Switch Engine v33.6.1 Release Notes

New Features, Improvements, and Known Issues

9039575-00 Rev AA
March 2026

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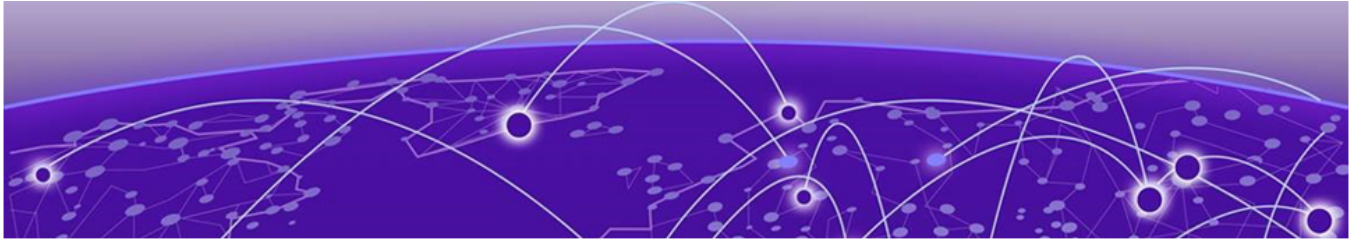

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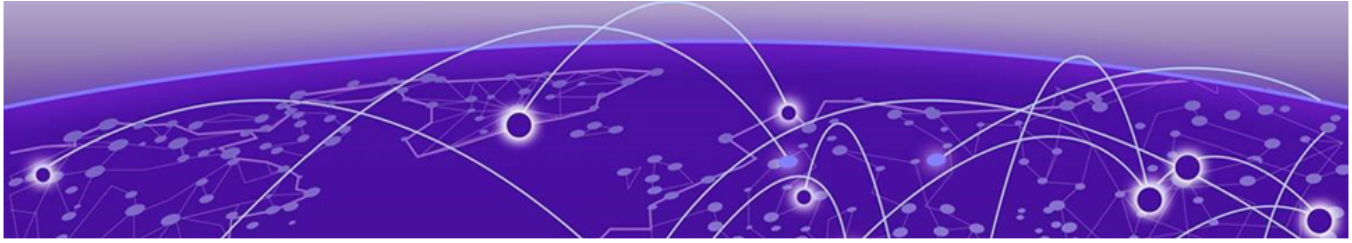

Abstract

Switch Engine v33.6.1 Release Notes by Extreme Networks, Inc., released in March 2026, provide comprehensive details on new features, software improvements, scaling limits, and resolved issues. Key technical points include support for configuring an alternate MAC address, enhancements in Fabric Attach timeout settings, and the introduction of new CLI commands for various functionalities. It outlines hardware and software compatibility, default settings, and image file names, along with guidance for upgrading Switch Engine. Limits for various licenses and features, including Base and Premier licenses, are detailed. Additionally, the release notes highlight known behaviors and limitations in the system architecture, and list numerous resolved issues across different patches, including improvements in security profile operation. This release serves as a comprehensive resource for technical readers seeking detailed insights into the functionality, compatibility, and performance improvements of the specified software version."

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.

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- 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

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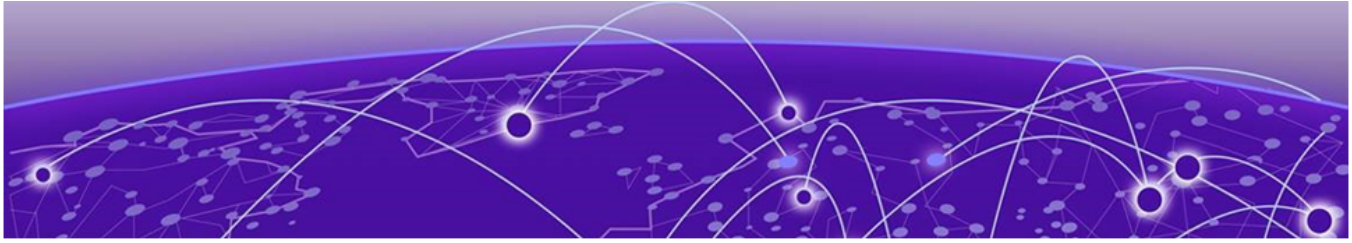
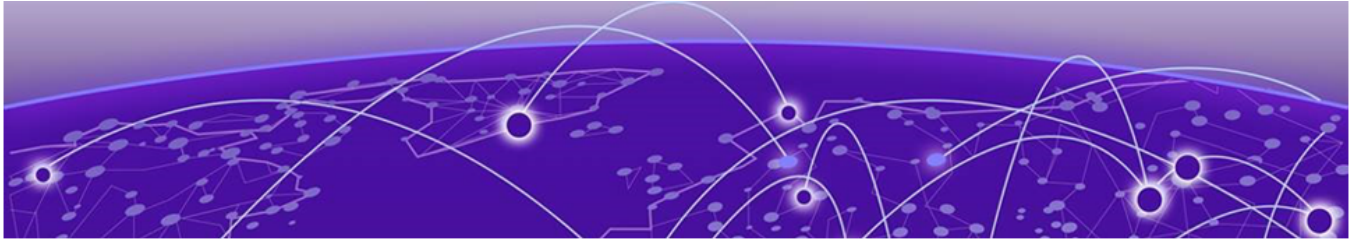


Overview

These release notes document the title version of Switch Engine, which adds features and resolves software deficiencies.



Security Information

The following section covers important security information.

Linux Kernel

This version of Switch Engine uses Linux Kernel 5.10.

OpenSSL Version

This version of Switch Engine uses FIPS openssl-3.0.10.

Upgrading Switch Engine

For instructions about upgrading software, see *Software Upgrade and Boot Options* in the user guide.

A Switch Engine core image (.xos file) must be downloaded and installed on the alternate (non-active) partition. If you try to download to an active partition, the system displays the following error message: `Error: Image can only be installed to the non-active partition.`. A modular software package (.xmod file) can still be downloaded and installed on either the active or alternate partition.

Note

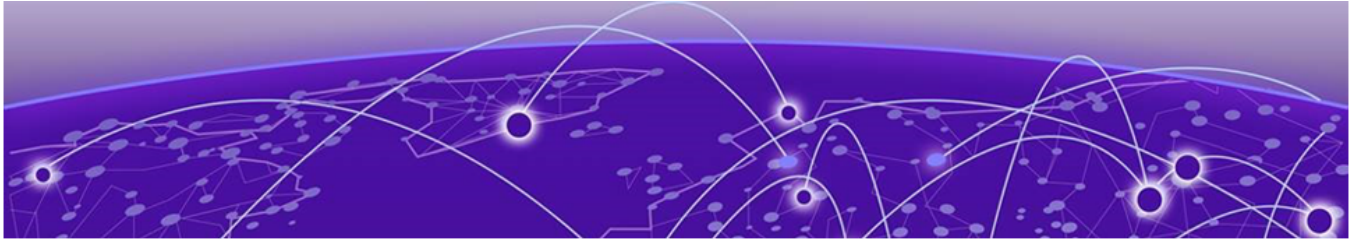
New 5420 and 5520 PoE switches use a new version of the PoE microcontroller that prevents the switch from downgrading to older versions and prevents operating system switchover to unsupported VOSS versions.

The following error message is displayed during the downgrades to older versions:

```
Error: Failed to download image - summit_arm-31.6.1.3.xos does not
include compatible PoE microcontroller support. See the User Guide for
information on installing a newer software release. See the
Hardware/Software Compatibility and Recommendation Matrices to verify the
supported releases.
```

5420 and 5520 PoE switches that use a new version of the PoE microcontroller can be identified for by checking the PoE firmware revision (5.0 or later) by entering the `show inline-power stats` command (line four):

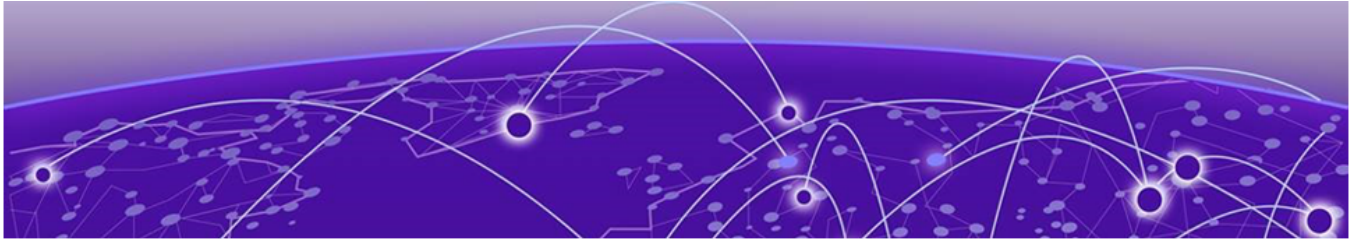
```
# show inline-power stats
Inline-Power Slot Statistics
Firmware status               : Operational
Firmware revision             : 5.0.0b4
Total ports powered           : 3
Total ports awaiting power    : 20
Total ports faulted           : 0
Total ports disabled          : 1
```



Newly Purchased Switches Require Software Upgrade

Newly delivered switches typically have pre-GA (general availability) software installed. You should promptly upgrade the software to the latest version available by visiting the Extreme Portal.

