Switch Engine™ v34.1.1 Licensing Guide

Comprehensive Licensing Features and Installation

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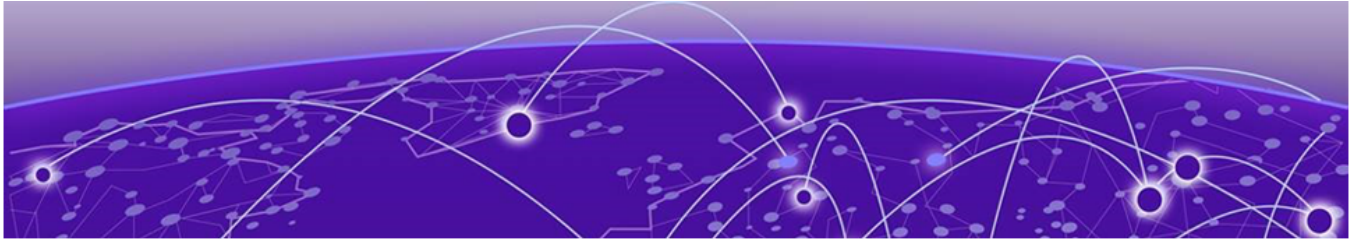


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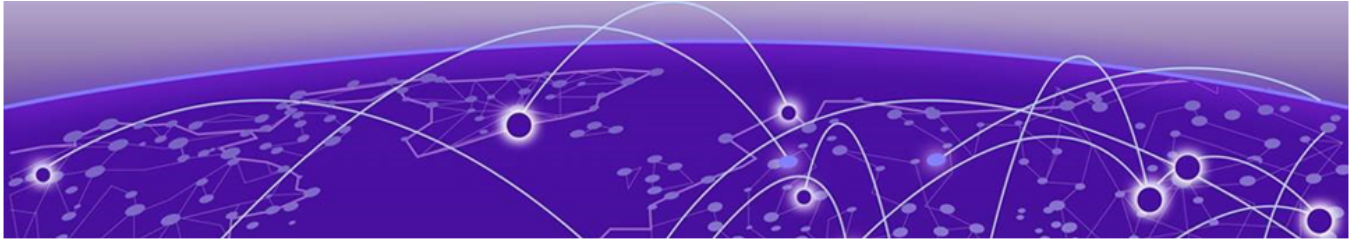
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Abstract

Switch Engine™ v34.1.1 Licensing Guide details licensing models, feature availability, and management procedures for universal hardware switches. Three licensing models are documented: Perpetual licenses provide permanent feature access stored in switch Flash memory with local validation and no cloud dependency; Subscription licenses deliver cloud-managed access through Extreme Platform ONE or ExtremeCloud IQ with daily validation and 30-day grace periods for offline operation; Trial licenses provide 30-day built-in evaluation access, extendable up to 120 days total. License types include Base (standard L2/L3 features, included), Premier (advanced routing, multicast, PTPv2, and application hosting on select models), and MACsec (IEEE 802.1AE link encryption, perpetual-only). Installation procedures cover license acquisition through Extreme Networks Support portal or automated bulk activation, manual switch installation, revocation, transfer (perpetual only), and status display using CLI. Complete support matrices provided for all licensing types across universal switch series, with documented platform and port restrictions for MACsec. Subscription licensing requires cloud connectivity; perpetual and trial operate offline. Key updates in this release include clarified Flash memory storage and local validation mechanisms for perpetual licenses, added Precision Time Protocol (PTPv2) support on select 5300 platforms (introduced in version 33.6.1), expanded MACsec platform availability with explicit exclusion notes, and updated port exception specifications. Perpetual license validation occurs locally at boot time without external authentication; Subscription license validation occurs daily using cloud platform with automatic 30-day grace period on connectivity loss. License files bind to switch serial numbers and cannot transfer between devices.

Preface

Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as Extreme Networks switches, the product is referred to as *the switch*.

Table 1: Notes and warnings

Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2: Text

Convention	Description
`screen displays`	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words *enter* and *type*	When you see the word *enter* in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says *type*.
Key names	Key names are written in boldface, for example **Ctrl** or **Esc**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **Ctrl**+**Alt**+**Del**
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
italic text	Italic text indicates variable content.
`[ ]`	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, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*[*member*...].
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

Current Product Documentation
Release Notes

Hardware and Software Compatibility for Extreme Networks products
Extreme Optics Compatibility
Other Resources such as articles, white papers, and case studies

Open Source Declarations

Some software files have been licensed under certain open source licenses. Information is available on the Open Source Declaration page.

Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit the Extreme Networks Training page.

Help and Support

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

Extreme Portal

Search the GTAC (Global Technical Assistance Center) 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.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2800. For the support phone number in your country, visit www.extremenetworks.com/support/contact.

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

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions 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

Subscribe to Product Announcements

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

1. Go to The Hub.
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

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

Extreme Support Portal

The Extreme Networks Extreme Support Portal provides access to:

- License management
- Firmware downloads
- Case management
- GTAC Knowledge base
- And more

To access the portal, you must first create an account. The Extreme Support Portal provides separate registration forms for End Customers and Partners.

Before you begin, gather the following: A valid corporate email address — required to receive the appropriate level of portal access. Your company details: company name, address, phone number (include country code if outside the US), job title, and job role. At least one supporting identifier: Sold-to number, serial number, contract number, or Purchase Order (PO) number.

Create an End Customer Extreme Support Portal Account

The Extreme Support Portal provides separate registration forms for End Customers and Partners. Use this task to create an End Customer account.

Note
If you are adding a new user to an existing account, the new user must complete and be vetted through the same registration process.

The portal registration page is at https://extreme-networks.my.site.com/.

1. Go to the Extreme Support Portal and select **Login or Signup** on the login page.
2. On the login page, select **Create a new Extreme Customer Portal Account** .
3. Complete all required fields (marked *). Use your corporate email address to ensure the appropriate access level.

Important
Do not register with a personal email address.

4. Read the Support Portal Terms of Use and select the acknowledgment check box to accept.

   Important
   You must accept the Terms of Use before you can submit the form. You can adjust or withdraw consent at any time through the Email Preference Center.

