-name {
    input {
      ieee-802.1 {
        code-point up-bits pfc;
      }
    }
  }
  drop-profiles {
    profile-name {
      fill-level percentage drop-probability percentage;
    }
  }
}
```

```
        interpolate {
            drop-probability [values];
            fill-level [values]
        }
    }
}
fabric {
    scheduler-map {
        priority (high | low) scheduler scheduler-name;
    }
}
forwarding-classes {
    class class-name {
        priority (high | low);
        queue-num queue-number;
    }
    queue queue-number;
}
host-outbound-traffic {
    forwarding-class class-name;
    dscp-code-point value;
}
interfaces interface-name {
    congestion-notification-profile profile-name {
        input {
            ieee-802.1 {
                code-point up-bits pfc;
            }
        }
    }
}
scheduler-map map-name;
shaping-rate;
unit (logical-unit-number | * ) {
    classifiers {
        (dscp | dscp-ipv6 | ieee-802.1 | inet-precedence) (classifier-name | default);
    }
    forwarding-class class-name ;
}
rewrite-rules {
    (dscp | dscp-ipv6 | ieee-802.1 | inet-precedence) rewrite-rule-name;
}
}
multi-destination {
    classifiers {
        (dscp) classifier-name;
    }
    family {
        ethernet {
            broadcast (forwarding-class-name);
        }
        inet {
            classifiers {
                (dscp | inet-precedence) classifier-name;
            }
        }
    }
}
```

```

    }
    inet6 {
        classifiers {
            dscp-ipv6 classifier-name;
        }
    }
}
scheduler-map map-name;
}
scheduler-maps {
    map-name {
        forwarding-class class-name {
            scheduler scheduler-name;
        }
    }
}
schedulers {
    scheduler-name {
        buffer-size (exact | percent percentage | remainder | temporal);
        drop-profile-map {
            loss-priority (high | low);
            protocol any;
        }
        priority (low | strict-high);
        shaping-rate (rate | percent percentage);
        transmit-rate (EX Series Switches) (rate | percent percentage | remainder);
    }
}
shared-buffer {
    percent;
}
traceoptions {
    file (file-name | files files | match match | no-world-readable | size size | world-readable);
    flag ( all | async | chassis-scheduler | cos-adjustment | dynamic | hardware-database
        | init | parse | performance-monitor | process | restart | route-socket | show | snmp |
        util);
    no-remote-trace;
}
tri-color;
}

```

Unsupported Statements in the [edit class-of-service] Hierarchy Level

All statements in the **[edit class-of-service]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Configuring CoS on EX Series Switches
- Defining CoS Code-Point Aliases (CLI Procedure) or Defining CoS Code-Point Aliases (J-Web Procedure)
- Defining CoS Classifiers (CLI Procedure) or Defining CoS Classifiers (J-Web Procedure)
- Defining CoS Forwarding Classes (CLI Procedure) or Defining CoS Forwarding Classes (J-Web Procedure)

- Configuring CoS Tail Drop Profiles (CLI Procedure)
- Defining CoS Schedulers (CLI Procedure) or Defining CoS Schedulers (J-Web Procedure)
- Defining CoS Rewrite Rules (CLI Procedure) or Defining CoS Rewrite Rules (J-Web Procedure)

[edit ethernet-switching-options] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit ethernet-switching-options]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit ethernet-switching-options\] Hierarchy Level on page 34](#)
- [Unsupported Statements in the \[edit ethernet-switching-options\] Hierarchy Level on page 37](#)

Supported Statements in the [edit ethernet-switching-options] Hierarchy Level

The following hierarchy shows the **[edit ethernet-switching-options]** configuration statements supported on EX Series switches:

```
ethernet-switching-options {
  analyzer {
    name {
      input {
        egress {
          interface (all | interface-name);
        }
        ingress {
          interface (all | interface-name);
          vlan (vlan-id | vlan-name);
        }
      }
    }
    loss-priority priority;
    output {
      interface interface-name;
      vlan (vlan-id | vlan-name);
    }
    ratio number;
```

```

    }
  }
  authentication-whitelist {
    interface;
    vlan-assignment;
  }
  bpdu-block {
    disable-timeout timeout;
    interface (all | [interface-name]) {
      (disable | drop | shutdown);
    }
  }
  dot1q-tunneling {
    ether-type (0x8100 | 0x88a8 | 0x9100);
  }
  interfaces interface-name {
    no-mac-learning;
  }
  mac-notification {
    notification-interval seconds;
  }
  mac-table-aging-time seconds;
  port-error-disable {
    disable-timeout timeout;
  }
  redundant-trunk-group {
    group name {
      description;
      interface interface-name {
        primary;
      }
      preempt-cutover-timer seconds;
    }
  }
  secure-access-port {
    dhcp-snooping-file {
      location local_pathname | remote_URL;
      timeout seconds;
      write-interval seconds;
    }
    interface (all | interface-name) {
      allowed-mac {
        mac-address-list;
      }
      (dhcp-trusted | no-dhcp-trusted );
      fcoe-trusted;
      mac-limit limit action action;
      no-allowed-mac-log;
      static-ip ip-address {
        mac mac-address;
        vlan vlan-name;
      }
    }
  }
  uac-policy;
}
vlan (all | vlan-name) {

```

```

(arp-inspection | no-arp-inspection );
dhcp-option82 {
  disable;
  circuit-id {
    prefix hostname;
    use-interface-description;
    use-vlan-id;
  }
  remote-id {
    prefix (hostname | mac | none);
    use-interface-description;
    use-string string;
  }
  vendor-id [string];
}
(examine-dhcp | no-examine-dhcp);
examine-fip {
  fc-map fc-map-value;
}
(ip-source-guard | no-ip-source-guard);
mac-move-limit limit action action;
}
}
static {
  vlan vlan-id {
    mac mac-address next-hop interface-name;
  }
}
storm-control {
  action-shutdown;
  interface (all | interface-name) {
    bandwidth bandwidth;
    multicast;
    no-broadcast;
    no-multicast;
    no-registered-multicast;
    no-unknown-unicast;
    no-unregistered-multicast;
  }
}
traceoptions {
  file filename <files number> <no-stamp> <replace> <size size> <world-readable |
    no-world-readable>;
  flag flag <disable>;
}
unknown-unicast-forwarding {
  vlan (all | vlan-name) {
    interface interface-name;
  }
}
}
voip {
  interface (all | [interface-name | access-ports]) {
    forwarding-class (assured-forwarding | best-effort | expedited-forwarding |
      network-control);
    vlan vlan-name;
  }
}

```

```
    }
}
```

Unsupported Statements in the [edit ethernet-switching-options] Hierarchy Level

All statements in the [edit ethernet-switching-options] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Setting Up Q-in-Q Tunneling on EX Series Switches
- Example: Configuring Redundant Trunk Links for Faster Recovery
- Configuring MAC Table Aging (CLI Procedure)
- Configuring MAC Notification (CLI Procedure)
- Configuring Q-in-Q Tunneling (CLI Procedure)
- Configuring Redundant Trunk Links for Faster Recovery (CLI Procedure)
- Configuring Nonstop Bridging on EX Series Switches (CLI Procedure)

[edit event-options] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit event-options] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switches, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit event-options\] Hierarchy Level on page 37](#)
- [Unsupported Statements in the \[edit event-options\] Hierarchy Level on page 39](#)

Supported Statements in the [edit event-options] Hierarchy Level

The following hierarchy shows the [edit event-options] configuration statements supported on EX Series switches:

```
event-options {
  destinations {
    destination-name {
      archive-sites {
        url <password password>;
      }
      transfer-delay seconds;
    }
  }
}
```

```
}
event-script {
  file filename {
    checksum (md5 | sha-256 | sha1) hash;
    refresh;
    refresh-from url;
    remote-execution {
      remote-hostname {
        passphrase user-password;
        username user-login;
      }
    }
    source url;
  }
  refresh;
  refresh-from url;
  traceoptions {
    file <filename> <files number> <size maximum-file-size> <world-readable |
      no-world-readable>;
    flag flag;
    no-remote-trace;
  }
}
generate-event event-name {
  time-interval seconds;
  time-of-day hh:mm:ss;
}
policy policy-name {
  attributes-match {
    event1.attribute-name equals event2.attribute-name;
    event.attribute-name matches regular-expression;
    event1.attribute-name starts-with event2.attribute-name;
  }
  events [ events ];
  then {
    event-script filename {
      arguments {
        argument-name argument-value;
      }
      destination destination-name {
        retry-count number retry-interval seconds;
        transfer-delay seconds;
      }
      output-filename filename;
      output-format (text | xml);
      user-name username;
    }
    execute-commands {
      commands {
        "command";
      }
      destination destination-name {
        retry-count number retry-interval seconds;
        transfer-delay seconds;
      }
      output-filename filename;
    }
  }
}
```



```

        output-format (text | xml);
        user-name username;
    }
    ignore;
    raise-trap;
    upload filename (filename | committed) destination destination-name {
        retry-count number retry-interval seconds;
        transfer-delay seconds;
        user-name username;
    }
}
within seconds {
    events [ events ];
    not events [ events ];
    trigger (after number | on number | until number);
}
}
traceoptions {
    file <filename> <files number> <match regular-expression> <size maximum-file-size>
        <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
}
}

```

Unsupported Statements in the [edit event-options] Hierarchy Level

All statements in the [edit event-options] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [Event Scripts Overview](#)

[edit firewall] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit firewall] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit firewall\] Hierarchy Level on page 40](#)
- [Unsupported Statements in the \[edit firewall\] Hierarchy Level on page 40](#)

Supported Statements in the [edit firewall] Hierarchy Level

The following hierarchy shows the [edit firewall] configuration statements supported on EX Series switches:

```
firewall {  
  family family-name {  
    filter filter-name {  
      interface-specific;  
      term term-name {  
        from {  
          match-conditions;  
        }  
        then {  
          action;  
          action-modifiers;  
        }  
      }  
    }  
  }  
  policer policer-name {  
    filter-specific;  
    if-exceeding {  
      bandwidth-limit bps;  
      burst-size-limit bytes;  
    }  
    then {  
      policer-action;  
    }  
  }  
}  
three-color-policer policer-name {  
  action {  
    loss-priority high then discard;  
  }  
  filter-specific;  
  single-rate {  
    (color-aware | color-blind);  
    committed-burst-size bytes;  
    committed-information-rate bps;  
    excess-burst-size bytes;  
  }  
  two-rate {  
    (color-aware | color-blind);  
    committed-burst-size bytes;  
    committed-information-rate bps;  
    peak-information-rate bps;  
    peak-burst-size bytes;  
  }  
}
```

Unsupported Statements in the [edit firewall] Hierarchy Level

All statements in the [edit firewall] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- Example: Configuring Firewall Filters for Port, VLAN, and Router Traffic on EX Series Switches
 - Configuring Firewall Filters (CLI Procedure)
 - Configuring Policers to Control Traffic Rates (CLI Procedure)
 - Firewall Filter Configuration Statements Supported by Junos OS for EX Series Switches
 - Firewall Filters for EX Series Switches Overview

[\[edit forwarding-options\]](#) Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit forwarding-options]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit forwarding-options\] Hierarchy Level on page 41](#)
- [Unsupported Statements in the \[edit forwarding-options\] Hierarchy Level on page 43](#)

Supported Statements in the **[edit forwarding-options]** Hierarchy Level

The following hierarchy shows the **[edit forwarding-options]** configuration statements supported on EX Series switches:

```
forwarding-options {
  dhcp-relay {
    group group-name {
      interface interface-name {
        overrides {
          always-write-giaddr;
          always-write-option-82;
          client-discover-match <option60-and-option82>;
          interface-client-limit number;
          layer2-unicast-replies;
          no-arp;
          trust-option-82;
        }
      }
    }
    exclude {
      overrides {
        ...
      }
    }
  }
}
```

```
        trace;
        upto upto-interface-name;
    }
    overrides {
        ...
    }
    relay-option {
        ...
    }
}
relay-option-82 {
    circuit-id {
        prefix prefix;
        use-interface-description (logical | device);
    }
}
server-group {
    server-group-name {
        server-ip-address;
    }
}
}
helpers{
    bootp {
        client-response-ttl number;
        description text-description;
        dhcp-option82 {
            circuit-id {
                prefix (Circuit ID for Option 82) hostname;
                use-interface-description;
                use-vlan-id;
            }
            disable;
            remote-id {
                prefix hostname | mac | none;
                use-interface-description;
                use-string string;
            }
            vendor-id <string>;
        }
    }
    interface (interface-name | interface-group) {
        broadcast;
        client-response-ttl number;
        description text-description;
        dhcp-option82 {
            circuit-id {
                prefix (Circuit ID for Option 82) hostname;
                use-interface-description;
                use-vlan-id;
            }
            disable;
            remote-id {
                prefix hostname | mac | none;
                use-interface-description;
                use-string string;
            }
        }
    }
}
```

```

        vendor-id <string>;
    }
    maximum-hop-count number;
    minimum-wait-time seconds;
    no-listen;
    server address {
        routing-instance [ routing-instance-names ];
    }
}
maximum-hop-count number;
minimum-wait-time seconds;
no-listen;
relay-agent-option;
server address {
    routing-instance [ routing-instance-names ];
}
source-address-giaddr;
}
}

```

Unsupported Statements in the [edit forwarding-options] Hierarchy Level

All statements in the [edit forwarding-options] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 8: Unsupported [edit forwarding-options] Configuration Statements on EX Series Switches

Statement	Hierarchy Level
NOTE: Variables, such as <i>filename</i> , are not shown in the statements or hierarchies.	
accounting	[edit forwarding-options]
aggregate-export-interval	[edit forwarding-options accounting output]
broadcast	[edit forwarding-options helpers domain interface] [edit forwarding-options helpers port interface] [edit forwarding-options helpers tftp interface]
description	[edit forwarding-options helpers domain] [edit forwarding-options helpers domain interface] [edit forwarding-options helpers port interface] [edit forwarding-options helpers tftp] [edit forwarding-options helpers tftp interface]
domain	[edit forwarding-options helpers]
engine-id	[edit forwarding-options accounting output interface]
file	[edit forwarding-options helpers traceoption]
flag	[edit forwarding-options helpers traceoption]

Table 8: Unsupported [edit forwarding-options] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy Level
flow-active-timeout	[edit forwarding-options accounting output]
flow-inactive-timeout	[edit forwarding-options accounting output]
hash-seed	[edit forwarding-options load-balance per-prefix]
indexed-next-hop	[edit forwarding-options load-balance]
interface	[edit forwarding-options accounting output] [edit forwarding-options helpers domain] [edit forwarding-options helpers port] [edit forwarding-options helpers tftp]
level	[edit forwarding-options helpers traceoption]
load-balance	[edit forwarding-options]
no-listen	[edit forwarding-options helpers domain interface] [edit forwarding-options helpers port interface] [edit forwarding-options helpers tftp interface]
no-remote-trace	[edit forwarding-options helpers traceoption]
output	[edit forwarding-options accounting]
per-prefix	[edit forwarding-options load-balance]
port	[edit forwarding-options helpers]
routing-instance	[edit forwarding-options helpers domain interface server] [edit forwarding-options helpers domain server] [edit forwarding-options helpers port interface server] [edit forwarding-options helpers rtsdb-client-traceoptions] [edit forwarding-options helpers tftp interface server] [edit forwarding-options helpers tftp server]
rtsdb-client-traceoptions	[edit forwarding-options helpers]
server	[edit forwarding-options helpers domain] [edit forwarding-options helpers domain interface] [edit forwarding-options helpers port] [edit forwarding-options helpers port interface] [edit forwarding-options helpers tftp] [edit forwarding-options helpers tftp interface]
source-address	[edit forwarding-options accounting output interface]
tftp	[edit forwarding-options helpers]

Table 8: Unsupported [\[edit forwarding-options\]](#) Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy Level
<code>traceoptions</code>	[edit forwarding-options helpers]
Related Documentation	<ul style="list-style-type: none"> • Example: Setting Up DHCP Option 82 with a Switch as a Relay Agent Between Clients and a DHCP Server • Setting Up DHCP Option 82 with the Switch as a Relay Agent Between Clients and DHCP Server (CLI Procedure) • DHCP/BOOTP Relay for Switches Overview • For more information about the [edit forwarding-options] hierarchy and its options, see <i>Junos OS Policy Framework Configuration Guide</i>

[\[edit interfaces\]](#) Configuration Statement Hierarchy on EX Series Switches

Each of the following topics lists the statements at a subhierarchy of the [\[edit interfaces\]](#) hierarchy:

- [\[edit interfaces ae\] Configuration Statement Hierarchy on EX Series Switches on page 46](#)
- [\[edit interfaces ge\] Configuration Statement Hierarchy on EX Series Switches on page 49](#)
- [\[edit interfaces interface-range\] Configuration Statement Hierarchy on EX Series Switches on page 56](#)
- [\[edit interfaces lo\] Configuration Statement Hierarchy on EX Series Switches on page 63](#)
- [\[edit interfaces me\] Configuration Statement Hierarchy on EX Series Switches on page 66](#)
- [\[edit interfaces vlan\] Configuration Statement Hierarchy on EX Series Switches on page 69](#)
- [\[edit interfaces vme\] Configuration Statement Hierarchy on EX Series Switches on page 72](#)
- [\[edit interfaces xe\] Configuration Statement Hierarchy on EX Series Switches on page 75](#)

- Related Documentation**
- EX Series Switches Interfaces Overview
 - Configuring Aggregated Ethernet Links (CLI Procedure)
 - Configuring Gigabit Ethernet Interfaces (CLI Procedure)
 - Configuring a Layer 3 Subinterface (CLI Procedure)
 - Configuring Routed VLAN Interfaces (CLI Procedure)

- [Configuring the Virtual Management Ethernet Interface for Global Management of an EX Series Virtual Chassis \(CLI Procedure\)](#)
- [Junos OS Interfaces Fundamentals Configuration Guide](#)
- [Junos OS Ethernet Interfaces Configuration Guide](#)

[edit interfaces ae] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit interfaces ae]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces ae\] Hierarchy Level on page 46](#)
- [Unsupported Statements in the \[edit interfaces ae\] Hierarchy Level on page 49](#)

Supported Statements in the [edit interfaces ae] Hierarchy Level

The following hierarchy shows the **[edit interfaces ae]** configuration statements supported on EX Series switches.

```
interfaces {
  ae-fpc/pic/port {
    accounting-profile name;
    aggregated-ether-options {
      ethernet-switch-profile {
        tag-protocol-id identifier;
      }
      (flow-control | no-flow-control);
      lacp {
        (active | passive);
        admin-key key;
        periodic interval;
        system-id mac-address;
      }
      (link-protection | no-link-protection);
      link-speed speed;
      (loopback | no-loopback);
      minimum-links number;
    }
    description text;
    disable;
    (gratuitous-arp-reply | no-gratuitous-arp-reply);
```



```

mtu bytes;
no-gratuitous-arp-request;
traceoptions {
    flag flag;
}
(traps | no-traps);
unit logical-unit-number {
    accounting-profile name;
    arp-resp;
    bandwidth rate;
    description text;
    disable;
    family ccc;
    family ethernet-switching {
        filter {
            input filter-name;
            output filter-name;
        }
        native-vlan-id vlan-id-number;
        port-mode (access | trunk);
        vlan {
            members [ members ];
        }
    }
}
family inet {
    address ipv4-address {
        arp ip-address (mac | multicast-mac) mac-address <publish>;
        broadcast address;
        preferred;
        primary;
        vrrp-group group-number {
            (accept-data | no-accept-data);
            advertise-interval seconds;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;
            (preempt | no-preempt) {
                hold-time seconds;
            }
        }
        priority number;
        track {
            interface interface-name {
                bandwidth-threshold bandwidth;
                priority-cost number;
            }
            priority-hold-time seconds;
            route ip-address/mask routing-instance instance-name priority-cost cost;
        }
        virtual-address [ addresses ];
        virtual-link-local-address address;
        vrrp-inherit-from {
            active-group group-number;
            active-interface interface-name;
        }
    }
}
}

```

```

dhcp {
  client-identifier (ascii client-id | hexadecimal client-id);
  lease-time (seconds | infinte);
  retransmission-attempt number;
  retransmission-interval sections;
  server-address ip-address;
  update-server server;
  vendor-id id;
}
filter {
  input filter-name;
  output filter-name;
}
mtu bytes;
no-neighbor-learn;
no-redirects;
primary;
rpf-check;
targeted-broadcast;
}
family inet6 {
  address address {
    eui-64;
    ndp ip-address (mac | multicast-mac) mac-address <publish>;
    preferred;
    primary;
    vrrp-inet6-group group-id {
      accept-data | no-accept-data;
      authentication-key key;
      authentication-type authentication;
      fast-interval milliseconds;
      inet6-advertise-interval milliseconds;
      preempt | no-preempt {
        hold-time seconds;
      }
      priority number;
      track {
        interface interface-name {
          bandwidth-threshold bandwidth priority-cost number;
          priority-cost number;
        }
        priority-hold-time seconds;
        route ( address | routing-instance routing-instance-name );
      }
      virtual-inet6-address [addresses];
      virtual-link-local-address ipv6-address;
    }
    vrrp-inherit-from {
      active-group group-name;
      active-interface interface-name;
    }
  }
}
(dad-disable | no-dad-disable);
filter {
  input filter-name;
  output filter-name;
}

```

```
    }
    mtu bytes;
    no-neighbor-learn;
    policer {
        input policer-name;
        output policer-name;
    }
    rpf-check;
}
family iso {
    address interface-address;
    mtu bytes;
}
family mpls {
    mtu bytes;
}
proxy-arp (restricted | unrestricted);
(traps | no-traps);
vlan-id (Layer 3 Subinterfaces) vlan-id-number;
}
vlan-tagging;
}
```

Unsupported Statements in the [edit interfaces ae] Hierarchy Level

All statements in the [edit interfaces ae] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 9: Unsupported [edit interfaces ae] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-range</i> , are not shown in the statements or hierarchies.	
family fibre-channel	[edit interfaces ae unit]
source-address-filter	[edit interfaces ae aggregated-ether-options]
source-address-filtering no-source-address-filtering	[edit interfaces ae aggregated-ether-options]

Related Documentation • [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces ge] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit interfaces ge] hierarchy level on EX Series switches.

- Supported statements are those that you can use to configure some aspect of a software feature on the switch.

- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces ge\] Hierarchy Level on page 50](#)
- [Unsupported Statements in the \[edit interfaces ge\] Hierarchy Level on page 53](#)

Supported Statements in the [edit interfaces ge] Hierarchy Level

The following hierarchy shows the [edit interfaces ge] configuration statements supported on EX Series switches.

```
interfaces {
  ge-fpc/pic/port {
    accounting-profile name;
    description text;
    disable;
    ether-options {
      802.3ad {
        aex;
        (backup | primary);
        lacp {
          force-up;
        }
      }
      (auto-negotiation | no-auto-negotiation);
      (flow-control | no-flow-control);
      ieee-802-3az-eee;
      link-mode mode;
      (loopback | no-loopback);
      speed (auto-negotiation | speed);
    }
    (gratuitous-arp-reply | no-gratuitous-arp-reply);
    hold-time up milliseconds down milliseconds;
    mtu bytes;
    no-gratuitous-arp-request;
    optics-options {
      alarm alarm-type;
      warning alarm-type;
      wavelength nanometers;
    }
    traceoptions {
      flag flag;
    }
    (traps | no-traps);
    unit logical-unit-number {
      accounting-profile name;
      arp-resp;
      bandwidth rate;
      description text;
```

```

disable;
family ccc;
family ethernet-switching {
  filter {
    input filter-name;
    output filter-name;
  }
  native-vlan-id vlan-id-number;
  port-mode (access | trunk);
  vlan {
    members [ members ];
  }
}
family inet {
  address ipv4-address {
    arp ip-address (mac | multicast-mac) mac-address <publish>;
    broadcast address;
    preferred;
    primary;
    vrrp-group group-number {
      (accept-data | no-accept-data);
      advertise-interval seconds;
      authentication-key key;
      authentication-type authentication;
      fast-interval milliseconds;
      (preempt | no-preempt) {
        hold-time seconds;
      }
      priority number;
      track {
        interface interface-name {
          bandwidth-threshold bandwidth;
          priority-cost number;
        }
        priority-hold-time seconds;
        route ip-address/mask routing-instance instance-name priority-cost cost;
      }
      virtual-address [ addresses ];
      virtual-link-local-address address;
      vrrp-inherit-from {
        active-group group-number;
        active-interface interface-name;
      }
    }
  }
}
dhcp {
  client-identifier (ascii client-id | hexadecimal client-id);
  lease-time (seconds | infinte);
  retransmission-attempt number;
  retransmission-interval sections;
  server-address ip-address;
  update-server
  vendor-id
}
filter {
  input filter-name;

```

```

        output filter-name;
    }
    mtu bytes;
    no-neighbor-learn;
    no-redirects;
    primary;
    rpf-check;
    targeted-broadcast;
}
family inet6 {
    address address {
        eui-64;
        ndp ip-address (mac | multicast-mac) mac-address <publish>;
        preferred;
        primary;
        vrrp-inet6-group group-id {
            accept-data | no-accept-data;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;
            inet6-advertise-interval milliseconds;
            preempt | no-preempt {
                hold-time seconds;
            }
            priority number;
            track {
                interface interface-name {
                    bandwidth-threshold bandwidth priority-cost number;
                    priority-cost number;
                }
                priority-hold-time seconds;
                route ( address | routing-instance routing-instance-name );
            }
            virtual-inet6-address [addresses];
            virtual-link-local-address ipv6-address;
            vrrp-inherit-from {
                active-group group-name;
                active-interface interface-name;
            }
        }
    }
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
policer {
    input policer-name;
    output policer-name;
}
rpf-check;
}
family iso {

```

```

        address interface-address;
        mtu bytes;
    }
    family mpls {
        mtu bytes;
    }
    proxy-arp (restricted | unrestricted);
    swap-by-poppush;
    (traps | no-traps);
    vlan-id vlan-id-number;
}
vlan-tagging;
}
}

```

Unsupported Statements in the [edit interfaces ge] Hierarchy Level

All statements in the [edit interfaces ge] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces gr] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit interfaces gr] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces gr\] Hierarchy Level on page 53](#)
- [Unsupported Statements in the \[edit interfaces gr\] Hierarchy Level on page 56](#)

Supported Statements in the [edit interfaces gr] Hierarchy Level

The following hierarchy shows the [edit interfaces gr] configuration statements supported on EX Series switches.