For information about upgrading the software, see the *Switch Engine Upgrade Process* topic in the *Software Upgrade and Boot Options* chapter of the user guide.



Default Settings

The following table shows the default settings for Switch Engine starting with version 31.6, and shows any changes that have been made to these settings and in what version these changes were made.

Table 4: Default Settings

Feature	31.6 and later	32.4 and later
1G behavior in 10G ports (5420 and 5520 series switches)	Autoneg OFF for port when 1G optic is inserted in a 10G port	
Account Lockout	After 3 consecutive login failures, account is locked for 5 minutes. [a]	
Auto-Discovery for Universal Hardware	Enabled.	
AVB	Disabled.	
BFD Strict Session Protection	Disabled.	
BGP	Disabled.	
Bluetooth	Enabled.	
BOOTP Relay	Disabled.	
CDP	Enabled.	
Configuration auto save	Disabled.	
Clear-flow	Disabled.	
Diagnostics	Admin level privileges required to show diagnostics. [a]	
DHCP	Disabled.	
DNS Cache Resolver and Analytics	Disabled.	
IPFIX	Disabled.	
IP NAT	Disabled.	
EAPS	Disabled.	
EDP	Enabled.	
ELRP	Disabled.	

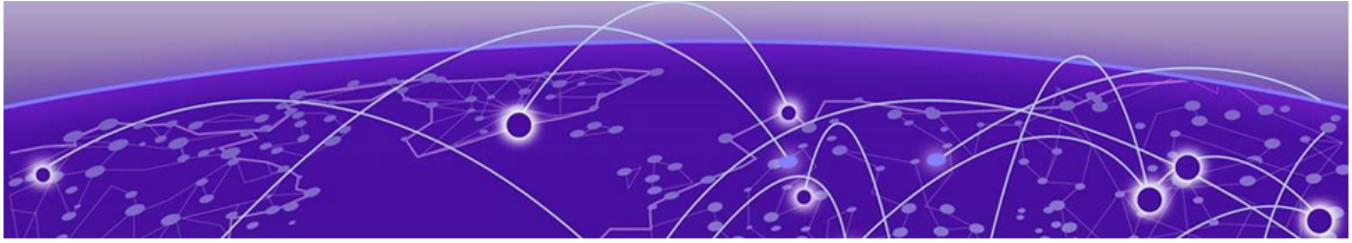
[a] If you choose enhanced security mode when initially setting up the switch or after running `unconfigure switch all`.

Table 4: Default Settings (continued)

Feature	31.6 and later	32.4 and later
ESRP	Disabled.	
Extended Edge Switching (VPEX)	Disabled.	
ExtremeCloud IQ	Enabled	
FEC	Enabled on Native 25Gb ports.	
Identity Management	Disabled.	
IGMP	Enabled, set to IGMPv2 compatibility mode.	
IGMP Snooping	Enabled.	
Image Integrity Check	Disabled.	
IP Route Compression	Enabled.	
ISIS	Disabled.	
LLDP	Enabled.	
Log	Admin level privileges required to show log. [a]	
Logging memory buffer	Generate an event when the logging memory buffer exceeds 90% of capacity. [a]	
MAC Security	Disabled.	
MLD	Disabled.	
MLD Snooping	Disabled.	
MPLS	Disabled.	
MSRP	Disabled.	
MSTP	Enabled.	
NetLogin	All types of authentication are disabled.	
NTP	Disabled.	
ONEPolicy	Disabled.	
Policy rule model	Hierarchical (Unless upgrading from 30.5 with a saved configuration set to access list.)	
OpenFlow	Disabled.	
OSPF	Disabled.	
OVSDB	Disabled.	
Passwords	Plain text password entry not allowed. [a]	
PIM	Disabled.	

Table 4: Default Settings (continued)

Feature	31.6 and later	32.4 and later
PIM Snooping	Disabled.	
PoE Fast PoE Perpetual PoE	Enabled. Disabled. Disabled.	
RADIUS	Disabled for both switch management and network login.	
RIP	Disabled.	
RMON	Disabled. However, even in the disabled state, the switch responds to RMON queries and sets for alarms and events.	
sFlow	Disabled.	
SNMP server	Disabled. [a]	
SSH	Disabled.	
Stacking-support	Enabled.	Disabled for 5120, Extreme 7520, and 7720 only.
Stacking auto-discovery	Enabled.	
STP	Enabled.	
Syslog	Disabled.	
TACACS	Disabled.	
Telnet	Enabled. [a]	
VPEX IP Multicast Replication	BPE	
VPLS	All newly created VPLS instances are enabled.	
Watchdog	Enabled.	
Web HTTP server	Enabled. [a]	
Web HTTPS server	Enabled. [a]	

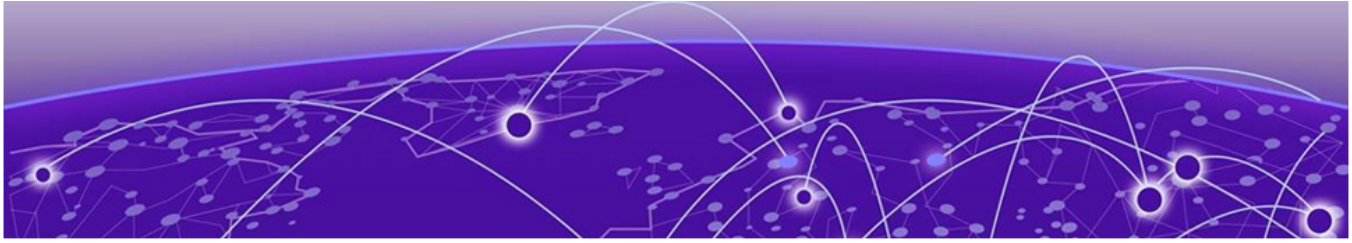


Switch Engine Image File Names

You can identify the appropriate image or module for your platform based on the file name prefix of the image.

Table 5: Switch Engine Image Types (Prefixes)

Switches	Image File Type (Prefix)
4120, 5120	`rzg2` Example: `rzg2-33.3.1.x.xos`
4220, 5320, 5420, 5520	`summit_arm` Example: `summit_arm-33.1.1.x.xos`
5720, 7520, 7720	`onie` Example: `onie-33.1.1.6.x86_64.xos`



New and Corrected Features in 33.6.1

This section lists the new and corrected features supported in this version:

Configurable Web Authentication Token Time-to-Live

Version 33.6.1 adds the ability to configure the time-to-live (TTL) for web authentication tokens, enabling shorter token lifetimes for automated tools and enhanced security.

Enhancement: The web interface supports two authentication mechanisms: basic authentication and token-based authentication. Previously, authentication tokens were issued with a fixed 1-day (86,400 seconds) validity period. You can now configure a custom default TTL between 1 minute and 24 hours to accommodate short-lived automation workflows such as Ansible modules while maintaining security best practices.

Key Capabilities:

- Configurable default token TTL from 60 to 86400 seconds
- API requests can override the default TTL by specifying a TTL property in the request
- Configuration persists across reboots
- Suitable for integration with automation tools requiring short-lived tokens
- Displayed in `show switch management` output

Token Authentication Workflow

Authentication tokens are generated via API calls to the `/auth/token` endpoint and used in subsequent requests via the `x-auth-token` header. The configured default TTL applies when the API request does not specify a TTL property.

Example token generation request:

```
curl --request POST \
  --url http://<switch-ip>/auth/token \
  --header 'content-type: application/json' \
  --data '{
  "username": "admin",
  "password": ""
}'
```

Example response:

```
{
  "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9...",
  "ttl": 60
}
```

New CLI Command

Configure default token TTL:

`configure web authentication token default-ttl` *`seconds`*

Where *`seconds`* specifies the validity time in seconds (60-86,400, default 86,400).

Supported Platforms

All platforms.

Extended SNMPv3 Password Length Support

Version 33.6.1 extends SNMPv3 password length support from 48 to 128 characters, enabling compliance with security requirements.

Enhancement: The maximum password length for SNMPv3 user authentication and privacy passwords has been increased from 48 to 128 characters. Combined with the existing password policy commands, administrators can now enforce minimum password lengths up to 128 characters to meet advanced security requirements while maintaining backward compatibility with existing configurations.

Key Capabilities:

- Authentication passwords support 8-128 characters (previously 8-48)
- Privacy passwords support 8-128 characters (previously 8-48)
- Configurable minimum password length enforcement from 8-128 characters using password policy
- Maintains compatibility with existing SNMPv3 configurations

- Supports ASCII and hexadecimal password formats
- All existing password policy features work with extended length passwords

Password Policy Configuration

Configure minimum password length for authentication passwords:

```
configure snmpv3 user password-policy authentication min-length
num_characters
```

Configure minimum password length for privacy passwords:

```
configure snmpv3 user password-policy privacy min-length num_characters
```

Where *num_characters* specifies the minimum length (8-128, default 8).