5. Select **Register**.

   A confirmation message appears on the page and a password setup email is sent to your corporate email address.
6. Open the password setup email and follow the instructions to create your portal password.

   Tip
   If the email does not appear in your inbox within a few minutes, check your spam or junk mail folder.

7. To log in to the support portal go to: https://extremesaas.my.site.com/.

Create a Partner Extreme Support Portal Account

The Extreme Support Portal provides separate registration forms for End Customers and Partners. Use this task to create a Partner account.

The portal registration page is at https://extreme-networks.my.site.com/.

1. Go to the Extreme Support Portal and select **Login or Signup** on the login page.
2. On the login page, select **Create a new Extreme Partner Portal Account**.
3. Complete all required fields (marked *). Use your corporate email address to ensure the appropriate access level.

   Important
   Do not register with a personal email address.

4. Read the following terms and select the required check boxes:
   - Support Portal Terms of Use
   - Extreme Networks Standard Reseller Terms and Conditions
   - Trade Compliance Terms and Conditions

   You can adjust or withdraw consent at any time through the Email Preference Center.
5. Select **Register**.

   A confirmation message appears on the page and a password setup email is sent to your corporate email address.
6. Open the password setup email and follow the instructions to create your portal password.

   Tip
   If the email does not appear in your inbox within a few minutes, check your spam or junk mail folder.

7. To log in to the support portal go to: https://extremesaas.my.site.com/.

Send Feedback

The User Enablement team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, email us at Product-Documentation@extremenetworks.com.

Provide as much detail as possible including the publication title, topic heading, and page number (if applicable), along with your comments and suggestions for improvement.

Licensing Overview

About Universal Switch Licensing

Universal switches support flexible licensing models that let you choose the approach that best fits your network needs and budget. Whether you want permanent feature access, cloud-managed subscriptions, or evaluation capabilities, Extreme Networks offers licensing options to match your deployment strategy.

License Levels and Feature Tiers

Switch Engine software supports multiple license levels for universal hardware switches:

- **Base License**—Included with all universal switches. Provides foundational networking capabilities including L2 switching, L3 routing, VLANs, dynamic routing protocols, and core management features.
- **Premier License**—Advanced features beyond Base, including enhanced BGP/OSPF support, multicast routing, precision time protocol (PTPv2), and application hosting on select models. Purchased as an upgrade.
- **MACsec License**—IEEE 802.1AE link-level encryption for security-hardened network deployments. Purchased separately as a feature license.

The following diagram illustrates how Premier builds on the Base License:

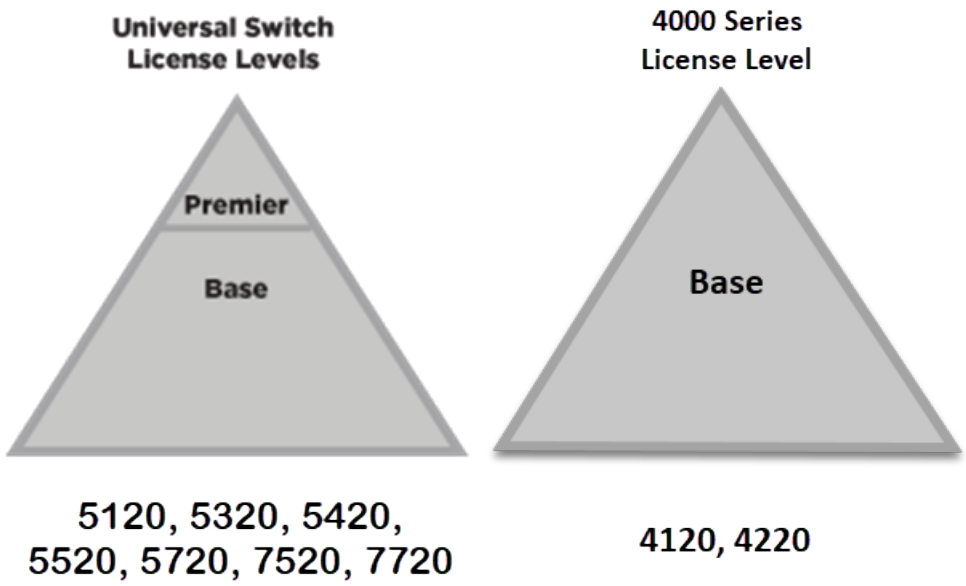


Figure 1: License Levels for Switches Supported on Switch Engine

License Types and Delivery Models

Universal switches support three types of licenses that deliver features in different ways:

Perpetual Licenses

Permanent feature access bound to your switch serial number. Once installed, perpetual licenses never expire and remain valid for the life of the switch. Purchased once, no renewal costs.

Subscription Licenses

Cloud-managed access to Premier features through Extreme Platform ONE or ExtremeCloud IQ. Subscriptions are time-limited and require active cloud connectivity for daily validation. Provides flexibility to add or remove licenses as your network needs change.

Trial Licenses

Time-limited evaluation licenses that let you try Premier features for up to 30 days (extendable three times up to 120 days total) without purchasing a permanent license. Useful for testing new capabilities before committing to a full license. Premier and MACsec licenses are available as Perpetual licenses.

Extreme Platform ONE Licensing

With Extreme Platform ONE (Extreme Platform ONE), operating system-level features are combined into a single management license. Extreme Platform ONE includes three license

levels: Standard, Advanced, and Premium. A Standard license is required to manage devices from ExtremeCloud IQ.