```

interfaces {
  gr-fpc/pic/port {
    accounting-profile name;
    description text;
    disable;
  }
}

```

```

hold-time up milliseconds down milliseconds;
traceoptions {
    flag flag;
}
(traps | no-traps);
unit logical-unit-number {
    accounting-profile name;
    bandwidth rate;
    description text;
    disable;
    family ccc;
    family inet {
        accounting {
            destination-class-usage;
            source-class-usage {
                direction;
            }
        }
    }
    address ipv4-address {
        destination address;
        preferred;
        primary;
        vrrp-group group-number {
            (accept-data | no-accept-data);
            advertise-interval seconds;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;
            (preempt | no-preempt) {
                hold-time seconds;
            }
            priority number;
            track {
                interface interface-name {
                    bandwidth-threshold bandwidth;
                    priority-cost number;
                }
                priority-hold-time seconds;
                route ip-address/mask routing-instance instance-name priority-cost cost;
            }
            virtual-address [ addresses ];
            virtual-link-local-address address;
            vrrp-inherit-from {
                active-group group-number;
                active-interface interface-name;
            }
        }
    }
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinte);
    retransmission-attempt number;
    retransmission-interval sections;
    server-address ip-address;
    update-server
    vendor-id

```



```

}
filter {
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
no-redirects;
primary;
rpf-check;
targeted-broadcast;
}
family inet6 {
    accounting {
        destination-class-usage;
        source-class-usage {
            direction;
        }
    }
}
address address {
    destination address;
    eui-64;
    ndp ip-address (mac | multicast-mac) mac-address <publish>;
    preferred;
    primary;
    vrrp-inet6-group group-id {
        accept-data | no-accept-data;
        authentication-key key;
        authentication-type authentication;
        fast-interval milliseconds;
        inet6-advertise-interval milliseconds;
        preempt | no-preempt {
            hold-time seconds;
        }
        priority number;
        track {
            interface interface-name {
                bandwidth-threshold bandwidth priority-cost number;
                priority-cost number;
            }
            priority-hold-time seconds;
            route ( address | routing-instance routing-instance-name );
        }
        virtual-inet6-address [addresses];
        virtual-link-local-address ipv6-address;
        vrrp-inherit-from {
            active-group group-name;
            active-interface interface-name;
        }
    }
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
    output filter-name;
}

```

```
    }
    mtu bytes;
    nd6-stale-time seconds;
    no-neighbor-learn;
    policer {
        input policer-name;
        output policer-name;
    }
    rpf-check;
}
family iso {
    address interface-address;
    mtu bytes;
}
family mpls {
    mtu bytes;
}
(traps | no-traps);
tunnel {
    destination destination-address;
    flow-label label;
    source source-address;
    ttl number;
}
}
}
```

Unsupported Statements in the [edit interfaces gr] Hierarchy Level

All statements in the **[edit interfaces gr]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces interface-range] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit interfaces interface-range]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see [EX Series Switch Software Features Overview](#)

This topic lists:

- [Supported Statements in the \[edit interfaces interface-range\] Hierarchy Level on page 57](#)
- [Unsupported Statements in the \[edit interfaces interface-range\] Hierarchy Level on page 61](#)

Supported Statements in the [edit interfaces interface-range] Hierarchy Level

The following hierarchy shows the **[edit interfaces interface-range]** configuration statements supported on EX Series switches.

```

interfaces {
  interface-range name {
    accounting-profile name;
    aggregated-ether-options {
      ethernet-switch-profile {
        tag-protocol-id identifier;
      }
      (flow-control | no-flow-control);
      ieee-802-3az-eee;
      lacp {
        (active | passive);
        admin-key key;
        periodic interval;
        system-id mac-address;
      }
      (link-protection | no-link-protection);
      link-speed speed;
      (loopback | no-loopback);
      minimum-links number;
      rebalance-periodic;
      source-address-filter filter;
      source-filtering | no-source-filtering;
    }
    description text;
    disable;
    ether-options {
      802.3ad {
        aex;
        (backup | primary);
        lacp {
          force-up;
        }
      }
      (auto-negotiation | no-auto-negotiation);
      (flow-control | no-flow-control);
      link-mode mode;
      (loopback | no-loopback);
      speed (auto-negotiation | speed);
    }
    framing;
    (gratuitous-arp-reply | no-gratuitous-arp-reply);
    hold-time up milliseconds down milliseconds;
    member interface-name;
  }
}

```

```
member-range starting-interface name to ending-interface name;  
mtu bytes;  
no-gratuitous-arp-request;  
optics-options {  
    alarm alarm-type;  
    warning alarm-type;  
    wavelength nanometers;  
}  
services-options;  
speed speed;  
traceoptions {  
    flag flag;  
}  
(traps | no-traps);  
unit logical-unit-number {  
    accept-source-mac;  
    accounting-profile name;  
    arp-resp;  
    bandwidth rate;  
    description text;  
    disable;  
    family ccc;  
    family ethernet-switching {  
        filter {  
            input filter-name;  
            output filter-name;  
        }  
        native-vlan-id vlan-id-number;  
        port-mode (access | trunk);  
        vlan {  
            members [ members];  
        }  
    }  
}  
family inet {  
    accounting {  
        destination-class-usage;  
        source-class-usage;  
    }  
    address ipv4-address {  
        arp ip-address (mac | multicast-mac) mac-address <publish>;  
        broadcast address;  
        destination-class-usage;  
        destination-profile;  
        master-only;  
        preferred;  
        primary;  
        vrrp-group group-number {  
            (accept-data | no-accept-data);  
            advertise-interval seconds;  
            authentication-key key;  
            authentication-type authentication;  
            fast-interval milliseconds;  
            (preempt | no-preempt) {  
                hold-time seconds;  
            }  
            priority number;
```

```

track {
    interface interface-name {
        bandwidth-threshold bandwidth;
        priority-cost number;
    }
    priority-hold-time seconds;
    route ip-address/mask routing-instance instance-name priority-cost cost;
}
virtual-address [ addresses ];
virtual-link-local-address address;
vrrp-inherit-from {
    active-group group-number;
    active-interface interface-name;
}
}
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinite);
    retransmission-attempt number;
    retransmission-interval seconds;
    server-address ip-address;
    update-server
    vendor-id
}
filter {
    input filter-name;
    output filter-name;
}
ipsec-sa;
mtu bytes;
multicast-only;
negotiate-address;
next-hop-tunnel;
no-neighbor-learn;
no-redirects;
primary;
receive-option-packets;
rpf-check;
targeted-broadcast;
}
family inet6 {
    accounting {
        destination-class-usage;
        source-class-usage;
    }
    address address {
        eui-64;
        ndp ip-address (mac | multicast-mac) mac-address <publish>;
        preferred;
        primary;
        vrrp-inet6-group group-id {
            accept-data | no-accept-data;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;

```

```

    inet6-advertise-interval milliseconds;
    preempt | no-preempt {
        hold-time seconds;
    }
    priority number;
    track {
        interface interface-name {
            bandwidth-threshold bandwidth priority-cost number;
            priority-cost number;
        }
        priority-hold-time seconds;
        route ( address | routing-instance routing-instance-name );
    }
    virtual-inet6-address [addresses];
    virtual-link-local-address ipv6-address;
}
vrrp-inherit-from {
    active-group group-name;
    active-interface interface-name;
}
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
policer {
    input policer-name;
    output policer-name;
}
rpf-check;
}
family iso {
    address interface-address;
    mtu bytes;
}
family mpls {
    mtu bytes;
}
}
interface-shared-with;
interleave-fragments;
inverse-arp;
link-layer-overhead;
minimum-links;
mtu;
proxy-arp (restricted | unrestricted);
swap-by-poppush;
(traps | no-traps);
vlan-id vlan-id-number;
}
vlan-tagging;
}

```

Unsupported Statements in the [edit interfaces interface-range] Hierarchy Level

All statements in the [edit interfaces interface-range] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 10: Unsupported [edit interfaces interface-range] Configuration Statements for EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-range</i> , are not shown in the statements or hierarchies.	
aggregated-sonet-options and all substatements	[edit interfaces interface-range]
allow-any-vci	[edit interfaces interface-range unit]
atm-l2circuit-mode	[edit interfaces interface-range unit]
atm-options and all substatements	[edit interfaces interface-range]
cell-bundle-size	[edit interfaces interface-range unit]
clear-don't-fragment-bit	[edit interfaces interface-range unit]
clocking	[edit interfaces interface-range]
compression-device	[edit interfaces interface-range unit]
container-options and all substatements	[edit interfaces interface-range]
copy-tos-to-outer-ip-header	[edit interfaces interface-range unit]
dce	[edit interfaces interface-range]
disable-mlppp-inter-ppp-pfc	[edit interfaces interface-range unit]
dlci	[edit interfaces interface-range unit]
drop-timeout	[edit interfaces interface-range unit]
ds0-options and all substatements	[edit interfaces interface-range]
e1-options and all substatements	[edit interfaces interface-range]
e3-options and all substatements	[edit interfaces interface-range]
epd-threshold	[edit interfaces interface-range unit]
family mlfr-end-to-end and all substatements	[edit interfaces interface-range unit]

Table 10: Unsupported [edit interfaces interface-range] Configuration Statements for EX Series Switches (*continued*)

Statement	Hierarchy
family mlfr-uni-uni and all substatements	[edit interfaces interface-range unit]
family mlppp and all substatements	[edit interfaces interface-range unit]
fragment-threshold	[edit interfaces interface-range unit]
ggsn-options and all substatements	[edit interfaces interface-range]
keepalives no-keepalives	[edit interfaces interface-range] [edit interfaces interface-range unit]
lmi	[edit interfaces interface-range]
lsq-failure-options	[edit interfaces interface-range]
mlfr-uni-nni-bundle-options and all substatements	[edit interfaces interface-range]
mrru	[edit interfaces interface-range unit]
multicast-dlci	[edit interfaces interface-range unit]
multilink-max-classes	[edit interfaces interface-range unit]
multipoint	[edit interfaces interface-range unit]
multipoint-destination	[edit interfaces interface-range unit family inet address]
multiservice-options and all substatements	[edit interfaces interface-range]
oam-liveness	[edit interfaces interface-range unit]
oam-period	[edit interfaces interface-range unit]
passive-monitor-mode	[edit interfaces interface-range unit]
peer-unit	[edit interfaces interface-range unit]
plp-to-clp	[edit interfaces interface-range unit]
point-to-point	[edit interfaces interface-range unit]
ppp-options and all substatements	[edit interfaces interface-range] [edit interfaces interface-range unit]
receive-lsp	[edit interfaces interface-range unit]

Table 10: Unsupported `[edit interfaces interface-range]` Configuration Statements for EX Series Switches (*continued*)

Statement	Hierarchy
<code>satop-options</code> and all substatements	<code>[edit interfaces interface-range]</code>
<code>serial-options</code> and all substatements	<code>[edit interfaces interface-range]</code>
<code>service-domain</code>	<code>[edit interfaces interface-range unit]</code>
<code>shaping</code>	<code>[edit interfaces interface-range unit]</code>
<code>short-sequence</code>	<code>[edit interfaces interface-range unit]</code>
<code>shdsl-options</code> and all substatements	<code>[edit interfaces interface-range]</code>
<code>t1-options</code> and all substatements	<code>[edit interfaces interface-range]</code>
<code>t3-options</code> and all substatements	<code>[edit interfaces interface-range]</code>
<code>transmit-lsp</code>	<code>[edit interfaces interface-range unit]</code>
<code>transmit-weight</code>	<code>[edit interfaces interface-range unit]</code>
<code>trunk-id</code>	<code>[edit interfaces interface-range unit]</code>
<code>tunnel</code>	<code>[edit interfaces interface-range unit]</code>
<code>vci</code>	<code>[edit interfaces interface-range unit]</code>
<code>vci-range</code>	<code>[edit interfaces interface-range unit]</code>
<code>vpi</code>	<code>[edit interfaces interface-range unit]</code>

Related Documentation • [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[\[edit interfaces lo\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the `[edit interfaces lo]` hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.

- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces lo\] Hierarchy Level on page 64](#)
- [Unsupported Statements in the \[edit interfaces lo\] Hierarchy Level on page 66](#)

Supported Statements in the [edit interfaces lo] Hierarchy Level

The following hierarchy shows the [edit interfaces lo] configuration statements supported on EX Series switches.

```
interfaces {
  lo0 {
    accounting-profile name;
    description text;
    disable;
    hold-time down milliseconds up milliseconds ;
    traceoptions {
      flag flag;
    }
    (traps | no-traps);
    unit logical-unit-number {
      accounting-profile name;
      arp-resp;
      bandwidth rate;
      description text;
      disable;
      family ccc;
      family inet {
        address ipv4-address {
          preferred;
          primary;
          vrrp-group group-number {
            (accept-data | no-accept-data);
            advertise-interval seconds;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;
            (preempt | no-preempt) {
              hold-time seconds;
            }
          }
          priority number;
          track {
            interface interface-name {
              bandwidth-threshold bandwidth;
              priority-cost number;
            }
            priority-hold-time seconds;
            route ip-address/mask routing-instance instance-name priority-cost cost;
          }
          virtual-address [ addresses ];
          virtual-link-local-address address;
        }
      }
    }
  }
}
```

```

        vrrp-inherit-from {
            active-group group-number;
            active-interface interface-name;
        }
    }
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinite);
    retransmission-attempt number;
    retransmission-interval seconds;
    server-address ip-address;
    update-server
    vendor-id
}
filter {
    input filter-name;
    output filter-name;
}
no-neighbor-learn;
no-redirects;
primary;
}
family inet6 {
    address address {
        preferred;
        primary;
        vrrp-inet6-group group-id {
            accept-data | no-accept-data;
            authentication-key key;
            authentication-type authentication;
            fast-interval milliseconds;
            inet6-advertise-interval milliseconds;
            preempt | no-preempt {
                hold-time seconds;
            }
        }
        priority number;
        track {
            interface interface-name {
                bandwidth-threshold bandwidth priority-cost number;
                priority-cost number;
            }
            priority-hold-time seconds;
            route ( address | routing-instance routing-instance-name );
        }
        virtual-inet6-address [addresses];
        virtual-link-local-address ipv6-address;
        vrrp-inherit-from {
            active-group group-name;
            active-interface interface-name;
        }
    }
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
}

```

```
        output filter-name;
    }
    no-neighbor-learn;
    policer {
        input policer-name;
        output policer-name;
    }
}
family iso {
    address interface-address;
}
family mpls;
(traps | no-traps);
}
}
```

Unsupported Statements in the [edit interfaces lo] Hierarchy Level

All statements in the **[edit interfaces lo]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces me] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit interfaces me]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces me\] Hierarchy Level on page 66](#)
- [Unsupported Statements in the \[edit interfaces me\] Hierarchy Level on page 68](#)

Supported Statements in the [edit interfaces me] Hierarchy Level

The following hierarchy shows the **[edit interfaces me]** configuration statements supported on EX Series switches.

```
interfaces {
  me0 {
    accounting-profile name;
```

```

description text;
disable;
(gratuitous-arp-reply | no-gratuitous-arp-reply);
hold-time up milliseconds down milliseconds;
no-gratuitous-arp-request;
traceoptions {
    flag flag;
}
(traps | no-traps);
unit logical-unit-number {
    accounting-profile name;
    arp-resp;
    bandwidth rate;
    description text;
    disable;
    family ethernet-switching {
        filter {
            input filter-name;
            output filter-name;
        }
        native-vlan-id vlan-id-number;
        port-mode (access | trunk);
        vlan {
            members [ members ];
        }
    }
}
family inet {
    accounting {
        destination-class-usage;
        source-class-usage {
            input;
            output;
        }
    }
}
address ipv4-address {
    arp ip-address (mac | multicast-mac) mac-address <publish>;
    broadcast address;
    master-only;
    preferred;
    primary;
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinte);
    retransmission-attempt number;
    retransmission-interval sections;
    server-address ip-address;
    update-server
    vendor-id
}
filter {
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;

```

```
        primary;
        rpf-check;
    }
    family inet6 {
        accounting {
            destination-class-usage;
            source-class-usage {
                input;
                output;
            }
        }
        address address {
            eui-64;
            ndp ip-address (mac | multicast-mac) mac-address <publish>;
            preferred;
            primary;
        }
        (dad-disable | no-dad-disable);
        filter {
            group group-name;
            input filter-name;
            output filter-name;
        }
        mtu bytes;
        no-neighbor-learn;
        policer {
            input policer-name;
            output policer-name;
        }
        rpf-check;
    }
    family iso {
        address interface-address;
        mtu bytes;
    }
    family mpls {
        mtu bytes;
    }
    swap-by-poppush;
    (traps | no-traps);
    vlan-id vlan-id-number;
}
vlan-tagging;
}
```

Unsupported Statements in the [edit interfaces me] Hierarchy Level

All statements in the [edit interfaces me] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces vlan] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit interfaces vlan]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces vlan\] Hierarchy Level on page 69](#)
- [Unsupported Statements in the \[edit interfaces vlan\] Hierarchy Level on page 72](#)

Supported Statements in the [edit interfaces vlan] Hierarchy Level

The following hierarchy shows the **[edit interfaces vlan]** configuration statements supported on EX Series switches.

```

interfaces {
  vlan {
    accounting-profile name;
    description text;
    disable;
    (gratuitous-arp-reply | no-gratuitous-arp-reply);
    hold-time up milliseconds down milliseconds;
    mtu bytes;
    no-gratuitous-arp-request;
    traceoptions {
      flag flag;
    }
    (traps | no-traps);
    unit logical-unit-number {
      accounting-profile name;
      arp-resp;
      bandwidth rate;
      description text;
      disable;
      family inet {
        accounting {
          destination-class-usage;
          source-class-usage {
            input;
            output;
          }
        }
      }
      address ipv4-address {
        arp ip-address (mac | multicast-mac) mac-address <publish>;
      }
    }
  }
}

```

```
    broadcast address;
    master-only;
    preferred;
    primary;
    vrrp-group group-number {
        (accept-data | no-accept-data);
        advertise-interval seconds;
        authentication-key key;
        authentication-type authentication;
        fast-interval milliseconds;
        (preempt | no-preempt) {
            hold-time seconds;
        }
        priority number;
        track {
            interface interface-name {
                bandwidth-threshold bandwidth;
                priority-cost number;
            }
            priority-hold-time seconds;
            route ip-address/mask routing-instance instance-name priority-cost cost;
        }
        virtual-address [ addresses ];
        virtual-link-local-address address;
        vrrp-inherit-from {
            active-group group-number;
            active-interface interface-name;
        }
    }
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinite);
    retransmission-attempt number;
    retransmission-interval seconds;
    server-address ip-address;
    update-server
    vendor-id
}
filter {
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
primary;
rpf-check;
}
family inet6 {
    accounting {
        destination-class-usage;
        source-class-usage {
            input;
            output;
        }
    }
}
```



```

address address {
  eui-64;
  ndp ip-address (mac | multicast-mac) mac-address <publish>;
  preferred;
  primary;
  vrrp-inet6-group group-id {
    accept-data | no-accept-data;
    authentication-key key;
    authentication-type authentication;
    fast-interval milliseconds;
    inet6-advertise-interval milliseconds;
    preempt | no-preempt {
      hold-time seconds;
    }
    priority number;
    track {
      interface interface-name {
        bandwidth-threshold bandwidth priority-cost number;
        priority-cost number;
      }
      priority-hold-time seconds;
      route ( address | routing-instance routing-instance-name );
    }
    virtual-inet6-address [addresses];
    virtual-link-local-address ipv6-address;
    vrrp-inherit-from {
      active-group group-name;
      active-interface interface-name;
    }
  }
}
(dad-disable | no-dad-disable);
filter {
  group group-name;
  input filter-name;
  output filter-name;
}
mtu bytes;
no-neighbor-learn;
policer {
  input policer-name;
  output policer-name;
}
rpf-check;
}
family iso {
  address interface-address;
  mtu bytes;
}
family mpls {
  mtu bytes;
}
proxy-arp (restricted | unrestricted);
(traps | no-traps);
}
}

```

```
}
```

Unsupported Statements in the [edit interfaces vlan] Hierarchy Level

All statements in the **[edit interfaces vlan]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces vme] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit interfaces vme]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit interfaces vme\] Hierarchy Level on page 72](#)
- [Unsupported Statements in the \[edit interfaces vme\] Hierarchy Level on page 75](#)

Supported Statements in the [edit interfaces vme] Hierarchy Level

The following hierarchy shows the **[edit interfaces vme]** configuration statements supported on EX Series switches.

```
interfaces {
  vme {
    accounting-profile name;
    description text;
    disable;
    (gratuitous-arp-reply | no-gratuitous-arp-reply);
    hold-time up milliseconds down milliseconds;
    mtu bytes;
    no-gratuitous-arp-request;
    traceoptions {
      flag flag;
    }
    (traps | no-traps);
    unit logical-unit-number {
      accounting-profile name;
      arp-resp;
      bandwidth rate;
      description text;
```

```

disable;
family inet {
  accounting {
    destination-class-usage;
    source-class-usage {
      input;
      output;
    }
  }
}
address ipv4-address {
  arp ip-address (mac | multicast-mac) mac-address <publish>;
  broadcast address;
  master-only;
  preferred;
  primary;
  vrrp-group group-number {
    (accept-data | no-accept-data);
    advertise-interval seconds;
    authentication-key key;
    authentication-type authentication;
    fast-interval milliseconds;
    (preempt | no-preempt) {
      hold-time seconds;
    }
  }
  priority number;
  track {
    interface interface-name {
      bandwidth-threshold bandwidth;
      priority-cost number;
    }
    priority-hold-time seconds;
    route ip-address/mask routing-instance instance-name priority-cost cost;
  }
  virtual-address [ addresses ];
  virtual-link-local-address address;
  vrrp-inherit-from {
    active-group group-number;
    active-interface interface-name;
  }
}
}
dhcp {
  client-identifier (ascii client-id | hexadecimal client-id);
  lease-time (seconds | infinte);
  retransmission-attempt number;
  retransmission-interval sections;
  server-address ip-address;
  update-server
  vendor-id
}
filter {
  input filter-name;
  output filter-name;
}
mtu bytes;
no-neighbor-learn;

```

```

    primary;
    rpf-check;
}
family inet6 {
    accounting {
        destination-class-usage;
        source-class-usage {
            input;
            output;
        }
    }
}
address address {
    eui-64;
    ndp ip-address (mac | multicast-mac) mac-address <publish>;
    preferred;
    primary;
    vrrp-inet6-group group-id {
        accept-data | no-accept-data;
        authentication-key key;
        authentication-type authentication;
        fast-interval milliseconds;
        inet6-advertise-interval milliseconds;
        preempt | no-preempt {
            hold-time seconds;
        }
        priority number;
        track {
            interface interface-name {
                bandwidth-threshold bandwidth priority-cost number;
                priority-cost number;
            }
            priority-hold-time seconds;
            route ( address | routing-instance routing-instance-name );
        }
        virtual-inet6-address [addresses];
        virtual-link-local-address ipv6-address;
        vrrp-inherit-from {
            active-group group-name;
            active-interface interface-name;
        }
    }
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
policer {
    input policer-name;
    output policer-name;
}
rpf-check;
}

```

```

        family iso {
            address interface-address;
            mtu bytes;
        }
        family mpls {
            mtu bytes;
        }
        (traps | no-traps);
    }
    vlan-tagging;
}

```

Unsupported Statements in the [edit interfaces vme] Hierarchy Level

All statements in the [edit interfaces vme] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation • [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit interfaces xe] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit interfaces xe] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see [EX Series Switch Software Features Overview](#)

This topic lists:

- [Supported Statements in the \[edit interfaces xe\] Hierarchy Level on page 75](#)
- [Unsupported Statements in the \[edit interfaces xe\] Hierarchy Level on page 79](#)

Supported Statements in the [edit interfaces xe] Hierarchy Level

The following hierarchy shows the [edit interfaces xe] configuration statements supported on EX Series switches.

```

interfaces {
    xe-fpc/pic/port {
        accounting-profile name;
        clocking (external | internal);
        description text;
        disable;
        ether-options {

```

```
802.3ad {
    aex;
    (backup | primary);
    lacp {
        force-up;
    }
}
(flow-control | no-flow-control);
(loopback | no-loopback);
}
framing (lan-phy | wan-phy);
(gratuitous-arp-reply | no-gratuitous-arp-reply);
hold-time up milliseconds down milliseconds;
mtu bytes;
no-gratuitous-arp-request;
optics-options {
    alarm alarm-type;
    warning alarm-type;
    wavelength nanometers;
}
traceoptions {
    flag flag;
}
(traps | no-traps);
unit logical-unit-number {
    accounting-profile name;
    bandwidth rate;
    description text;
    disable;
    family ccc;
    family ethernet-switching {
        filter {
            input filter-name;
            output filter-name;
        }
        native-vlan-id vlan-id-number;
        port-mode (access | trunk);
        vlan {
            members [ members ];
        }
    }
}
family inet {
    accounting {
        destination-class-usage;
        source-class-usage {
            input;
            output;
        }
    }
}
address ipv4-address {
    arp ip-address (mac | multicast-mac) mac-address <publish>;
    broadcast address;
    preferred;
    primary;
    vrrp-group group-number {
        (accept-data | no-accept-data);
    }
}
```

```

    advertise-interval seconds;
    authentication-key key;
    authentication-type authentication;
    fast-interval milliseconds;
    (preempt | no-preempt) {
        hold-time seconds;
    }
    priority number;
    track {
        interface interface-name {
            bandwidth-threshold bandwidth;
            priority-cost number;
        }
        priority-hold-time seconds;
        route ip-address/mask routing-instance instance-name priority-cost cost;
    }
    virtual-address [ addresses ];
    virtual-link-local-address address;
    vrrp-inherit-from {
        active-group group-number;
        active-interface interface-name;
    }
}
}
dhcp {
    client-identifier (ascii client-id | hexadecimal client-id);
    lease-time (seconds | infinite);
    retransmission-attempt number;
    retransmission-interval seconds;
    server-address ip-address;
    update-server
    vendor-id
}
filter {
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
no-redirects;
primary;
rpf-check;
targeted-broadcast;
}
family inet6 {
    accounting {
        destination-class-usage;
        source-class-usage {
            input;
            output;
        }
    }
}
address address {
    eui-64;
    ndp ip-address (mac | multicast-mac) mac-address <publish>;
    preferred;
}

```

```

primary;
vrrp-inet6-group group-id {
    accept-data | no-accept-data;
    authentication-key key;
    authentication-type authentication;
    fast-interval milliseconds;
    inet6-advertise-interval milliseconds;
    preempt | no-preempt {
        hold-time seconds;
    }
    priority number;
    track {
        interface interface-name {
            bandwidth-threshold bandwidth priority-cost number;
            priority-cost number;
        }
        priority-hold-time seconds;
        route ( address | routing-instance routing-instance-name );
    }
    virtual-inet6-address [addresses];
    virtual-link-local-address ipv6-address;
    vrrp-inherit-from {
        active-group group-name;
        active-interface interface-name;
    }
}
(dad-disable | no-dad-disable);
filter {
    group group-name;
    input filter-name;
    output filter-name;
}
mtu bytes;
no-neighbor-learn;
policer {
    input policer-name;
    output policer-name;
}
rpf-check;
}
family iso {
    address interface-address;
    mtu bytes;
}
family mpls {
    mtu bytes;
}
proxy-arp (restricted | unrestricted);
swap-by-poppush;
(traps | no-traps);
vlan-id (Layer 3 Subinterfaces) vlan-id-number;
}
vlan-tagging;
}
}

```


Unsupported Statements in the [edit interfaces xe] Hierarchy Level

All statements in the **[edit interfaces xe]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation • [\[edit interfaces\] Configuration Statement Hierarchy on EX Series Switches on page 45](#)

[edit poe] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit poe]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit poe\] Hierarchy Level on page 79](#)
- [Unsupported Statements in the \[edit poe\] Hierarchy Level on page 80](#)

Supported Statements in the [edit poe] Hierarchy Level

The following hierarchy shows the **[edit poe]** configuration statements supported on EX Series switches except for EX6200 and EX8200 switches:

```
poe {
  guard-band watts;
  interface (all | interface-name) {
    disable;
    maximum-power watts;
    priority (high | low);
    telemetries {
      disable;
      duration hours;
      interval minutes;
    }
  }
  lldp-priority;
  management (class | static);
  notification-control {
    fpc slot-number {
      disable;
    }
  }
}
```

```
}
```

The following hierarchy shows the **[edit poe]** configuration statements supported on EX Series switches for EX6200 and EX8200 switches:

```
poe {  
  fpc (all | slot-number) {  
    guard-band watts;  
    lldp-priority;  
    management (class | static);  
    maximum-power watts;  
  }  
  interface (all | interface-name) {  
    af-mode;  
    disable;  
    maximum-power watts;  
    priority (high | low);  
    telemetries {  
      disable;  
      duration hours;  
      interval minutes;  
    }  
  }  
  notification-control {  
    fpc slot-number {  
      disable;  
    }  
  }  
}
```

Unsupported Statements in the **[edit poe]** Hierarchy Level

All statements in the **[edit poe]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Configuring PoE Interfaces with Different Priorities on an EX Series Switch
- Example: Configuring PoE on an EX6200 or EX8200 Switch
- Configuring PoE (CLI Procedure)
- Understanding PoE on EX Series Switches

[edit policy-options] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit policy-options]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.

- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switches, see EX Series Switch Software Features Overview.
- [Supported Statements in the \[edit policy-options\] Hierarchy Level on page 81](#)
- [Unsupported Statements in the \[edit policy-options\] Hierarchy Level on page 91](#)

Supported Statements in the [edit policy-options] Hierarchy Level

The following hierarchy shows the **[edit policy-options]** configuration statements supported on EX Series switches:

```

policy-options {
  as-path name regular-expression {
    dynamic-db;
  }
  as-path-group group-name {
    as-path name regular-expression;
    dynamic-db;
  }
  community name {
    dynamic-db;
    invert-match;
    members [ community-ids ];
  }
  condition condition-name {
    dynamic-db;
    if-route-exists address table table-name;
  }
  damping name {
    disable;
    half-life minutes;
    max-suppress minutes;
    reuse number;
    suppress number;
  }
  policy-statement policy-name {
    dynamic-db;
    from {
      aggregate-contributor;
      area area-id;
      as-path [ regular-expression-names ];
      as-path-group [ as-path-group-names ];
      color preference;
      color2 preference;
      community [ community-names ];
      condition [ conditions ];
      external {
        type (1 | 2);
      }
      family family-name;
      instance instance-name;
      interface [ interface-names ];
      level isis-level;
      local-preference value;
    }
  }
}

```

```

metric metric-value;
metric2 metric-value;
metric3 metric-value;
metric4 metric-value;
multicast-scope (scope-value | global | link-local | node-local | organization-local |
  site-local) (orhigher | orlower);
neighbor [ ip-addresses ];
next-hop [ ip-addresses ];
origin (egp | igp | incomplete);
policy [ policy-names ];
preference preference;
preference2 preference;
prefix-list prefix-list-name;
prefix-list-filter prefix-list-name (exact | longer | orlonger) {
  (accept | reject);
  as-path-expand (as-number | last-as) <count number>;
  as-path-prepend as-number;
  class class-name;
  color (preference | add number | subtract number);
  color2 (preference | add number | subtract number);
  community (add | delete | set | + | - | =) community-name;
  cos-next-hop-map map-name;
  damping list-name;
  default-action (accept | reject);
  destination-class class-name;
  dynamic-db;
  external {
    type (1 | 2);
  }
  forwarding-class class-name;
  install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
    <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])>;
  label-allocation (per-nexthop | per-table);
  load-balance per-packet;
  local-preference (preference | add number | subtract number);
  map-to-interface (interface-name | self);
  metric (metric-value | add number | igp <metric-offset> |
    minimum-igp <metric-offset> | subtract number | ... the following complex
    expression ...);
  expression {
    metric (multiplier number | offset number | multiplier number offset number);
    metric2 (multiplier number | offset number | multiplier number offset number);
  }
  metric2 (metric-value | add number | subtract number);
  metric3 (metric-value | add number | subtract number);
  metric4 (metric-value | add number | subtract number);
  next (policy | term);
  next-hop (ip-address | discard | next-table routing-table-name | peer-address |
    reject | self);
  origin (egp | igp | incomplete);
  preference (preference | add number | subtract number);
  preference2 (preference | add number | subtract number);
  priority (high | low | medium);
  source-class class-name;

```

```

ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}
protocol [ protocol-names ];
rib routing-table-name;
route-filter ip-prefix </prefix-length> (exact | longer | orlonger |
through ip-prefix </prefix-length> | upto /prefix-length) {
(accept | reject);
as-path-expand (as-number | last-as) <count number>;
as-path-prepend as-number;
class class-name;
color (preference | add number | subtract number);
color2 (preference | add number | subtract number);
community (add | delete | set | + | - | =) community-name;
cos-next-hop-map map-name;
damping list-name;
default-action (accept | reject);
destination-class class-name;
dynamic-db;
external {
    type (1 | 2);
}
forwarding-class class-name;
install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
    <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ]) >;
label-allocation (per-nexthop | per-table);
load-balance per-packet;
local-preference (preference | add number | subtract number);
map-to-interface (interface-name | self);
metric (metric-value | add number | igp <metric-offset> |
    minimum-igp <metric-offset> | subtract number | ... the following complex
    expression ...);
expression {
    metric (multiplier number | offset number | multiplier number offset number);
    metric2 (multiplier number | offset number | multiplier number offset number);
}
metric2 (metric-value | add number | subtract number);
metric3 (metric-value | add number | subtract number);
metric4 (metric-value | add number | subtract number);
next (policy | term);
next-hop (ip-address | discard | next-table routing-table-name | peer-address |
    reject | self);
origin (egp | igp | incomplete);
preference (preference | add number | subtract number);
preference2 (preference | add number | subtract number);
priority (high | low | medium);
source-class class-name;
ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}

```

```

route-type (external | internal);
source-address-filter ip-prefix</prefix-length> (exact | longer | orlonger |
  through ip-prefix</prefix-length> | upto /prefix-length) {
  route-filter ip-prefix</prefix-length> (exact | longer | orlonger |
    through ip-prefix</prefix-length> | upto /prefix-length) {
    (accept | reject);
  }
  as-path-expand (as-number | last-as) <count number>;
  as-path-prepend as-number;
  class class-name;
  color (preference | add number | subtract number);
  color2 (preference | add number | subtract number);
  community (add | delete | set | + | - | =) community-name;
  cos-next-hop-map map-name;
  damping list-name;
  default-action (accept | reject);
  destination-class class-name;
  dynamic-db;
  external {
    type (1 | 2);
  }
  forwarding-class class-name;
  install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
    <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
      static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ]) >;
  label-allocation (per-nexthop | per-table);
  load-balance per-packet;
  local-preference (preference | add number | subtract number);
  map-to-interface (interface-name | self);
  metric (metric-value | add number | igp <metric-offset> |
    minimum-igp <metric-offset> | subtract number | ... the following complex
    expression ...);
  expression {
    metric (multiplier number | offset number | multiplier number offset number);
    metric2 (multiplier number | offset number | multiplier number offset number);
  }
  metric2 (metric-value | add number | subtract number);
  metric3 (metric-value | add number | subtract number);
  metric4 (metric-value | add number | subtract number);
  next (policy | term);
  next-hop (ip-address | discard | next-table routing-table-name | peer-address |
    reject | self);
  origin (egp | igp | incomplete);
  preference (preference | add number | subtract number);
  preference2 (preference | add number | subtract number);
  priority (high | low | medium);
  source-class class-name;
  ssm-source source;
  tag (tag-number | add number | subtract number);
  tag2 (tag-number | add number | subtract number);
  trace;
}
tag [ tag-numbers ];
tag2 tag-number;
}
term term-name {

```

```

from {
    aggregate-contributor;
    area area-id;
    as-path [ regular-expression-names ];
    as-path-group [ as-path-group-names ];
    color preference;
    color2 preference;
    community [ community-names ];
    community-count number;
    condition [ conditions ];
    external {
        type (1 | 2);
    }
    family family-name;
    instance instance-name;
    interface [ interface-names ];
    level isis-level;
    local-preference value;
    metric metric-value;
    metric2 metric-value;
    metric3 metric-value;
    metric4 metric-value;
    multicast-scope (scope-value | global | link-local | node-local | organization-local
        | site-local) (orhigher | orlower);
    neighbor [ ip-addresses ];
    next-hop [ ip-addresses ];
    next-hop-type type;
    origin (egp | igp | incomplete);
    policy [ policy-names ];
    preference preference;
    preference2 preference;
    prefix-list prefix-list-name;
    prefix-list-filter prefix-list-name (exact | longer | orlonger) {
        (accept | reject);
        as-path-expand (as-number | last-as) <count number>;
        as-path-prepend as-number;
        class class-name;
        color (preference | add number | subtract number);
        color2 (preference | add number | subtract number);
        community (add | delete | set | + | - | =) community-name;
        cos-next-hop-map map-name;
        damping list-name;
        default-action (accept | reject);
        destination-class class-name;
        dynamic-db;
        external {
            type (1 | 2);
        }
        forwarding-class class-name;
        install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
            static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
            <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
            static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])>;
        label-allocation (per-nexthop | per-table);
        load-balance per-packet;
        local-preference (preference | add number | subtract number);
    }
}

```

```

map-to-interface (interface-name | self);
metric (metric-value | add number | igp <metric-offset> |
  minimum-igp <metric-offset> | subtract number | ... the following complex
  expression ...);
expression {
  metric (multiplier number | offset number | multiplier number offset number);
  metric2 (multiplier number | offset number | multiplier number offset number);
}
metric2 (metric-value | add number | subtract number);
metric3 (metric-value | add number | subtract number);
metric4 (metric-value | add number | subtract number);
next (policy | term);
next-hop (ip-address | discard | next-table routing-table-name | peer-address |
  reject | self);
origin (egp | igp | incomplete);
preference (preference | add number | subtract number);
preference2 (preference | add number | subtract number);
priority (high | low | medium);
source-class class-name;
ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}
protocol [ protocol-names ];
rib routing-table-name;
source-address-filter ip-prefix</prefix-length> (exact | longer | orlonger |
  through ip-prefix</prefix-length> | upto /prefix-length) {
  route-filter ip-prefix</prefix-length> (exact | longer | orlonger |
    through ip-prefix</prefix-length> | upto /prefix-length) {
    (accept | reject);
  }
}
as-path-expand (as-number | last-as) <count number>;
as-path-prepend as-number;
class class-name;
color (preference | add number | subtract number);
color2 (preference | add number | subtract number);
community (add | delete | set | + | - | =) community-name;
cos-next-hop-map map-name;
damping list-name;
default-action (accept | reject);
destination-class class-name;
dynamic-db;
external {
  type (1 | 2);
}
forwarding-class class-name;
install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
  static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
  <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])]>;
label-allocation (per-nexthop | per-table);
load-balance per-packet;
local-preference (preference | add number | subtract number);
map-to-interface (interface-name | self);

```



```

metric (metric-value | add number | igp <metric-offset> |
  minimum-igp <metric-offset> | subtract number | ... the following complex
  expression ...);
expression {
  metric (multiplier number | offset number | multiplier number offset number);
  metric2 (multiplier number | offset number | multiplier number offset number);
}
metric2 (metric-value | add number | subtract number);
metric3 (metric-value | add number | subtract number);
metric4 (metric-value | add number | subtract number);
next (policy | term);
next-hop (ip-address | discard | next-table routing-table-name | peer-address |
  reject | self);
origin (egp | igp | incomplete);
preference (preference | add number | subtract number);
preference2 (preference | add number | subtract number);
priority (high | low | medium);
source-class class-name;
ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}
route-type (external | internal);
source-address-filter ip-prefix</prefix-length> (exact | longer | orlonger |
  through ip-prefix</prefix-length> | upto /prefix-length) {
  route-filter ip-prefix</prefix-length> (exact | longer | orlonger |
    through ip-prefix</prefix-length> | upto /prefix-length) {
    (accept | reject);
  }
}
as-path-expand (as-number | last-as) <count number>;
as-path-prepend as-number;
class class-name;
color (preference | add number | subtract number);
color2 (preference | add number | subtract number);
community (add | delete | set | + | - | =) community-name;
cos-next-hop-map map-name;
damping list-name;
default-action (accept | reject);
destination-class class-name;
dynamic-db;
external {
  type (1 | 2);
}
forwarding-class class-name;
install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
  static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
  <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])>;
label-allocation (per-nexthop | per-table);
load-balance per-packet;
local-preference (preference | add number | subtract number);
map-to-interface (interface-name | self);
metric (metric-value | add number | igp <metric-offset> |
  minimum-igp <metric-offset> | subtract number | ... the following complex
  expression ...);
expression {

```

```

        metric (multiplier number | offset number | multiplier number offset number);
        metric2 (multiplier number | offset number | multiplier number offset number);
    }
    metric2 (metric-value | add number | subtract number);
    metric3 (metric-value | add number | subtract number);
    metric4 (metric-value | add number | subtract number);
    next (policy | term);
    next-hop (ip-address | discard | next-table routing-table-name | peer-address |
        reject | self);
    origin (egp | igp | incomplete);
    preference (preference | add number | subtract number);
    preference2 (preference | add number | subtract number);
    priority (high | low | medium);
    source-class class-name;
    ssm-source source;
    tag (tag-number | add number | subtract number);
    tag2 (tag-number | add number | subtract number);
    trace;
}
state;
tag [ tag-numbers ];
tag2 tag-number;
}
then {
    (accept | reject);
    as-path-expand (as-number | last-as) <count number>;
    as-path-prepend as-number;
    class class-name;
    color (preference | add number | subtract number);
    color2 (preference | add number | subtract number);
    community (add | delete | set | + | - | =) community-name;
    cos-next-hop-map map-name;
    damping list-name;
    default-action (accept | reject);
    destination-class class-name;
    external {
        type (1 | 2);
    }
    forwarding-class class-name;
    install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
        static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
        <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
        static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ]) >;
    label-allocation (per-nexthop | per-table);
    load-balance per-packet;
    local-preference (preference | add number | subtract number);
    map-to-interface (interface-name | self);
    metric (metric-value | add number | igp <metric-offset> |
        minimum-igp <metric-offset> | subtract number | ... the following complex
        expression ...);
    expression {
        metric (multiplier number | offset number | multiplier number offset number);
        metric2 (multiplier number | offset number | multiplier number offset number);
    }
    metric2 (metric-value | add number | subtract number);
    metric3 (metric-value | add number | subtract number);
}

```

```

metric4 (metric-value | add number | subtract number);
next (policy | term);
next-hop (ip-address | discard | next-table routing-table-name | peer-address |
    reject | self);
origin (egp | igp | incomplete);
preference (preference | add number | subtract number);
preference2 (preference | add number | subtract number);
priority (high | low | medium);
source-class class-name;
ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}
to {
    area area-id;
    as-path [ regular-expression-names ];
    as-path-group [ as-path-group-names ];
    color preference;
    color2 preference;
    community [ community-names ];
    external {
        type (1 | 2);
    }
    family family-name;
    instance instance-name;
    interface [ interface-names ];
    level isis-level;
    local-preference value;
    metric metric-value;
    metric2 metric-value;
    metric3 metric-value;
    metric4 metric-value;
    neighbor [ ip-addresses ];
    next-hop [ ip-addresses ];
    origin (egp | igp | incomplete);
    policy [ policy-names ];
    preference preference;
    preference2 preference;
    protocol [ protocol-names ];
    rib routing-table-name;
    tag [ tag-numbers ];
    tag2 tag-number;
}
}
then {
    (accept | reject);
    as-path-expand (as-number | last-as) <count number>;
    as-path-prepend as-number;
    class class-name;
    color (preference | add number | subtract number);
    color2 (preference | add number | subtract number);
    community (add | delete | set | + | - | =) community-name;
    cos-next-hop-map map-name;
    damping list-name;
    default-action (accept | reject);
}

```

```

destination-class class-name;
external {
    type (1 | 2);
}
forwarding-class class-name;
install-nexthop <strict> (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
    static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])
    <except (lsp [ lsp-names ] | lsp-regex [ regular-expressions ] |
        static-lsp [ lsp-names ] | static-lsp-regex [ regular-expressions ])>;
label-allocation (per-nexthop | per-table);
load-balance per-packet;
local-preference (preference | add number | subtract number);
map-to-interface (interface-name | self);
metric (metric-value | add number | igp <metric-offset> |
    minimum-igp <metric-offset> | subtract number | ... the following complex expression
    ...);
expression {
    metric (multiplier number | offset number | multiplier number offset number);
    metric2 (multiplier number | offset number | multiplier number offset number);
}
metric2 (metric-value | add number | subtract number);
metric3 (metric-value | add number | subtract number);
metric4 (metric-value | add number | subtract number);
next (policy | term);
next-hop (ip-address | discard | next-table routing-table-name | peer-address | reject |
    self);
origin (egp | igp | incomplete);
preference (preference | add number | subtract number);
preference2 (preference | add number | subtract number);
priority (high | low | medium);
source-class class-name;
ssm-source source;
tag (tag-number | add number | subtract number);
tag2 (tag-number | add number | subtract number);
trace;
}
to {
    area area-id;
    as-path [ regular-expression-names ];
    as-path-group [ as-path-group-names ];
    color preference;
    color2 preference;
    community [ community-names ];
    external {
        type (1 | 2);
    }
    family family-name;
    instance instance-name;
    interface [ interface-names ];
    level isis-level;
    local-preference value;
    metric metric-value;
    metric2 metric-value;
    metric3 metric-value;
    metric4 metric-value;
    neighbor [ ip-addresses ];

```

```

    next-hop [ ip-addresses ];
    origin (egp | igp | incomplete);
    policy [ policy-names ];
    preference preference;
    preference2 preference;
    protocol [ protocol-names ];
    rib routing-table-name;
    tag [ tag-numbers ];
    tag2 tag-number;
  }
}
prefix-list list-name {
  ip-prefix</prefix-length>;
  apply-path path;
  dynamic-db;
}
vsi-policy policy-name {
  from {
    vsi-manager identifier vsi-type identifier vsi-version version-number vsi-instance
      instance-name;
  }
  then {
    filter filter-name;
  }
}
}

```

Unsupported Statements in the [edit policy-options] Hierarchy Level

All statements in the **[edit policy-options]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [Routing Policy Configuration Guide](#)

[edit protocols] Configuration Statement Hierarchy on EX Series Switches

Each of the following topics lists the statements at a subhierarchy of the **[edit protocols]** hierarchy:

- [\[edit protocols bfd\] Configuration Statement Hierarchy on EX Series Switches on page 93](#)
- [\[edit protocols bgp\] Configuration Statement Hierarchy on EX Series Switches on page 94](#)
- [\[edit protocols connections\] Configuration Statement Hierarchy on EX Series Switches on page 104](#)
- [\[edit protocols dcbx\] Configuration Statement Hierarchy on EX Series Switches on page 105](#)
- [\[edit protocols dot1x\] Configuration Statement Hierarchy on EX Series Switches on page 106](#)

- [\[edit protocols igmp\] Configuration Statement Hierarchy on EX Series Switches on page 108](#)
- [\[edit protocols igmp-snooping\] Configuration Statement Hierarchy on EX Series Switches on page 109](#)
- [\[edit protocols isis\] Configuration Statement Hierarchy on EX Series Switches on page 111](#)
- [\[edit protocols lacp\] Configuration Statement Hierarchy on EX Series Switches on page 114](#)
- [\[edit protocols link-management\] Configuration Statement Hierarchy on EX Series Switches on page 114](#)
- [\[edit protocols lldp\] Configuration Statement Hierarchy on EX Series Switches on page 116](#)
- [\[edit protocols lldp-med\] Configuration Statement Hierarchy on EX Series Switches on page 117](#)
- [\[edit protocols mld\] Configuration Statement Hierarchy on EX Series Switches on page 118](#)
- [\[edit protocols mld-snooping\] Configuration Statement Hierarchy on EX Series Switches on page 120](#)
- [\[edit protocols mpls\] Configuration Statement Hierarchy on EX Series Switches on page 121](#)
- [\[edit protocols msdp\] Configuration Statement Hierarchy on EX Series Switches on page 132](#)
- [\[edit protocols mstp\] Configuration Statement Hierarchy on EX Series Switches on page 134](#)
- [\[edit protocols mvrp\] Configuration Statement Hierarchy on EX Series Switches on page 136](#)
- [\[edit protocols neighbor-discovery\] Configuration Statement Hierarchy on EX Series Switches on page 137](#)
- [\[edit protocols oam\] Configuration Statement Hierarchy on EX Series Switches on page 138](#)
- [\[edit protocols ospf\] Configuration Statement Hierarchy on EX Series Switches on page 140](#)
- [\[edit protocols ospf3\] Configuration Statement Hierarchy on EX Series Switches on page 144](#)
- [\[edit protocols pim\] Configuration Statement Hierarchy on EX Series Switches on page 147](#)
- [\[edit protocols rip\] Configuration Statement Hierarchy on EX Series Switches on page 150](#)
- [\[edit protocols ripng\] Configuration Statement Hierarchy on EX Series Switches on page 153](#)

- [\[edit protocols router-advertisement\]](#) Configuration Statement Hierarchy on EX Series Switches on page 154
- [\[edit protocols router-discovery\]](#) Configuration Statement Hierarchy on EX Series Switches on page 155
- [\[edit protocols rstp\]](#) Configuration Statement Hierarchy on EX Series Switches on page 157
- [\[edit protocols rsvp\]](#) Configuration Statement Hierarchy on EX Series Switches on page 158
- [\[edit protocols sflow\]](#) Configuration Statement Hierarchy on EX Series Switches on page 162
- [\[edit protocols stp\]](#) Configuration Statement Hierarchy on EX Series Switches on page 163
- [\[edit protocols uplink-failure-detection\]](#) Configuration Statement Hierarchy on EX Series Switches on page 164
- [\[edit protocols vrrp\]](#) Configuration Statement Hierarchy on EX Series Switches on page 166
- [\[edit protocols vstp\]](#) Configuration Statement Hierarchy on EX Series Switches on page 166

**Related
Documentation**

- EX Series Switch Software Features Overview
- Junos® OS for EX Series Switches, Release 12.2

[\[edit protocols bfd\]](#) Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [\[edit protocols bfd\]](#) hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols bfd\] Hierarchy Level on page 93](#)
- [Unsupported Statements in the \[edit protocols bfd\] Hierarchy Level on page 94](#)

Supported Statements in the [\[edit protocols bfd\]](#) Hierarchy Level

The following hierarchy shows the [\[edit protocols bfd\]](#) configuration statements supported on EX Series switches:

```
protocols {
  bfd {
    no-issu-timer-negotiation;
    traceoptions {
      file <filename> <files number> <match regular-expression> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag;
      no-remote-trace;
    }
  }
}
```

Unsupported Statements in the [edit protocols bfd] Hierarchy Level

All statements in the [edit protocols bfd] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Protocol-Independent Routing Properties Configuration Guide
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols bgp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols bgp] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols bgp\] Hierarchy Level on page 94](#)
- [Unsupported Statements in the \[edit protocols bgp\] Hierarchy Level on page 103](#)

Supported Statements in the [edit protocols bgp] Hierarchy Level

The following hierarchy shows the [edit protocols bgp] configuration statements supported on EX Series switches:

```
protocols {
  bgp {
    accept-remote-nexthop;
    advertise-external <conditional>;
    advertise-inactive;
    (advertise-peer-as | no-advertise-peer-as);
    authentication-algorithm (hmac-sha-1-96 | md5);
```



```

authentication-key key;
bfd-liveness-detection {
  authentication {
    algorithm algorithm-name;
    loose-check;
  }
  detection-time {
    threshold milliseconds;
  }
  hold-down-interval milliseconds;
  minimum-interval milliseconds;
  minimum-receive-interval milliseconds;
  multiplier number;
  no-adaptation;
  session-mode (automatic | multihop | single-hop);
  transmit-interval {
    threshold milliseconds;
    minimum-interval milliseconds;
  }
  version (1 | automatic);
}
cluster cluster-identifier;
damping;
description text-description;
disable;
export [ policy-names ];
family inet {
  any {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
  }
  flow {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
  }
  multicast {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
  }
  unicast {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
  }
}

```

```

    }
    rib-group group-name;
    topology name {
        community target identifier;
    }
}
family inet6 {
    any {
        loops number;
        prefix-limit {
            maximum number;
            teardown <percentage> <idle-timeout (forever | minutes)>;
        }
        rib-group group-name;
    }
    labeled-unicast {
        aggregate-label {
            community community-name;
        }
        explicit-null connected-only;
        loops number;
        per-group-label;
        prefix-limit {
            maximum number;
            teardown <percentage> <idle-timeout (forever | minutes)>;
        }
    }
    rib-group group-name;
    traffic-statistics {
        file filename <files number> <size maximum-file-size> <world-readable |
            no-world-readable>;
        interval seconds;
    }
}
multicast {
    loops number;
    prefix-limit {
        maximum number;
        teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
}
unicast {
    loops number;
    prefix-limit {
        maximum number;
        teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
    topology name {
        community target identifier;
    }
}
} # end of [edit protocols bgp family]
graceful-restart {

```

```

disable;
restart-time seconds;
stale-routes-time seconds;
}
group group-name {
  advertise-external <conditional>;
  advertise-inactive;
  (advertise-peer-as | no-advertise-peer-as);
  allow [ all ip-prefix</prefix-length> ];
  as-override;
  authentication-algorithm (hmac-sha-1-96 | md5);
  authentication-key key;
  bfd-liveness-detection {
    authentication {
      algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
        meticulous-keyed-sha-1 | simple-password);
      loose-check;
    }
    holddown-interval milliseconds;
    minimum-interval milliseconds;
    minimum-receive-interval milliseconds;
    multiplier number;
    no-adaptation;
    session-mode (automatic | multihop | single-hop);
    transmit-interval {
      minimum-interval milliseconds;
      threshold milliseconds;
    }
    version (1 | automatic);
  }
  cluster cluster-identifier;
  damping;
  description text-description;
  export [ policy-names ];
  family inet {
    any {
      loops number;
      prefix-limit {
        maximum number;
        teardown <percentage> <idle-timeout (forever | minutes)>;
      }
      rib-group group-name;
    }
    flow {
      loops number;
      prefix-limit {
        maximum number;
        teardown <percentage> <idle-timeout (forever | minutes)>;
      }
      rib-group group-name;
    }
  }
  multicast {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
  }
}

```

```

    }
    rib-group group-name;
  }
  unicast {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
    topology name {
      community target identifier;
    }
  }
}
family inet6 {
  any {
    loops number;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
  }
  labeled-unicast {
    aggregate-label {
      community community-name;
    }
    explicit-null connected-only;
    loops number;
    per-group-label;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
    traffic-statistics {
      file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
      interval seconds;
    }
  }
}
multicast {
  loops number;
  prefix-limit {
    maximum number;
    teardown <percentage> <idle-timeout (forever | minutes)>;
  }
  rib-group group-name;
}
unicast {
  loops number;
  prefix-limit {
    maximum number;
    teardown <percentage> <idle-timeout (forever | minutes)>;
  }
}

```

```

        rib-group group-name;
        topology name {
            community target identifier;
        }
    }
} # end of [edit protocols bgp group family]
graceful-restart {
    disable;
    restart-time seconds;
    stale-routes-time seconds;
}
hold-time seconds;
idle-after-switch-over (seconds | forever);
import [ policy-names ];
include-mp-next-hop;
keep (all | none);
local-interface interface-name;
local-preference local-preference;
log-updown;
metric-out (metric | igp (delay-med-update | offset) | minimum-igp offset);
mtu-discovery;
multihop {
    no-nexthop-change;
    ttl ttl-value;
}
neighboraddress {
    advertise-external <conditional>;
    advertise-inactive;
    (advertise-peer-as | no-advertise-peer-as);
    as-override;
    authentication-algorithm algorithm;
    authentication-key key;
    bfd-liveness-detection {
        authentication {
            algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
                meticulous-keyed-sha-1 | simple-password);
            loose-check;
        }
        holddown-interval milliseconds;
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        multiplier number;
        no-adaptation;
        session-mode (automatic | multihop | single-hop);
        transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
        }
        version (1 | automatic);
    }
}
cluster cluster-identifier;
damping;
description text-description;
export [ policy-names ];
family {

```

