

# Extreme SLX-OS Software Licensing Guide, 17s.1.01

Supporting the ExtremeSwitching SLX 9140 and SLX 9240 Switches

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# Preface

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## Document conventions

The document conventions describe text formatting conventions, command syntax conventions, and important notice formats used in Extreme technical documentation.

## Notes, cautions, and warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

### NOTE

A Note provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

### ATTENTION

An Attention statement indicates a stronger note, for example, to alert you when traffic might be interrupted or the device might reboot.



### CAUTION

A Caution statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



### DANGER

A Danger statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

## Text formatting conventions

Text formatting conventions such as boldface, italic, or Courier font may be used to highlight specific words or phrases.

| Format             | Description                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------|
| <b>bold text</b>   | Identifies command names.<br>Identifies keywords and operands.<br>Identifies the names of GUI elements. |
| <i>italic text</i> | Identifies text to enter in the GUI.<br>Identifies emphasis.<br>Identifies variables.                   |
| Courier font       | Identifies document titles.<br>Identifies CLI output.                                                   |

| Format | Description                         |
|--------|-------------------------------------|
|        | Identifies command syntax examples. |

## Command syntax conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

| Convention         | Description                                                                                                                                                             |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>bold text</b>   | Identifies command names, keywords, and command options.                                                                                                                |
| <i>italic text</i> | Identifies a variable.                                                                                                                                                  |
| [ ]                | Syntax components displayed within square brackets are optional.<br><br>Default responses to system prompts are enclosed in square brackets.                            |
| { x   y   z }      | A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.                                           |
| x   y              | A vertical bar separates mutually exclusive elements.                                                                                                                   |
| < >                | Nonprinting characters, for example, passwords, are enclosed in angle brackets.                                                                                         |
| ...                | Repeat the previous element, for example, <i>member[member...]</i> .                                                                                                    |
| \                  | Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash. |

## Extreme resources

Visit the Extreme website to locate related documentation for your product and additional Extreme resources.

White papers, data sheets, and the most recent versions of Extreme software and hardware manuals are available at [www.extremenetworks.com](http://www.extremenetworks.com). Product documentation for all supported releases is available to registered users at [www.extremenetworks.com/support/documentation](http://www.extremenetworks.com/support/documentation).

## Document feedback

Quality is our first concern at Extreme, and we have made every effort to ensure the accuracy and completeness of this document. However, if you find an error or an omission, or you think that a topic needs further development, we want to hear from you.

You can provide feedback in two ways:

- Use our short online feedback form at <http://www.extremenetworks.com/documentation-feedback-pdf/>
- Email us at [internalinfodev@extremenetworks.com](mailto:internalinfodev@extremenetworks.com)

Provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

# Contacting Extreme Technical Support

As an Extreme customer, you can contact Extreme Technical Support using one of the following methods: 24x7 online or by telephone. OEM customers should contact their OEM/solution provider.

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

- [GTAC \(Global Technical Assistance Center\)](#) for immediate support
  - Phone: 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: [www.extremenetworks.com/support/contact](http://www.extremenetworks.com/support/contact).
  - Email: [support@extremenetworks.com](mailto:support@extremenetworks.com). To expedite your message, enter the product name or model number in the subject line.
- [GTAC Knowledge](#) - Get on-demand and tested resolutions from the GTAC Knowledgebase, or create a help case if you need more guidance.
- [The Hub](#) - A forum for Extreme customers to connect with one another, get questions answered, share ideas and feedback, and get problems solved. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.
- [Support Portal](#) - Manage cases, downloads, service contracts, product licensing, and training and certifications.

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

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





# About This Document

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## What's new in this document

On October 30, 2017, Extreme Networks, Inc. acquired the data center networking business from Brocade Communications Systems, Inc. This document has been updated to remove or replace references to Brocade Communications, Inc. with Extreme Networks, Inc., as appropriate.

The following table includes descriptions of new information added to this guide for the SLX OS 17s.1.01 software release.

**TABLE 1** Summary of enhancements in SLX OS release 17s.1.01

| Feature                                     | Description                                                                                                                                                               | Described in                                                |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| Network Packet Broker (NPB) license feature | The Advanced Features Self Authenticated Upgrade (SAU) license enables NPB feature functionality on the ExtremeSwitching SLX 9140 and ExtremeSwitching SLX 9240 switches. | <a href="#">Adding or removing a SAU license</a> on page 13 |

For complete information, refer to the *SLX-OS 17s.1.01 Release Notes*.