The following diagram illustrates the Extreme Platform ONE license tiers:

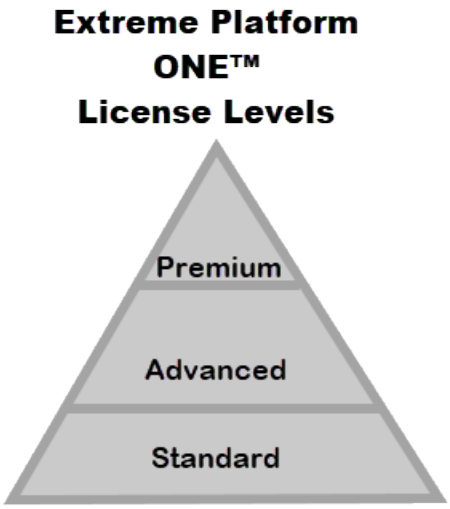


Figure 2: Extreme Platform ONE License Levels

Each license level is purchased based on four platform tiers, depending on device type:

- Tier A — 4120, 4220, 5120, 5320
- Tier B — 5420
- Tier C — 5520
- Tier D — 5720, 7520, 7720

Quick License Comparison

The following table provides a quick comparison of the licensing options available:

Table 4: License Type Comparison

License Type	Duration	How It Works	Best For	Cost Model
Perpetual	Never expires	Activation file installed on switch; bound to serial number	Long-term deployments; on-premises networks	One-time purchase
Subscription	Time-limited; 30-day grace period offline	Cloud-managed via Platform ONE or ExtremeCloud IQ; daily validation	Flexible licensing; pay-as-you-go; cloud-managed networks	Recurring subscription (monthly/annual)

Table 4: License Type Comparison (continued)

License Type	Duration	How It Works	Best For	Cost Model
Trial	30 days (extendable to 120 days total)	Built-in; activated with `enable license trial`	Evaluation and proof-of-concept testing	Free
MACsec	Never expires	Perpetual feature license; installed like other licenses	Link-level encryption for security-hardened deployments	One-time purchase (perpetual-only)

Choosing the Right License

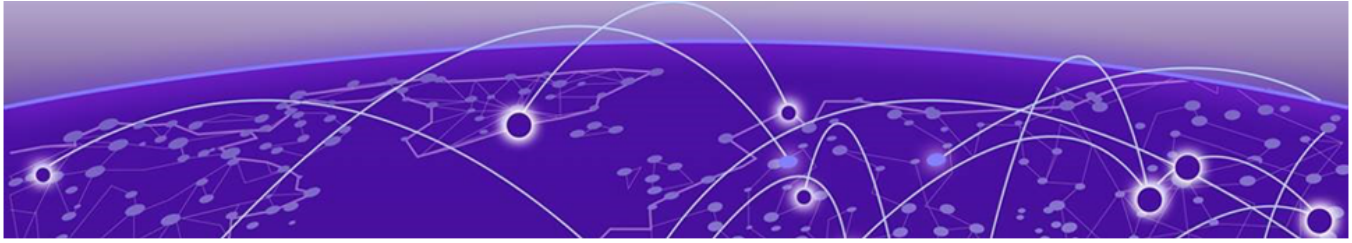
The licensing model you choose depends on your deployment strategy, network architecture, and operational preferences:

- **Choose Perpetual Licenses if:** You want permanent feature access without recurring costs, operate on-premises networks, or prefer not to depend on cloud connectivity for license validation.
- **Choose Subscription Licenses if:** You prefer lower upfront costs, want flexibility to scale licenses up or down, use cloud management platforms, or want centralized license management.
- **Choose Trial Licenses if:** You want to evaluate Premier features before purchasing, conduct proof-of-concept testing, or need short-term access to advanced capabilities.
- **Choose MACsec Licenses if:** You require link-level encryption for regulatory compliance, security-hardened deployments, or sensitive data networks. Note: MACsec is perpetual-only; trial and subscription licenses do not support MACsec.

What's Next

This guide covers all licensing details for universal switches:

- Licensing Types for Universal Switches on page 16—Detailed information on each license type, platform support, and feature availability
- Installing and Uninstalling Licenses on Universal Switches on page 24—How to obtain, activate, and manage licenses
- License Feature Reference on page 31—Complete feature matrix by license level



Licensing Types for Universal Switches

Perpetual Licenses on page 17
Subscription Licenses on page 20
Trial Licenses on page 22

Licensing Models

Switch Engine universal switches support three distinct licensing models:

- **Perpetual Licenses**—Permanent, non-expiring feature access bound to the switch serial number. Stored in switch Flash memory.
- **Subscription Licenses**—Cloud-managed, time-limited feature access through Extreme Platform ONE Networking or ExtremeCloud IQ. Validated daily.
- **Trial Licenses**—Built-in evaluation licenses providing 30-day access to Premier features, extendable to 120 days total.

Licensing Model Comparison

Table 5: Licensing Model Characteristics

Aspect	Perpetual	Subscription	Trial	MACsec
Expiration	Never	Time-limited (annually or monthly)	30 days (up to 120 total)	Never
Storage	Switch Flash memory	Cloud-managed	Built-in to switch	Switch Flash memory
Cloud Connectivity	Not required	Required for daily validation; 30-day grace period	Not required	Not required
Cost Model	One-time purchase	Recurring (monthly/annual)	Free	One-time purchase

License Selection Guide

Table 6: Recommended License Type by Scenario

Scenario	Recommended License Type
Long-term on-premises deployment, no cloud requirement	Perpetual License
Multi-site network requiring dynamic license allocation	Subscription License
Feature evaluation before purchase	Trial License
Link-level encryption required	MACsec License (perpetual-only)

Perpetual Licenses

Perpetual Licenses

Perpetual licenses provide permanent access to Switch Engine software features. Once installed on a switch, perpetual licenses never expire and remain valid for the life of the switch. Perpetual licenses are stored in switch Flash memory and are bound to the switch serial number.

Types of Perpetual Licenses

Switch Engine offers three types of perpetual licenses:

- **Base License**—Included with all universal switches. Provides L2 switching, L3 routing, VLANs, and core management features. See Base License Features on page 31 for detailed feature matrix.
- **Premier License**—Available on select platforms. Adds advanced routing, multicast support, Precision Time Protocol (PTPv2), and application hosting. See Premier License Features on page 34 for platform support and SKU information.
- **MACsec License**—Separate perpetual feature license for IEEE 802.1AE link-level encryption. See MACsec (Media Access Control Security) for supported platforms and SKU information.