Example setting 64-character minimum:

```
# configure snmpv3 user password-policy authentication min-length 64
# configure snmpv3 user password-policy privacy min-length 64
```

Disable minimum length enforcement:

```
# configure snmpv3 user password-policy authentication min-length none
# configure snmpv3 user password-policy privacy min-length none
```

User Creation with Extended Passwords

Create SNMPv3 user with authentication and privacy (existing syntax, extended range):

```
# configure snmpv3 add user <user_name> authentication [md5 | sha] <auth_password>
    privacy [des | 3des | aes {128 | 192 | 192-legacy | 256 | 256-legacy}] <priv_password>
```

Example with 128-character passwords:

```
# configure snmpv3 add user secureuser authentication md5

"12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
012345678901234567890123456789012345678"
    privacy

"12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789
012345678901234567890123456789012345678"
```

Policy Enforcement

When minimum length policies are configured, password creation is validated:

```
# configure snmpv3 user password-policy authentication min-length 64
# configure snmpv3 add user testuser authentication md5 "password1234567890"
Error: Password length cannot be less than 64 characters.
```

Passwords meeting the minimum length requirement are accepted:

```
# configure snmpv3 add user testuser authentication md5
    "12345678901234567890123456789012345678901234567890123456789012345"
#
```

Backward Compatibility

Existing SNMPv3 user configurations with passwords up to 48 characters continue to function normally. The extended password length is optional and enforced only when explicitly configured via password policy commands.

Supported Platforms

All platforms that support SNMPv3.

Increased Load Sharing Groups Capacity

Version 33.6.1 enhances network scalability by increasing the maximum number of load sharing groups (LAGs) to 512 on select high-capacity Universal Platforms.

Enhancement: Select high-capacity Universal Platforms now support up to 512 load sharing groups, enabling more flexible and scalable network designs with numerous aggregated links. This enhancement applies seamlessly to both standalone switches and stack configurations while maintaining the standard configuration of 8 ports per LAG.

Key Capabilities:

- Up to 512 LAGs on supported high-capacity platforms for greater design flexibility
- Seamless operation in both standalone and stack configurations
- Intelligent stack management automatically handles capacity differences between nodes
- No configuration changes required; existing commands work as expected

Platform Capacity

Maximum LAG capacity varies by platform capability:

- **512 LAGs:** High-capacity Universal Platforms (7520, 7720 series)
- **128 LAGs:** All other platforms

Mixed-Capacity Stack Considerations

In stacks with mixed platform capacities, the system intelligently manages LAG limits to ensure stable operation:

- When a node with lower LAG capacity joins a stack where the active LAG count exceeds its supported limit, the system temporarily disables that node's ports to maintain network stability
- An informative EMS message indicates when LAG count adjustments are needed
- Reduce the number of configured LAGs to match all nodes' capacity, or use the `reboot stacktopology` command to reconfigure the stack
- The system prevents adding ports from lower-capacity nodes to LAGs when doing so would exceed that node's supported limit

Supported Platforms

All Universal Platforms. Enhanced capacity (512 LAGs) available on high-capacity platforms including 7520 and 7720 series switches.

IP Device Tracking for Silent Devices

Version 33.6.1 adds IP Device Tracking to maintain network connectivity for silent devices that generate minimal traffic, preventing disconnection due to NetLogin idle timeout.

Issue: NetLogin authenticated clients with minimal traffic were regularly disconnected when idle timeout thresholds were reached. The only workaround was to globally disable idle timeout, which reduced network security.

Resolution: When IP Device Tracking is enabled on a port, the switch sends periodic ARP probes to devices in the nodealias table with NetLogin authentication. If a device responds to the ARP probe, its session remains active and the inactivity timer is not triggered. Devices that fail to respond after a configurable number of probe attempts are marked as "Inactive."

Key Capabilities:

- Configurable ARP probe parameters: interval (30-3600 seconds, default 60), maximum consecutive failures (1-10, default 3), initial delay (0-3600 seconds, default 10), and source IP address (default 0.0.0.0)
- Per-port configuration for enabling IP device tracking
- Device status monitoring (Active, Inactive, or Not Tracked)
- Integration with NetLogin authentication to maintain sessions

New CLI Commands

Configuration commands:

```
configure nodealias ports [<port_list> | all] ip-device-tracking [on | off]
configure nodealias ports [<port_list> | all] ip-device-tracking arp-probe
    [{max-failures <max_failures>}
     {ipaddress <ipaddress>}
     {interval <interval>}
     {initial-delay <initial_delay>}]
```

Show commands:

```
show nodealias ip-device-tracking {ports <port_list>}
show nodealias ip-device-tracking configuration {ports <port_list>}
```

Supported Platforms

All platforms.

IP Multicast NAT Support

Version 33.6.1 adds IP Multicast NAT support, extending the existing basic source NAT capability to L3 IPv4 multicast traffic. The NAT router translates the source IP address in the IP header of each per-receiver multicast copy sent out on the egress VLAN.

Issue: Prior to this release, NAT translation was limited to IPv4 unicast traffic. Multicast sources using private IP addresses could not have their source addresses translated to registered public addresses when multicast streams crossed address domain boundaries.

Resolution: When IP Multicast NAT is enabled globally and a source-nat rule is configured, the NAT router performs per-copy source IP address translation for each replicated multicast packet. Translation is applied based on the source IP address, meaning a single SNAT rule covers all multicast groups originated by a given source host. Translation occurs only in the outbound direction; the destination multicast group address is never modified.

Key Capabilities:

- Global CLI knob to independently enable or disable IP multicast NAT (separate from unicast NAT)
- Per-copy source IP address translation for each multicast receiver copy
- Reuses existing `source-nat` rule type — no new rule type required
- Single SNAT rule applies to all multicast groups from the same source IP address
- Translation applies to outbound traffic only; inbound multicast destination address is not translated

Limitations:

- Supported only for L3 IPv4 multicast traffic; L2 multicast and IPv6 multicast are not supported
- Only the `source-nat` rule type is supported; `napt` and `destination-napt` rule types are not applicable
- Cannot be used concurrently with MACsec
- Not supported on stacking platforms
- ACL resources are consumed per source; scalability is bounded by available ACL hardware resources

Modified CLI Commands

Enable or disable IP multicast NAT globally:

```
enable ip nat multicast
disable ip nat multicast
```

The existing `show ip nat` command output now includes a `Multicast NAT` status line:

```
show ip nat
```

Sample configuration for two multicast sources:

```
configure ip nat add vlan in_vlan direction ingress
configure ip nat add vlan out_vlan direction egress

create ip nat rule snat1 type source-nat
configure ip nat rule snat1 egress vlan out_vlan
configure ip nat rule snat1 source 10.1.1.1 255.255.255.255 source-vr VR-Default
newsource 20.1.1.100
enable ip nat rule snat1

create ip nat rule snat2 type source-nat
configure ip nat rule snat2 egress vlan out_vlan
configure ip nat rule snat2 source 10.1.1.2 255.255.255.255 source-vr VR-Default
newsource 20.1.1.101
enable ip nat rule snat2

enable ip nat multicast
enable ip nat unicast
```

Supported Platforms

7520 and 7720 platforms. It is not supported on stacking configurations.

Non-Volatile Storage Health Monitoring

Version 33.6.1 adds health monitoring capabilities for non-volatile (flash) storage on Summit ARM platforms to proactively detect potential storage issues.

Enhancement: The system automatically monitors the health of non-volatile NAND flash memory and logs diagnostic information based on configurable reporting intervals. Health metrics include erase counters and block counts (bad, reserved, available, and total blocks), enabling proactive identification of storage degradation before it impacts switch operation.

Key Capabilities:

- Automatic health monitoring enabled by default on all supported platforms
- Configurable reporting intervals: normal (24-hour) or frequent (1-hour)
- Smart logging that reports only when values require Technical Support investigation (normal mode)
- On-demand health status display showing current flash metrics
- Configuration persists across reboots

New CLI Commands

Display current health status:

```
show switch non-volatile-storage health-check
```

Sample output:

```
Poll period mode: normal
Erase counter:       134
Block counts:
```

```
Bad:                  6
Reserved:            74
Available:          969
Total:             4090
```

Configure health check reporting interval:

```
configure switch non-volatile-storage health-check-reporting [normal |
frequent]
```

Where:

- **normal** - Check on 24-hour period and log messages only if values should be investigated by Technical Support (default)
- **frequent** - Check on 1-hour period and always log values even when operation is nominal

Supported Platforms

5520, 5420, 5320, and 4220 series switches.

OpenAPI Server Management

Version 33.6 adds user-accessible commands to manage the OpenAPI server, enabling integration with third-party management tools such as Ansible while maintaining compatibility with IQAgent cloud management.

