

# Extreme SLX-OS Software Licensing Guide, 18s.1.01

Supporting the ExtremeSwitching SLX 9140 and SLX 9240 Switches

## Legal Notice

Extreme Networks, Inc. reserves the right to make changes in specifications and other information contained in this document and its website without prior notice. The reader should in all cases consult representatives of Extreme Networks to determine whether any such changes have been made.

The hardware, firmware, software or any specifications described or referred to in this document are subject to change without notice.

## Trademarks

Extreme Networks and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries.

All other names (including any product names) mentioned in this document are the property of their respective owners and may be trademarks or registered trademarks of their respective companies/owners.

For additional information on Extreme Networks trademarks, please see: [www.extremenetworks.com/company/legal/trademarks](http://www.extremenetworks.com/company/legal/trademarks)

## Software Licensing

Some software files have been licensed under certain open source or third-party licenses. End-user license agreements and open source declarations can be found at: [www.extremenetworks.com/support/policies/software-licensing](http://www.extremenetworks.com/support/policies/software-licensing)

## Support

For product support, phone the Global Technical Assistance Center (GTAC) at 1-800-998-2408 (toll-free in U.S. and Canada) or +1-408-579-2826. For the support phone number in other countries, visit: <http://www.extremenetworks.com/support/contact/>

For product documentation online, visit: <https://www.extremenetworks.com/documentation/>

# Contents

---

<b>Preface</b> .....	<b>5</b>
Conventions.....	5
Notes, cautions, and warnings.....	5
Text formatting conventions.....	5
Command syntax conventions.....	6
Documentation and Training.....	6
Open Source Declarations.....	6
Training.....	6
Getting Help.....	7
Subscribing to Service Notifications.....	7
Providing Feedback to Us.....	7
<b>About This Document</b> .....	<b>9</b>
Supported hardware and software.....	9
What's new in this document.....	9
<b>Software Licensing Overview</b> .....	<b>11</b>
Software-based licensing overview.....	11
How software-based licensing works.....	11
License types.....	11
Software license terminology.....	11
Licensing rules.....	12
Licensing considerations.....	12
<b>Software Licensing Tasks</b> .....	<b>15</b>
Adding or removing a SAU license.....	15
Displaying the device license ID.....	16
Troubleshooting licensing issues.....	16



# Preface

---

- Conventions..... 5
- Documentation and Training..... 6
- Getting Help..... 7
- Providing Feedback to Us..... 7

This section discusses the conventions used in this guide, ways to provide feedback, additional help, and other Extreme Networks® publications.

## Conventions

This section discusses the conventions used in this guide.

## 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. Identifies keywords and operands. Identifies the names of GUI elements.
<i>italic text</i>	Identifies text to enter in the GUI. Identifies emphasis. Identifies variables. Identifies document titles.

Format	Description
Courier font	Identifies CLI output.
	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. 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.

## Documentation and Training

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

Current Product Documentation	<a href="http://www.extremenetworks.com/documentation/">www.extremenetworks.com/documentation/</a>
Archived Documentation (for earlier versions and legacy products)	<a href="http://www.extremenetworks.com/support/documentation-archives/">www.extremenetworks.com/support/documentation-archives/</a>
Release Notes	<a href="http://www.extremenetworks.com/support/release-notes">www.extremenetworks.com/support/release-notes</a>
Hardware/Software Compatibility Matrices	<a href="https://www.extremenetworks.com/support/compatibility-matrices/">https://www.extremenetworks.com/support/compatibility-matrices/</a>
White papers, data sheets, case studies, and other product resources	<a href="https://www.extremenetworks.com/resources/">https://www.extremenetworks.com/resources/</a>

## Open Source Declarations

Some software files have been licensed under certain open source licenses. More information is available at: [www.extremenetworks.com/support/policies/open-source-declaration/](http://www.extremenetworks.com/support/policies/open-source-declaration/).

## Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For more information, visit [www.extremenetworks.com/education/](http://www.extremenetworks.com/education/).

## Getting Help

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

- **GTAC (Global Technical Assistance Center) for Immediate Support**
  - **Phone:** 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: [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.
- **Extreme Portal** — Search the GTAC knowledge base, manage support cases and service contracts, download software, and obtain product licensing, training, and certifications.
- **The Hub** — A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

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

## Subscribing to Service Notifications

You can subscribe to email notifications for product and software release announcements, Vulnerability Notices, and Service Notifications.

1. Go to [www.extremenetworks.com/support/service-notification-form](http://www.extremenetworks.com/support/service-notification-form).
2. Complete the form with your information (all fields are required).
3. Select the products for which you would like to receive notifications.

### NOTE

You can modify your product selections or unsubscribe at any time.

4. Click **Submit**.

## Providing Feedback to Us

Quality is our first concern at Extreme Networks, and we have made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you! We welcome all feedback but especially want to know about:

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

- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team, you can do so in two ways:

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

Please 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.



# About This Document

---

- Supported hardware and software.....9
- What's new in this document.....9

## 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).

## What's new in this document

There are no new features for the SLX-OS 18s.1.01 software release.

For complete information for this release, refer to the *SLX-OS 18s.1.01 Release Notes*.



# Software Licensing Overview

---

- [Software-based licensing overview](#).....11
- [Software license terminology](#).....11

## 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), an *entitlement certificate* or e-mail message, along with a *transaction key*, are issued to you by Extreme as proof of purchase. The *transaction key* and license ID (*LID*) of the Extreme device are used to generate a license key from the Extreme software licensing 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.
- Advanced Features SAU license - This license enables the advanced licensed feature set prior to purchasing a license. The SAU license does not require an activation process or transaction key. 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. A Certificate of Entitlement (CoE) is issued through Brocade once you have paid for 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:

- Entitlement certificate - The proof-of-purchase certificate issued by Extreme when a license is purchased. The certificate contains a unique transaction key that is used in conjunction with the *license ID (LID)* of the Extreme device to generate and download a software license from the Extreme software portal.
- License file - The file produced by the Extreme software portal when the license is generated. The file is uploaded to the Extreme device and controls access to a *licensed feature* or feature set.

- License ID (LID) - The identification number that uniquely identifies the Extreme device. The LID is used in conjunction with a transaction key to generate and download a software license from the Extreme software portal. The software license is tied to the LID of the Extreme 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.
- Transaction key - This unique key, along with the *LID*, is used to generate a software license from the Extreme software portal. The transaction key is issued by Extreme when a license is purchased. The transaction key is delivered according to the method specified when the order is placed:
  - **Certificate** - The transaction key is recorded on an *entitlement certificate*, which is mailed to the customer.
  - **Electronic** - The transaction key is contained in an e-mail, which is instantly sent to the customer after the order is placed. The customer receives the e-mail within a few minutes after the order is placed, though the timing will vary depending on the network, Internet connection, and so on.
  - If a delivery method was not specified at the time of the order, the key will be delivered via paper-pack.

## Licensing rules

The following table lists the license requirements by platform.

**TABLE 1** 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.  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 2** Extreme licenses for SLX-OS

License	Description
<ul style="list-style-type: none"> <li>• <code>ADVANCED_FEATURES</code></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 OVSDDB integration, BGP EVPN, Guest VM, gRPC, 1588 BC, Timestamping, TPVM and NPB features.</p> <p><b>NOTE</b> 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

---

- Adding or removing a SAU license..... 15
- Displaying the device license ID..... 16
- Troubleshooting licensing issues..... 16

## 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 Brocade End User License Agreement found at the following URL.
[www.brocade.com/en/legal/software-terms-eulas/brocade-network-operating-system.html].
```

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 Brocade End User License Agreement
found at the following URL
[www.brocade.com/en/legal/software-terms-eulas/brocade-network-operating-system.html].
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:
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
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.