Platform Support

Perpetual licenses are supported on all Switch Engine universal platforms:

Table 7: Perpetual License Platform Support

Platform Series	Models	Minimum Version
4000 Series	4120, 4220	33.1.1
5100 Series	5120	33.1.1

Table 7: Perpetual License Platform Support (continued)

Platform Series	Models	Minimum Version
5300 Series	5320	33.1.1
5400 Series	5420	33.1.1
5500 Series	5520	33.1.1
5700 Series	5720	33.1.1
7500 Series	7520 only	33.1.1
7700 Series	7720	33.1.1

Installing Perpetual Licenses

Perpetual licenses are installed on the switch using a license activation file. See Installing and Uninstalling Licenses on Universal Switches on page 24 for installation procedures.

Perpetual License Storage and Characteristics

Perpetual Software Licenses are stored in Flash memory on the switch. For detailed information on storage mechanism, validation, and recovery procedures, see Perpetual License Characteristics on page 18.

Perpetual License Characteristics

License Storage Mechanism

Perpetual Software Licenses are stored in Flash memory on the switch. This on-board storage ensures that perpetual licenses persist through power cycles and software updates without requiring external management or cloud connectivity.

Key storage differences:

- **Perpetual Licenses:** Stored locally in switch Flash memory; not managed in the cloud; remain valid indefinitely
- **Subscription Licenses:** Cloud-managed through Extreme Platform ONE or ExtremeCloud IQ; require periodic validation and active cloud connectivity for daily check-in

Serial Number Binding

Perpetual licenses are bound to the unique hardware serial number of the switch. This binding ensures that:

- Each license is tied to a specific switch and cannot be used on another device
- The binding stays with the switch for its entire operational lifetime
- License security is maintained through serial number verification at boot time
- The license key file should be retained for recovery purposes if Flash memory is corrupted

License Validation

Perpetual licenses use local validation, meaning the switch verifies the license file contents against the stored Flash memory data during boot-up. No external cloud service or internet connectivity is required for validation.

Validation process:

1. Switch boots and reads the license file from Flash memory
2. License signature and serial number binding are verified locally on the switch
3. If validation succeeds, licensed features are enabled
4. If validation fails, the switch operates with only Base License features

Note
Perpetual license validation occurs locally and does not depend on cloud connectivity, making it suitable for air-gapped or offline deployments.

Expiration Behavior

Perpetual licenses do not expire. Once installed and validated on a switch, the license remains active throughout the switch's operational lifetime.

Benefits of non-expiring licenses:

- No renewal reminders or renewal windows to manage
- Predictable long-term software costs
- No risk of accidental license expiry or service disruption
- Simplifies compliance and audit tracking for permanent deployments

License Persistence

Perpetual licenses persist across:

- Power cycles—Licenses remain in Flash memory through power on/off events
- Software upgrades—Licenses are retained when upgrading to new Switch Engine versions
- System resets—Licenses survive configuration resets and factory resets (unless Flash memory is explicitly cleared)
- Hardware replacement—If a switch is replaced, the old switch's license cannot be transferred to the new switch due to serial number binding

License Recovery and Backup

If a license file becomes corrupted in Flash memory, the license key file can be used to recover it. It is recommended to retain the original license key file in a secure location.

Recovery involves:

- Obtaining the original license key file from purchase records or Extreme Networks
- Reinstalling the license using the standard license installation procedure
- Verifying that the license is recognized by using the show licenses command

MACsec (Media Access Control Security) License

MACsec License

The MACsec license provides IEEE 802.1AE link-level encryption for network deployments requiring encryption at the data link layer. It enables encryption and authentication of frames between switches and network devices, protecting against eavesdropping, modification, and replay attacks. MACsec is a perpetual-only license and is not available as a subscription or trial license.

Note
MACsec is not supported on 5320-16P-2MXT-2X and 5320-24T-4X-XT models.

Platform Support and License SKUs

MACsec is supported on the following Switch Engine platforms. One MACsec license SKU covers all supported 5000 Series switches, and another covers the 7000 Series.

Table 8: MACsec-Supported Platforms and License SKUs

Series	Models	SKU
5100 Series	5120	5000-MACSEC-LIC-P
5300 Series	5320 (except 5320-16P-2MXT-2X and 5320-24T-4X-XT)	
5400 Series	5420	
5500 Series	5520	
5700 Series	5720	
7500 Series	7520-48YE-8CE	7000-MACSEC-LIC-P

Note
MACsec is perpetual-only. Trial and subscription licenses do not support MACsec.

Port Support Exceptions

MACsec is supported on all ports with the following exceptions: 5520-VIM-4X, 5520-24X 10G ports, and Universal Ethernet ports.

Subscription Licenses

Subscription Licenses

Subscription licenses provide time-limited, cloud-managed access to Switch Engine features. Unlike perpetual licenses, subscription licenses are managed centrally through Extreme Platform ONE or ExtremeCloud IQ and require active cloud connectivity for daily validation.

Subscription License Characteristics

Table 9: Subscription License Characteristics

Characteristic	Details
Management	Cloud-managed through Extreme Platform ONE or ExtremeCloud IQ
Storage	Cloud-stored; switches pull entitlements daily
Duration	Time-limited (monthly or annual renewal)
Cloud Connectivity	Required for daily validation; 30-day grace period if offline
Cost Model	Recurring subscription (monthly or annual)
Scalability	Flexible; add/remove licenses through management portal

Platform Support

Subscription licenses are supported on the following platforms:

Table 10: Subscription License Platform Support

Platform Series	Supported Models
5400 Series	5420
5500 Series	5520
5700 Series	5720
7500 Series	7520-48YE-8CE
7700 Series	7720

License Validation and Grace Period

Subscription licenses require daily cloud validation:

- Switches perform daily check-in with the cloud management platform
- License entitlements are validated and refreshed for 24 hours
- If validation fails, a 30-day grace period allows offline operation
- After 30 days offline, subscription features are disabled until cloud connectivity is restored

License Management

Subscription licenses are managed through the cloud management platform, allowing you to:

- Assign licenses to specific switches
- Reallocate licenses between switches
- Renew subscriptions before expiry
- Monitor license status and expiry dates from a centralized dashboard

Trial Licenses

Trial Licenses

Trial licenses are built-in evaluation licenses included at factory default on all Switch Engine universal switches. Trial licenses provide free access to Premier features for evaluation purposes.