Enhancement: The OpenAPI server, previously managed exclusively by IQAgent for internal cloud applications, is now available for customer use using HTTP (port 80) or HTTPS (ports 443/9443). You can enable, disable, and restart the OpenAPI server through CLI commands. When IQAgent is enabled, it automatically keeps the OpenAPI server operational regardless of user configuration, ensuring uninterrupted cloud connectivity.

Key Capabilities:

- User control of OpenAPI server lifecycle through standard CLI commands
- Automatic server operation when IQAgent is enabled
- Access via standard HTTP/HTTPS ports alongside existing Chalet web interface
- Server health status monitoring and version information display
- Debug mode for detailed logging and troubleshooting
- URI-based multiplexing allows coexistence with Chalet and other web applications

IQAgent Behavior

When IQAgent is enabled, the OpenAPI server remains operational regardless of user configuration. Attempting to disable the server displays the following message:

```
Note: The OpenAPI server is required by IQAgent and will remain operational
while IQAgent is enabled.
```

This ensures continuous cloud connectivity while allowing users to manage the server when IQAgent is not in use.

Server Status Values

- **Healthy** - Server is running normally
- **Unhealthy** - Server is running but experiencing issues
- **Booting** - Server is starting up
- **Stopped** - Server is not running
- **Failed** - Server failed to start or crashed

New CLI Commands

Enable, disable, or restart the OpenAPI server:

```
enable openapi
disable openapi
restart process openapi
```

Display OpenAPI server status:

```
show openapi
```

Supported Platforms

All platforms.

Port Configuration Reset to Factory Defaults

Version 33.6.1 adds the ability to reset all port-level configurations to factory defaults with a single command.

Resolution: The new `unconfigure ports` *`port_list`* `configuration` command resets all port-related settings to factory defaults, including VLAN/VR membership, load sharing, policies, and all per-port protocol and feature settings. This is equivalent to the configuration state of a port immediately after **`unconfigure switch`**.

Key Capabilities:

- Single command resets all port configurations to factory defaults
- Supports individual ports or port lists
- Confirmation prompt prevents accidental execution
- Resets VLAN membership, load sharing, policies, and all protocol-specific settings

New CLI Command

The following new command supports this enhancement:

`unconfigure ports` **`ports`** *`port_list`* `configuration`

The command prompts for confirmation before execution:

```
Warning: This will restore factory defaults to all port-related configuration
for selected port(s). Do you wish to proceed? (y/N)
```

Example

```
# unconfigure ports 1 configuration
Warning: This will restore factory defaults to all port-related configuration
for selected port(s). Do you wish to proceed? (y/N) Yes
```

Supported Platforms

All platforms.

PTP Profile Configuration Enhancement

Version 33.6.1 adds support for specifying a PTP profile when creating a PTP domain. This simplifies configuration by automatically applying profile-specific default timing intervals.

Behavior:

When a profile is specified during domain creation, VLANs subsequently added to the PTP domain automatically inherit the profile's default timing intervals (sync interval, delay request interval, and announce interval) rather than system defaults. This eliminates the need for manual configuration of these parameters per VLAN.

Modified CLI Command

The following command adds the following supported profiles using keywords:

Supported Profiles:

- **aes67-2018** - AES67-2018 profile (domain 0)
- **g8275.1** - G.8275.1 profile (domain 24)
- **g8275.2** - G.8275.2 profile (domain 44)
- **g8265.1** - G.8265.1 profile (domain 1)
- **st-2059-2** - ST-2059-2 profile (domain 127)

The **`show network-clock ptp`** command now displays the configured PTP profile.

Example:

```
show network-clock ptp boundary
Mode         :  Boundary Clock
Profile      :  st-2059-2
State        :  Enabled
...
```

To change the profile of an existing PTP domain, the domain must be deleted and recreated with the new profile.

Supported Platforms

7520 and 7720 platforms.

RADIUS Reauthentication Pause with Passive Polling

Version 33.6.1 adds passive polling capability to RADIUS reauthentication pause, enabling automatic early resume when RADIUS service becomes available during scheduled maintenance windows.

Enhancement: When RADIUS reauthentication is paused for scheduled maintenance, passive polling monitors RADIUS responses (Authentication Success or Authentication Failure) to detect when the service becomes available again. Once a configurable threshold of consecutive responses is observed within a specified period, reauthentication automatically resumes without requiring manual intervention.

Key Capabilities:

- Automatic early resume based on RADIUS service availability detection
- Configurable observation parameters to prevent false positives
- Non-sliding observation window for conservative resume behavior
- Integration with existing reauthentication pause feature
- Policy-mode only support for MAC and 802.1x authentication

Configurable Parameters

- **Start delay:** Time after pause begins before passive polling starts monitoring (10-1440 minutes, default 1440)
- **Stop period:** Time before scheduled resume when polling stops (10-1440 minutes, default 1440)
- **Observation period:** Window for counting RADIUS responses (5-1440 minutes, default 5)
- **Observation threshold:** Number of consecutive responses required to trigger early resume (5-512, default 512)

Note: Default values are configured to disable polling unless explicitly configured by the user to prevent unintended effects.

New CLI Commands

The following new commands support this feature:

```
configure netlogin radius reauthentication pause pause_duration

configure netlogin radius reauthentication resume

configure netlogin radius reauthentication pause passive-poll [on | off
| start-delay start_delay | stop-period stop_period | observe-period
observe_period | observe-threshold observe_threshold]
```

Recommended Workflow

For scheduled RADIUS maintenance:

1. Issue reauthentication pause command
2. Bring down RADIUS server for maintenance
3. Complete maintenance and testing
4. Bring up RADIUS server
5. Passive polling automatically detects service availability and resumes reauthentication when threshold is met, or manually resume with `configure netlogin radius reauthentication resume`

Use the **`show netlogin`** command to view passive polling status:

```
# show netlogin
RADIUS Reauthentication Pause Passive Polling : On
    Start delay                       : 10 minutes
    Stop period                       : 10 minutes
    Observation period                : 5 minutes
    Observation threshold             : 5
    State                             : count=0 state=ACTIVE
```

Supported Platforms

All platforms that support NetLogin and Policy. MAC and 802.1x authentication supported; web authentication not supported.

Service Probe Device Simulation

Version 33.6.1 enhances Service Probe functionality with the ability to run custom Python scripts and shell commands within Service Probe contexts, along with asynchronous operation support and improved DNS query capabilities.

Enhancements:

- Run Python scripts in Service Probe namespace
- Run shell commands in Service Probe namespace
- Asynchronous execution with request/poll model for ping, DNS queries, shell, and Python commands
- Enhanced DNS query options (primary, secondary, tertiary, or all servers)
- Cached results display for DNS and gateway queries in detailed output
- Resource limits enforced via dedicated SvcProbe cgroup (5% CPU, 5% memory maximum)
- Execution under non-root "admin" user for security
- Environment variables automatically set for script context

Code Execution Security

All code execution (Python and shell) runs with the following security controls:

- Runs under "admin" user (non-root) to limit system access
- Runs in dedicated SvcProbe cgroup with resource limits (maximum 5% CPU and 5% memory)
- Restricted to users with admin privileges (same access control as existing Python features)
- Automatic timeout and termination after configurable intervals

Environment variables are automatically set to provide Service Probe context without requiring manual discovery:

```
SP_DEV='svc_dev_3000'
SP_VLAN_NAME='uplink'
SP_VLAN_ID='3500'
SP_MAC='0a:11:88:fe:ec:36'
SP_IP_ADDR='172.16.1.99'
SP_IP_GATEWAY='172.16.1.99'
SP_DNS='11.100.100.1,172.16.1.98'
```

New and Enhanced CLI Commands

Run Python script in Service Probe context:

```
run service-probe <instance_id> python <script_file>
```

Run shell command in Service Probe context:

```
run service-probe <instance_id> shell
```

Enhanced DNS query with server selection:

```
run service-probe <instance_id> query dns
    {primary | secondary | tertiary | default} {<fqdn>}
```

View cached query results in detailed output:

```
show service-probe <instance_id> detail
```

Sample detailed output with cached results:

```
ID                   : 1
VLAN                 : SpBlue (UP)
In-Use MAC           : 0a:11:88:fe:ec:36
Default Route Exists : True
Dynamic              : False
Cfg IP               : 150.150.1.99/24
Cfg Gateway          : 150.150.1.4
Cfg DNS              : 1.1.1.1, 8.8.8.8, 150.150.1.4
In-Use IP            : 150.150.1.99/24

In-Use Resource   Server              Status       Query Time
----------------  ------------------  -----------  -------------------
Gateway           150.150.1.4         Reachable    02-03-2026 12:37:15
Primary DNS       1.1.1.1             Fail         02-03-2026 12:34:31
Secondary DNS     8.8.8.8             Fail         02-03-2026 12:34:31
Tertiary DNS      150.150.1.4         Success      02-03-2026 12:34:29
```

View SvcProbe cgroup resource usage:

```
show process group service-probe
```

Sample output:

```
SvcProbe:
 Number of processes : 2
 CPU
  Limit              : 5 %
  Current utilization: 0.2 %
  Maximum utilization: 1.3 %
 Memory
  Upper Limit        : 5 %
  Current utilization: 0.1 %
  Maximum utilization: 0.3 %
```

Asynchronous Operation

Commands that run in Service Probe context (ping, query dns, shell, python) now run asynchronously. A request ID is returned immediately, and results must be polled. Completed requests are automatically removed after being queried or expire 10 minutes after their maximum expected runtime.