```

(inet | inet6 | inet-mvpn | inet6-mpvn | inet-vpn | inet6-vpn | iso-vpn | l2-vpn)
{
  (any | flow | multicast | unicast | signaling) {
    accepted-prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    damping;
    prefix-limit {
      maximum number;
      teardown <percentage> <idle-timeout (forever | minutes)>;
    }
    rib-group group-name;
    topology name {
      community {
        target identifier;
      }
    }
  }
}
flow {
  no-validate policy-name;
}
labeled-unicast {
  accepted-prefix-limit {
    maximum number;
    teardown <percentage> <idle-timeout (forever | minutes)>;
  }
  aggregate-label {
    community community-name;
  }
  explicit-null {
    connected-only;
  }
  prefix-limit {
    maximum number;
    teardown <percentage> <idle-timeout (forever | minutes)>;
  }
  resolve-vpn;
  rib inet.3;
  rib-group group-name;
  topology name {
    community {
      target identifier;
    }
  }
}
}
route-target {
  advertise-default;
  external-paths number;
  accepted-prefix-limit {
    maximum number;
    teardown <percentage> <idle-timeout (forever | minutes)>;
  }
  prefix-limit {
    maximum number;
  }
}

```

```

        teardown <percentage> <idle-timeout (forever | minutes)>;
    }
}
signaling {
    prefix-limit {
        maximum number;
        teardown <percentage> <idle-timeout (forever | minutes)>;
    }
}
}
graceful-restart {
    disable;
    restart-time seconds;
    stale-routes-time seconds;
}
hold-time seconds;
import [ policy-names ];
ipsec-sa ipsec-sa;
keep (all | none);
local-address address;
local-as autonomous-system <private>;
local-interface interface-name;
local-preference preference;
log-updown;
metric-out (metric | minimum-igp <offset> | igp <offset>);
mtu-discovery;
multihop <ttl-value>;
multipath {
    multiple-as;
}
no-aggregator-id;
no-client-reflect;
out-delay seconds;
passive;
peer-as autonomous-system;
preference preference;
tcp-mss segment-size;
traceoptions {
    file filename <files number> <size size> <world-readable |
        no-world-readable>;
    flag flag <flag-modifier> <disable>;
}
}
no-aggregator-id;
no-client-reflect;
out-delay seconds;
outbound-route-filter {
    bgp-orf-cisco-mode;
    prefix-based {
        accept {
            inet;
            inet6;
        }
    }
}
}
passive;

```

```

    peer-as autonomous-system;
    preference preference;
    remove-private;
    tcp-mss segment-size;
    traceoptions {
        file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
        flag flag <flag-modifier> <disable>;
    }
    type (external | internal);
}
hold-time seconds;
idle-after-switch-over (seconds | forever);
import [ policy-names ];
include-mp-next-hop;
keep (all | none);
local-address address;
local-as autonomous-system <loops number> < alias> <no-prepend-global-as>
    <private>;
local-interface interface-name;
local-preference local-preference;
log-updown;
metric-out (metric | igp (delay-med-update | offset) | minimum-igp offset);
mtu-discovery;
multihop {
    no-nexthop-change;
    ttl ttl-value;
}
multipath;
no-aggregator-id;
no-client-reflect;
out-delay seconds;
outbound-route-filter {
    bgp-orf-cisco-mode;
    prefix-based {
        accept {
            inet;
            inet6;
        }
    }
}
}
passive;
path-selection {
    always-compare-med;
    as-path-ignore;
}
peer-as autonomous-system;
precision-timers | no-precision-timers;
preference preference;
remove-private;
tcp-mss segment-size;
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
    no-world-readable>;
    flag flag <flag-modifier> <disable>;
}

```



```

    }
}

```

Unsupported Statements in the [edit protocols bgp] Hierarchy Level

All statements in the [edit protocols bgp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 11: Unsupported [edit protocols bgp] Configuration Statements on EX Series Switches

Statement	Hierarchy Level
NOTE: Variables, such as <i>family-name</i> , are not shown in the statements or hierarchies.	
accepted-prefix-limit	[edit protocols bgp family]
add-path	[edit protocols bgp family]
authentication-key-chain	[edit protocols bgp] [edit protocols bgp group] [edit protocols bgp group neighbor]
cisco-non-deterministic	[edit protocols bgp path-selection]
eternal-router-id	[edit protocols bgp path-selection]
igp-multiplier	[edit protocols bgp path-selection]
ipsec-sa	[edit protocols bgp] [edit protocols bgp group]
key-chain	[edit protocols bgp bfd-liveness-detection authentication] [edit protocols bgp group bfd-liveness-detection authentication] [edit protocols bgp group neighbor bfd-liveness-detection authentication]
maximum	[edit protocols bgp family accepted-prefix-limit]
med-multiplier	[edit protocols bgp path-selection]
med-plus-igp	[edit protocols bgp path-selection]
no-validate	[edit protocols bgp family inet flow]
path-count	[edit protocols bgp family add-path send]
prefix-policy	[edit protocols bgp family add-path send]
receive	[edit protocols bgp family add-path]
send	[edit protocols bgp family add-path]

Table 11: Unsupported [edit protocols bgp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy Level
teardown	[edit protocols bgp family accepted-prefix-limit]
vpn-apply-export	[edit protocols bgp] [edit protocols bgp group neighbor]

- Related Documentation**
- BGP Configuration Guide
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[\[edit protocols connections\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols connections]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols connections\] Hierarchy Level on page 104](#)
- [Unsupported Statements in the \[edit protocols connections\] Hierarchy Level on page 105](#)

Supported Statements in the [edit protocols connections] Hierarchy Level

The following hierarchy shows the **[edit protocols connections]** configuration statements supported on EX Series switches:

```

protocols {
  connections {
    interface-switch connection-name {
      interface interface-name.unit-number;
    }
    lsp-switch connection-name {
      receive-lsp label-switched-path;
      transmit-lsp label-switched-path;
    }
    remote-interface-switch connection-name {
      interface interface-name.unit-number;
      receive-lsp label-switched-path;
      transmit-lsp label-switched-path;
    }
  }
}

```

```

    }
}

```

Unsupported Statements in the [edit protocols connections] Hierarchy Level

All statements in the [edit protocols connections] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 12: Unsupported [edit protocols connections] Configuration Statements on EX Series Switches

Statement	Hierarchy
p2mp-receive-switch	[edit protocols connections]
p2mp-transmit-switch	[edit protocols connections]

NOTE: Variables, such as *p2mp-receive-switch*, are not shown in the statements or hierarchies.

Related Documentation

- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols dcbx] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols dcbx] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols dcbx\] Hierarchy Level on page 105](#)
- [Unsupported Statements in the \[edit protocols dcbx\] Hierarchy Level on page 106](#)

Supported Statements in the [edit protocols dcbx] Hierarchy Level

The following hierarchy shows the [edit protocols dcbx] configuration statements supported on EX Series switches:

```

protocols {
  dcbx {
    disable;
    interface (all | interface-name) {
      application-map application-map-name;
    }
  }
}

```

```

    applications {
      fcoe {
        no-auto-negotiation;
      }
    }
    disable ;
    priority-flow-control {
      no-auto-negotiation;
    }
  }
}

```

Unsupported Statements in the [edit protocols dcbx] Hierarchy Level

All statements in the [edit protocols dcbx] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 13: Unsupported [edit protocols dcbx] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
enhanced-transmission-selection	[edit protocols dcbx interface]

Related Documentation

- Example: Configuring an FCoE Transit Switch
- Example: Configuring DCBX to Support an iSCSI Application
- Configuring Priority-Based Flow Control for an EX Series Switch (CLI Procedure)
- Disabling DCBX to Disable PFC Autonegotiation on EX Series Switches (CLI Procedure)
- Understanding Data Center Bridging Capability Exchange Protocol for EX Series Switches
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols dot1x] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols dot1x] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols dot1x\] Hierarchy Level on page 107](#)
- [Unsupported Statements in the \[edit protocols dot1x\] Hierarchy Level on page 108](#)

Supported Statements in the [edit protocols dot1x] Hierarchy Level

The following hierarchy shows the **[edit protocols dot1x]** configuration statements supported on EX Series switches:

```

protocols {
  dot1x {
    authenticator {
      authentication-profile-name access-profile-name;
      interface (all | [ interface-names ]) {
        disable;
        guest-vlan (vlan-id | vlan-name);
        mac-radius {
          flap-on-disconnect;
          restrict;
        }
        maximum-requests number;
        no-reauthentication;
        quiet-period seconds;
        reauthentication {
          interval seconds;
        }
        retries number;
        server-fail (deny | permit | use-cache | vlan-id | vlan-name);
        server-reject-vlan (vlan-id | vlan-name) {
          eapol-block;
          block-interval block-interval;
        }
        server-timeout seconds;
        supplicant (single | single-secure | multiple);
        supplicant-timeout seconds;
        transmit-period seconds;
      }
    }
    no-mac-table-binding {
      interface interface-names
      static mac-address
    }
    static mac-address {
      interface interface-names;
      vlan-assignment (vlan-id | vlan-name);
    }
  }
}
traceoptions {
  file filename <files number> <size size> <world-readable | no-world-readable> <match
    regex>;
  flag flag ;
}

```

Unsupported Statements in the [edit protocols dot1x] Hierarchy Level

All statements in the **[edit protocols dot1x]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Setting Up 802.1X in Conference Rooms to Provide Internet Access to Corporate Visitors on an EX Series Switch
- Example: Setting Up 802.1X for Single Supplicant or Multiple Supplicant Configurations on an EX Series Switch
- Example: Configuring 802.1X Authentication Options When the RADIUS Server is Unavailable to an EX Series Switch
- Example: Configuring Fallback Options on EX Series Switches for EAP-TTLS Authentication and Odyssey Access Clients
- Example: Configuring Static MAC Bypass of Authentication on an EX Series Switch
- 802.1X for EX Series Switches Overview
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols igmp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols igmp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols igmp\] Hierarchy Level on page 108](#)
- [Unsupported Statements in the \[edit protocols igmp\] Hierarchy Level on page 109](#)

Supported Statements in the [edit protocols igmp] Hierarchy Level

The following hierarchy shows the **[edit protocols igmp]** configuration statements supported on EX Series switches:

```
protocols {
  igmp {
    accounting;
    interface interface-name {
      (accounting | no-accounting);
```

```

disable;
group-policy [ policy-names ];
group-policy policy-name;
immediate-leave;
oif-map [ map-names ];
passive <allow-receive> <send-general-query> <send-group-query>;
promiscuous-mode;
ssm-map ssm-map-name;
static {
    group multicast-group-address {
        exclude;
        group-count number;
        group-increment increment;
        source ip-address {
            source-count number;
            source-increment increment;
        }
    }
}
version version;
}
maximum-transmit-rate packets-per-second;
query-interval seconds;
query-last-member-interval seconds;
query-response-interval seconds;
robust-count number;
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
    no-world-readable>;
    flag flag <flag-modifier> <disable>;
}
}
}

```

Unsupported Statements in the [edit protocols igmp] Hierarchy Level

All statements in the [edit protocols igmp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols igmp-snooping] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols igmp-snooping] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.

- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols igmp-snooping\] Hierarchy Level on page 110](#)
- [Unsupported Statements in the \[edit protocols igmp-snooping\] Hierarchy Level on page 110](#)

Supported Statements in the [edit protocols igmp-snooping] Hierarchy Level

The following hierarchy shows the **[edit protocols igmp-snooping]** configuration statements supported on EX Series switches:

```
protocols {
  igmp-snooping {
    traceoptions {
      file filename <files number> <no-stamp> <replace> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag <flag-modifier> <disable>;
    }
    vlan (all | vlan-identifier) {
      data-forwarding {
        receiver {
          install;
          source-vlans vlan-name;
        }
        source {
          groups ip-address;
        }
      }
      disable;
      immediate-leave;
      interface (all | interface-name) {
        multicast-router-interface;
        static {
          group multicast-ip-address;
        }
      }
      no-default-flooding;
      proxy {
        source-address ip-address;
      }
      robust-count number;
      version;
    }
  }
}
```

Unsupported Statements in the [edit protocols igmp-snooping] Hierarchy Level

All statements in the **[edit protocols igmp-snooping]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[\[edit protocols isis\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols isis]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols isis\] Hierarchy Level on page 111](#)
- [Unsupported Statements in the \[edit protocols isis\] Hierarchy Level on page 113](#)

Supported Statements in the [edit protocols isis] Hierarchy Level

The following hierarchy shows the **[edit protocols isis]** configuration statements supported on EX Series switches.

```

protocols {
  isis {
    disable;
    export [ policy-names ];
    graceful-restart {
      disable;
      helper-disable;
      restart-duration seconds;
    }
    ignore-attached-bit;
    interface interface-name {
      bfd-liveness-detection {
        authentication {
          algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
            meticulous-keyed-sha-1 | simple-password);
          loose-check;
        }
        detection-time {
          threshold milliseconds;
        }
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        multiplier number;
        no-adaptation;
        transmit-interval {
          minimum-interval milliseconds;

```

```
        threshold milliseconds;
    }
    version (0 | 1 | automatic);
}
checksum;
csnp-interval (seconds | disable);
disable;
hello-padding (adaptive | loose | strict);
disable;
}
level (1 | 2) {
    disable;
    hello-authentication-key key;
    hello-authentication-key-chain;
    hello-authentication-type authentication;
    hello-interval seconds;
    hold-time seconds;
    ipv4-multicast-metric number;
    ipv6-multicast-metric number;
    ipv6-unicast-metric number;
    metric metric;
    passive;
    priority number;
}
link-protection;
mesh-group (value | blocked);
no-adjacency-down-notification;
no-eligible-backup;
no-ipv4-multicast;
no-ipv6-multicast;
no-ipv6-unicast;
no-unicast-topology;
node-link-protection;
passive;
point-to-point;
}
level (1 | 2) {
    authentication-key key;
    authentication-type authentication;
    disable;
    external-preference preference;
    no-csnp-authentication;
    no-hello-authentication;
    no-psnp-authentication;
    preference preference;
    prefix-export-limit number;
    wide-metrics-only;
}
loose-authentication-check;
max-areas number;
no-adjacency-holddown;
no-authentication-check;
no-ipv4-routing;
no-ipv6-routing;
overload {
    advertise-high-metrics;
```

```
        allow-route-leaking;
        timeout seconds;
    }
    reference-bandwidth reference-bandwidth;
    rib-group {
        inet group-name;
        inet6 group-name;
    }
    spf-options {
        delay milliseconds;
        holddown milliseconds;
        rapid-runs number;
    }
    topologies {
        ipv4-multicast;
        ipv6-multicast;
        ipv6-unicast;
    }
    traceoptions {
        file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
        flag flag <flag-modifier> <disable>;
    }
}
}
```

Unsupported Statements in the [edit protocols isis] Hierarchy Level

All statements in the [edit protocols isis] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 14: Unsupported [edit protocols isis] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>filename</i> , are not shown in the statements or hierarchies.	
authentication-key-chain	[edit protocols isis level<1 2>]
lsp-interval	[edit protocols isis interface]
lsp-lifetime	[edit protocols isis]
key-chain	[edit protocols isis interface bfd-liveness-detection authentication]

- Related Documentation
- IS-IS Configuration Guide
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols lacp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols lacp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols lacp\] Hierarchy Level on page 114](#)
- [Unsupported Statements in the \[edit protocols lacp\] Hierarchy Level on page 114](#)

Supported Statements in the [edit protocols lacp] Hierarchy Level

The following hierarchy shows the **[edit protocols lacp]** configuration statements supported on EX Series switches:

```
protocols {
  lacp {
    ppm {
      centralized
    }
    traceoptions {
      file <filename> <files number> <match regular-expression> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag;
      no-remote-trace;
    }
  }
}
```

Unsupported Statements in the [edit protocols lacp] Hierarchy Level

All statements in the **[edit protocols lacp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols link-management] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols link-management]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols link-management\] Hierarchy Level on page 115](#)
- [Unsupported Statements in the \[edit protocols link-management\] Hierarchy Level on page 116](#)

Supported Statements in the [edit protocols link-management] Hierarchy Level

The following hierarchy shows the [edit protocols link-management] configuration statements supported on EX Series switches:

```

protocols {
  link-management {
    peer peer-name {
      address address;
      control-channel [ control-channel-interfaces ];
      lmp-control-channel interface-name {
        remote-address address;
      }
      lmp-protocol {
        hello-dead-interval milliseconds;
        hello-interval milliseconds;
        passive;
        retransmission-interval milliseconds;
        retry-limit number;
      }
      te-link [ te-link-names ];
    }
    te-link te-link-name {
      disable;
      interface interface-name {
        disable;
        local-address address;
        remote-address address;
        remote-id id-number;
      }
      label-switched-path lsp-name {
        disable;
        local-address address;
        remote-address address;
        remote-id id-number;
      }
      local-address address;
      remote-address address;
    }
  }
}

```

```
        remote-id id-number;  
        te-metric metric;  
    }  
    traceoptions {  
        file filename <files number> <size maximum-file-size> <world-readable |  
            no-world-readable>;  
        flag flag;  
    }  
}
```

Unsupported Statements in the [edit protocols link-management] Hierarchy Level

All statements in the [edit protocols link-management] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols lldp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols lldp] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols lldp\] Hierarchy Level on page 116](#)
- [Unsupported Statements in the \[edit protocols lldp\] Hierarchy Level on page 117](#)

Supported Statements in the [edit protocols lldp] Hierarchy Level

The following hierarchy shows the [edit protocols lldp] configuration statements supported on EX Series switches:

```
protocols {  
    lldp {  
        advertisement-interval seconds;  
        disable;  
        hold-multiplier seconds;  
        interface (all | interface-name) {  
            disable;  
            power-negotiation {  
                disable;  
            }  
        }  
    }  
}
```

```

    }
  }
}
lldp-configuration-notification-interval seconds;
management-address;
netbios-snooping;
ptopo-configuration-maximum-hold-time seconds;
ptopo-configuration-trap-interval seconds;
traceoptions {
  file filename <files number> <size maximum-file-size> <world-readable |
    no-world-readable>;
  flag flag <disable>;
}
transmit-delay seconds;
}
}

```

Unsupported Statements in the [edit protocols lldp] Hierarchy Level

All statements in the **[edit protocols lldp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols lldp-med] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols lldp-med]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols lldp-med\] Hierarchy Level on page 117](#)
- [Unsupported Statements in the \[edit protocols lldp-med\] Hierarchy Level on page 118](#)

Supported Statements in the [edit protocols lldp-med] Hierarchy Level

The following hierarchy shows the **[edit protocols lldp-med]** configuration statements supported on EX Series switches:

```

protocols {
  lldp-med {
    disable;
  }
}

```

```
fast-start number;  
interface (all | interface-name) {  
  disable;  
  location {  
    civic-based {  
      ca-type {  
        index {  
          ca-value value;  
        }  
      }  
      country-code code;  
      what value;  
    }  
    elin number;  
  }  
}
```

Unsupported Statements in the [edit protocols lldp-med] Hierarchy Level

All statements in the [edit protocols lldp-med] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Setting Up VoIP with 802.1X and LLDP-MED on an EX Series Switch
- show lldp
- Configuring LLDP-MED (CLI Procedure)
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols mld] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols mld] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols mld\] Hierarchy Level on page 119](#)
- [Unsupported Statements in the \[edit protocols mld\] Hierarchy Level on page 119](#)

Supported Statements in the [edit protocols mld] Hierarchy Level

The following hierarchy shows the [edit protocols mld] configuration statements supported on EX Series switches:

```
protocols {
  mld {
    accounting;
    interface interface-name {
      (accounting | no-accounting);
      disable;
      group-limit number;
      group-policy [ policy-names ];
      immediate-leave;
      oif-map [ map-names ];
      passive <allow-receive> <send-general-query> <send-group-query>;
      ssm-map ssm-map-name;
      ssm-map-policy policy-name;
      static {
        group multicast-group-address {
          exclude;
          group-count number;
          group-increment increment;
          source source-ip-address {
            source-count number;
            source-increment number;
          }
        }
      }
    }
    version (1 | 2);
  }
  maximum-transmit-rate packets-per-second;
  query-interval seconds;
  query-last-member-interval seconds;
  query-response-interval seconds;
  robust-count number;
  traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
      no-world-readable>;
    flag flag <flag-modifier> <disable>;
  }
}
```

Unsupported Statements in the [edit protocols mld] Hierarchy Level

All statements in the [edit protocols mld] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols mld-snooping] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols mld-snooping]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols mld-snooping\] Hierarchy Level on page 120](#)
- [Unsupported Statements in the \[edit protocols mld-snooping\] Hierarchy Level on page 121](#)

Supported Statements in the [edit protocols mld-snooping] Hierarchy Level

The following hierarchy shows the **[edit protocols mld-snooping]** configuration statements supported on EX Series switches:

```
protocols {
  mld-snooping {
    traceoptions {
      file filename <files number> <no-stamp> <replace> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag <flag-modifier> <disable>;
    }
    vlan (all | vlan-identifier) {
      disable;
      immediate-leave;
      interface (all | interface-name) {
        multicast-router-interface;
        static {
          group mcast-ip-address;
        }
      }
      robust-count number;
      version number;
    }
  }
}
```

Unsupported Statements in the [edit protocols mld-snooping] Hierarchy Level

All statements in the **[edit protocols mld-snooping]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- Example: Configuring MLD Snooping on EX Series Switches
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols mpls] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols mpls]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols mpls\] Hierarchy Level on page 121](#)
- [Unsupported Statements in the \[edit protocols mpls\] Hierarchy Level on page 122](#)

Supported Statements in the [edit protocols mpls] Hierarchy Level

The following hierarchy shows the **[edit protocols mpls]** configuration statements supported on EX Series switches:

```
protocols {
  mpls {
    class-of-service cos-value;
    disable;
    explicit-null;
    interface (interface-name | all) {
      disable;
    }
    ipv6-tunneling ;
    label-switched-path lsp-name {
      description text-string;
      disable;
      exclude-slr;
      from address;
      ldp-tunneling;
      no-cspf;
      no-decrement-ttl;
      oam {
```