Trial License Characteristics

Table 11: Trial License Characteristics

Characteristic	Details
Availability	Built-in at factory default; no purchase required
Duration	30 days initial period; extendable to 120 days total (one extension only)
Cost	Free
Storage	Built-in to switch firmware
Cloud Connectivity	Not required
Scope	Provides access to Premier features only; Base License features always active
MACsec Support	No; MACsec requires a separate perpetual license

Trial License Activation

Trial licenses are activated through CLI commands:

```
enable license trial
show licenses
```

The trial period begins when the command is executed. A 30-day countdown timer starts immediately.

Extending Trial Licenses

Trial licenses can be extended once via CLI command, adding 90 additional days (120 days total):

```
enable license trial extend
```



Note
Extension can only be performed once. After 120 days total, the trial license expires permanently and cannot be reactivated.

Trial License Expiry

When a trial license expires:

- Premier License features are automatically disabled
- The switch continues to operate with Base License features only
- Log messages indicate that Premier features have expired
- To restore Premier access, purchase and install a perpetual or subscription license

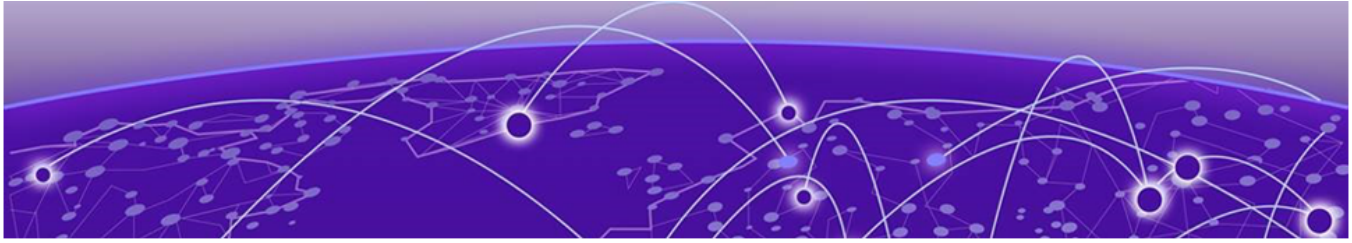
Trial License Log Messages

The switch generates log messages at key trial license events:

- On activation: Trial license enabled; valid for 30 days
- On extension: Trial license extended; valid for 90 additional days (120 days total)
- 14 days before expiry: Warning—Trial license expires in 14 days
- On expiry: Trial license expired; Premier features disabled

Platform Availability

Trial licenses are available on all Switch Engine universal platforms.



Installing and Manging Licenses

Installing and Uninstalling Licenses on Universal Switches on page 24
Displaying the Installed License Levels and Feature Licenses on page 26
Managing Licenses on page 26

Installing and Uninstalling Licenses on Universal Switches

This section explains how to obtain and install/uninstall licenses on universal hardware switches.

Obtaining and Installing Licenses

For universal hardware switches, you can activate a license on the switch using either of the following methods:

1. Manual activation by obtaining the license activation file from the Support Portal.
2. Automated activation using ExtremeCloud IQ. For information about using ExtremeCloud IQ for bulk automated license activation, go to https://www.extremenetworks.com/support/documentation/extremecloud-iq/.

For manual license generation and installation:

1. Follow manual activation instructions for license generation available on the Extreme Portal: **Products** > **Products Home** > **ExtremeSwitching** > **Universal** > **EXOS (for your switch)** > **Activation Instructions**.
2. Load the license file onto the switch using either of the following commands:

   ```
   download [url url {vr vrname} | image [active | inactive] [[hostname | ipaddress] filename {{vr} vrname} {block-size block_size}] {partition} {install {reboot}}
   ```

   ```
   tftp get [ ip-address | host-name] { vr vr_name } { block-size block_size } remote-file local-file} {force-overwrite}
   ```

   To copy from a USB: `cp old_name new_name` specifying `/usr/local/ext`. For example: `cp /usr/local/ext/old_name /usr/local/cfg/new_name`.

   You can place the license file anywhere within the user-visible file system (for example: `/usr/local/*`).
3. To install the license, use the following command:

`install license` **`file`** *`filename`* {**`slot`** *`slot`*}

This command installs all of the license features contained in the selected license file to the specified slot (node).

Uninstalling Licenses Temporarily

You can temporarily uninstall a license from a switch. This enables you to retain the license entitlement on the switch, and thus, the original license can be used to reinstall the license. You can use this option to temporarily disable a license.

To uninstall a license temporarily from a universal hardware switch, use the following command:

`uninstall license` **`file`** *`filename`* [{**`revoke`** *`revocation_file`*} | **`withhold`**] {**`slot`** *`slot`*} using the withhold option.

To temporarily uninstall a specific license feature, such as MAC Security (MACsec), from a universal hardware switch, use the following command:

`uninstall license` **`product`** *`product_name`* [**`revoke`** *`revocation_file`* | **`withhold`**] {**`slot`** *`slot`*} using the withhold option.

Transferring Licenses

You can permanently remove a license, which enables you to transfer the license to another switch. This should only be done when preparing to return a defective switch for a replacement switch (RMA).

The `uninstall license file` *`filename`* command accepts *`filename`* as a `.lic` file that contains one or more licenses to be uninstalled. This is the license file that was used to install license.

The `uninstall license product` *`product_name`* command accepts *`product_name`* as the name of the license product to be uninstalled. This is the product name as it appears with the **`show licenses`** command.

- To uninstall a license permanently from a universal hardware switch, use the following command:

  `uninstall license` **`product`** *`product_name`* [**`revoke`** *`revocation_file`* | **`withhold`**] {**`slot`** *`slot`*} using the revoke option.
- To permanently uninstall a specific license product, such as PRD-5000-MACSEC, from a universal hardware switch, use the following command:

  `uninstall license` **`product`** *`product_name`* [**`revoke`** *`revocation_file`* | **`withhold`**] {**`slot`** *`slot`*} using the revoke option.