Default timeout settings:

- DNS query: 8 seconds (2 seconds per DNS entry + buffer)
- Ping: 10 seconds
- Shell: 15 seconds (configurable via NOS-API)
- Python: 15 seconds (configurable via NOS-API)

Example Use Cases

Run traceroute from Service Probe perspective:

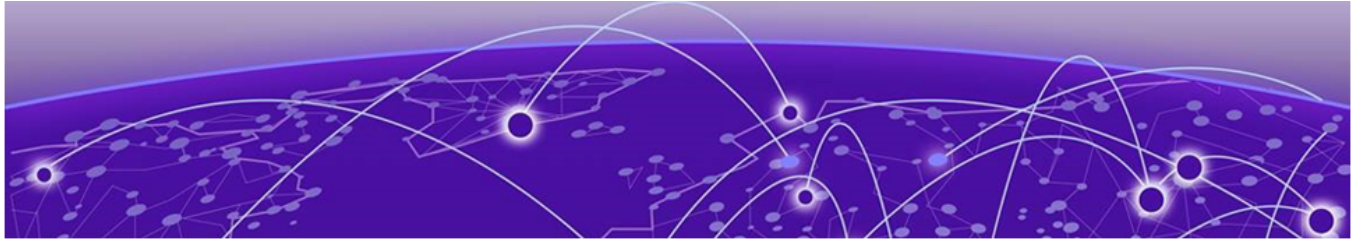
```
run service-probe 1 shell
Command: traceroute 11.100.100.1
Exit Status: 0
...output follows:
traceroute to 11.100.100.1 (11.100.100.1), 30 hops max, 46 byte packets
1  192.168.1.1 (192.168.1.1)  0.547 ms  0.343 ms  0.321 ms
2  110.110.110.2 (110.110.110.2)  0.364 ms  88.943 ms  0.375 ms
3  11.100.100.1 (11.100.100.1)  0.287 ms  0.271 ms  0.247 ms
```

Run custom Python script:

```
run service-probe 1 python /usr/local/cfg/network-test.py
Exit Status: 0
...output follows:
[script output]
```

Supported Platforms

All platforms.



Changing the Network Operating System

Universal Hardware switches can run two different operating systems: Switch Engine (default) or Fabric Engine.

Making Your Initial Network Operating System Selection

You can make your initial selection of the operating system using:

- **ExtremeCloud IQ** —You can select your network operating system when purchasing your switch, which associates the switch serial number with your desired network operating system, which then causes the desired network operating system to be loaded during ExtremeCloud onboarding. For more information about using ExtremeCloud IQ, go to https://www.extremenetworks.com/support/documentation/extremecloud-iq/.
- **Extreme Management Center**— see documentation for version 22.3 or later
- **Manually during boot-up**:
  - **Bootloader**—When you see the message `Starting Default Bootloader ...Press and hold the <spacebar> to enter the bootrom`, press and hold the **space bar** until the boot menu is displayed (you have 30 seconds):

```
*** 5320-48T-8XE Boot Menu ( 3.4.2.8 ) ***

     EXOS: Default
     EXOS: Primary 32.1.1.6
     EXOS: Secondary 32.1.1.6
     EXOS: Primary 32.1.1.6 with default configuration
     EXOS: Secondary 32.1.1.6 with default configuration
     EXOS: Rescue
     Change the switch OS to VOSS
     Run Manufacturing Diagnostics
     Update bootloader
     Reboot system
```

Use the **up** and **down** arrow keys to select `Change the switch OS to VOSS`, and then press **Enter**.

Note
The 5720, 7520, and 7720 Series use the **GRUB** menu. There is no need to press and hold the **space bar**. Use the **up** and **down** arrow keys to navigate the menu.

- **Safe defaults mode start-up menu**—When the question `Would you like to change the switch OS to VOSS? [y/N/q]` is displayed:
  - For Switch Engine, type `N`.
  - For Fabric Engine, type `y`.

Continue to log onto the switch. For more information about logging onto the switch, see the user guide.

Changing Your Network Operating System

You can change your network operating system selection at any time.

Caution
Changing your network operating systems deletes all configuration files, debug information, logs, events, and statistics information of the previous network operating system.

Note
If you anticipate ever changing the operating system to Fabric Engine, and you want to statically assign IP addresses on the DHCP server, then it is recommended to assign them based on the DHCP client ID. For more information about this issue, see the *Using a BOOTP or DHCP Server* topic in the user guide.

- **ExtremeCloud IQ**—See https://www.extremenetworks.com/support/documentation/extremecloud-iq/
- **Extreme Management Center**—See *Extreme Management Center User Guide*
- **CLI Command**—run the `download [url url {vr vrname} | image [active | inactive] [[hostname | ipaddress] filename {{vr} vrname} {block-size block_size}] {partition} {install {reboot}}` command specifying a VOSS image.

  Note
  Do *not* use the active, inactive, and partition options. They are not applicable for Fabric Engine.

ExtremeCloud IQ Agent Support

Switch Engine supports ExtremeCloud IQ. For network administrators looking for unified management of access points, switches, & routers, ExtremeCloud IQ is a cloud-driven network management application that:

- simplifies network operations through an easy to use and intuitive interface, including minimal touch onboarding of devices
- provides ultimate flexibility in deployment choice, cloud platform choice, OS choice
- offers unlimited data duration for more informed networking decisions

Important
Check the ExtremeCloud IQ release notes to ensure support for your version has been added before upgrading.

This version supports device discovery, basic monitoring, visibility into homogenous stacking, and the ability to configure an optional user-defined virtual router (VR) and address of the server for ExtremeCloud IQ agent to connect to. These values are used instead of any auto-detected values.

For more information about ExtremeCloud IQ, go to https://www.extremenetworks.com/support/documentation/extremecloud-iq/.

Table 6: Supported Platforms

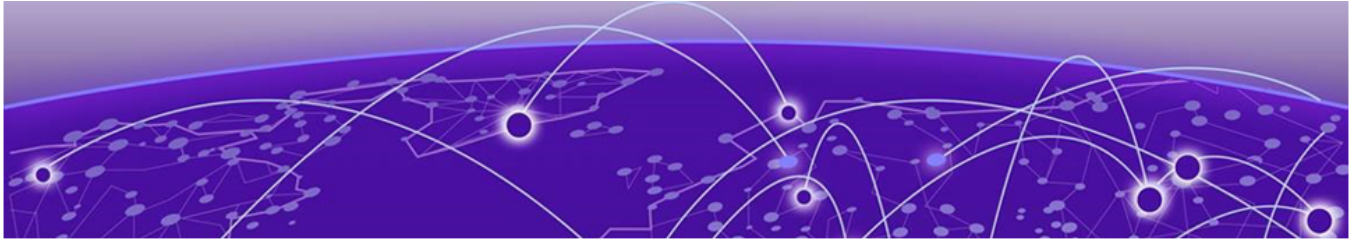
Switch Series	Switch Models
4120	4120-24MW-4Y 4120-48MW-4Y
4220	4220-8X 4220-12P-4X 4220-12T-4X 4220-24P-4X 4220-24T-4X 4220-48P-4X 4220-48T-4X 4220-4MW-8P-4X 4220-4MW-20P-4X 4220-8MW-40P-4X
5120	5120-24X-4Y 5120-24XT-4Y 5120-44X-4Y-2C

Table 6: Supported Platforms (continued)

Switch Series	Switch Models
5320	5320-48T-8XE 5320-48P-8XE 5320-24T-8XE 5320-24P-8XE 5320-16P-4XE 5320-16P-4XE-DC 5320-24T-4X-XT 5320-24T-24S-4XE-XT
5420	5420F-8W-16P-4XE 5420F-24P-4XE 5420F-24S-4XE 5420F-24T-4XE 5420F-16MW-32P-4XE 5420F-16W-32P-4XE 5420F-48P-4XE 5420F-48P-4XL 5420F-48T-4XE 5420M-24T-4YE 5420M-24W-4YE 5420M-16MW-32P-4YE 5420M-24W-24S-4YE 5420M-48T-4YE 5420M-48W-4YE
5520	5520-24T 5520-24W 5520-48T 5520-48W 5520-12MW-36W 5520-24X 5520-48SE 5520-24T-ACDC-BASE 5520-48T-ACDC-BASE 5520-24X-ACDC-BASE 5520-48SE-ACDC-BASE
5720	5720-24MW 5720-24MXW 5720-48MW 5720-48MXW

Table 6: Supported Platforms (continued)

Switch Series	Switch Models
7520	7520-48Y-8C 7520-48XT-6C 7520-48YE-8CE
7720	7720-32C



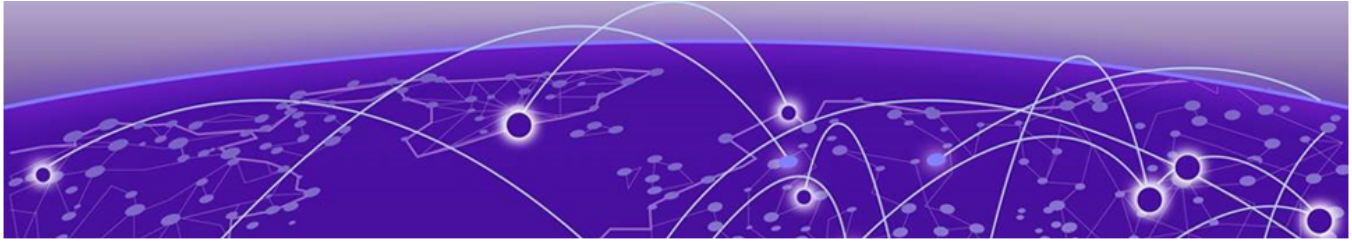
Extreme Hardware/Software Compatibility and Recommendation Matrices

ExtremeXOS and Switch Engine Software Support provides information about the minimum version of software required to support switches.