```

bfd-liveness-detection {
  detection-time {
    threshold milliseconds;
  }
  failure-action (make-before-break <teardown-timeout seconds> | teardown);
  minimum-interval milliseconds;
  minimum-receive-interval milliseconds;
  multiplier number;
  no-adaptation;
  transmit-interval {
    minimum-interval milliseconds;
    threshold milliseconds;
  }
  version (1 | automatic);
}
}
to address;
}
no-cspf;
no-decrement-ttl;
no-propagate-ttl;
static-label-switched-path lsp-name {
  ingress {
    install {
      destination-prefix <active>;
    }
    next-hop (address | interface-name | address/interface-name);
    push out-label;
    to address;
  }
  transit incoming-label {
    description text-string;
    next-hop (address | interface-name | address/interface-name);
    pop;
    swap out-label;
  }
}
traffic-engineering (bgp | bgp-igp | bgp-igp-both-ribs | mpls-forwarding);
}
}

```

Unsupported Statements in the [edit protocols mpls] Hierarchy Level

All statements in the [edit protocols mpls] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
active	[edit protocols mpls static-label-switched-path ingress install] [edit protocols mpls label-switched-path install]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
adaptive	[edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
adjust-interval	[edit protocols mpls label-switched-path auto-bandwidth]
adjust-threshold	[edit protocols mpls label-switched-path auto-bandwidth]
adjust-threshold-overflow-limit	[edit protocols mpls label-switched-path auto-bandwidth]
adjust-threshold-underflow-limit	[edit protocols mpls label-switched-path auto-bandwidth]
admin-down	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
admin-group	[edit protocols mpls] [edit protocols mpls interface] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
admin-group-extended	[edit protocols mpls] [edit protocols mpls interface] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
admin-groups	[edit protocols mpls]
advertisement-hold-time	[edit protocols mpls]
allow-fragmentation	[edit protocols mpls path-mtu]
always-mark-connection-protection-tlv	[edit protocols mpls interface]
associate-backup-pe-groups	[edit protocols mpls label-switched-path]
auto-bandwidth	[edit protocols mpls label-switched-path] [edit protocols mpls statistics]
auto-policing	[edit protocols mpls]
backup	[edit protocols mpls label-switched-path]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
bandwidth	[edit protocols mpls] [edit protocols mpls bandwidth] [edit protocols mpls label-switched-path] [edit protocols mpls static-label-switched-path bypass] [edit protocols mpls label-switched-path fast-reroute] [edit protocols mpls static-label-switched-path ingress] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary] [edit protocols mpls static-label-switched-path transit]
bandwidth-model	[edit protocols mpls diffserv-te]
bandwidth-percent	[edit protocols mpls label-switched-path fast-reroute]
bfd-liveness-detection	[edit protocols mpls label-switched-path primary oam] [edit protocols mpls label-switched-path secondary oam] [edit protocols mpls oam]
bypass	[edit protocols mpls static-label-switched-path]
bypass-name	[edit protocols mpls static-label-switched-path ingress link-protection] [edit protocols mpls static-label-switched-path ingress node-protection] [edit protocols mpls static-label-switched-path transit link-protection] [edit protocols mpls static-label-switched-path transit node-protection]
class	[edit protocols mpls auto-policing]
class-of-service	[edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary] [edit protocols mpls static-label-switched-path ingress]
context-identifier	[edit protocols mpls egress-protection]
ct0	[edit protocols mpls bandwidth] [edit protocols mpls label-switched-path bandwidth] [edit protocols mpls label-switched-path primary bandwidth] [edit protocols mpls label-switched-path secondary bandwidth]
ct1	[edit protocols mpls bandwidth] [edit protocols mpls label-switched-path bandwidth] [edit protocols mpls label-switched-path primary bandwidth] [edit protocols mpls label-switched-path secondary bandwidth]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
ct2	[edit protocols mpls bandwidth] [edit protocols mpls label-switched-path bandwidth] [edit protocols mpls label-switched-path primary bandwidth] [edit protocols mpls label-switched-path secondary bandwidth]
ct3	[edit protocols mpls bandwidth] [edit protocols mpls label-switched-path bandwidth] [edit protocols mpls label-switched-path primary bandwidth] [edit protocols mpls label-switched-path secondary bandwidth]
description	[edit protocols mpls static-label-switched-path bypass] [edit protocols mpls static-label-switched-path ingress]
detection-time	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
diffserv-te	[edit protocols mpls]
drop	[edit protocols mpls auto-policing class]
egress-protection	[edit protocols mpls] [edit protocols mpls label-switched-path]
encoding-type	[edit protocols mpls label-switched-path lsp-attributes]
exclude	[edit protocols mpls admin-group] [edit protocols mpls label-switched-path admin-group] [edit protocols mpls label-switched-path admin-group-extended] [edit protocols mpls label-switched-path primary admin-group] [edit protocols mpls label-switched-path primary admin-group-extended] [edit protocols mpls label-switched-path secondary admin-group] [edit protocols mpls label-switched-path secondary admin-group-extended] [edit protocols mpls label-switched-path fast-reroute]
exclude-slrq	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
expand-loose-hop	[edit protocols mpls]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
failure-action	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
fast-reroute	[edit protocols mpls label-switched-path]
file	[edit protocols mpls label-switched-path primary oam traceoptions] [edit protocols mpls label-switched-path secondary oam traceoptions] [edit protocols mpls label-switched-path traceoptions] [edit protocols mpls statistics] [edit protocols mpls traceoptions]
files	[edit protocols mpls statistics file]
filter	[edit protocols mpls static-label-switched-path ingress policing]
flag	[edit protocols mpls label-switched-path primary oam traceoptions] [edit protocols mpls label-switched-path secondary oam traceoptions] [edit protocols mpls label-switched-path traceoptions] [edit protocols mpls traceoptions]
gpid	[edit protocols mpls label-switched-path lsp-attributes]
hop-limit	[edit protocols mpls] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary] [edit protocols mpls label-switched-path fast-reroute] [edit protocols mpls label-switched-path]
icmp-tunneling	[edit protocols mpls]
include-all	[edit protocols mpls admin-group] [edit protocols mpls admin-group-extended] [edit protocols mpls label-switched-path admin-group] [edit protocols mpls label-switched-path admin-group-extended] [edit protocols mpls label-switched-path fast-reroute] [edit protocols mpls label-switched-path primary admin-group] [edit protocols mpls label-switched-path primary admin-group-extended] [edit protocols mpls label-switched-path secondary admin-group] [edit protocols mpls label-switched-path secondary admin-group-extended]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
include-any	[edit protocols mpls admin-group] [edit protocols mpls admin-group-extended] [edit protocols mpls label-switched-path admin-group] [edit protocols mpls label-switched-path admin-group-extended] [edit protocols mpls label-switched-path fast-reroute] [edit protocols mpls label-switched-path primary admin-group] [edit protocols mpls label-switched-path primary admin-group-extended] [edit protocols mpls label-switched-path secondary admin-group] [edit protocols mpls label-switched-path secondary admin-group-extended]
install	[edit protocols mpls label-switched-path]
inter-domain	[edit protocols mpls label-switched-path]
interval	[edit protocols mpls statistics]
least-fill	[edit protocols mpls label-switched-path]
link-protection	[edit protocols mpls label-switched-path] [edit protocols mpls static-label-switched-path ingress] [edit protocols mpls static-label-switched-path transit]
log-updown	[edit protocols mpls]
loss-priority-high	[edit protocols mpls auto-policing class]
loss-priority-low	[edit protocols mpls auto-policing class]
lsp-attributes	[edit protocols mpls label-switched-path]
make-before-break	[edit protocols mpls label-switched-path secondary oam bfd-liveness-detection failure-action]
maximum-bandwidth	[edit protocols mpls label-switched-path auto-bandwidth]
metric	[edit protocols mpls egress-protection context-identifier] [edit protocols mpls label-switched-path] [edit protocols mpls static-label-switched-path ingress]
mib-mpls-show-p2mp	[edit protocols mpls]
mimum-bandwidth	[edit protocols mpls label-switched-path auto-bandwidth]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
minimum-interval	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path primary oam bfd-liveness-detection transit-interval] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection transit-interval]
minimum-receive-interval	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
monitor-bandwidth	[edit protocols mpls label-switched-path auto-bandwidth]
most-fill	[edit protocols mpls label-switched-path]
mpls-lsp-traps	[edit protocols mpls log-updown no-trap]
mpls-tp-mode	[edit protocols mpls oam]
mtu-signaling	[edit protocols mpls path-mtu rsvp]
multiplier	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
next-hop	[edit protocols mpls path] [edit protocols mpls static-label-switched-path bypass]
next-next-label	[edit protocols mpls static-label-switched-path ingress node-protection] [edit protocols mpls static-label-switched-path transit node-protection]
no-adaptation	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
no-auto-policing	[edit protocols mpls static-label-switched-path ingress policing]
no-cspf	[edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
no-decrement-ttl	[edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
node-link-protection	[edit protocols mpls label-switched-path]
node-protection	[edit protocols mpls static-label-switched-path ingress] [edit protocols mpls static-label-switched-path transit]
no-exclude	[edit protocols mpls label-switched-path fast-reroute]
no-include-all	[edit protocols mpls label-switched-path fast-reroute]
no-include-any	[edit protocols mpls label-switched-path fast-reroute]
no-install-to-address	[edit protocols mpls label-switched-path] [edit protocols mpls static-label-switched-path ingress]
no-record	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
no-remote-trace	[edit protocols mpls label-switched-path oam traceoptions] [edit protocols mpls label-switched-path secondary oam traceoptions]
no-syslog	[edit protocols mpls log-updown]
no-trap	[edit protocols mpls log-updown]
no-world-readable	[edit protocols mpls statistics file]
number	[edit protocols mpls auto-policing class]
oam	[edit protocols mpls] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
optimize-aggressive	[edit protocols mpls]
optimize-hold-dead-delay	[edit protocols mpls]
optimize-switchover-delay	[edit protocols mpls]
optimize-timer	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
path	[edit protocols mpls]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
path-mtu	[edit protocols mpls]
policing	[edit protocols mpls static-label-switched-path ingress] [edit protocols mpls label-switched-path]
preference	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls static-label-switched-path ingress] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
primary	[edit protocols mpls egress-protection context-identifier]
priority	[edit protocols mpls] [edit protocols mpls diffserv-te te-class-matrix tex] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
protection-revert-time	[edit protocols mpls interface static]
protector	[edit protocols mpls egress-protection context-identifier]
push	[edit protocols mpls static-label-switched-path bypass]
random	[edit protocols mpls label-switched-path]
record	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
retry-limit	[edit protocols mpls label-switched-path]
retry-timer	[edit protocols mpls label-switched-path]
revert-timer	[edit protocols mpls] [edit protocols mpls label-switched-path]
rfc3812-traps	[edit protocols mpls log-updown no-trap]
rsvp	[edit protocols mpls path-mtu]
rsvp-error-hold-time	[edit protocols mpls]
select	[edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
signal-bandwidth	[edit protocols mpls label-switched-path lsp-attributes]
size	[edit protocols mpls statistics file]
smart-optimize-timer	[edit protocols mpls]
soft-preemption	[edit protocols mpls label-switched-path]
srlg	[edit protocols mpls interface]
standby	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path primary] [edit protocols mpls label-switched-path secondary]
static	[edit protocols mpls interface]
statistics	[edit protocols mpls]
switch-away-lsps	[edit protocols mpls interface]
switching-type	[edit protocols mpls label-switched-path lsp-attributes]
syslog	[edit protocols mpls log-updown]
tex	[edit protocols mpls diffserv-te te-class-matrix]
teardown	[edit protocols mpls label-switched-path secondary oam bfd-liveness-detection failure-action]
te-class-matrix	[edit protocols mpls diffserv-te]
template	[edit protocols mpls label-switched-path]
threshold	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection transmit-interval] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection detection-time] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection transmit-interval]
to	[edit protocols mpls static-label-switched-path bypass]
traceoptions	[edit protocols mpls] [edit protocols mpls label-switched-path] [edit protocols mpls label-switched-path oam] [edit protocols mpls label-switched-path primary oam] [edit protocols mpls label-switched-path secondary oam]

Table 15: Unsupported [edit protocols mpls] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
traffic-class	[edit protocols mpls diffserv-te te-class-matrix tex]
transmit-interval	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
trap	[edit protocols mpls log-updown]
trap-path-down	[edit protocols mpls log-updown]
trap-path-up	[edit protocols mpls log-updown]
version	[edit protocols mpls label-switched-path primary oam bfd-liveness-detection] [edit protocols mpls label-switched-path secondary oam bfd-liveness-detection]
world-readable	[edit protocols mpls statistics file]

**Related
Documentation**

- Configuring MPLS on Provider Edge Switches Using Circuit Cross-Connect (CLI Procedure)
- Configuring MPLS on Provider Edge Switches Using IP Over MPLS (CLI Procedure)
- Configuring MPLS on Provider Switches (CLI Procedure)
- Junos OS MPLS for EX Series Switches Overview
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols msdp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols msdp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols msdp\] Hierarchy Level on page 133](#)
- [Unsupported Statements in the \[edit protocols msdp\] Hierarchy Level on page 134](#)

Supported Statements in the [edit protocols msdp] Hierarchy Level

The following hierarchy shows the **[edit protocols msdp]** configuration statements supported on EX Series switches:

```

protocols {
  msdp {
    active-source-limit {
      maximum number;
      threshold number;
    }
    data-encapsulation (disable | enable);
    disable;
    export [ policy-names ];
    group group-name {
      disable;
      export [ policy-names ];
      import [ policy-names ];
      local-address address;
      mode (mesh-group | standard);
      peer address {
        active-source-limit {
          maximum number;
          threshold number;
        }
        authentication-key peer-key;
        default-peer;
        disable;
        export [ policy-names ];
        import [ policy-names ];
        local-address address;
        traceoptions {
          file filename <files number> <size maximum-file-size> <world-readable |
            no-world-readable>;
          flag flag <flag-modifier> <disable>;
        }
      }
    }
    traceoptions {
      file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
      flag flag <flag-modifier> <disable>;
    }
  }
  import [ policy-names ];
  local-address address;
  peer address {
    active-source-limit {
      maximum number;
      threshold number;
    }
  }
}

```

```
authentication-key peer-key;  
default-peer;  
disable;  
export [ policy-names ];  
import [ policy-names ];  
local-address address;  
traceoptions {  
    file filename <files number> <size maximum-file-size> <world-readable |  
        no-world-readable>;  
    flag flag <flag-modifier> <disable>;  
}  
}  
rib-group group-name;  
source ip-prefix </prefix-length> {  
    active-source-limit {  
        maximum number;  
        threshold number;  
    }  
}  
traceoptions {  
    file filename <files number> <size maximum-file-size> <world-readable |  
        no-world-readable>;  
    flag flag <flag-modifier> <disable>;  
}  
}  
}
```

Unsupported Statements in the [edit protocols msdp] Hierarchy Level

All statements in the [edit protocols msdp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols mstp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols mstp] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols mstp\] Hierarchy Level on page 135](#)
- [Unsupported Statements in the \[edit protocols mstp\] Hierarchy Level on page 136](#)

Supported Statements in the [edit protocols mstp] Hierarchy Level

The following hierarchy shows the **[edit protocols mstp]** configuration statements supported on EX Series switches:

```

protocols {
  mstp {
    bpdu-block-on-edge;
    bridge-priority priority;
    configuration-name configuration-name;
    disable;
    forward-delay seconds;
    hello-time seconds;
    interface interface-name {
      arp-on-stp;
      bpdu-timeout-action {
        block;
        log;
      }
      cost cost;
      disable;
      edge;
      mode (point-to-point | shared);
      no-root-port;
      priority interface-priority;
    }
    max-age seconds;
    max-hops hops;
    msti identifier {
      bridge-priority priority;
      interface interface-name {
        arp-on-stp;
        cost cost;
        disable;
        priority interface-priority;
      }
      vlan [ vlan-ids ];
    }
    revision-level revision-level;
    traceoptions {
      file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
      flag flag <disable>;
    }
  }
}

```

Unsupported Statements in the [edit protocols mstp] Hierarchy Level

All statements in the **[edit protocols mstp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- Example: Configuring Network Regions for VLANs with MSTP on EX Series Switches
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols mvrp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols mvrp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols mvrp\] Hierarchy Level on page 136](#)
- [Unsupported Statements in the \[edit protocols mvrp\] Hierarchy Level on page 137](#)

Supported Statements in the [edit protocols mvrp] Hierarchy Level

The following hierarchy shows the **[edit protocols mvrp]** configuration statements supported on EX Series switches:

```
protocols {
  mvrp {
    add-attribute-length-in-pdu;
    disable;
    interface (all | interface-name) {
      disable;
      join-timer milliseconds;
      leave-timer milliseconds;
      leaveall-timer milliseconds;
      registration (forbidden | normal);
    }
    no-dynamic-vlan;
    traceoptions {
      file filename <files number> <no-stamp> <replace> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag <disable>;
    }
  }
}
```

```
}

```

Unsupported Statements in the [edit protocols mvrp] Hierarchy Level

All statements in the **[edit protocols mvrp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Configuring Automatic VLAN Administration Using MVRP on EX Series Switches
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols neighbor-discovery] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols neighbor-discovery]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols neighbor-discovery\] Hierarchy Level on page 137](#)
- [Unsupported Statements in the \[edit neighbor-discovery\] Hierarchy Level on page 137](#)

Supported Statements in the [edit protocols neighbor-discovery] Hierarchy Level

The following hierarchy shows the **[edit protocols neighbor-discovery]** configuration statements supported on EX Series switches:

```
protocols {
  neighbor-discovery {
    no-dad-on-state-change ;
    onlink-subnet-only;
  }
}
```

Unsupported Statements in the [edit neighbor-discovery] Hierarchy Level

All statements in the **[edit protocols neighbor-discovery]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- Related Documentation**
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[\[edit protocols oam\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols oam]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols oam\] Hierarchy Level on page 138](#)
- [Unsupported Statements in the \[edit protocols oam\] Hierarchy Level on page 140](#)

Supported Statements in the [edit protocols oam] Hierarchy Level

The following hierarchy shows the **[edit protocols oam]** configuration statements supported on EX Series switches:

```
protocols {
  oam {
    ethernet {
      connectivity-fault-management {
        action-profile profile-name {
          action {
            interface-down;
          }
          default-actions {
            interface-down;
          }
          event {
            adjacency-loss;
          }
        }
      }
      esp-traceoptions {
        file filename <files number> <no-stamp> <replace> <size size> <world-readable  
| no-world-readable>;
        flag (all | error | esp | interface | krt | lib | normal | task | timer);
      }
      linktrace {
        age (30m | 10m | 1m | 30s | 10s);
        path-database-size path-database-size;
      }
      maintenance-domain domain-name {
        level number;
      }
    }
  }
}
```

```

maintenance-association ma-name {
  continuity-check {
    hold-interval minutes;
    interface-status-tlv;
    interval (10m | 10s | 1m | 1s| 100ms);
    loss-threshold number;
    port-status-tlv;
  }
  mep mep-id {
    auto-discovery;
    direction down;
    interface interface-name {
      vlan-id identifier;
    }
    priority number;
    remote-mep mep-id {
      action-profile profile-name;
      sla-iterator-profile profile-name {
        data-tlv-size size;
        iteration-count count-value;
        priority priority-value;
      }
    }
  }
  short-name-format (character-string | vlan | 2octet | rfc-2685-vpn-id);
}
mip-half-function (none | default |explicit);
name-format (character-string | none | dns | mac+2oct);
vlan-name name;
}
performance-monitoring {
  no-delegate-processing;
  sla-iterator-profiles {
    profile-name {
      calculation-weight {
        delay delay-value;
        delay-variation delay-variation-value;
      }
      cycle-time cycle-time-value;
      iteration-period iteration-period-value;
      measurement-type two-way-delay;
      passive;
    }
  }
}
}
traceoptions {
  file filename <files number> <match regex> <size size> <world-readable |
    no-world-readable>;
  flag flag ;
  no-remote-trace;
}
}
link-fault-management {
  action-profile profile-name {
    action {
      link-down;
    }
  }
}

```

```

        syslog;
    }
    event {
        link-adjacency-loss;
        link-event-rate {
            frame-error count;
            frame-period count;
            frame-period-summary count;
            symbol-period count;
        }
    }
}
interface interface-name {
    apply-action-profile profile-name;
    event-thresholds {
        frame-error count;
        frame-period count;
        frame-period-summary count;
        symbol-period count;
    }
    link-discovery (active | passive);
    negotiation-options {
        allow-remote-loopback;
        no-allow-link-events;
    }
    pdu-interval interval;
    pdu-threshold threshold-value;
    remote-loopback;
}
traceoptions {
    file filename <files number> <match regex> <size size> <world-readable |
        no-world-readable>;
    flag flag ;
    no-remote-trace;
}
}
}
}
}

```

Unsupported Statements in the [edit protocols oam] Hierarchy Level

All statements in the [edit protocols oam] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols ospf] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols ospf] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols ospf\] Hierarchy Level on page 141](#)
- [Unsupported Statements in the \[edit protocols ospf\] Hierarchy Level on page 143](#)

Supported Statements in the [edit protocols ospf] Hierarchy Level

The following hierarchy shows the **[edit protocols ospf]** configuration statements supported on EX Series switches:

```

protocols {
  ospf {
    area area-id {
      area-range ip-prefix </prefix-length> <exact> <override-metric metric> <restrict>;
      context-identifier
      interface interface-name {
        authentication {
          md5 key-id key key-string <start-time YYYY-MM-DD.hh:mm>;
          simple-password key-string;
        }
        bandwidth-based-metrics {
          bandwidth value metric number;
        }
        bfd-liveness-detection {
          authentication {
            algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
              meticulous-keyed-sha-1 | simple-password);
            loose-check;
          }
          detection-time {
            threshold milliseconds;
          }
          full-neighbors-only;
          minimum-interval milliseconds;
          minimum-receive-interval milliseconds;
          multiplier number;
          no-adaptation;
          transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
          }
          version (0|1 | automatic);
        }
        dead-interval seconds;
        disable;
      }
    }
  }
}

```

```
dynamic-neighbors;
flood-reduction;
hello-interval seconds;
interface-type (nbma | p2mp | p2p);
ipsec-sa sa-name;
(link-protection | node-link-protection);
metric metric;
no-eligible-backup;
no-interface-state-traps;
no-neighbor-down-notification;
passive {
    traffic-engineering {
        remote-node-id address;
    }
}
poll-interval seconds;
priority number;
retransmit-interval seconds;
secondary;
te-metric metric;
transit-delay seconds;
}
network-summary-export [ policy-names ];
network-summary-import [ policy-names ];
no-context-identifier-advertisement;
nssa {
    area-range ip-prefix </prefix-length> <exact> <override-metric metric> <restrict>;
    default-lsa {
        default-metric metric;
        metric-type type;
        type-7;
    }
    (summaries | no-summaries);
}
stub <default-metric metric> <summaries | no-summaries>;
virtual-link neighbor-id router-id transit-area area-id;
}
backup-spf-options
disable;
downstream-paths-only;
no-install;
}
database-protection {
    ignore-count number;
    ignore-time seconds;
    maximum-lsa number;
    reset-time seconds;
    warning-only;
    warning-threshold percent;
}
disable;
export [ policy-names ];
external-preference preference;
graceful-restart {
    disable;
    helper-disable <both | restart-signaling | standard>;
```



```

    no-strict-lsa-checking;
    notify-duration seconds;
    restart-duration seconds;
}
import [ policy-names ];
no-nssa-abr;
no-rfc-1583;
overload <timeout seconds>;
preference preference;
prefix-export-limit number;
reference-bandwidth reference-bandwidth;
rib-group group-name;
spf-options {
    delay milliseconds;
    holddown milliseconds;
    no-ignore-our-externals;
    rapid-runs number;
}
topology {
    disable;
    rib-group group-name;
    topology-id number;
}
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
    no-world-readable>;
    flag flag <flag-modifier> <disable>;
}
traffic-engineering {
    advertise-unnumbered-interfaces;
    credibility-protocol-preference;
    ignore-lsp-metrics;
    multicast-rpf-routes;
    no-topology;
    shortcuts <lsp-metric-into-summary>;
}
}
}

```

Unsupported Statements in the [edit protocols ospf] Hierarchy Level

All statements in the [edit protocols ospf] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 16: Unsupported [edit protocols ospf] Configuration Statements on EX Series Switches

Statement	Hierarchy
backup-spf-options	[edit protocols ospf topology]
key-chain	[edit protocols ospf area interface bfd-liveness-detection authentication]

NOTE: Variables, such as *interface-name*, are not shown in the statements or hierarchies.

Table 16: Unsupported [edit protocols ospf] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
overload	[edit protocols ospf topology]
prefix-export-limit	[edit protocols ospf topology]
spf-options	[edit protocols ospf topology]
topology	[edit protocols ospf area interface]

- Related Documentation**
- OSPF Configuration Guide
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols ospf3] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols ospf3]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols ospf3\] Hierarchy Level on page 144](#)
- [Unsupported Statements in the \[edit protocols ospf3\] Hierarchy Level on page 147](#)

Supported Statements in the [edit protocols ospf3] Hierarchy Level

The following hierarchy shows the **[edit protocols ospf3]** configuration statements supported on EX Series switches:

```

protocols {
  ospf3 {
    area area-id {
      area-range ip-prefix </prefix-length> <exact> <override-metric metric> <restrict>;
      context-identifier
      inter-area-prefix-export [ policy-names ];
      inter-area-prefix-import [ policy-names ];
      interface interface-name {
        bandwidth-based-metrics {
          bandwidth value metric number;

```

```

}
bfd-liveness-detection {
  authentication {
    algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
      meticulous-keyed-sha-1 | simple-password);
    loose-check;
  }
  detection-time {
    threshold milliseconds;
  }
  full-neighbors-only;
  minimum-interval milliseconds;
  minimum-receive-interval milliseconds;
  multiplier number;
  no-adaptation;
  transmit-interval {
    minimum-interval milliseconds;
    threshold milliseconds;
  }
  version (0|1 | automatic);
}
dead-interval seconds;
disable;
flood-reduction;
hello-interval seconds;
interface-type (p2mp-over-lan | p2p);
ipsec-sa sa-name;
(link-protection | node-link-protection);
metric metric;
no-eligible-backup;
passive {
  traffic-engineering {
    remote-node-id address;
  }
}
priority number;
retransmit-interval seconds;
secondary;
transit-delay seconds;
}
no-context-identifier-advertisement;
nssa {
  area-range ip-prefix </prefix-length> <exact> <override-metric metric> <restrict>;
  default-lsa {
    default-metric metric;
    metric-type type;
    type-7;
  }
  (summaries | no-summaries);
}
}
stub <default-metric metric> <summaries | no-summaries>;
}
backup-spf-options (disable | downstream-paths-only | no-install);
database-protection {
  ignore-count number;
  ignore-time seconds;

```

```

    maximum-lsa number;
    reset-time seconds;
    warning-only;
    warning-threshold percent;
}
disable;
export [ policy-names ];
external-preference preference;
graceful-restart {
    disable;
    helper-disable;
    no-strict-lsa-checking;
    notify-duration seconds;
    restart-duration seconds;
}
import [ policy-names ];
no-nssa-abr;
no-rfc-1583;
overload <timeout seconds>;
preference preference;
prefix-export-limit number;
realm (ipv4-multicast| ipv6-multicast) {
    ... same statements as at the [edit protocols ospf3] hierarchy level, EXCEPT FOR ...
    area area-id {
        interface interface-name {
            no-eligible-backup; # NOT valid at this level
        }
    }
    backup-spf-options { ... } # NOT valid at this level
    realm realm-identifier { ... } # NOT valid at this level
    traffic-engineering { ... } # NOT valid at this level
}
realm ipv4-unicast {
    ... same statements as at the [edit protocols ospf3] hierarchy level, PLUS ...
    area area-id {
        interface interface-name {
        }
    }
}
realm ipv6-unicast {
    ... same statements as at the [edit protocols ospf3] hierarchy level, PLUS ...
    disable;
    backup-spf-options {
        disable;
        downstream-paths-only;
        no-install;
    }
}
reference-bandwidth reference-bandwidth;
rib-group group-name;
spf-options {
    delay milliseconds;
    holddown milliseconds;
    no-ignore-our-externals;
    rapid-runs number;
}
traceoptions {

```

```
file filename <files number> <size maximum-file-size> <world-readable |
no-world-readable>;
flag flag <flag-modifier> <disable>;
}
traffic-engineering {
  ignore-lsp-metrics;
  shortcuts <lsp-metric-into-summary>;
}
}
```

Unsupported Statements in the [edit protocols ospf3] Hierarchy Level

All statements in the [edit protocols ospf3] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exception:

Table 17: Unsupported [edit protocols ospf 3] Configuration Statements on EX Series Switches

Statement	Hierarchy
-----------	-----------

NOTE: Variables, such as *interface-name*, are not shown in the statements or hierarchies.

key-chain	[edit protocols ospf3 area interface bfd-liveness-detection authentication]
-----------	---

- Related Documentation
- OSPF Configuration Guide
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols pim] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols pim] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols pim\] Hierarchy Level on page 147](#)
- [Unsupported Statements in the \[edit protocols pim\] Hierarchy Level on page 150](#)

Supported Statements in the [edit protocols pim] Hierarchy Level

The following hierarchy shows the [edit protocols pim] configuration statements supported on EX Series switches:

```
protocols {
  pim {
    assert-timeout seconds;
    default-vpn-source {
      interface-name interface-name;
    }
    dense-groups {
      address <announce | reject>;
    }
    disable;
    dr-election-on-p2p;
    export [ policy-names ];
    family (inet | inet6) {
      disable;
    }
    graceful-restart {
      disable;
      restart-duration seconds;
    }
    import [ policy-names ];
    interface interface-name {
      accept-remote-source;
      disable;
      bfd-liveness-detection {
        authentication {
          algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
            meticulous-keyed-sha-1 | simple-password);
          key-chain key-chain-name;
          loose-check;
        }
        detection-time {
          threshold milliseconds;
        }
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        multiplier number;
        no-adaptation;
        transmit-interval {
          minimum-interval milliseconds;
          threshold milliseconds;
        }
        version (1 | automatic);
      }
      disable;
      family (inet | inet6) {
        disable;
      }
      hello-interval seconds;
      mode (bidirectional-sparse | bidirectional-sparse-dense | dense | sparse |
        sparse-dense);
      neighbor-policy [ policy-names ];
      override-interval milliseconds;
      priority number;
      propagation-delay milliseconds;
      reset-tracking-bit;
      version (1 | 2);
    }
  }
}
```

```

}
join-load-balance;
join-prune-timeout seconds;
mpls-internet-multicast;
nexthop-hold-time time;
no-wildcard-register-stop;
nonstop-routing {
    disable;
}
override-interval milliseconds;
propagation-delay milliseconds;
reset-tracking-bit;
rib-group {
    inet group-name;
    inet6 group-name;
}
rp {
    auto-rp {
        (announce | discovery | mapping);
        (mapping-agent-election | no-mapping-agent-election);
    }
    bootstrap {
        family (inet | inet6) {
            export [ policy-names ];
            import [ policy-names ];
            priority number;
        }
    }
    bootstrap-export [ policy-names ];
    bootstrap-import [ policy-names ];
    bootstrap-priority number;
    dr-register-policy [ policy-names ];
    embedded-rp {
        group-ranges {
            ip-prefix</prefix-length>;
        }
        maximum-rps limit;
    }
    local {
        address address;
        disable;
        family (inet | inet6) {
            address address;
            anycast-pim {
                local-address address;
                rp-set {
                    address address <forward-msdp-sa>;
                }
            }
            disable;
            group-ranges {
                ip-prefix</prefix-length>;
            }
            hold-time seconds;
            override;
            priority number;

```

```
    }
    group-ranges {
        ip-prefix</prefix-length>;
    }
    hold-time seconds;
    override;
    priority number;
}
register-probe-time time;
rp-register-policy [ policy-names ];
static {
    address address {
        group-ranges {
            ip-prefix</prefix-length>;
        }
        override;
        version (1 | 2);
    }
}
}
spt-threshold {
    infinity [ policy-names ];
}
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
no-world-readable>;
    flag flag <flag-modifier> <disable>;
    flag (route | state) <flag-modifier> <disable> <filter <match-on prefix>
    <policy [ policy-names ]>>;
}
}
```

Unsupported Statements in the [edit protocols pim] Hierarchy Level

All statements in the [edit protocols pim] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Multicast Protocols Configuration Guide
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols rip] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols rip] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.

- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols rip\] Hierarchy Level on page 151](#)
- [Unsupported Statements in the \[edit protocols rip\] Hierarchy Level on page 152](#)

Supported Statements in the [edit protocols rip] Hierarchy Level

The following hierarchy shows the **[edit protocols rip]** configuration statements supported on EX Series switches:

```
protocols {
  rip {
    authentication-key password;
    authentication-type type;
    (check-zero | no-check-zero);
    group group-name {
      bfd-liveness-detection {
        authentication {
          algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
            meticulous-keyed-sha-1 | simple-password);
          loose-check;
        }
        detection-time {
          threshold milliseconds;
        }
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        multiplier number;
        no-adaptation;
        transmit-interval {
          minimum-interval milliseconds;
          threshold milliseconds;
        }
        version (1 | automatic);
      }
    }
    export [ policy-names ];
    import [ policy-names ];
    metric-out metric;
    neighbor neighbor-name {
      any-sender;
      authentication-key password;
      authentication-type type;
      bfd-liveness-detection {
        authentication {
          algorithm (keyed-md5 | keyed-sha-1 | meticulous-keyed-md5 |
            meticulous-keyed-sha-1 | simple-password);
          loose-check;
        }
        detection-time {
          threshold milliseconds;
        }
      }
    }
  }
}
```