The revoke option invalidates the feature license and generates a revocation certificate, which is the first step to release the license entitlement back to the license entitlement manager

(LEM). If the specified file name (for *revocation_file*) does not have an .rvk extension, it is automatically appended.

To transfer a license from a defective unit to a working unit:

1. Go to the Extreme Portal.
2. Select **Asset** > **Licenses Home**.
3. Select **License Transfer**.
4. Enter the serial numbers of the defective unit and the replacement unit, and the RMA/case number.

Displaying the Installed License Levels and Feature Licenses

You can display the switch license level, Extreme Platform ONE license, and feature licenses installed on your switch by using the `show licenses {[slot slot |all]} {detail}` command.

Managing Licenses

Overview

After installing a license on your switch, you can display the current license status, monitor Subscription license validity, and check for expiry warnings. This section provides tools and information to manage your switch licenses effectively.

The following tasks are covered in this topic:

- Displaying current license status and validation state
- Understanding Subscription license expiry log messages
- Monitoring license renewal dates and grace periods
- Troubleshooting license connectivity issues

Related Topics

For more information about installing and managing licenses, see:

- Licensing Types for Universal Switches – Understand Base and Premier license levels
- Installing and Uninstalling Licenses on Universal Switches on page 24 – Install and uninstall licenses
- Factory Default (Evaluation) License for Universal Hardware Switches – Evaluate Premier features with trial licenses

Displaying License Status

Subscription License Only (Successfully Validated)

When a Subscription license is active and the switch is successfully connected to the cloud management system:

```
4120-48MW-4Y-SwitchEngine.3 # show licenses
 Enabled License Level:
         Standard
 Enabled Feature Packs:
         None

4120-48MW-4Y-SwitchEngine.4 # show licenses detail
License Product     Feature(s)  Installed   Expiration
------------------  ----------  ----------  ------------------------
STANDARD            Standard    Yes         N/A
```

Interpretation:

- "Standard" license level indicates Subscription is active
- "N/A" expiration date means license is current and valid
- No "License check failed" message = successful cloud validation

Subscription License Only (Disconnected 3+ Days)

When the switch has been disconnected from the cloud management system for more than 3 days:

```
4120-48MW-4Y-SwitchEngine.10 # show licenses
 Enabled License Level:
         Standard
         License check failed, license assignment will expire in 6 days
 Enabled Feature Packs:
         None

4120-48MW-4Y-SwitchEngine.10 # show licenses detail
License Product     Feature(s)  Installed   Expiration
------------------  ----------  ----------  ------------------------
STANDARD            Standard    Yes         License check failed*
*License check failed, license assignment will expire in 6 days
```

Interpretation:

- "License check failed" indicates switch cannot reach cloud management system
- Countdown shows days remaining before the subscription license fully expires (6 days in this example)
- After 30 total days without cloud contact, subscription expires completely
- Existing Premier features continue to run; no new features can be configured
- After next reboot, Premier features will not load without a valid license

Subscription + Perpetual Premier License (Successfully Validated)

When both a Subscription and Perpetual Premier license are installed and the switch is successfully connected to the cloud:

```
5720-48MW-SwitchEngine.6 # show licenses
Enabled License Level:
Standard (Premier features included)
Enabled Feature Packs:
None

5720-48MW-SwitchEngine.7 # show licenses detail
License Product Feature(s) Installed Expiration
-------------- ---------- ---------- ------------------------
STANDARD        Standard   Yes       N/A
PRD-5000-PRMR   Premier    Yes       Never
PRD-5000-MACSEC MACsec     No        N/A
```

Interpretation:

- "Standard (Premier features included)" = Subscription active + Perpetual Premier present
- "Premier" line shows "Never" for expiration = Perpetual license installed
- MACsec shows "No" because no MACsec license is installed (separate feature license)
- If Subscription expires later, Perpetual Premier will remain active

Subscription + Perpetual Premier License (Disconnected 3+ Days)

When both licenses are present but the switch is disconnected from cloud for more than 3 days:

```
5720-48MW-SwitchEngine.13 # show licenses
 Enabled License Level:
         Standard (Premier features included)
         License check failed, license assignment will expire in 6 days
 Enabled Feature Packs:
         None

5720-48MW-SwitchEngine.14 # show licenses detail
License Product     Feature(s)  Installed   Expiration
------------------  ----------  ----------  ------------------------
STANDARD            Standard    Yes         License check failed*
PRD-5000-PRMR       Premier     Yes         Never
PRD-5000-MACSEC     MACsec      No          N/A
*License check failed, license assignment will expire in 6 days
```

Interpretation:

- "License check failed" still appears due to cloud disconnection
- "PRD-5000-PRMR" shows "Never" because Perpetual Premier is permanent
- Perpetual Premier remains fully functional even with Subscription check failure
- Subscription license countdown shows 6 days remaining before expiration
- If Subscription expires, Perpetual Premier continues to work; new feature configuration remains enabled

License Expiry Log Messages and Warnings

Switch Engine License Expiry Warnings

Switch Engine logs warning messages when a Subscription license is approaching expiration or has expired. These messages help network administrators take action before Premier features become unavailable.

When Time Remaining < 15 Days

Switch Engine logs daily Error-level EMS messages:

```
Sep 13 15:42:29 5720-48MXW-SwitchEngine <Erro:licMgr.FeatTimeExpSoon>
(licMgrServer.c:1394) License product STANDARD for the Standard feature
will expire in 14 day(s) - the license will expire soon.
```



Note
In Switch Engine 34.1 and later, this message is updated to:

```
Jul 18 12:20:50.52 DUT2 Erro:licMgr.FeatTimeExpSoon Switch:
(disableExpiredFeature@licMgrServer.c:1419) License check of product
STANDARD for the Standard feature failed, license assignment will expire
in 13 day(s).
```

When License Fully Expires

After the expiration date is reached and Premier features are disabled:

```
Sep 27 21:52:23 5720-48MXW-SwitchEngine <Crit:licMgr.FeatTimeExp>
(licMgrServer.c:1384) License product STANDARD for the Standard feature
has expired.
```