The Extreme Optics Compatibility website displays supported hardware platforms, technical specifications, and usage considerations for pluggable optical devices (transceivers and cables) used in all Extreme Networks operating environments. To access the site, open https://optics.extremenetworks.com/EXOS/ in a web browser.

To find the recommended releases for Universal Hardware platforms, see *ExtremeXOS and Switch Engine Release Recommendations*.

The latest versions of this and other guides are at: www.extremenetworks.com/documentation/.

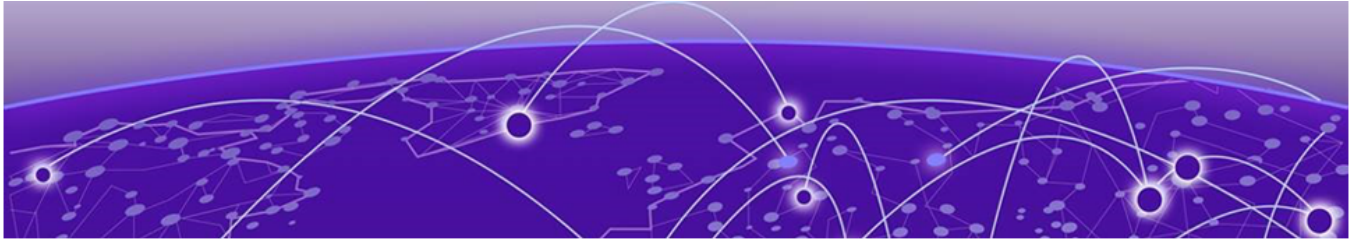


Compatibility with Extreme Management Center

This version of Switch Engine is compatible with the version of Extreme Management Center as shown in this table: http://emc.extremenetworks.com/content/common/releasenotes/extended_firmware_support.htm.

This version of Switch Engine is compatible with ExtremeCloud IQ - Site Engine version 22.3 or later. Older versions (including Extreme Management Center) will not recognize devices running Switch Engine.

This version was tested with ExtremeCloud IQ Site Engine version 25.11.10.48.

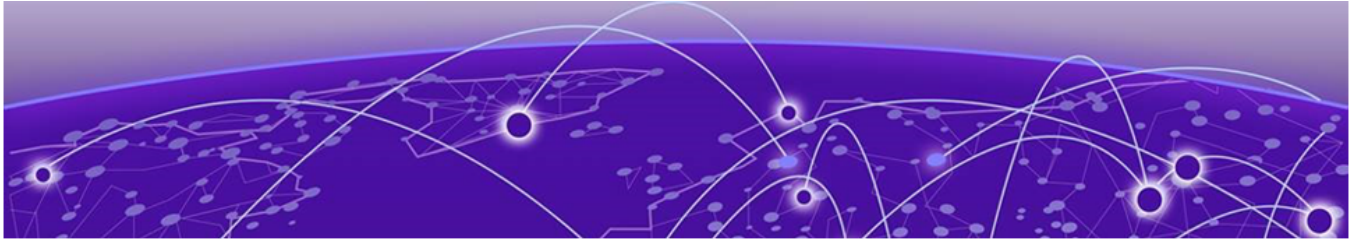


Supported MIBs

The Extreme Networks management information bases (MIBs) are located on the Extreme Portal in the Downloads section. Log in to the Extreme Portal to view and download.

When you provide your serial number or agreement number, the MIBs are available under each release.

For detailed information on which MIBs and SNMP traps are supported, see the *Extreme Networks Proprietary MIBs* and *MIB Support Details* sections in the user guide.



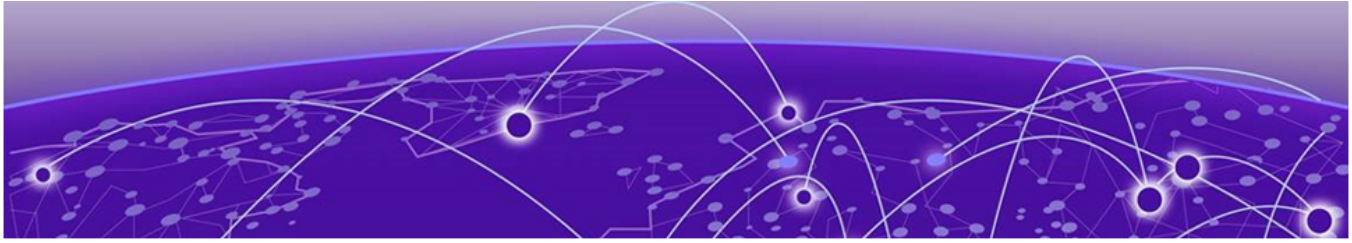
Tested Third-Party Products

The following third-party products have been tested.

Tested RADIUS Servers

The following RADIUS servers are fully tested:

- Microsoft—Internet Authentication Server
- Meetinghouse
- FreeRADIUS



Extreme Switch Security Assessment

DoS Attack Assessment

Tools used to assess DoS attack vulnerability:

- Network Mapper (NMAP)

ICMP Attack Assessment

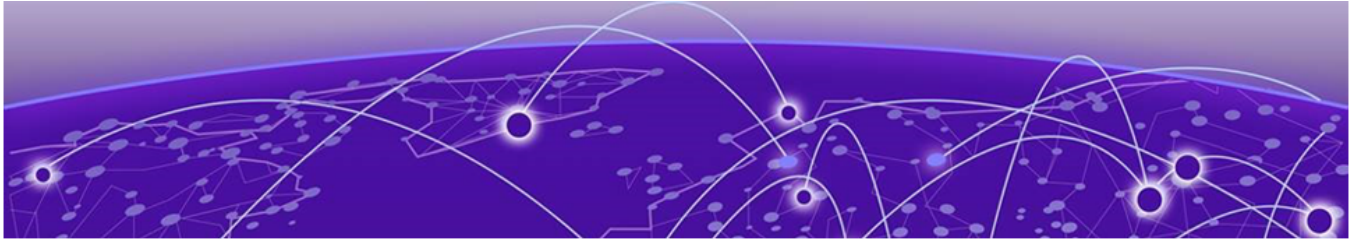
Tools used to assess ICMP attack vulnerability:

- SSPing
- Twinge
- Nuke
- WinFreeze

Port Scan Assessment

Tools used to assess port scan assessment:

- Nessus



Limits

This chapter summarizes the supported limits in this version.

Limits Overview

The limits data is grouped by license level that contains the associated features:

- Base License Limits on page 45
- Premier License Limits on page 82

The Universal family of switches includes two license levels: Base and Premier.

The following figure illustrates that each license level builds on the features of the license level below it. For example, the Premier license includes all of the features in the Base license, plus the features in the Premier license level.

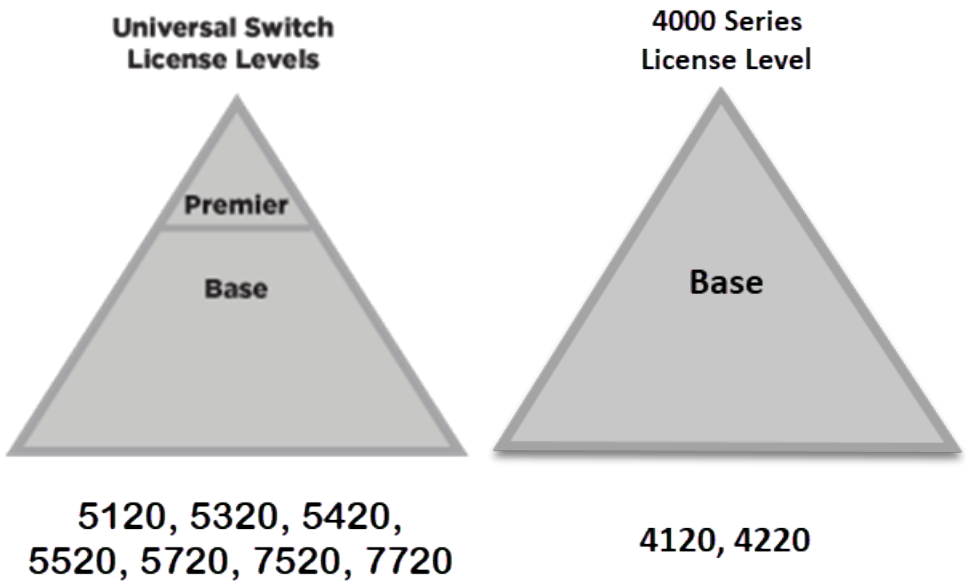


Figure 1: License Levels for Universal Switches

Extreme Platform ONE Networking includes three license levels: Standard, Advanced, and Premium. A Standard license is required to manage devices from ExtremeCloud IQ.