```

        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        multiplier number;
        no-adaptation;
        transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
        }
        version (1 | automatic);
    }
    (check-zero | no-check-zero);
    import [ policy-names ];
    message-size number;
    metric-in metric;
    receive (both | none | version-1 | version-2);
    route-timeout seconds;
    send (broadcast | multicast | none | version-1);
    update-interval seconds;
}
preference preference;
route-timeout seconds;
update-interval seconds;
}
graceful-restart {
    disable;
    restart-time seconds;
}
holddown seconds;
import [ policy-names ];
message-size number;
metric-in metric;
receive (both | none | version-1 | version-2);
rib-group group-name;
route-timeout seconds;
send (broadcast | multicast | none | version-1);
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
    flag flag <flag-modifier> <disable>;
}
update-interval seconds;
}
}

```

Unsupported Statements in the [edit protocols rip] Hierarchy Level

All statements in the [edit protocols rip] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 18: Unsupported [edit protocols-rip] Configuration Statements on EX Series Switches

Statement	Hierarchy
-----------	-----------

NOTE: Variables, such as *group-name*, are not shown in the statements or hierarchies.

Table 18: Unsupported [edit protocols-rip] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
demand-circuit	[edit protocols rip group] [edit protocols rip group neighbor]
key-chain	[edit protocols rip group bfd-liveness-detection authentication] [edit protocols rip group neighbor bfd-liveness-detection authentication]
max-retrans-time	[edit protocols rip group] [edit protocols rip group neighbor]

- Related Documentation**
- RIP Configuration Guide
 - [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols ripng] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols ripng]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols ripng\] Hierarchy Level on page 153](#)
- [Unsupported Statements in the \[edit protocols ripng\] Hierarchy Level on page 154](#)

Supported Statements in the [edit protocols ripng] Hierarchy Level

The following hierarchy shows the **[edit protocols ripng]** configuration statements supported on EX Series switches:

```
protocols {
  ripng {
    graceful-restart {
      disable;
      restart-time seconds;
    }
    group group-name {
      export [ policy-names ];
      import [ policy-names ];
      metric-out metric;
```

```
neighbor neighbor-name {  
    import [ policy-names ];  
    metric-in metric;  
    receive <none>;  
    route-timeout seconds;  
    send <none>;  
    update-interval seconds;  
}  
preference number;  
route-timeout seconds;  
update-interval seconds;  
}  
holddown seconds;  
import [ policy-names ];  
metric-in metric;  
receive <none>;  
route-timeout seconds;  
send <none>;  
traceoptions {  
    file filename <files number> <size maximum-file-size> <world-readable |  
        no-world-readable>;  
    flag flag <flag-modifier> <disable>;  
}  
update-interval seconds;  
}  
}
```

Unsupported Statements in the [edit protocols ripng] Hierarchy Level

All statements in the [edit protocols ripng] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [RIPng Configuration Guide](#)
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols router-advertisement] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols router-advertisement] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see [EX Series Switch Software Features Overview](#).

This topic lists:

- [Supported Statements in the \[edit protocols router-advertisement\] Hierarchy Level on page 155](#)
- [Unsupported Statements in the \[edit protocols router-advertisement\] Hierarchy Level on page 155](#)

Supported Statements in the [edit protocols router-advertisement] Hierarchy Level

The following hierarchy shows the **[edit protocols router-advertisement]** configuration statements supported on EX Series switches:

```
protocols {
  router-advertisement {
    interface interface-name {
      current-hop-limit number;
      default-lifetime seconds;
      (link-mtu | no-link-mtu);
      (managed-configuration | no-managed-configuration);
      max-advertisement-interval seconds;
      min-advertisement-interval seconds;
      (other-stateful-configuration | no-other-stateful-configuration);
      prefix prefix {
        (autonomous | no-autonomous);
        (on-link | no-on-link);
        preferred-lifetime seconds;
        valid-lifetime seconds;
      }
      reachable-time milliseconds;
      retransmit-timer milliseconds;
      virtual-router-only;
    }
    traceoptions {
      file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
      flag flag;
    }
  }
}
```

Unsupported Statements in the [edit protocols router-advertisement] Hierarchy Level

All statements in the **[edit protocols router-advertisement]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols router-discovery] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols router-discovery]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols router-discovery\] Hierarchy Level on page 156](#)
- [Unsupported Statements in the \[edit protocols router-discovery\] Hierarchy Level on page 156](#)

Supported Statements in the [edit protocols router-discovery] Hierarchy Level

The following hierarchy shows the **[edit protocols router-discovery]** configuration statements supported on EX Series switches:

```
protocols {
  router-discovery {
    address address {
      (advertise | (broadcast | multicast ) |ignore);
      (ineligible | priority number);
    }
    disable;
    interface interface-name {
      lifetime seconds;
      max-advertisement-interval seconds;
      min-advertisement-interval seconds;
    }
    traceoptions {
      file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
      flag flag;
    }
  }
}
```

Unsupported Statements in the [edit protocols router-discovery] Hierarchy Level

All statements in the **[edit protocols router-discovery]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols rstp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols rstp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols rstp\] Hierarchy Level on page 157](#)
- [Unsupported Statements in the \[edit protocols rstp\] Hierarchy Level on page 158](#)

Supported Statements in the [edit protocols rstp] Hierarchy Level

The following hierarchy shows the **[edit protocols rstp]** configuration statements supported on EX Series switches:

```
protocols {
  rstp {
    bpdu-block-on-edge;
    bridge-priority priority;
    disable;
    forward-delay seconds;
    hello-time seconds;
    interface (all | interface-name) {
      arp-on-stp;
      bpdu-timeout-action {
        block;
        log;
      }
      cost cost;
      disable;
      edge;
      mode mode;
      no-root-port;
      priority priority;
    }
    max-age seconds;
    traceoptions {
      file filename <files number > <size size > <no-stamp | no-world-readable |
        world-readable>;
      flag flag;
    }
  }
}
```

Unsupported Statements in the [edit protocols rstp] Hierarchy Level

All statements in the **[edit protocols rstp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Configuring Faster Convergence and Improving Network Stability with RSTP on EX Series Switches
- Understanding RSTP for EX Series Switches
- show spanning-tree bridge
- show spanning-tree interface
- [edit protocols] Configuration Statement Hierarchy on EX Series Switches

[edit protocols rsvp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols rsvp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols rsvp\] Hierarchy Level on page 158](#)
- [Unsupported Statements in the \[edit protocols rsvp\] Hierarchy Level on page 159](#)

Supported Statements in the [edit protocols rsvp] Hierarchy Level

The following hierarchy shows the **[edit protocols rsvp]** configuration statements supported on EX Series switches.

```
protocols {
  rsvp {
    disable;
    hello-acknowledgements;
    interface interface-name {
      (aggregate | no-aggregate);
      authentication-key key;
      disable;
      hello-interval seconds;
      (reliable | no-reliable);
    }
    keep-multiplier number;
```



```

load-balance bandwidth;
no-interface-hello;
no-local-reversion;
no-p2mp-sublsp;
node-hello;
refresh-time seconds;
setup-protection;
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
    flag flag <flag-modifier> <disable>;
}
}
}

```

Unsupported Statements in the [edit protocols rsvp] Hierarchy Level

All statements in the [edit protocols rsvp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 19: Unsupported [edit protocols rsvp] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
aggregate	[edit protocols rsvp peer-interface]
aggressive	[edit protocols rsvp preemption]
admin-group	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
authentication-key	[edit protocols rsvp peer-interface]
bandwidth	[edit protocols rsvp interface] [edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass] [edit protocols rsvp interface subscription] [edit protocols rsvp load-balance]
bypass	[edit protocols rsvp interface link-protection]
class-of-service	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
cleanup-timer	[edit protocols rsvp preemption soft-preemption]
ct0	[edit protocols rsvp interface link-protection bandwidth] [edit protocols rsvp interface link-protection bypass bandwidth] [edit protocols rsvp interface subscription]

Table 19: Unsupported [edit protocols rsvp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
ct1	[edit protocols rsvp interface link-protection bandwidth] [edit protocols rsvp interface link-protection bypass bandwidth] [edit protocols rsvp interface subscription]
ct2	[edit protocols rsvp interface link-protection bandwidth] [edit protocols rsvp interface link-protection bypass bandwidth] [edit protocols rsvp interface subscription]
ct3	[edit protocols rsvp interface link-protection bandwidth] [edit protocols rsvp interface link-protection bypass bandwidth] [edit protocols rsvp interface subscription]
description	[edit protocols rsvp interface link-protection bypass]
devices	[edit protocols rsvp tunnel-services]
disable	[edit protocols rsvp graceful-restart] [edit protocols rsvp interface link-protection] [edit protocols rsvp peer-interface] [edit protocols rsvp preemption]
exclude	[edit protocols rsvp interface link-protection admin-group] [edit protocols rsvp interface link-protection bypass admin-group]
exclude-srlg	[edit protocols rsvp interface link-protection bypass] [edit protocols rsvp interface link-protection]
fast-reroute	[edit protocols rsvp]
graceful-deletion-timeout	[edit protocols rsvp]
graceful-restart	[edit protocols rsvp]
hello-interval	[edit protocols rsvp peer-interface]
helper-disable	[edit protocols rsvp graceful-restart]
hop-limit	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
include-all	[edit protocols rsvp interface link-protection admin-group] [edit protocols rsvp interface link-protection bypass admin-group]
include-any	[edit protocols rsvp interface link-protection admin-group] [edit protocols rsvp interface link-protection bypass admin-group]

Table 19: Unsupported [edit protocols rsvp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
link-protection	[edit protocols rsvp interface]
load-balance	[edit protocols rsvp]
loose	[edit protocols rsvp interface link-protection bypass path] [edit protocols rsvp interface link-protection path]
max-bypasses	[edit protocols rsvp interface link-protection]
maximum-helper-recovery-time	[edit protocols rsvp graceful-restart]
maximum-helper-restart-time	[edit protocols rsvp graceful-restart]
no-aggregate	[edit protocols rsvp peer-interface]
no-cspf	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
no-node-id-subobject	[edit protocols rsvp]
no-node-protection	[edit protocols rsvp interface link-protection]
no-reliable	[edit protocols rsvp peer-interface]
normal	[edit protocols rsvp preemption]
optimize-timer	[edit protocols rsvp fast-reroute] [edit protocols rsvp interface link-protection]
path	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
peer-interface	[edit protocols rsvp]
preemption	[edit protocols rsvp]
priority	[edit protocols rsvp interface link-protection] [edit protocols rsvp interface link-protection bypass]
reliable	[edit protocols rsvp peer-interface]
soft-preemption	[edit protocols rsvp preemption]
strict	[edit protocols rsvp interface link-protection bypass path] [edit protocols rsvp interface link-protection path]

Table 19: Unsupported [edit protocols rsvp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
subscription	[edit protocols rsvp interface] [edit protocols rsvp interface link-protection]
to	[edit protocols rsvp interface link-protection bypass]
tunnel-services	[edit protocols rsvp]
update-threshold	[edit protocols rsvp interface]

- Related Documentation**
- [RSVP Configuration Guide](#)
 - [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[\[edit protocols sflow\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols sflow]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols sflow\] Hierarchy Level on page 162](#)
- [Unsupported Statements in the \[edit sflow\] Hierarchy Level on page 163](#)

Supported Statements in the [edit protocols sflow] Hierarchy Level

The following hierarchy shows the **[edit protocols sflow]** configuration statements supported on EX Series switches:

```
sflow {
  agent-id;
  collector {
    ip-address;
    udp-port port-number;
  }
  interfaces interface-name {
    polling-interval seconds;
    sample-rate {
      egress number;
    }
  }
}
```

```

        ingress number;
    }
}
polling-interval seconds;
sample-rate {
    egress number;
    ingress number;
}
source-ip;
}
traceoptions {
    file filename <files number> <no-stamp> <replace> <size size> <world-readable |
        no-world-readable>;
    flag (all | client-server | configuration | interface | rtsock );
}

```

Unsupported Statements in the [edit sflow] Hierarchy Level

All statements in the **[edit protocols sflow]** hierarchy level that are displayed in the command-line interface (CLI) on the EX Series switch are supported on the switch and operate as documented.

Related Documentation

- [Configuring sFlow Technology for Network Monitoring \(CLI Procedure\)](#)
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[edit protocols stp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit protocols stp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols stp\] Hierarchy Level on page 163](#)
- [Unsupported Statements in the \[edit protocols stp\] Hierarchy Level on page 164](#)

Supported Statements in the [edit protocols stp] Hierarchy Level

The following hierarchy shows the **[edit protocols stp]** configuration statements supported on EX Series switches:

```

protocols {
    stp {
        bpdu-block-on-edge;
    }
}

```

```
bridge-priority priority;  
disable;  
forward-delay seconds;  
hello-time seconds;  
interface (all | interface-name) {  
    arp-on-stp;  
    bpdu-timeout-action {  
        block;  
        log;  
    }  
    cost cost;  
    disable;  
    edge;  
    mode mode;  
    no-root-port;  
    priority priority;  
}  
max-age seconds;  
traceoptions {  
    file filename <files number > <size size > <no-stamp | world-readable |  
        no-world-readable>;  
    flag flag;  
}  
}
```

Unsupported Statements in the [edit protocols stp] Hierarchy Level

All statements in the [edit protocols stp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

- | | |
|------------------------------|---|
| Related Documentation | <ul style="list-style-type: none">• Example: Configuring BPDU Protection on Edge Interfaces to Prevent STP Miscalculations on EX Series Switches• Configuring STP (CLI Procedure)• Understanding STP for EX Series Switches• show spanning-tree bridge• show spanning-tree interface• [edit protocols] Configuration Statement Hierarchy on EX Series Switches |
|------------------------------|---|

[edit protocols uplink-failure-detection] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the [edit protocols uplink-failure-detection] hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.

- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols uplink-failure-detection\] Hierarchy Level on page 165](#)
- [Unsupported Statements in the \[edit protocols uplink-failure-detection\] Hierarchy Level on page 165](#)

Supported Statements in the [edit protocols uplink-failure-detection] Hierarchy Level

The following hierarchy shows the **[edit protocols uplink-failure-detection]** configuration statements supported on EX Series switches:

```
protocols {
  uplink-failure-detection {
    action {
      log;
    }
    group {
      group-name {
        link-to-monitor {
          interface-name;
        }
        link-to-disable {
          interface-name;
        }
      }
    }
    traceoptions {
      file filename <files number> <no-stamp> <replace> <size size> <world-readable |
        no-world-readable>;
      flag (all | dcd | groups | interface | parse );
    }
  }
}
```

Unsupported Statements in the [edit protocols uplink-failure-detection] Hierarchy Level

All statements in the **[edit protocols uplink-failure-detection]** hierarchy level that are displayed in the command-line interface (CLI) on the EX Series switch are supported on the switch and operate as documented.

Related Documentation

- [Configuring Interfaces for Uplink Failure Detection \(CLI Procedure\)](#)
- [Understanding Uplink Failure Detection](#)
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[\[edit protocols vrrp\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols vrrp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols vrrp\] Hierarchy Level on page 166](#)
- [Unsupported Statements in the \[edit protocols vrrp\] Hierarchy Level on page 166](#)

Supported Statements in the [edit protocols vrrp] Hierarchy Level

The following hierarchy shows the **[edit protocols vrrp]** configuration statements supported on EX Series switches:

```
protocols {
  vrrp {
    failover-delay milliseconds;
    startup-silent-period seconds;
    traceoptions {
      file <filename> <files number> <match regular-expression> <microsecond-stamp>
        <size maximum-file-size> <world-readable | no-world-readable>;
      flag flag;
      no-remote-trace;
    }
  }
}
```

Unsupported Statements in the [edit protocols vrrp] Hierarchy Level

All statements in the **[edit protocols vrrp]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Junos® OS Ethernet Interfaces
- [\[edit protocols\] Configuration Statement Hierarchy on EX Series Switches](#)

[\[edit protocols vstp\] Configuration Statement Hierarchy on EX Series Switches](#)

This topic lists supported and unsupported configuration statements in the **[edit protocols vstp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit protocols vstp\] Hierarchy Level on page 167](#)
- [Unsupported Statements in the \[edit protocols vstp\] Hierarchy Level on page 168](#)

Supported Statements in the [edit protocols vstp] Hierarchy Level

The following hierarchy shows the **[edit protocols vstp]** configuration statements supported on EX Series switches:

```

protocols {
  vstp {
    bpdu-block-on-edge;
    disable;
    force-version stp;
    vlan (vlan-id | vlan-name) {
      bridge-priority priority;
      forward-delay seconds;
      hello-time seconds;
      interface (all | interface-name) {
        arp-on-stp;
        bpdu-timeout-action {
          block;
          log;
        }
        cost cost;
        disable;
        edge;
        mode mode;
        no-root-port;
        priority priority;
      }
      max-age seconds;
      traceoptions {
        file filename <files number > <size size > <no-stamp | no-world-readable |
          world-readable>;
        flag flag;
      }
    }
  }
}

```

Unsupported Statements in the `[edit protocols vstp]` Hierarchy Level

All statements in the `[edit protocols vstp]` hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Configuring VSTP (CLI Procedure)
- Understanding VSTP for EX Series Switches
- `show spanning-tree bridge`
- `show spanning-tree interface`
- `[edit protocols]` Configuration Statement Hierarchy on EX Series Switches

`[edit redundant-power-system]` Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the `[edit redundant-power-system]` hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the `\[edit redundant-power-system\]` Hierarchy Level on page 168](#)
- [Unsupported Statements in the `\[edit redundant-power-system\]` Hierarchy Level on page 169](#)

Supported Statements in the `[edit redundant-power-system]` Hierarchy Level

The following hierarchy shows the `[edit redundant-power-system]` configuration statements supported on EX Series switches:

```
redundant-power-system {  
  member member-number {  
    priority (0|1|2|3|4|5|6);  
  }  
}
```

Unsupported Statements in the `[edit redundant-power-system]` Hierarchy Level

All statements in the `[edit redundant-power-system]` hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- EX Series Redundant Power System (RPS) Documentation
- Setting Priority for Switches Connected to the Redundant Power System (CLI Procedure)
- Understanding How Power Priority Is Determined and Set for Switches Connected to the EX Series Redundant Power System
- EX Series Redundant Power System Hardware Overview

`[edit routing-options]` Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the `[edit routing-options]` hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the `\[edit routing-options\]` Hierarchy Level on page 169](#)
- [Unsupported Statements in the `\[edit routing-options\]` Hierarchy Level on page 183](#)

Supported Statements in the `[edit routing-options]` Hierarchy Level

The following hierarchy shows the `[edit routing-options]` configuration statements supported on EX Series switches:

```
routing-options {
  access {
    route ip-prefix </prefix-length> {
      metric route-cost;
      next-hop next-hop;
      preference route-distance;
      qualified-next-hop address {
        bfd-liveness-detection {
          authentication {
            algorithm algorithm-name;
            key-chain key-chain-name;
            loose-check;
```

```

    }
    detection-time {
        threshold milliseconds;
    }
    holddown-interval milliseconds;
    local address address;
    minimum-interval milliseconds;
    minimum-receive-interval milliseconds;
    minimum-receive-ttl milliseconds;
    multiplier number;
    neighbor address;
    no-adaptation;
    transmit-interval {
        minimum-interval milliseconds;
        threshold milliseconds;
    }
    version (1 | automatic);
}
interface interface-name;
mac-address mac-address;
metric metric;
preference preference-value;
}
tag route-tag;
}
} # end of [edit routing-options access]
access-internal {
    route ip-prefix</prefix-length> {
        next-hop [ addresses ];
        qualified-next-hop address {
            bfd-liveness-detection {
                authentication {
                    algorithm algorithm-name;
                    key-chain key-chain-name;
                    loose-check;
                }
                detection-time {
                    threshold milliseconds;
                }
            }
            holddown-interval milliseconds;
            local address address;
            minimum-interval milliseconds;
            minimum-receive-interval milliseconds;
            minimum-receive-ttl milliseconds;
            multiplier number;
            neighbor address;
            no-adaptation;
            transmit-interval {
                minimum-interval milliseconds;
                threshold milliseconds;
            }
            version (1 | automatic);
        }
    }
    interface interface-name;
    mac-address mac-address;
    metric metric;

```

```

        preference preference-value;
    }
    tag route-tag;
}
} # end of [edit routing-options access-internal]
admin-groups-extended group-name {
    group-value group-identifier;
}
admin-groups-extended-range {
    maximum maximum-number;
    minimum minimum-number;
}
aggregate {
    defaults {
        (active | passive);
        as-path {
            aggregator as-number address;
            atomic-aggregate;
            origin (egp | igp | incomplete);
            path path-identifier;
        }
        brief;
        color metric <type metric-type>;
        color2 metric <type metric-type>;
        community [ community-id no-advertise no-export no-export-subconfed ];
        discard;
        full;
        metric metric <type metric-type>;
        metric2 metric <type metric-type>;
        metric3 metric <type metric-type>;
        metric4 metric <type metric-type>;
        preference preference-value <type metric-type>;
        preference2 preference-value <type metric-type>;
        tag metric <type metric-type>;
        tag2 metric <type metric-type>;
    }
    route {
        (active | passive);
        as-path {
            aggregator as-number address;
            atomic-aggregate;
            origin (egp | igp | incomplete);
            path path-identifier;
        }
        brief;
        color metric <type metric-type>;
        color2 metric <type metric-type>;
        community [ community-id no-advertise no-export no-export-subconfed ];
        discard;
        full;
        metric metric <type metric-type>;
        metric2 metric <type metric-type>;
        metric3 metric <type metric-type>;
        metric4 metric <type metric-type>;
        policy [policy-names];
        preference preference-value <type metric-type>;
    }
}

```

```

        preference2 preference-value <type metric-type>;
        tag metric <type metric-type>;
        tag2 metric <type metric-type>;
    } # end of [edit routing-options aggregate]
}
bgp-orf-cisco-mode;
bmp {
    memory-limit bytes;
    station-address (ip-address | name);
    station-port-number port-number;
    statistics-timeout seconds;
}
confederation as-number members [ as-numbers ];
fate-sharing {
    group group-name {
        cost value;
        from {
            address <to address>;
        }
    }
}
flow {
    route name {
        match {
            destination address;
            destination-port [ afs bgp biff bootpc bootps cmd cvspserver dhcp domain eklogin
                ekshell exec finger ftp ftp-data http https ident imap kerberos-sec klogin kpasswd
                krb-prop krbupdate kshell ldap ldp login mobileip-agent mobilip-mn msdp
                netbios-dgm netbios-ns netbios-ssn nfsd nntp ntalk ntp pop3 pptp printer radacct
                radius rip rkinit smtp snmp snmptrap snpp socks ssh sunrpc syslog tacacs
                tacacs-ds talk telnet tftp timed who xdmcp ];
            dscp [ code-points ];
            fragment [ don't-fragment first-fragment is-fragment last-fragment
                not-a-fragment ];
            icmp-code [ communication-prohibited-by-filtering destination-host-prohibited
                destination-host-unknown fragmentation-needed host-precedence-violation
                host-unreachable host-unreachable-for-tos ip-header-bad network-unreachable
                network-unreachable-for-tos port-unreachable precedence-cutoff-in-effect
                protocol-unreachable redirect-for-host redirect-for-network
                redirect-for-tos-and-host redirect-for-tos-and-net required-option-missing
                source-host-isolated source-route-failed ttl-eq-zero-during-reassembly
                ttl-eq-zero-during-transit ];
            icmp-type [ echo-reply echo-request info-reply info-request mask-reply
                mask-request parameter-problem redirect router-advertisement router-solicit
                source-quench time-exceeded timestamp timestamp-reply unreachable ];
            packet-length [ values ];
            port [ ... same values as for the preceding destination-port statement ... ];
            protocol [ ah esp gre icmp igmp ipip ospf pim rsvp sctp tcp udp ];
            source address;
            source-port [ ... same values as for the preceding destination-port statement ... ];
            tcp-flags [ ack fin push rst syn urgent ];
        }
    }
    then {
        (accept | discard);
        community community-name;
        next-term;
    }
}

```

```

        rate-limit value;
        routing-instance routing-instance-name;
        sample;
    }
}
term-order;
validation {
    traceoptions {
        file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
        flag flag <flag-modifier> <disable>;
    }
}
} # end of [edit routing-options flow]
forwarding-table {
    export [ policy-names ];
    (indirect-next-hop | no-indirect-next-hop);
}
generate {
    defaults {
        (active | passive);
        as-path {
            aggregator as-number address;
            atomic-aggregate;
            origin (egp | igp | incomplete);
            path path-identifier;
        }
        brief;
        color metric <type metric-type>;
        color2 metric <type metric-type>;
        community [ community-id no-advertise no-export no-export-subconfed ];
        discard;
        full;
        metric metric <type metric-type>;
        metric2 metric <type metric-type>;
        metric3 metric <type metric-type>;
        metric4 metric <type metric-type>;
        preference preference-value <type metric-type>;
        preference2 preference-value <type metric-type>;
        tag metric <type metric-type>;
        tag2 metric <type metric-type>;
    }
    route {
        (active | passive);
        as-path {
            aggregator as-number address;
            atomic-aggregate;
            origin (egp | igp | incomplete);
            path path-identifier;
        }
        brief;
        color metric <type metric-type>;
        color2 metric <type metric-type>;
        community [ community-id no-advertise no-export no-export-subconfed ];
        discard;
        full;
    }
}

```

```

metric metric <type metric-type>;
metric2 metric <type metric-type>;
metric3 metric <type metric-type>;
metric4 metric <type metric-type>;
preference preference-value <type metric-type>;
policy [policy-names];
preference2 preference-value <type metric-type>;
tag metric <type metric-type>;
tag2 metric <type metric-type>;
}
} # end of [edit routing-options generate]
graceful-restart {
  disable;
  restart-duration seconds;
}
instance-export [ policy-names ];
instance-import [ policy-names ];
interface-routes {
  family (inet | inet6) {
    export {
      lan;
      point-to-point;
    }
    import [ policy-names ];
  }
}
rib-group {
  inet group-name;
  inet6 group-name;
}
}
martians {
  ip-prefix</prefix-length> (exact | longer | orlonger |
    prefix-length-range /minimum-prefix-length–/maximum-prefix-length |
    through ip-prefix</prefix-length> | upto /prefix-length) <allow>;
}
maximum-paths path-limit <log-only | threshold value> <log-interval seconds>;
maximum-prefixes prefix-limit <log-only | threshold value> <log-interval seconds>;
med-igp-update-interval minutes;
multicast {
  asm-override-ssm;
  backup-pe-group group-name {
    backups [ addresses ];
    local-address address;
  }
  flow-map flow-map-name {
    bandwidth <bps> <adaptive>;
    forwarding-cache {
      timeout (never <non-discard-entry-only> | minutes);
    }
    policy [ policy-names ];
    redundant-sources [ addresses ];
  }
}
interface interface-name {
  maximum-bandwidth bps;
}
pim-to-igmp-proxy {

```



```

    upstream-interface [ interface-names ];
  }
  pim-to-mld-proxy {
    upstream-interface [ interface-names ];
  }
  rpf-check-policy [ policy-names ];
  scope-policy [ policy-names ];
  ssm-map ssm-map-name {
    policy [ policy-names ];
    source [ addresses ];
  }
  traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
      no-world-readable>;
    flag flag <disable>;
  }
} # end of [edit routing-options multicast]
nonstop-routing;
options {
  mark seconds;
  syslog {
    level level;
    upto level;
  }
}
ppm {
  no-delegate-processing;
}
resolution {
  rib routing-table-name {
    import [ policy-names ];
    resolution-ribs [ routing-table-names ];
  }
  tracefilter [ filter-policy-names ];
  traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
      no-world-readable>;
    flag flag <flag-modifier> <disable>;
  }
}
rib routing-table-name {
  access {
    route ip-prefix </prefix-length> {
      metric route-cost;
      next-hop next-hop;
      preference route-distance;
      qualified-next-hop address {
        bfd-liveness-detection {
          authentication {
            algorithm algorithm-name;
            key-chain key-chain-name;
            loose-check;
          }
          detection-time {
            threshold milliseconds;
          }
        }
      }
    }
  }
}

```