When Switch Reboots After Expiry (Grace Period)

If a switch initializes (reboots) after the subscription expires and lacks cloud connectivity, it enters a 60-minute grace period:

```
Jul 29 12:54:14 5720-48MXW-SwitchEngine <Crit:licMgr.FeatTimeExpExtnd>
(licMgrServer.c:1387) The STANDARD license has expired due to lack of
connectivity. The Standard features will become unavailable in 60 minutes
unless refreshed by a cloud license server
```

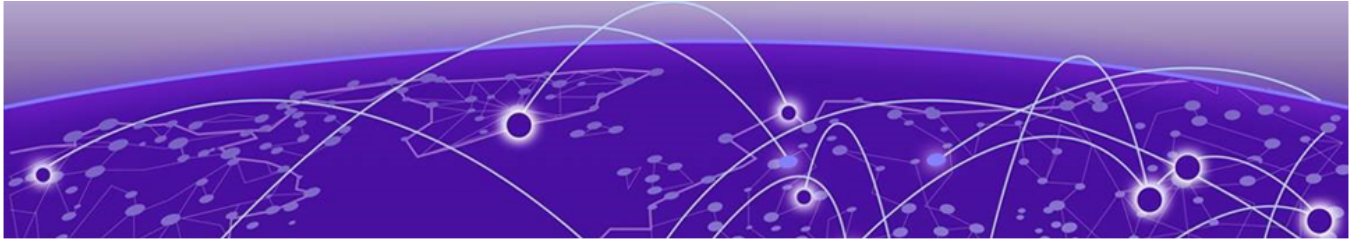
Action Required: The switch must reconnect to the cloud management system within 60 minutes to refresh the Subscription license. Failure to reconnect results in permanent loss of Premier feature functionality until a valid license is obtained.

Correlation Between Log Messages and Expiry Status

Log Message Pattern	Interpretation
No "License check failed" message	Subscription valid and validated
"License check failed" + day countdown	Disconnected from cloud; expiration pending
No license log messages (after prior warnings)	License expired and features disabled
"License expired due to lack of connectivity"	Grace period active; 60 minutes to reconnect

Recommended Monitoring Actions

1. Set alerts on EMS messages with keywords: "license will expire" or "license check failed"
2. Establish automated reconnection procedures to cloud management system
3. Verify Perpetual Premier licenses are installed as backup (if using Subscription model)
4. Test grace period recovery procedures in non-production environments
5. Maintain records of Subscription license renewal dates



License Feature Reference

Base License Features on page 31
Premier License Features on page 34

Base License Features

The Base License includes the features in the following table:

Table 12: Base License Features

Software Feature	Supported Platforms
AVB • Generalized Precision Time Protocol (GPTP) • Multiple VLAN Registration Protocol (MVRP) • Multiple Stream Registration Protocol (MSRP) • Platform Support	5120, 5320, 5420, 5520, 5720, 7520. Universal platforms have the AVB Feature License included in the Base License. You do not need to separately purchase and install the AVB Feature License for these switches.
BGP Auto-peering	All platforms except 4120 and 4220
BGP peers—Switches are allowed up to 2 manually configured BGP peers on the default VR with a base license.	All platforms except 4120 and 4220
CLEARFlow	All platforms
Convergence End Point (CEP) detection	All platforms
DHCPv4: • DHCPv4 server • DHCv4 client • DHCPv4 relay • DHCPv4 smart relay	All platforms
DHCPv6: • DHCPv6 relay • DHCPv6 prefix delegation snooping • DHCPv6 client • DHCPv6 smart relay • DHCPv6 remote ID	All platforms

Table 12: Base License Features (continued)

Software Feature	Supported Platforms
Direct Attach—based on the IEEE version of VEPA, eliminates the virtual switch layer, simplifying the network and improving performance. Direct Attach enables data center simplification by reducing network tiers from four or five tiers to just two or three tiers, depending on the size of the data center.	All platforms
EAPS Advanced Edge—multiple physical rings, and "common links", also known as "shared port".	All platforms
ERPS-more domains (allows 32 rings with matching ring ports) and multi-ring support	All platforms
ESRP-Full	All platforms
ESRP-Virtual MAC	All platforms
Extended Edge Switching	5420, 5520, and 7520-48Y
Extreme Network Virtualization (XNV)	All platforms except 4120, 4220, 5120, and 5320
Fabric Attach—uses the IEEE802.1ab Link Layer Discovery Protocol (LLDP) extensions to automatically attach network devices to individual services in an IEEE 802.1aq Shortest Path Bridging (SPB) network: • Fabric Attach Proxy • Fabric Attach Client • Fabric Attach Server • Standalone Proxy	All platforms
GRE tunneling	All platforms except 4120 and 5120
IP address security: • DHCP snooping • Trusted DHCP server • Source IP lockdown • ARP validation	All platforms
IP Flow Information Export (IPFIX)	5420, 5520, 5720
IP NAT	7520, 7720
IP security: • DHCP Option 82—L3 mode • DHCP Option 82—L3 mode VLAN ID • Disable ARP learning • Gratuitous ARP protection • DHCP secured ARP / ARP validation • Source IP lockdown	All platforms
IPv4 unicast routing, including static routes	All platforms

Table 12: Base License Features (continued)