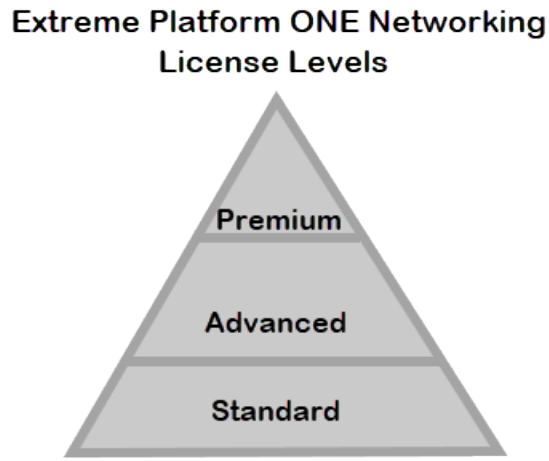


Figure 2: Extreme Platform ONE Networking License Levels

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

- A - 4000 series, 5120, 5320
- B - 5420
- C - 5520
- D - 5720, 7520, 7720

Universal devices with a verified Extreme Platform ONE Networking license will perform the following actions:

- 5000 and 7000 series - activate Premier Universal license features

Extreme Platform ONE Networking also provides operating system product service, management, and insights.

For more information about licenses, see Switch Engine v33.6.1 Licensing Guide .

The following tables summarize tested metrics for a variety of features, as measured in a per-system basis unless otherwise noted. These limits may change, but represent the current status. The contents of this table supersede any values mentioned in the Switch Engine books.

The scaling and performance information shown in the following tables is provided for the purpose of assisting with network design. It is recommended that network architects and administrators design and manage networks with an appropriate level of network scaling “head room.” The scaling and performance figures provided have been verified using specific network topologies using limited switch configurations. There is no guarantee that the scaling and performance figures shown are applicable to all network topologies and switch configurations and are provided as a realistic estimation only. If you experience scaling and performance characteristics that you feel are sufficiently below what has been documented, contact Extreme Networks technical support for additional assistance.

The route limits shown in the following tables for IPv4 and IPv6 routing protocols are software limits only. The actual hardware limits may be higher or lower than the software limits, based on platform. The hardware limits for specific platforms are specified as "IPv4/IPv6 routes (LPM entries in hardware)" in the following tables.

In the architecture, Layer-2, Layer-3, and multicast packet forwarding and filtering operations take place on the controlling bridge. The controlling bridge switch and attached BPEs (V400 Virtual Port Extenders) constitute a single, extended switch system. Therefore, the system assumes the scale and limits from the specific controlling bridge model in use. For applicable limits, see the following tables for the controlling bridge you are using.

Base License Limits

The following table shows supported limits for features in the Base License.

Table 7: Supported Limits for the Base License

Metric	Product	Limit
AAA (local)—maximum number of admin and local user accounts.	All platforms	16
Access lists (meters)—maximum number of meters.	4120, 5120	512 ingress 128 egress
	4220	2,048 ingress 256 egress
	5320, 5420	6,144 ingress 512 egress
	5320-16P-2MXT-2X	1,024 ingress 256 egress
	7520, 7720	6,144 ingress 1,024 egress
	5520	2,048 ingress 512 egress
	5720-MW	6,144 ingress 3,072 egress
	5720-MXW	6,144 ingress 6,144 egress
Access lists (policies)—suggested maximum number of lines in a single policy file.	All platforms	300,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Access lists (policies)—maximum number of rules in a single policy file. [a]	4220, 5320-48T/P, 7520, 7720	8,192 ingress 1,024 egress
	5320-24T/P, 5320-16P	8,192 ingress 512 egress
	5320-16P-2MXT-2X	1,000 (rules double-wide (160-bit)) ingress 2,000 (rules single-wide (80-bit, default)) ingress 512 egress
	4120, 5120	1,024 ingress 256 egress
	5420M	18,000 (rules double-wide (160-bit)) ingress 36,000 (rules single-wide (80-bit, default)) ingress 1,024 egress
	5420F	8,000 (rules double-wide (160-bit)) ingress 16,000 (rules single-wide (80-bit, default)) ingress 1,024 egress
	5520	9,216 ingress 1,024 egress
	5720-MW	18,432 (80-bit) ingress 6,144 egress
	5720-MXW	36,864 (80-bit), 18,432 (160-bit) ingress

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
		12,288 egress
Access lists (policies)— maximum number of rules in a single policy file in first stage (VFP).	5520, 5720	2,048 ingress only
	5320-48T/P, 5420, 7520, 7720	1,024 ingress only
	4220, 5320-16P, 5320-24T-4X-XT	512 ingress only
	4120, 5120	256 ingress
Access lists (slices)—number of ACL slices.	5720, 7520, 7720	12 ingress 4 egress
	5320-48T/P, 5420, 5520	18 ingress 4 egress
	4120, 4220, 5120, 5320-24T/P, 5320-16P	8 ingress 4 egress
Access lists (slices)—number of ACL slices in first stage (VFP).	All platforms	4 ingress only
ACL Per Port Meters—number of meters supported per port.	All platforms	16
ACL port ranges.	All platforms	32
Meters Packets-Per-Second Capable.	All platforms	N/A
AVB (audio video bridging)—maximum number of active streams.	5320, 5420	1,024
	5520, 5720, 7520	4,096
BFD sessions (Software Mode)—maximum number of BFD sessions.	5320, 5420, 5520, 5720, 7520, 7720 (default timers—1 sec).	512
	5120 (default timers—1 sec).	90
BFD IPv4 sessions (Hardware Assisted)—maximum number of IPv4 BFD sessions.	7520, 7720	900 425 256 (with 3 ms transmit interval)
BFD IPv6 sessions (Hardware Assisted)—maximum number of IPv6 BFD sessions.	7520, 7720	425 (PTP not enabled)

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
BGP (multicast address-family routes)—maximum number of multicast address-family routes.	5520, 5720-MXW	13,000
	5720-MW	20,000
	7520, 7720	25,000
	5320-16P-4XE, 5320 24-port except XT	8,000
	5320 48-port, 5420	12,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	992
	5120	64
BGP (non-unique routes) — maximum number of nonunique BGP routes.	7520. 7720	75,000
	5720-MW	60,000
	5320 48-port, 5420	36,000
	5320-16P-4XE, 5320 24-port except XT	24,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	2,700
	5120	192
BGP (peers)—maximum number of BGP peers.	All platforms except 4120 and 4220	2
BGP (unicast address-family routes)—maximum number of unicast address-family routes.	5520, 5720-MW (at default)	13,000
	5720-MXW (at default)	20,000
	7520, 7720 (at deafult)	25,000
	5320 48-port, 5420	12,000
	5320-16P-4XE, 5320 24-port except XT	8,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	992
	5120	64
	5720-MW (with ALPM enabled)	163,000
	5720-MXW (with ALPM enabled)	288,000
	5520 (with ALPM enabled)	80,000
BGP auto-peering—maximum number of auto-peering nodes and VTEPs.	All platforms except 4120 and 4220	64
BGP auto-peering attached IPv4 hosts— maximum number of attached IPv4 hosts.	All platforms except 4120 and 4220	64,000
BGP auto-peering attached IPv6 hosts— maximum number of attached IPv6 hosts.	All platforms except 4120 and 4220	8,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
BGP auto-peering ECMP—maximum number of equal cost multipath for auto-peering. **Note:** * Subject to the limitation imposed by the number of physical ports on a switch.	5720, 7520, 7720 5320, 5420, 5520	16* 4*
BGP auto-peering maximum IPv4 prefixes with ECMP—Maximum number of IPv4 Network prefixes with ECMP.	5120, 5320, 5420, 5520, 5720 7520, 7720	16,000 64,000
BGP auto-peering maximum IPv6 prefixes with ECMP—Maximum number of IPv6 Network prefixes with ECMP.	5120, 5320, 5420, 5520, 5720 7520, 7720	254 64,000
BGP auto-peering MLAG peers—maximum MLAG peers per AutoBGP node.	All platforms except 4120 and 4220	1
BGP auto-peering VRFs—maximum number of VRFs.	All platforms except 4120 and 4220	64
BGP auto-peering EVPN instances—maximum EVPN instances.	All platforms except 4120, 4220, and 5120	1,024
BGPv6 (unicast address family routes)—maximum number of unicast address family routes.	5320 48-port, 5420, 5520, 5720-MW (at default)	6,000
	5720-MW (with ALPM enabled)	107,000
	5720-MXW, 7520, 7720 (at default)	10,000
	5120	64
	5720-MXW (with ALPM enabled)	213,000
	5520 (with ALPM enabled)	40,000
	5320-16P-4XE, 5320 24-port except XT	4,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	496
BGPv6 (non-unique routes) — maximum number of nonunique BGP routes.	5320 48-port, 5420, 5520, 5720-MW	18,000
	5720-MXW, 7520, 7720	30,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	14,000
	5320-16P-4XE, 5320 24-port except XT	12,000
	5120	64