```

        holddown-interval milliseconds;
        local address address;
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        minimum-receive-ttl milliseconds;
        multiplier number;
        neighbor address;
        no-adaptation;
        transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
        }
        version (1 | automatic);
    }
    interface interface-name;
    mac-address mac-address;
    metric metric;
    preference preference-value;
}
tag route-tag;
}
} # end of [edit routing-options rib access]
access-internal {
    route ip-prefix</prefix-length> {
        next-hop [ addresses ];
        qualified-next-hop address {
            bfd-liveness-detection {
                authentication {
                    algorithm algorithm-name;
                    key-chain key-chain-name;
                    loose-check;
                }
                detection-time {
                    threshold milliseconds;
                }
            }
            holddown-interval milliseconds;
            local address address;
            minimum-interval milliseconds;
            minimum-receive-interval milliseconds;
            minimum-receive-ttl milliseconds;
            multiplier number;
            neighbor address;
            no-adaptation;
            transmit-interval {
                minimum-interval milliseconds;
                threshold milliseconds;
            }
            version (1 | automatic);
        }
        interface interface-name;
        mac-address mac-address;
        metric metric;
        preference preference-value;
    }
    tag route-tag;
}
}

```

```

} # end of [edit routing-options rib access-internal]
aggregate {
  defaults {
    (active | passive);
    as-path {
      aggregator as-number address;
      atomic-aggregate;
      origin (egp | igp | incomplete);
      path path-identifier;
    }
    brief;
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    discard;
    full;
    metric metric <type metric-type>;
    metric2 metric <type metric-type>;
    metric3 metric <type metric-type>;
    metric4 metric <type metric-type>;
    preference preference-value <type metric-type>;
    preference2 preference-value <type metric-type>;
    tag metric <type metric-type>;
    tag2 metric <type metric-type>;
  }
  route {
    (active | passive);
    as-path {
      aggregator as-number address;
      atomic-aggregate;
      origin (egp | igp | incomplete);
      path path-identifier;
    }
    brief;
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    discard;
    full;
    metric metric <type metric-type>;
    metric2 metric <type metric-type>;
    metric3 metric <type metric-type>;
    metric4 metric <type metric-type>;
    policy [ policy-names ];
    preference preference-value <type metric-type>;
    preference2 preference-value <type metric-type>;
    tag metric <type metric-type>;
    tag2 metric <type metric-type>;
  }
} # end of [edit routing-options rib aggregate]
generate {
  defaults {
    (active | passive);
    as-path {
      aggregator as-number address;
      atomic-aggregate;

```

```

        origin (egp | igp | incomplete);
        path path-identifier;
    }
    brief;
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    discard;
    full;
    metric metric <type metric-type>;
    metric2 metric <type metric-type>;
    metric3 metric <type metric-type>;
    metric4 metric <type metric-type>;
    preference preference-value <type metric-type>;
    preference2 preference-value <type metric-type>;
    tag metric <type metric-type>;
    tag2 metric <type metric-type>;
}
route {
    (active | passive);
    as-path {
        aggregator as-number address;
        atomic-aggregate;
        origin (egp | igp | incomplete);
        path path-identifier;
    }
    brief;
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    discard;
    full;
    metric metric <type metric-type>;
    metric2 metric <type metric-type>;
    metric3 metric <type metric-type>;
    metric4 metric <type metric-type>;
    preference preference-value <type metric-type>;
    policy [policy-names];
    preference2 preference-value <type metric-type>;
    tag metric <type metric-type>;
    tag2 metric <type metric-type>;
}
} # end of [edit routing-options rib generate]
martians {
    ip-prefix</prefix-length> (exact | longer | orlonger |
        prefix-length-range /minimum-prefix-length—/maximum-prefix-length |
        through ip-prefix</prefix-length> | upto /prefix-length) <allow>;
}
maximum-paths path-limit <log-only | threshold value> <log-interval seconds>;
maximum-prefixes prefix-limit <log-only | threshold value> <log-interval seconds>;
static {
    defaults {
        (active | passive);
        as-path {
            aggregator as-number address;
            atomic-aggregate;

```

```

    origin (egp | igp | incomplete);
    path path-identifier;
}
color metric <type metric-type>;
color2 metric <type metric-type>;
community [ community-id no-advertise no-export no-export-subconfed ];
(install | no-install);
lsp-next-hop next-hop-address;
metric metric <type metric-type>;
metric2 metric <type metric-type>;
metric3 metric <type metric-type>;
metric4 metric <type metric-type>;
preference preference-value <type metric-type>;
preference2 preference-value <type metric-type>;
(readvertise | no-readvertise);
(resolve | no-resolve);
(retain | no-retain);
tag metric <type metric-type>;
tag2 metric <type metric-type>;
}
rib-group group-name;
route {
    (active | passive);
    as-path {
        aggregator as-number address;
        atomic-aggregate;
        origin (egp | igp | incomplete);
        path path-identifier;
    }
    bfd-liveness-detection {
        authentication {
            algorithm algorithm-name;
            key-chain key-chain-name;
            loose-check;
        }
        detection-time {
            threshold milliseconds;
        }
        holddown-interval milliseconds;
        local address address;
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        minimum-receive-ttl milliseconds;
        multiplier number;
        neighbor address;
        no-adaptation;
        transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
        }
        version (1 | automatic);
    }
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    discard;
}

```

```

(install | no-install);
lsp-next-hop next-hop-address {
    metric metric;
    preference preference-value;
}
metric metric <type metric-type>;
metric2 metric <type metric-type>;
metric3 metric <type metric-type>;
metric4 metric <type metric-type>;
next-hop next-hop-address;
p2mp-lsp-next-hop next-hop-address {
    metric metric;
    preference preference-value;
}
preference preference-value <type metric-type>;
preference2 preference-value <type metric-type>;
qualified-next-hop address {
    bfd-liveness-detection {
        authentication {
            algorithm algorithm-name;
            key-chain key-chain-name;
            loose-check;
        }
        detection-time {
            threshold milliseconds;
        }
        holddown-interval milliseconds;
        local address address;
        minimum-interval milliseconds;
        minimum-receive-interval milliseconds;
        minimum-receive-ttl milliseconds;
        multiplier number;
        neighbor address;
        no-adaptation;
        transmit-interval {
            minimum-interval milliseconds;
            threshold milliseconds;
        }
        version (1 | automatic);
    }
    interface interface-name;
    mac-address mac-address;
    metric metric;
    preference preference-value;
}
(readvertise | no-readvertise);
receive;
reject;
(resolve | no-resolve);
(retain | no-retain);
static-lsp-next-hop next-hop-address;
tag metric <type metric-type>;
tag2 metric <type metric-type>;
}
} # end of [edit routing-options rib static]
} # end of [edit routing-options rib]

```

```

rib-groups {
  group-name {
    export-rib table-name;
    import-policy [ policy-names ];
    import-rib [ table-names ];
  }
}
route-distinguisher-id address;
route-record;
router-id address;
source-routing {
  ip;
  ipv6;
}
srlg group-name {
  srlg-cost number;
  srlg-value number;
}
static {
  defaults {
    (active | passive);
    as-path {
      aggregator as-number address;
      atomic-aggregate;
      origin (egp | igp | incomplete);
      path path-identifier;
    }
    color metric <type metric-type>;
    color2 metric <type metric-type>;
    community [ community-id no-advertise no-export no-export-subconfed ];
    (install | no-install);
    metric metric <type metric-type>;
    metric2 metric <type metric-type>;
    metric3 metric <type metric-type>;
    metric4 metric <type metric-type>;
    preference preference-value <type metric-type>;
    preference2 preference-value <type metric-type>;
    (readvertise | no-readvertise);
    (resolve | no-resolve);
    (retain | no-retain);
    tag metric <type metric-type>;
    tag2 metric <type metric-type>;
  }
  rib-group group-name;
  route {
    (active | passive);
    as-path {
      aggregator as-number address;
      atomic-aggregate;
      origin (egp | igp | incomplete);
      path path-identifier;
    }
    bfd-liveness-detection {
      authentication {
        algorithm algorithm-name;
        key-chain key-chain-name;

```

```
        loose-check;
    }
    detection-time {
        threshold milliseconds;
    }
    holddown-interval milliseconds;
    local address address;
    minimum-interval milliseconds;
    minimum-receive-interval milliseconds;
    minimum-receive-ttl milliseconds;
    multiplier number;
    neighbor address;
    no-adaptation;
    transmit-interval {
        minimum-interval milliseconds;
        threshold milliseconds;
    }
    version (1 | automatic);
}
color metric <type metric-type>;
color2 metric <type metric-type>;
community [ community-id no-advertise no-export no-export-subconfed ];
discard;
(install | no-install);
lsp-next-hop next-hop-address {
    metric metric;
    preference preference-value;
}
metric metric <type metric-type>;
metric2 metric <type metric-type>;
metric3 metric <type metric-type>;
metric4 metric <type metric-type>;
next-hop next-hop-address;
p2mp-lsp-next-hop next-hop-address {
    metric metric;
    preference preference-value;
}
preference preference-value <type metric-type>;
preference2 preference-value <type metric-type>;
qualified-next-hop address {
    bfd-liveness-detection {
        authentication {
            algorithm algorithm-name;
            key-chain key-chain-name;
            loose-check;
        }
        detection-time {
            threshold milliseconds;
        }
    }
    holddown-interval milliseconds;
    local address address;
    minimum-interval milliseconds;
    minimum-receive-interval milliseconds;
    minimum-receive-ttl milliseconds;
    multiplier number;
    neighbor address;
```



```
no-adaptation;
transmit-interval {
    minimum-interval milliseconds;
    threshold milliseconds;
}
version (1 | automatic);
}
interface interface-name;
mac-address mac-address;
metric metric;
preference preference-value;
}
(readvertise | no-readvertise);
receive;
reject;
(resolve | no-resolve);
(retain | no-retain);
static-lsp-next-hop next-hop-address;
tag metric <type metric-type>;
tag2 metric <type metric-type>;
}
} # end of [edit routing-options static]
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
    no-world-readable>;
    flag flag <disable>;
}
}
```

Unsupported Statements in the [edit routing-options] Hierarchy Level

All statements in the [edit routing-options] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 20: Unsupported [edit routing-options] Configuration Statements on EX Series Switches

Statement	Hierarchy
<i>NOTE:</i> Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
forwarding-cache	[edit routing-options multicast]
scope	[edit routing-options multicast]
ssm-groups	[edit routing-options multicast]
threshold	[edit routing-options multicast forwarding-cache]
timeout	[edit routing-options multicast forwarding-cache]

Related Documentation • Junos OS Configuration Statements and Commands

[edit security] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit security]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit security\] Hierarchy Level on page 184](#)
- [Unsupported Statements in the \[edit security\] Hierarchy Level on page 186](#)

Supported Statements in the [edit security] Hierarchy Level

The following hierarchy shows the **[edit security]** configuration statements supported on EX Series switches:

```
security {
  alarms {
    potential-violation {
      authentication failures;
      cryptographic-self-test ;
      key-generation-self-test;
      non-cryptographic-self-test;
      policy number per (minute | second);
      replay-attacks {
        threshold value;
      }
      security-log-percent-full;
    }
  }
  certificates {
    cache-size bytes;
    cache-timeout-negative seconds;
    certification-authority ca-profile-name {
      ca-name certificate-authority-name;
      crl filename;
      encoding (binary | pem);
      enrollment-url url;
      file certificate-filename;
      ldap-url url-name;
    }
    enrollment-retry number;
    local certificate-name {
      certificate-key-string;
      load-key-file URL-or-path;
    }
  }
}
```

```

    }
    maximum-certificates number;
    path-length bytes;
  }
  ipsec {
    security-association sa-name {
      description text-description;
      manual {
        direction (bidirectional | inbound | outbound) {
        }
        mode (transport | tunnel);
      }
    }
  }
  log {
    cache {
      exclude name {
        destination-address;
        destination-port;
        event-id;
        failure;
        interface-name;
        policy-name;
        process;
        source-address;
        source-port;
        success;
        username;
      }
      limit number;
    }
  }
  pki {
    auto-re-enrollment {
      certificate-id certificate-id {
        ca-profile-name profile-name;
        challenge-password password;
        re-enroll-trigger-time-percentage percentage;
        re-generate-keypair;
      }
    }
    traceoptions {
      file <filename> <files number> <match regular-expression> <size maximum-file-size>
        <world-readable | no-world-readable>;
      flag flag;
    }
  }
  ssh-known-hosts {
    fetch-from-server (hostname | address);
    host (hostname | address) {
      dsa-key key;
      ecdsa-sha2-nistp256-key key;
      ecdsa-sha2-nistp384-key key;
      ecdsa-sha2-nistp521-key key;
      rsa-key key;
      rsa1-key key;
    }
  }

```

```

        load-key-file filename;
    }
    traceoptions {
        file <filename> <files number> <match regular-expression> <size maximum-file-size>
            <world-readable | no-world-readable>;
        flag flag;
        level level;
        no-remote-trace;
        rate-limit rate;
    }
}

```

Unsupported Statements in the [edit security] Hierarchy Level

All statements in the **[edit security]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 21: Unsupported [edit security] Configuration Statements on EX Series Switches

Statement	Hierarchy
<i>NOTE:</i> Variables, such as <i>filename</i> , are not shown in the statements or hierarchies.	
audible	[edit security alarms]
continuous	[edit security alarms audible]

[edit services] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit services]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switches, see EX Series Switch Software Features Overview.
- [Supported Statements in the \[edit services\] Hierarchy Level on page 186](#)
- [Unsupported Statements in the \[edit services\] Hierarchy Level on page 189](#)

Supported Statements in the [edit services] Hierarchy Level

The following hierarchy shows the **[edit services]** configuration statements supported on EX Series switches:

```

services {
    captive-portal {

```

```

authentication-profile-name authentication-profile-name;
custom-options {
    banner-message string;
    footer-bgcolor color;
    footer-message string;
    footer-text-color color;
    form-header-bgcolor color;
    form-header-message string;
    footer-header-text-color color;
    form-reset-label label-name;
    form-submit-label label-name;
    header-bgcolor color;
    header-logo filename;
    header-message string;
    header-text-color color0;
    post-authentication-url url;
}
interface (all | interface-name) {
    quiet-period seconds;
    retries number-of-retries;
    server-timeout seconds;
    session-expiry seconds;
    supplicant (multiple | single | single-secure);
}
secure-authentication (http | https);
traceoptions {
    file filename <files number> <size maximum-file-size> <world-readable |
        no-world-readable>;
    flag flag <disable>;
}
}
rpm {
    bgp {
        data-fill data;
        data-size size;
        destination-port port;
        history-size size;
        moving-average-size number-of-samples;
        probe-count count;
        probe-interval seconds;
        probe-type type;
        routing-instances {
            routing-instance-name;
        }
        test-interval seconds;
    }
    probe owner {
        test test-name {
            data-fill data;
            data-size size;
            destination-port port;
            dscp-code-point dscp-bits;
            hardware-timestamp;
            history-size size;
            moving-average-size number;
            one-way-hardware-timestamp;
        }
    }
}

```

```

    probe-count count;
    probe-interval seconds;
    probe-type type;
    routing-instance instance-name;
    source-address address;
    target (address address | url url);
    test-interval interval;
    thresholds {
        egress-time microseconds;
        ingress-time microseconds;
        jitter-egress microseconds;
        jitter-ingress microseconds;
        jitter-rtt microseconds;
        rtt microseconds;
        std-dev-egress microseconds;
        std-dev-ingress microseconds;
        std-dev-rtt microseconds;
        successive-loss count;
        total-loss count;
    }
    traps [ trap-names ];
}
}
probe-limit number;
probe-server {
    tcp {
        port port-number;
    }
    udp {
        port port-number;
    }
}
}
unified-access-control {
    certificate-verification (optional | required | warning);
    infranet-controllerhostname {
        address ip-address;
        interface interface-name;
        password password;
        port port-number;
    }
    interval seconds;
    timeout seconds;
    timeout-action (close | no-change);
    traceoptions {
        file filename <files number> <size maximum-file-size> <world-readable |
            no-world-readable>;
        flag flag <disable>;
    }
}
}
}

```

Unsupported Statements in the [edit services] Hierarchy Level

All statements in the **[edit services]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 22: Unsupported [edit services] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
ca-profile	[edit services unified-access-control infranet-controller]
interface	[edit services interface-pools] [edit services service-device-pools pool]
pool	[edit services interface-pools] [edit services service-device-pools]
server-certificate-subject	[edit services unified-access-control infranet-controller]
service-device-pools	[edit services]
service-interface-pools	[edit services]

Related Documentation

- Junos OS Configuration Statements and Commands

[edit snmp] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit snmp]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see [EX Series Switch Software Features Overview](#)

This topic lists:

- [Supported Statements in the \[edit snmp\] Hierarchy Level on page 190](#)
- [Unsupported Statements in the \[edit snmp\] Hierarchy Level on page 194](#)

Supported Statements in the [edit snmp] Hierarchy Level

The following hierarchy shows the [edit snmp] configuration statements supported on EX Series switches:

```
snmp {
  client-list list-name {
    address {
      restrict;
    }
  }
  community community-name {
    authorization (read-only | read-write);
    client-list-name list-name;
    clients {
      address <restrict>;
    }
    routing-instance instance-name;
    routing-instance instance-name {
      client-list-name list-name;
      clients {
        address <restrict>;
      }
    }
  }
  view view-name;
}
contact contact-information;
description description;
engine-id {
  (local engine-id | use-default-ip-address | use-mac-address);
}
filter-duplicates;
filter-interfaces {
  interfaces
  all-internal-interfaces;
  interface 1;
  interface 2;
}
health-monitor {
  falling-threshold percentage;
  idp {
    falling-threshold;
    interval seconds;
    rising-threshold;
  }
  interval seconds;
  rising-threshold percentage;
}
interface [ interface-names ];
location location;
name system-name;
nonvolatile {
  commit-delay seconds;
}
rmon {
```



```

alarm index {
    description description;
    falling-event-index index;
    falling-threshold integer;
    falling-threshold-interval seconds;
    interval seconds;
    request-type (get-next-request | get-request | walk-request);
    rising-event-index index;
    rising-threshold integer;
    sample-type (absolute-value | delta-value);
    startup-alarm (falling-alarm | rising-alarm | rising-or-falling alarm);
    syslog-subtag text-string;
    variable oid-variable;
}
event index {
    community community-name;
    description description;
    type (log | log-and-trap | none | snmptrap);
}
history index {
    bucket-size number;
    interface interface-name;
    interval seconds;
    owner owner-name;
}
}
routing-instance-access {
    access-list {
        routing-instance-name <restrict>;
    }
}
traceoptions {
    file <files number> <match regular-expression> <size maximum-file-size>
        <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
}
trap-group group-name {
    categories {
        authentication;
        chassis;
        configuration;
        link;
        otn-alarms {
            alarm-name;
        }
        remote-operations;
        rmon-alarm;
        routing;
        services;
        sonet-alarms {
            alarm-name;
        }
        startup;
        vrrp-events;
    }
}

```

```

    destination-port port-number;
    routing-instance instance-name;
    routing-instance instance-name;
    targets {
        address;
    }
    version (all | v1 | v2);
}
trap-options {
    agent-address outgoing-interface;
    enterprise-oid;
    routing-instance instance-name;
    routing-instance instance-name {
        source-address (address | lo0);
    }
    source-address address;
}
v3 {
    ... the v3 subhierarchy appears after the main [edit snmp] hierarchy level ...
}
view view-name {
    oid object-identifier <exclude | include>;
}
}

snmp {
    v3 {
        notify name {
            tag tag-name;
            type (inform | trap);
        }
        notify-filter profile-name {
            oid oid <exclude | include>;
        }
        snmp-community community-index {
            community-name community-name;
            context context-name;
            security-name security-name;
            tag tag-name;
        }
        target-address target-address-name {
            address address;
            address-mask address-mask;
            routing-instance routing-instance-name;
            port port-number;
            retry-count number;
            routing-instance routing-instance-name;
            tag-list tag-list;
            target-parameters parameter-name;
            timeout seconds;
        }
        target-parameters parameter-name {
            notify-filter profile-name;
            parameters {
                message-processing-model (v1 | v2c | v3);
                security-level (authentication | none | privacy);
            }
        }
    }
}

```

```

        security-model (usm | v1 | v2c);
        security-name security-name;
    }
}
usm {
    local-engine {
        user username {
            authentication-md5 {
                authentication-key password;
                authentication-password password;
            }
            authentication-none;
            authentication-sha {
                authentication-key password;
                authentication-password password;
            }
            privacy-3des {
                privacy-password password;
            }
            privacy-aes128 {
                privacy-password password;
            }
            privacy-des {
                privacy-password password;
            }
            privacy-none;
        }
    }
    remote-engine engine-id {
        user username {
            authentication-md5 {
                authentication-key password;
                authentication-password password;
            }
            authentication-none;
            authentication-sha {
                authentication-key
                authentication-password password;
            }
            privacy-3des {
                privacy-password password;
            }
            privacy-aes128 {
                privacy-password password;
            }
            privacy-des {
                privacy-password password;
            }
            privacy-none;
        }
    }
}
vacm {
    access {
        group group-name {
            context-prefix prefix {

```

```

        security-model (any | usm | v1 | v2c) {
            security-level (authentication | none | privacy) {
                context-match (exact | prefix);
                notify-view view-name;
                read-view view-name;
                write-view view-name;
            }
        }
    }
}
default-context-prefix prefix {
    security-model (any | usm | v1 | v2c) {
        security-level (authentication | none | privacy) {
            context-match (exact | prefix);
            notify-view view-name;
            read-view view-name;
            write-view view-name;
        }
    }
}
}
}
}
}
security-to-group {
    security-model (usm | v1 | v2c) {
        security-name security-name {
            group group-name;
        }
    }
}
}
}
}
}
}

```

Unsupported Statements in the [edit snmp] Hierarchy Level

All statements in the [edit snmp] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 23: Unsupported [edit snmp] Configuration Statements on EX Series Switches

Statement	Hierarchy
-----------	-----------

NOTE: Variables, such as *community-name*, are not shown in the statements or hierarchies.

Table 23: Unsupported [edit snmp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
logical-system	[edit snmp community] [edit snmp trap-group]

Table 23: Unsupported [edit snmp] Configuration Statements on EX Series Switches (*continued*)

Statement	Hierarchy
	[edit snmp trap-options] [edit snmp v3 target-address]
logical-systems-trap-filter	[edit snmp]

**Related
Documentation**

- Configuring SNMP (J-Web Procedure)
- Network Management Configuration Guide

[edit system] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit system]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit system\] Hierarchy Level on page 196](#)
- [Unsupported Statements in the \[edit system\] Hierarchy Level on page 209](#)

Supported Statements in the [edit system] Hierarchy Level

The following hierarchy shows the **[edit system]** configuration statements supported on EX Series switches.

```
system {
  accounting {
    destination {
      radius {
        server {
          server-address {
            accounting-port port-number;
            port port-number;
            retry number;
            secret password;
            source-address address;
            timeout seconds;
          }
        }
      }
    }
  }
}
```

```

tacplus {
  server {
    server-address {
      port port-number;
      secret password;
      single-connection;
      timeout seconds;
    }
  }
}
events
traceoptions {
  file;
  flag;
  no-remote-trace;
}
}
allow-v4-mapped-packets;
archival {
  configuration {
    archive-sites {
      ftp://<username>:<password>@<host>:<port>/<url-path>;
      scp://<username>:<password>@<host>:<port>/<url-path>;
    }
    transfer-interval interval;
    transfer-on-commit;
  }
}
arp {
  aging-timer minutes;
  gratuitous-arp-delay;
  gratuitous-arp-on-ifup;
  interfaces interface-name {
    aging-timer minutes;
  }
  passive-learning;
  purging;
}
authentication-order [ authentication-methods ];
autoinstallation {
  configuration-servers {
    server-url <password password>;
  }
  interfaces {
    interface-name {
      bootp;
      rarp;
    }
  }
}
}
backup-router address <destination [ destination-addresses ]>;
commit {
  synchronize (and-quit | force);
}
(compress-configuration-files | no-compress-configuration-files);

```

```
default-address-selection;
domain-name domain-name;
domain-search [ domain-list ];
extensions {
  providers {
    provider-id {
      license-type license deployment-scope [ deployments ];
    }
  }
  resource-limits {
    package package-name {
      resources {
        cpu {
          priority number;
          time seconds;
        }
        file {
          core-size bytes;
          open number;
          size bytes;
        }
        memory {
          data-size bytes;
          locked-in bytes;
          resident-set-size bytes;
          socket-buffers bytes;
          stack-size bytes;
        }
      }
    }
  }
  process process-ui-name {
    resources {
      cpu {
        priority number;
        time seconds;
      }
      file {
        core-size bytes;
        open number;
        size bytes;
      }
      memory {
        data-size bytes;
        locked-in bytes;
        resident-set-size bytes;
        socket-buffers bytes;
        stack-size bytes;
      }
    }
  }
}
internet-options {
  (gre-path-mtu-discovery | no-gre-path-mtu-discovery);
  icmpv4-rate-limit bucket-size number packet-rate rate;
  icmpv6-rate-limit bucket-size number packet-rate rate;
```



```

(ipip-path-mtu-discovery | no-ipip-path-mtu-discovery);
ipv6-duplicate-addr-detection-transmits;
(ipv6-path-mtu-discovery | noipv6-path-mtu-discovery);
ipv6-path-mtu-discovery-timeout;
ipv6-reject-zero-hop-limit | no-ipv6-reject-zero-hop-limit;
no-tcp-reset;
no-tcp-rfc1323-paws;
no-tcp-rfc1323;
(path-mtu-discovery | no-path-mtu-discovery);
source-port upper-limit port-number;
(source-quench | no-source-quench);
tcp-drop-synfin-set;
}
kernel-replication;
license {
  autoupdate {
    url url{
      password password;
    }
  }
  renew {
    before-expiration days;
    interval hours;
  }
  traceoptions {
    file <filename> <files number> <size maximum-file-size> <world-readable |
      no-world-readable>;
    flag flag;
    no-remote-trace;
  }
}
location {
  altitude feet;
  building name;
  country-code code;
  floor number;
  hcoord horizontal-coordinate;
  lata service-area;
  latitude degrees;
  longitude degrees;
  npa-nxx number;
  postal-code postal-code;
  rack number;
  vcoord vertical-coordinate;
}
login {
  announcement "text";
  class class-name {
    access-end "hh<:mm:<ss>>";
    access-start "hh<:mm:<ss>>";
    allow-commands "regular-expression";
    allow-configuration-regexps "regular-expression";
    allowed-days [ sunday monday tuesday wednesday thursday friday saturday ];
    deny-commands "regular-expression";
    deny-configuration-regexps "regular-expression";
    idle-timeout minutes;
  }
}

```

```
login-alarms;
login-script script-name;
login-tip;
permissions [ permissions ];
security-role;
}
deny-sources {
    address;
}
message "text";
password {
    change-type (character-sets | set-transitions);
    format (des | md5 | sha1);
    maximum-length number;
    minimum-changes number;
    minimum-length number;
}
retry-options {
    backoff-factor number;
    backoff-threshold number;
    lockout-period number;
    maximum-time number;
    minimum-time number;
    tries-before-disconnect number;
}
user username {
    authentication {
        (encrypted-password "password" | plain-text-password);
        load-key-file filename;
        ssh-dsa "public-key" <from hostname>;
        ssh-rsa "public-key" <from hostname>;
    }
    class class-name;
    full-name "complete-name";
    uid uid-value;
}
}
max-configurations-on-flash number;
name-server {
    address;
}
}
nd-maxmcast-solicit;
nd-retransmit-timer;
no-multicast-echo;
no-neighbor-learn;
no-ping-record-route;
no-ping-time-stamp;
}
ntp {
    authentication-key key-number type md5 value password;
    boot-server address;
    broadcast <address> <key key-number> <ttl value> <version value>;
    broadcast-client;
    multicast-client <address>;
    peer address <key key-number> <prefer> <version value>;
    server address <key key-number> <prefer> <version value>;
```