## Supported hardware and software

In those instances in which procedures or parts of procedures documented here apply to some devices but not to others, this guide identifies exactly which devices are supported and which are not.

Although many different software and hardware configurations are tested and supported by Extreme Networks, Inc. for this SLX-OS release, documenting all possible configurations and scenarios is beyond the scope of this document.

The following hardware platforms are supported by this release:

- ExtremeSwitching SLX 9140
- ExtremeSwitching SLX 9240

### NOTE

Some of the commands in this document use a slot/port designation. Because the SLX 9140 and the SLX 9240 do not contain line cards, the slot designation must always be "0" (for example, 0/1 for port 1).



# Software Licensing Overview

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## Software-based licensing overview

You can purchase Extreme licenses per product or per feature. Each switch must have its own licenses. You can purchase licenses separately from your switch vendor.

### How software-based licensing works

When a license is ordered separately (not pre-installed), a fulfillment email message, along with a *Voucher ID (VID)*, is issued to you by Extreme as proof of purchase. The *VID* and license ID (*LID*) of the Extreme device are used to generate a license key from the Extreme Portal. The license key is contained within a *license file*, which can be uploaded to the switch. Once a license is installed on the SLX-OS switch, you may be prompted to disable and reenable the chassis or specific ports to activate the license. The license key is stored in the flash file system.

### License types

The following license types are supported in SLX-OS:

- Permanent licenses - A permanent license (also referred to as a chassis-wide license) has no expiration date and is locked to a single switch identified by the switch license ID.
- Self Authenticated Upgrade (SAU) licenses - This license enables the advanced licensed feature set prior to purchasing a license. The SAU license does not require an activation process. You do not need to install a physical license on the SLX-OS platform to use the licensed feature set. You must accept the End-User License Agreement (EULA) through the CLI commands before the system can support the licensed capabilities. Once you accept the EULA, you can configure and begin using the feature on the device. The EULA requires a license to be purchased within 30 days of accepting the license EULA statement through the CLI. The fulfillment e-mail is issued through Extreme once you have paid for the SAU license. The CoE document certifies that you have paid for the license to use the feature on for a specific platform.

#### NOTE

The NPB feature functionality is part of the Advanced Features SAU license.

## Software license terminology

The following terms are used in this document

- License file - The file produced by the Extreme Portal when the license is generated. The file is uploaded to the device and controls access to a *licensed feature* or feature set.
- License ID (LID) - The identification number that uniquely identifies the device. The LID is used in conjunction with the VID to generate and download a software license from the Extreme Portal. The software license is tied to the LID of the device for which the license was ordered and generated.

- Licensed feature - Any hardware or software feature or set of features that require a valid software license in order to operate on the device.
- Voucher ID (VID) - This unique key, along with the *LID*, is used to generate a software license from the Extreme Portal. The Voucher ID is issued by Extreme when a license is purchased. The Voucher ID is delivered through e-mail which is sent to the customer shortly after the order has completed.

## Licensing rules

The following table lists the license requirements by platform.

**TABLE 2** License requirements by platform

| Platform | License type                  | Notes                                                                                                                                                                                                                                                |
|----------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SLX 9240 | Advanced Features SAU License | Advanced features are available with the SAU license, including the NPB feature functionality. By default, the base features are available on this platform.<br><br>The SLX 9140 and SLX 9240 supports only one orderable SKU for Advanced features. |
| SLX 9140 | Advanced Features SAU License | Advanced features are available with the SAU license, including the NPB feature functionality. By default, the base features are available on this platform.                                                                                         |

The following table provides descriptive details for the license type.