Software Feature	Supported Platforms
IPv4 multicast routing, including static routes **Note:** This feature has limitations in the Edge and Advanced Edge licenses. See the user guide.	All platforms
IPv4 Duplicate Address Detection (DAD)	All platforms
IPv6 unicast routing, including static routes	All platforms
IPv6 interworking—IPv6-to-IPv4 and IPv6-in-IPv4 configured tunnels	All platforms except 4120 and 5120
IPv6 DAD without CLI management	All platforms
IPv6 DAD with CLI management	All platforms
Keychain Manager	All platforms except 4120 and 4220
Local-only, user-created virtual routers (VR)	4120, 4220, 5120, 5320-16P, 5320-24T/24P
Multi-Switch Link Aggregation Group (MLAG)	All platforms
Multinetting for forwarding	All platforms
ONEPolicy	All platforms
OSPFv2-Edge (limited to max of 4 active interfaces)	All platforms
OSPFv2 Auto-peering	All platforms
OSPFv3-Edge (limited to max of 4 active interfaces)	All platforms except 4120 and 4220
PIM—Universal switches are subject to the maximum number of PIM IPv4 interfaces (4) that pertains to other switch models.	All platforms
PIM-SM-Edge (No CRP/CBSR support)	All platforms
PIM snooping **Note:** This feature has limitations in the Base license. See the user guide.	All platforms
Policy based routing (PBR) for IPv4	All platforms
Policy based routing (PBR) for IPv6	All platforms
Protocol-based VLANs	All platforms
PSTag	5520, 5720, 7520, and 7720
Python scripting	All platforms
RIP v1/v2	All platforms
RIPng	All platforms except 4120 and 4220
Routing access policies	All platforms
Route maps	All platforms

Table 12: Base License Features (continued)

Software Feature	Supported Platforms
SummitStack (switch stacking using native or dedicated ports)	Not supported
SummitStack-V (switch stacking using dual-purpose data ports)	All platforms. See the specific models listed in the "Support for Alternate Stacking Ports" section of the user guide.
System virtual routers (VRs)	All platforms
UDP Forwarding	All platforms
UDP BootP relay forwarding	All platforms
User-created virtual routers (VRs) Virtual router and forwarding (VRF)	5320-48T/48P, 5420, 5520, 5720, 7520, and 7720
VLAN aggregation	All platforms
VRRP	All platforms
VXLAN	All platforms except 4120 and 4220

Premier License Features

The Premier License includes the features in the following table:

Table 13: Premier License Features

software feature	Supported platforms
Anycast RP	All platforms except 4120 and 4220
Anycast RP Using PIM (RFC 4610)	All platforms except 4120 and 4220
BGP4 and MBGP (BGP4+) for IPv4 ECMP	All platforms except 4120 and 4220
BGP4 and MBGP (BGP4+) for IPv6	All platforms except 4120 and 4220
EVPN	All platforms except 4120 and 4220
Integrated Application Hosting (IAH)	5720-24MXW, 5720-48MXW, 7520, and 7720
IS-IS for IPv4	All platforms except 4120 and 4220
IS-IS for IPv6	All platforms except 4120 and 4220
MSDP	All platforms except 4120 and 4220
OSPFv2 "Full" (not limited to 4 active interfaces)	All platforms except 4120 and 4220
OSPFv3 "Full" (not limited to 4 active interfaces)	All platforms except 4120 and 4220
PIM DM "Full"	All platforms except 4120 and 4220
PIM SM "Full"	All platforms except 4120 and 4220
PIM SSM "Full"	All platforms except 4120 and 4220

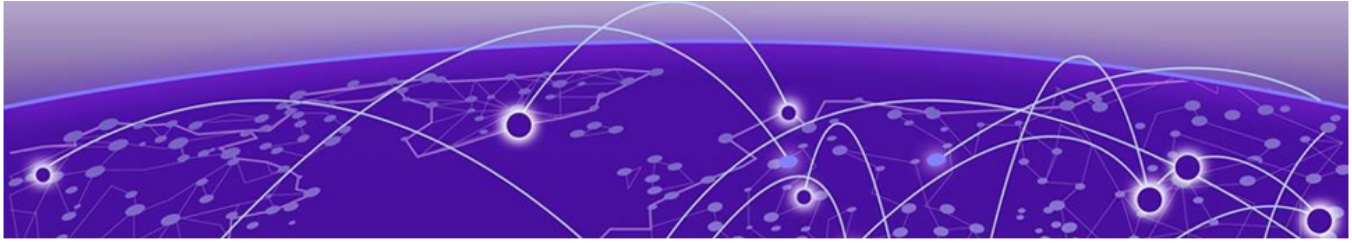
Table 13: Premier License Features (continued)

software feature	Supported platforms
PTPv2 Boundary/Ordinary Clock	7520-48Y and 7720
PTPv2 End-to-End Transparent Clock	5420, 5520, 5720, 7520-48Y, and 7720

The following table lists the Premier license SKUs:

Table 14: Premier License SKUs

Series	SKU
5000 Series	5000-PRMR-LIC-P
7000 Series	7000-PRMR-LIC-P



Optional Feature Licenses

The software features are listed in the following table are managed as feature licenses. Feature licenses are distributed in one of the following forms:

- **In Switch Engine software** (standard software component)—You must purchase a license to use the feature.
- **Modular software package** (XMOD file, so named because of its .xmod file extension)—You must request the XMOD file from your supplier and install it.

For feature license and installation instructions, see *Installing a Modular Software Package* in the user guide.

Note

Secure Shell 2 (SSH2) is not provided as a feature license. It is incorporated into the main software image and is not provided as an XMOD. However, SSH2 contains strong encryption algorithms that heighten the export controls required in the US and other countries. When downloading the software image, you are required to verify that you meet the export clearance requirements. For more information, see *Software Upgrade and Boot Options* in the user guide.

For more information on SSH2, see *Using Secure Shell 2* in the user guide.

Table 15: Optional Feature Licenses

Feature License	Feature	Platform support	XMOD Required
MPLS Feature The MPLS Feature is available as part of the Premier license under the **Platform Support** column.	• MPLS • LDP • Static LSPs • OSPF-TE • MPLS label • EXP bit replacement and classification • RSVP-TE • VPLS / H-VPLS for VLANs • VPLS STP redundancy • VPLS with ESRP redundancy • VPLS with EAPS redundancy • Fast Reroute (FRR) • Support for PW counters • User Virtual Routers • L3VPN	5520, 7520, and 7720. The MPLS Feature is available as part of the Premier License.	No
AVB Feature License	• Generalized Precision Time Protocol (GPTP) • Multiple VLAN Registration Protocol (MVRP) • Multiple Stream Registration Protocol (MSRP) • Platform Support	All platforms, except 4120 and 7720. All Universal Hardware platforms have the AVB Feature License included in the Base License. You do not need to separately purchase and install the AVB Feature License for supported Universal platforms.	No