```

    source-address source-address;
    trusted-key [ key-numbers ];
}
ports {
    auxiliary {
        disable;
        insecure;
        port-type (mini-usb | rj45);
        type (ansi | small-xterm | vt100 | xterm);
    }
    console {
        disable;
        insecure;
        log-out-on-disconnect;
        type (ansi | small-xterm | vt100 | xterm);
    }
}
radius-options {
    attributes {
        nas-ip-address address;
    }
    password-protocol mschap-v2;
}
radius-server {
    server-address {
        accounting-port port-number;
        port port-number;
        retry number;
        secret password;
        source-address source-address;
        timeout seconds;
    }
}
root-authentication {
    (encrypted-password "password" | plain-text-password);
    load-key-file filename;
    ssh-dsa "public-key" <from hostname>;
    ssh-rsa "public-key" <from hostname>;
}
(saved-core-context | no-saved-core-context);
saved-core-files number;
scripts {
    commit {
        allow-transients;
        direct-access;
        file filename.xml {
            checksum (md5 | sha-256 | sha2) hash;
            optional;
            refresh;
            refresh-from url;
            source url;
        }
        refresh;
        refresh-from url;
        traceoptions {

```

```

        file <filename> <files number> <size maximum-file-size> <world-readable |
            no-world-readable>;
        flag flag;
        no-remote-trace;
    }
}
load-scripts-from-flash;
op {
    file filename.xml {
        arguments {
            argument-name {
                description descriptive-text;
            }
        }
        checksum (md5 | sha-256 | sha2) hash;
        command filename-alias;
        description descriptive-text;
        refresh;
        refresh-from url;
        source url;
    }
    no-allow-url;
    refresh;
    refresh-from url;
    traceoptions {
        file <filename> <files number> <size maximum-file-size> <world-readable |
            no-world-readable>;
        flag flag;
        no-remote-trace;
    }
}
}
services {
    database-replication {
        traceoptions {
            file <filename> <files number> <match regular-expression>
                <size maximum-file-size> <world-readable | no-world-readable>;
            flag flag;
            no-remote-trace;
        }
    }
}
dhcp {
    boot-file filename;
    boot-server (address | hostname);
    default-lease-time (seconds | infinite);
    domain-name domain-name;
    domain-search {
        domain-suffix;
    }
    maximum-lease-time (seconds | infinite);
    name-server {
        address;
    }
    next-server address;
    option option-index (array type-name [ type-values ] | byte 8-bit-value | flag (false |
        off | on | true) | integer signed-32-bit-value | ip-address address |

```

```

    short signed-16-bit-value | string text-string | unsigned-integer 32-bit-value |
    unsigned-short 16-bit-value);
pool ip-prefix/prefix-length {
    address-range low address high address;
    boot-file filename;
    boot-server (address | hostname);
    default-lease-time (seconds | infinite);
    domain-name domain-name;
    domain-search {
        domain-suffix;
    }
    exclude-address {
        ipv4-address;
    }
    maximum-lease-time (seconds | infinite);
    name-server {
        address;
    }
    next-server address;
    option option-index (array type-name type-values ] | byte 8-bit-value | flag (false |
        off | on | true) | integer signed-32-bit-value | ip-address address |
        short signed-16-bit-value | string text-string | unsigned-integer 32-bit-value |
        unsigned-short 16-bit-value);
    propagate-settings interface-name;
    router {
        address;
    }
    server-identifier identifier;
    sip-server {
        address {
            address;
        }
        name {
            name;
        }
    }
    wins-server {
        address;
    }
}
router {
    address;
}
server-identifier identifier;
sip-server {
    address {
        address;
    }
    name {
        name;
    }
}
static-binding mac-address {
    boot-file filename;
    boot-server (address | hostname);
    client-identifier (ascii ascii-text | hexadecimal hexadecimal-value);

```

```

domain-name domain-name;
domain-search {
    domain-suffix;
}
fixed-address {
    ipv4-address;
}
host-name hostname;
name-server {
    address;
}
next-server address;
option option-index (array type-name type-values ] | byte 8-bit-value | flag (false |
    off | on | true) | integer signed-32-bit-value | ip-address address |
    short signed-16-bit-value | string text-string | unsigned-integer 32-bit-value |
    unsigned-short 16-bit-value);
router {
    address;
}
server-identifier identifier;
sip-server {
    address {
        address;
    }
    name {
        name;
    }
}
wins-server {
    address;
}
}
traceoptions {
    file <filename> <files number> <match regular-expression>
        <size maximum-file-size> <world-readable | no-world-readable>;
    flag flag;
    level severity;
    no-remote-trace;
}
wins-server {
    address;
}
}
dhcp-local-server {
    group group-name {
        interface interface-name {
            exclude;
            overrides {
                client-discover-match <option60-and-option82>;
                interface-client-limit number;
                no-arp;
                process-inform {
                    pool pool-name;
                }
            }
        }
        trace;
    }
}

```

```

    upto upto-interface-name;
}
overrides {
    client-discover-match <option60-and-option82>;
    interface-client-limit number;
    no-arp;
    process-inform {
        pool pool-name;
    }
}
reconfigure {
    attempts attempt-count;
    clear-on-abort;
    timeout timeout-value;
    token token-value;
    trigger {
        radius-disconnect;
    }
}
}
interface-traceoptions {
    file <filename> <files number> <match regular-expression> <size size>
    <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
}
overrides {
    client-discover-match <option60-and-option82>;
    interface-client-limit number;
    no-arp;
    process-inform {
        pool pool-name;
    }
}
pool-match-order {
    external-authority;
    ip-address-first;
    option-82;
}
reconfigure {
    attempts attempt-count;
    clear-on-abort;
    timeout timeout-value;
    token token-value;
    trigger {
        radius-disconnect;
    }
}
traceoptions {
    file <filename> <files number> <match regular-expression>
    <size maximum-file-size> <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
}
}
finger {

```

```
        connection-limit limit;  
        rate-limit limit;  
    }  
    ftp {  
        connection-limit limit;  
        rate-limit limit;  
    }  
    netconf {  
        ssh {  
            connection-limit limit;  
            port number;  
            rate-limit limit;  
        }  
    }  
    outbound-ssh {  
        client client-id {  
            address {  
                port port-number;  
                retry number;  
                timeout seconds;  
            }  
            device-id device-id;  
            keep-alive {  
                retry number;  
                timeout seconds;  
            }  
            reconnect-strategy (in-order | sticky);  
            secret secret;  
            services netconf;  
        }  
        traceoptions {  
            file <filename> <files number> <match regular-expression>  
                <size maximum-file-size> <world-readable | no-world-readable>;  
            flag flag;  
            no-remote-trace;  
        }  
    }  
    service-deployment {  
        local-certificate certificate-name;  
        servers {  
            server-address {  
                port port-number;  
                security-options {  
                    (ssl3 | tls);  
                }  
                user username;  
            }  
        }  
        source-address source-address;  
        traceoptions {  
            file <filename> <files number> <match regular-expression>  
                <size maximum-file-size> <world-readable | no-world-readable>;  
            flag flag;  
            no-remote-trace;  
        }  
    }  
}
```



```

ssh {
  ciphers;
  connection-limit limit;
  hostkey-algorithm {
    ssh-dss | no-ssh-dss;
    ssh-ecdsa | no-ssh-ecdsa;
    ssh-rsa | no-ssh-rsh;
  }
  key-exchange;
  macs;
  protocol-version [ v1 v2 ];
  rate-limit limit;
  root-login (allow | deny | deny-password);
}
subscriber-management {
  gres-route-flush-delay;
  maintain-subscriber {
    interface-delete;
  }
  traceoptions {
    file filename <files number> <match regular-expression> <size maximum-file-size>
      <world-readable | no-world-readable>;
    flag flag;
    no-remote-trace;
  }
}
telnet {
  connection-limit limit;
  rate-limit limit;
}
web-management {
  control {
    max-threads number;
  }
  http {
    interface [ interface-names ];
    port port-number;
  }
  https {
    interface [ interface-names ];
    (local-certificate certificate-name | pki-local-certificate certificate-name |
      system-generated-certificate);
    port port-number;
  }
  management-url url;
  session {
    idle-timeout minutes;
    session-limit number;
  }
}
xnm-clear-text {
  connection-limit limit;
  rate-limit limit;
}
xnm-ssl {
  connection-limit limit;

```

```

        local-certificate certificate-name;
        rate-limit limit;
    }
}
static-host-mapping {
    hostname {
        alias [ aliases ];
        inet [ addresses ];
        inet6 [ addresses ];
        sysid system-identifier;
    }
}
syslog {
    allow-duplicates;
    archive <files number> <size size> <world-readable | no-world-readable>;
    console {
        facility severity;
    }
    file filename {
        allow-duplicates;
        facility severity;
        archive <archive-sites {ftp-url <password password>}> <files number> <size size>
            <start-time "YYYY-MM-DD.hh:mm"> <transfer-interval minutes> <world-readable |
            no-world-readable>;
        explicit-priority;
        match "regular-expression";
        structured-data {
            brief;
        }
    }
}
host (hostname | other-routing-engine) {
    facility severity;
    explicit-priority;
    facility-override facility;
    log-prefix string;
    match "regular-expression";
}
log-rotate-frequency;
time-format (year | millisecond | year millisecond);
user (username | *) {
    facility severity;
    explicit-priority;
    match "regular-expression";
}
}
tacplus-options {
    (exclude-cmd-attribute | no-cmd-attribute-value);
    service-name service-name;
}
tacplus-server {
    server-address {
        port port-number;
        secret password;
        single-connection;
        source-address source-address;
        timeout seconds;
    }
}

```

```

    }
  }
  time-zone (GMT | GMT+hour-offset | GMT-hour-offset | zone-name);
  tracing destination-override syslog host address;
  use-imported-time-zones;
}

```

Unsupported Statements in the [edit system] Hierarchy Level

All statements in the **[edit system]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 24: Unsupported [edit system] Configuration Statements on EX Series Switches

Statement	Hierarchy
NOTE: Variables, such as <i>interface-name</i> , are not shown in the statements or hierarchies.	
mirror-flash-on-disk	[edit system]
processes	[edit system]

Related Documentation

- Configuration File Management on EX Series Switches
- [EX Series Switches Hardware and CLI Terminology Mapping on page 9](#)

[edit virtual-chassis] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit virtual-chassis]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit virtual-chassis\] Hierarchy Level on page 209](#)
- [Unsupported Statements in the \[edit virtual-chassis\] Hierarchy Level on page 210](#)

Supported Statements in the [edit virtual-chassis] Hierarchy Level

The following hierarchy shows the **[edit virtual-chassis]** configuration statements supported on EX Series switches:

```
virtual-chassis {
```

```
auto-sw-update {
  (ex4200 | ex4500)
  package-name package-name;
}
fast-failover (ge | vcp disable | xe);
graceful-restart {
  disable;
}
id id;
mac-persistence-timer [minutes | disable];;
member member-id {
  location location;
  mastership-priority number;
  no-management-vlan;
  role;
  serial-number;
}
no-split-detection;
preprovisioned;
traceoptions {
  file filename <files number> <size size> <world-readable | no-world-readable> <match
    regex>;
  flag flag ;
}
vc-port {
  lag-hash (packet-based | source-port-based);
}
}
```

Unsupported Statements in the [edit virtual-chassis] Hierarchy Level

All statements in the [edit virtual-chassis] hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented.

Related Documentation

- Example: Configuring an EX4200 Virtual Chassis with a Master and Backup in a Single Wiring Closet
- Example: Configuring a Preprovisioned Mixed EX4200 and EX4500 Virtual Chassis
- Example: Configuring an EX3300 Virtual Chassis with a Master and Backup
- Example: Setting Up a Full Mesh EX8200 Virtual Chassis with Two EX8200 Switches and Redundant XRE200 External Routing Engines
- Configuring an EX4200, EX4500, or EX4550 Virtual Chassis (CLI Procedure)
- Configuring a Mixed Virtual Chassis with EX4200, EX4500, and EX4550 Member Switches (CLI Procedure)
- Configuring an EX8200 Virtual Chassis (CLI Procedure)

[edit vlans] Configuration Statement Hierarchy on EX Series Switches

This topic lists supported and unsupported configuration statements in the **[edit vlans]** hierarchy level on EX Series switches.

- *Supported* statements are those that you can use to configure some aspect of a software feature on the switch.
- *Unsupported* statements are those that appear in the command-line interface (CLI) on the switch, but that have no effect on switch operation if you configure them.
- Not all features are supported on all switch platforms. For detailed information about feature support on specific EX Series switch platforms, see EX Series Switch Software Features Overview.

This topic lists:

- [Supported Statements in the \[edit vlans\] Hierarchy Level on page 211](#)
- [Unsupported Statements in the \[edit vlans\] Hierarchy Level on page 212](#)

Supported Statements in the [edit vlans] Hierarchy Level

The following hierarchy shows the **[edit vlans]** configuration statements supported on one or more of the EX Series switches:

```

vlangs {
  vlan-name {
    description text-description;
    dot1q-tunneling {
      customer-vlans (id | native | range);
      layer2-protocol-tunneling all | protocol-name {
        drop-threshold number;
        shutdown-threshold number;
      }
    }
  }
  filter {
    input filter-name
    output filter-name;
  }
  interface interface-name {
    egress;
    ingress;
    mapping (native (push | swap) | policy | tag (push | swap));
    pvlan-trunk;
  }
  isolation-id id-number;
  l3-interface vlan.logical-interface-number;
  l3-interface-ingress-counting layer-3-interface-name;
  mac-limit limit action action;
  mac-table-aging-time seconds;
  no-local-switching;
  no-mac-learning;
  primary-vlan vlan-name;
  vlan-id number;
}

```

```

        vlan-prune;
        vlan-range vlan-id-low-vlan-id-high;
    }
}

```

Unsupported Statements in the [edit vlans] Hierarchy Level

All statements in the **[edit vlans]** hierarchy level that are displayed in the command-line interface (CLI) on the switch are supported on the switch and operate as documented with the following exceptions:

Table 25: Unsupported [edit vlans] Configuration Statements on EX Series Switches

Statement	Hierarchy Level
-----------	-----------------

NOTE: Variables, such as *filename*, are not shown in the statements or hierarchies.

udid	[edit vlans dot1q-tunneling layer2-protocol-tunneling]
------	--

Related Documentation

- Example: Setting Up Bridging with Multiple VLANs for EX Series Switches
- Example: Connecting an Access Switch to a Distribution Switch
- Example: Setting Up Q-in-Q Tunneling on EX Series Switches
- Example: Configuring Layer 2 Protocol Tunneling on EX Series Switches
- Example: Configuring Port Mirroring for Remote Monitoring of Employee Resource Use on EX Series Switches
- Example: Configuring a Private VLAN Spanning Multiple EX Series Switches
- Creating a Private VLAN on a Single EX Series Switch (CLI Procedure)

PART 3

Administration

- [Operational Commands on page 215](#)

CHAPTER 5

Operational Commands

set cli complete-on-space

Syntax	set cli complete-on-space (off on)
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the command-line interface (CLI) to complete a partial command entry when you type a space or a tab. This is the default behavior of the CLI.
Options	off —Turn off command completion. on —Allow either a space or a tab to be used for command completion.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli on page 225
List of Sample Output	set cli complete-on-space on page 216
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli complete-on-space

In the following example, pressing the Spacebar changes the partial command entry from **com** to **complete-on-space**. The example shows how adding the keyword **off** at the end of the command disables command completion.

```
user@host> set cli com<Space>
user@host>set cli complete-on-space off
Disabling complete-on-space
```

set cli directory

Syntax	set cli directory <i>directory</i>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the current working directory.
Options	<i>directory</i> —Pathname of the working directory.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli directory on page 231
List of Sample Output	set cli directory on page 217
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli directory

```
user@host> set cli directory /var/home/regress
Current directory: /var/home/regress
```

set cli idle-timeout

Syntax	set cli idle-timeout < <i>minutes</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the maximum time that an individual session can be idle before the user is logged off the router or switch.
Options	<i>minutes</i> —(Optional) Maximum idle time. The range of values, in minutes, is 0 through 100,000. If you do not issue this command, and the user's login class does not specify this value, the user is never forced off the system after extended idle times. Setting the value to 0 disables the timeout.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli on page 225
List of Sample Output	set cli idle-timeout on page 218
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli idle-timeout

```
user@host> set cli idle-timeout 60
Idle timeout set to 60 minutes
```

set cli prompt

Syntax	set cli prompt <i>string</i>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the prompt so that it is displayed within the CLI.
Options	<i>string</i> —CLI prompt string. To include spaces in the prompt, enclose the string in quotation marks. By default, the string is <i>username@hostname</i> .
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli on page 225
List of Sample Output	set cli prompt on page 219
Output Fields	When you enter this command, the new CLI prompt is displayed.

Sample Output

set cli prompt

```
user@host> set cli prompt lab1-router>
lab1-router>
```

set cli restart-on-upgrade

Syntax	set cli restart-on-upgrade string (off on)
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	For an individual session, set the CLI to prompt you to restart the router or switch after upgrading the software.
Options	off —Disables the prompt. on —Enables the prompt.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli on page 225
List of Sample Output	set cli restart-on-upgrade on page 220
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli restart-on-upgrade

```
user@host> set cli restart-on-upgrade on
Enabling restart-on-upgrade
```

set cli screen-length

Syntax	<code>set cli screen-length <i>length</i></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set terminal screen length.
Options	<i>length</i> —Number of lines of text that the terminal screen displays (0 through 10,000). The default is 24.
Additional Information	The point at which the ---(more)--- prompt appears on the screen is a function of this setting and the settings for the <code>set cli screen-width</code> and <code>set cli terminal</code> commands.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • CLI User Interface Overview • set cli screen-width on page 222 • set cli terminal on page 223 • show cli on page 225
List of Sample Output	set cli screen-length on page 221
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli screen-length

```
user@host> set cli screen-length 75
Screen length set to 75
```

set cli screen-width

Syntax	set cli screen-width <i>width</i>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the terminal screen width.
Options	<i>width</i> —Number of characters (0 through 1024) in a line. The default is 80.
Additional Information	The point at which the ---(more)--- prompt appears on the screen is a function of this setting and the settings for the set cli screen-length and set cli terminal commands.
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• set cli screen-length on page 221• set cli terminal on page 223• show cli on page 225
List of Sample Output	set cli screen-width on page 222
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli screen-width

```
user@host> set cli screen-width
Screen width set to 132
```


set cli terminal

Syntax	<code>set cli terminal <i>terminal-type</i></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set the terminal type.
Options	<p><i>terminal-type</i>—Type of terminal that is connected to the Ethernet management port:</p> <ul style="list-style-type: none"> • ansi—ANSI-compatible terminal (80 characters by 24 lines) • small-xterm—Small xterm window (80 characters by 24 lines) • vt100—VT100-compatible terminal (80 characters by 24 lines) • xterm—Large xterm window (80 characters by 65 lines)
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none"> • CLI User Interface Overview • set cli screen-length on page 221 • set cli screen-width on page 222 • show cli on page 225
List of Sample Output	set cli terminal on page 223
Output Fields	This command provides no output.

Sample Output

`set cli terminal`

```
user@host> set cli terminal xterm
```

set cli timestamp

Syntax	set cli timestamp (format <i>timestamp-format</i> disable)
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
Description	Set a timestamp for CLI output.
Options	<p>format <i>timestamp-format</i>—Set the date and time format for the timestamp. The timestamp format you specify can include the following placeholders in any order:</p> <ul style="list-style-type: none">• %m—Two-digit month• %d—Two-digit date• %T—Six-digit hour, minute, and seconds <p>disable—Remove the timestamp from the CLI.</p>
Required Privilege Level	view
Related Documentation	<ul style="list-style-type: none">• CLI User Interface Overview• show cli on page 225
List of Sample Output	set cli timestamp on page 224
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

set cli timestamp

```
user@host> set cli timestamp format '%m-%d-%T'
'04-21-17:39:13'
CLI timestamp set to: '%m-%d-%T'
```

show cli

Syntax	show cli
Syntax (QFX Series)	show cli <authorization> <directory> <history <i>count</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	Display configured CLI settings.
Options	This command has no options.
Required Privilege Level	view
List of Sample Output	show cli on page 226
Output Fields	Table 26 on page 225 lists the output fields for the show cli command. Output fields are listed in the approximate order in which they appear.

Table 26: show cli Output Fields

Field Name	Field Description
CLI complete-on-space	Capability to complete a partial command entry when you type a space or a tab: on or off .
CLI idle-timeout	Maximum time that an individual session can be idle before the user is logged out from the router or switch. When this feature is enabled, the number of minutes is displayed. Otherwise, the state is disabled .
CLI restart-on-upgrade	CLI is set to prompt you to restart the router or switch after upgrading the software: on or off .
CLI screen-length	Number of lines of text that the terminal screen displays.
CLI screen-width	Number of characters in a line on the terminal screen.
CLI terminal	Terminal type.
CLI is operating in	Mode: enhanced .
CLI timestamp	Date and time format for the timestamp. If the timestamp is not set, the state is disabled .
CLI working directory	Pathname of the working directory.

Sample Output

show cli

```
user@host> show cli
CLI complete-on-space set to on
CLI idle-timeout disabled
CLI restart-on-upgrade set to on
CLI screen-length set to 47
CLI screen-width set to 132
CLI terminal is 'vt100'
CLI is operating in enhanced mode
CLI timestamp disabled
CLI working directory is '/var/home/regress'
```

show cli authorization

Syntax	show cli authorization
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	Display the permissions for the current user.
Options	This command has no options.
Required Privilege Level	view
List of Sample Output	show cli authorization on page 229
Output Fields	Table 27 on page 227 lists the output fields for the show cli authorization command. In the table, all possible permissions are displayed and output fields are listed in alphabetical order.

Table 27: show cli authorization Output Fields

Field Name	Field Description
access	Can view access configuration information.
access-control	Can modify access configuration.
admin	Can view user account information.
admin-control	Can modify user account information.
clear	Can clear learned network information.
configure	Can enter configuration mode.
control	Can modify any configuration.
edit	Can edit configuration files.
field	Reserved for field (debugging) support.
firewall	Can view firewall configuration information.
firewall-control	Can modify firewall configuration information.
floppy	Can read from and write to removable media.
flow-tap	Can view flow-tap configuration information.

Table 27: show cli authorization Output Fields (*continued*)

Field Name	Field Description
flow-tap-control	Can configure flow-tap configuration information.
idp-profiler-operation	Can configure Profiler data.
interface	Can view interface configuration information.
interface-control	Can modify interface configuration information.
maintenance	Can perform system maintenance.
network	Can access the network by entering the ping , ssh , telnet , and traceroute commands.
pgcp-session-mirroring	Can view Packet Gateway Control Protocol session mirroring configuration.
pgcp-session-mirroring-control	Can modify Packet Gateway Control Protocol session mirroring configuration all-control.
reset	Can reset or restart interfaces and system processes.
rollback	Can roll back to previous configurations.
routing	Can view routing configuration information.
routing-control	Can modify routing configuration information.
secret	Can view passwords and authentication keys in the configuration.
secret-control	Can modify passwords and authentication keys in the configuration.
security	Can view security configuration information.
security-control	Can modify security configuration information.
shell	Can start a local shell.
snmp	Can view SNMP configuration information.
snmp-control	Can modify SNMP configuration information.
system	Can view system configuration information.
system-control	Can modify system configuration information.
trace	Can view trace file settings information.

Table 27: show cli authorization Output Fields (*continued*)

Field Name	Field Description
trace-control	Can modify trace file settings information.
view	Can view current values and statistics.
view-configuration	Can view all configuration information (not including secrets).

Sample Output

show cli authorization

```

user@host> show cli authorization
Current user: 'remote' login: 'user' class ''
Permissions:
  admin      -- Can view user accounts
  admin-control-- Can modify user accounts
  clear      -- Can clear learned network information
  configure  -- Can enter configuration mode
  control    -- Can modify any configuration
  edit       -- Can edit full files
  field      -- Special for field (debug) support
  floppy     -- Can read and write from the floppy
  interface  -- Can view interface configuration
  interface-control-- Can modify interface configuration
  network    -- Can access the network
  reset      -- Can reset/restart interfaces and daemons
  routing    -- Can view routing configuration
  routing-control-- Can modify routing configuration
  shell      -- Can start a local shell
  snmp       -- Can view SNMP configuration
  snmp-control-- Can modify SNMP configuration
  system     -- Can view system configuration
  system-control-- Can modify system configuration
  trace      -- Can view trace file settings
  trace-control-- Can modify trace file settings
  view       -- Can view current values and statistics
  maintenance -- Can become the super-user
  firewall   -- Can view firewall configuration
  firewall-control-- Can modify firewall configuration
  secret     -- Can view secret configuration
  secret-control-- Can modify secret configuration
  rollback   -- Can rollback to previous configurations
  security   -- Can view security configuration
  security-control-- Can modify security configuration
  access     -- Can view access configuration
  access-control-- Can modify access configuration
  view-configuration-- Can view all configuration (not including secrets)
  flow-tap   -- Can view flow-tap configuration
  flow-tap-control-- Can configure flow-tap service
Individual command authorization:
  Allow regular expression: none
  Deny regular expression: none
  Allow configuration regular expression: none
  Deny configuration regular expression: none

```

show cli directory

Syntax	show cli directory
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	Display the current working directory.
Options	This command has no options.
Required Privilege Level	view
List of Sample Output	show cli directory on page 231
Output Fields	Table 28 on page 231 lists the output fields for the show cli directory command. Output fields are listed in the approximate order in which they appear.

Table 28: show cli directory Output Fields

Field Name	Field Description
Current directory	Pathname of the current working directory.

Sample Output

show cli directory

```
user@host> show cli directory
Current directory: /var/home/regress
```

show cli history

Syntax	<code>show cli history</code> <code><count></code>
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	Display a list of previous CLI commands.
Options	none —Display all previous CLI commands. count —(Optional) Maximum number of commands to display.
Required Privilege Level	view
List of Sample Output	show cli history on page 232
Output Fields	Table 29 on page 232 lists the output fields for the show cli history command. Output fields are listed in the approximate order in which they appear.

Table 29: show cli history Output Fields


Field Name	Field Description
<i>timestamp</i>	Time at which the command was entered.
<i>command-syntax</i>	Command that was entered.

Sample Output

show cli history

```
user@host> show cli history
11:14:14 -- show arp
11:22:10 -- show cli authorization
11:27:12 -- show cli history
```

start shell

Syntax	start shell (csh sh) <user <i>username</i> >
Release Information	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
Description	Exit from the CLI environment and create a UNIX-level shell. To return to the CLI, type exit from the shell.
<div>  <p>NOTE:</p> <ul style="list-style-type: none"> To issue this command, the user must have the required login access privileges configured by including the permissions statement at the [edit system login class <i>class-name</i>] hierarchy level. UNIX wheel group membership or permissions are no longer required to issue this command. </div>	
Options	csh —Create a UNIX C shell. sh —Create a UNIX Bourne shell. user <i>username</i> —(Optional) Start the shell as another user.
Additional Information	When you are in the shell, the shell prompt has the following format: <i>username@hostname%</i> An example of the prompt is: root@host%
Required Privilege Level	shell and maintenance
List of Sample Output	start shell csh on page 233
Output Fields	When you enter this command, you are provided feedback on the status of your request.

Sample Output

start shell csh

```
user@host> start shell csh
%
exit
```

```
%  
username@hostname% start shell sh  
%  
exit  
user@host>
```