**TABLE 3** Extreme licenses for SLX-OS

| License                                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• ADVANCED_FEATURES</li> </ul> | <p>The SAU license enables the advanced licensed features prior to purchasing a license. On the SLX 9240 and SLX 9140 platforms, the Advanced Feature license set includes OVSDB integration, BGP EVPN, Guest VM, gRPC, 1588 BC, Timestamping, TPVM and NPB features.</p> <p><b>NOTE</b><br/>On the SLX 9240 and SLX 9140 platforms, the following features do not require the Advanced Features license: L2 protocols, L3 routing protocols, MCT, SNMP, NetConf, REST, Python Scripting, and the Insight Architecture Interface.</p> |

## Licensing considerations

This section lists the generic rules, restrictions, and considerations related to the software licensing:

- A license is tied to the unique LID of the blade or the switch for which the license was generated. Therefore, a license can be used on one switch only. It cannot be used on any other switch.
- More than one license for multiple features can be installed per switch.
- Only one permanent license at a time can be in effect for a licensed feature.
- Licenses are not interchangeable between units.
- Licenses are independent of configuration files and are therefore not affected when you make changes to a configuration file or restore the default configuration.

# Software Licensing Tasks

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## Adding or removing a SAU license

You can add a SAU license using the **license eula accept** command. The EULA text can be displayed using the **show license eula** command.

The following example displays the EULA text.

```
device# show license eula
Use of the features enabled via the "license eula accept" CLI requires a license to
be purchased within 30 days. By accepting the EULA you indicate that you
have read and accept the Extreme Networks End User License Agreement found at the following URL.
[https://learn.extremenetworks.com/rs/641-VMV-602/images/Extreme-Networks-End-User-License-Agreement.pdf].
```

When the **license eula accept** command is entered, you are agreeing to purchase a license within a specific timeframe. You can begin using the features immediately.

The following example shows how to accept the EULA for the SAU license (Advanced Features).

```
device# license eula accept ADVANCED_FEATURES
2016/12/05-13:35:00, [SEC-1120], 64,, INFO, SLX9240, License EULA entry added for ADVANCED_FEATURES feature
(capacity 0).

EULA accepted for feature [ADVANCED_FEATURES]

Use of the ADVANCED_FEATURES feature requires a license to be purchased within 30 days.
By accepting the EULA you indicate that you have read and accept the Extreme Networks End User License
Agreement found at the following URL
[https://learn.extremenetworks.com/rs/641-VMV-602/images/Extreme-Networks-End-User-License-Agreement.pdf].
You can decline the EULA acceptance now by entering "license eula decline ADVANCED_FEATURES"
at the CLI prompt; declining the EULA will prevent use of the licensed feature.
```

The **show license** command will also display the SAU license when the EULA is accepted.

```
device# show license
Chassis:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Advanced Features license
Feature name:ADVANCED_FEATURES
License is Trust Based
EULA acceptance date: Mon Dec 5 13:35:00 2016
```

If the SAU license is not accepted using the **license eula accept** command, the Advanced features cannot be used. In the following example for gRPC configuration, the **license eula accept** command was not accepted prior to the configuration. You must accept the SAU license before you can begin using the Advanced Features.

```
device(config)# telemetry server use-vrf mgmt-vrf
device(config-server-mgmt-vrf)# transport tcp
device(config-server-mgmt-vrf)# port 50051
device(config-server-mgmt-vrf)# activate
%ERROR: ADVANCED_FEATURES license is required for this feature.
```

You can remove a SAU license using the **license eula decline** command. The following example displays removing a SAU license (Advanced Features).

```
device# license eula decline ADVANCED_FEATURES
EULA removed for feature [ADVANCED_FEATURES]
```

When the **license eula decline** command is entered, you are no longer able to use the licensed features. Before you can "decline" the licensed features, all configuration settings related to the feature must be restored to default settings.

The following CLI message is displayed when you attempt to configure a feature that requires a SAU license, and you have not accepted the EULA and there is no SAU license installed for that feature.

```
No ADVANCED_FEATURES EULA accepted for this feature
```

## Displaying the device license ID

The switch license ID identifies the switch for which the license is valid. You will need the switch license ID when you activate a license key.

To display the switch license ID, enter the **show license id** command in privileged EXEC mode.

```
device# show license id
Location  License ID
=====
Chassis  10:00:C4:F5:7C:40:01:46
```

## Troubleshooting licensing issues

Some features require licenses in order to work properly. Non-SAU Licenses are created using a switch license identifier (LID), so you cannot apply one license to different switches. Before calling your switch support provider, verify that you have the correct licenses installed by using the **show license** command.