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per virtual router.	All platforms	8
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per VLAN.	All platforms	8
BOOTP/DHCP relay—maximum number of DHCPv4/v6 relay agents	All platforms	4,000
Connectivity fault management (CFM)—maximum number or CFM domains.	All platforms	8
CFM—maximum number of CFM associations.	All platforms	256
CFM—maximum number of CFM up end points.	All platforms	32
CFM—maximum number of CFM down end points.	All platforms	32
CFM—maximum number of CFM remote end points per up/down end point.	All platforms	2,000
CFM—maximum number of dot1ag ports.	All platforms	128
CFM—maximum number of CFM segments.	All platforms	1,000
CFM—maximum number of MIPs.	All platforms	256
CLEAR-Flow—total number of rules supported. The ACL rules plus CLEAR-Flow rules must be less than the total number of supported ACLs.	4120, 4220, 5120, 5320, 5420, 5720, 7520, 7720 ExtremeSwitching 5520	8,192 9,215
Data Center Bridging eXchange (DCBX) protocol Type Length Value (TLVs)—maximum number of DCBX application TLVs.	All platforms	8

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
DHCPv6 Prefix Delegation Snooping—Maximum number of DHCPv6 prefix delegation snooped entries.	All platforms	256 (with underlying protocol RIPng) 128 (with underlying protocol OSPFv3) 1,024 (with static routes)
DHCP snooping entries—maximum number of DHCP snooping entries.	All platforms	2,048
Dynamic ACLs—maximum number of ACLs processed per second. **Note:** Limits are load-dependent.	All platforms with 50 DACLs with 500 DACLs	 10 5
EAPS domains—maximum number of EAPS domains. **Note:** An EAPS ring that is being spatially reused cannot have more than four configured EAPS domains.	5720 4120, 4220, 5120, 5320-24T/P, 5320-16P 5320-48T/P, 5420, 5520	128 32 64
EAPSv1 protected VLANs—maximum number of protected VLANs.	4120, 4220, 5120, 5320-24T/P, 5320-16P 5320-48T/P, 5420, 5520, 5720, 7520, 7720	1,000 2,000
EAPSv2 protected VLANs—maximum number of protected VLANs.	4120, 4220, 5120, 5320, 5420, 5520 5720, 7520, 7720	1,000 2,000
ELSM (vlan-ports)—maximum number of VLAN ports.	4120, 4220, 5120, 5320-24T/P, 5320-16P 5320-48T/P, 5420, 5520, 5720, 7520, 7720	4,000 5,000
ERPS domains—maximum number of ERPS domains with or without CFM configured.	All platforms	32
ERPSv1 protected VLANs—maximum number of protected VLANs.	4120, 4220, 5120, 5320-24T/P, 5320-16P 5320-48T/P, 5420, 5520, 5720, 7520, 7720	1,000 2,000
ERPSv2 protected VLANs—maximum number of protected VLANs.	4120, 4220, 5120, 5320-24T/P, 5320-16P 5320-48T/P, 5420, 5520, 5720, 7520, 7720	500 2,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
ESRP groups—maximum number of ESRP groups	All platforms	32
ESRP domains—maximum number of ESRP domains.	4220, 5320, 5420, 5520, 5720, 7520, 7720.	64
	4120, 5120	32
ESRP L2 VLANs—maximum number of ESRP VLANs without an IP address configured.	4220, 5320, 5420, 5520, 5720, 7520, 7720	1,000
	4120, 5120	120
ESRP L3 VLANs—maximum number of ESRP VLANs with an IP address configured.	5320-48T/P, 5420, 5520, 5720, 7520, 7720	511
	4220, 5320-24T/P, 5320-16P	509
	4120, 5120	120
ESRP (maximum ping tracks)—maximum number of ping tracks per VLAN.	All platforms	8
ESRP (IP route tracks)—maximum IP route tracks per VLAN.	All platforms	8
ESRP (VLAN tracks)—maximum number of VLAN tracks per VLAN.	All platforms	1
Extended Edge Switching maximum BPEs—maximum number of attached bridge port extenders (BPEs).	5520, 7520-48Y	48
	5420	20
Extended Edge Switching maximum cascade ports—maximum number of upstream ports on bridge port extenders (BPEs).	5420, 5520, 7520-48Y	2 on V400-24 and V300 models 4 on V400-48 models
Extended Edge Switching maximum tiers—maximum number of cascade levels (tiers) of bridge port extenders (BPEs).	ExtremeSwitching 5420, 5520, 7520-48Y	4 (except for V300-8P-2T-W, which support 1 tier)
Extended Edge Switching maximum ring BPEs—maximum number of bridge port extenders (BPEs) in a ring topology.	ExtremeSwitching 5420, 5520, 7520-48Y	8

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Extended Edge Switching maximum VLANs—maximum number of VLANs - Includes all VLANs	ExtremeSwitching 5520, 7520-48Y	4,094
	ExtremeSwitching 5420	1,024
Extended Edge Switching VLAN+ port memberships—maximum number of VLAN+ (extended) port memberships.	ExtremeSwitching 5520, 7520-48Y	12,000 in hash mode (default) 131,000 in port-group mode
	5420	8,750 in hash mode (default) 131,617 in port-group mode
Forwarding rate—maximum L3 software forwarding rate.	4220	9,274 pps
	4120	12,624 pps
	5120	9,000 pps
	5320-24P-8XE, 5320-24T-4X-XT	11,000 pps
	5320-48P	19,142 pps
	5420F	21,585 pps
	5520	18,838 pps
	5720-MW	27,000 pps
	5720-MXW	31,000 pps
	7520, 7720	34,813 pps
FDB (unicast blackhole entries)—maximum number of unicast blackhole FDB entries.	4120, 5120	16,384
	4220, 5320	32,000
	ExtremeSwitching 5420M	65,536
	ExtremeSwitching 5420F	32,768 [f]
	ExtremeSwitching 5520	114,688 [f]
	ExtremeSwitching 5720-MW	163,840 [f]
	ExtremeSwitching 5720-MXW, 7520, 7720	294,912 [f]
FDB (multicast blackhole entries)—maximum number of multicast blackhole FDB entries.	5520, 5720-MW	4,096
	4120, 4220, 5120, 5320, 5420	1,024
	5720-MXW, 7520, 7720	16,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
FDB (maximum L2 entries)—maximum number of MAC addresses.	4120, 5120	16,384
	4220, ExtremeSwitching 5320	32,000
	ExtremeSwitching 5420M	65,536
	ExtremeSwitching 5420F	32,768 [g]
	ExtremeSwitching 5520	114,688 [g]
	ExtremeSwitching 5720-MW	163,840 [g]
	5720-MXW, 7520, 7720	294,912 [g]
FDB (maximum L2 entries)—maximum number of multicast FDB entries.	ExtremeSwitching 5520	4,096
	4120, 4220, 5120, 5320, 5420	1,024
	5720, 7520, 7720	16,000
GRE Tunnels—maximum number of GRE tunnels.	All platforms, except 4120, 5120	255
Identity management—maximum number of Blacklist entries.	All platforms except 4120 and 4220.	512
Identity management—maximum number of Whitelist entries.	All platforms except 4120 and 4220.	512
Identity management—maximum number of roles that can be created.	All platforms except 4120 and 4220.	64
Identity management—maximum role hierarchy depth allowed.	All platforms except 4120 and 4220.	5
Identity management—maximum number of attribute value pairs in a role match criteria.	All platforms except 4120 and 4220.	16
Identity management—maximum number of child roles for a role.	All platforms except 4120 and 4220.	8
Identity management—maximum number of policies/dynamic ACLs that can be configured per role.	All platforms except 4120 and 4220.	8
Identity management—maximum number of LDAP servers that can be configured.	All platforms except 4120 and 4220.	8
Identity management—maximum number of Kerberos servers that can be configured.	All platforms except 4120 and 4220.	20

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Identity management—maximum database memory size.	All platforms except 4120 and 4220.	512
Identity management—recommended number of identities per switch. **Note:** Number of identities per switch is for a default identity management database size (512 Kbytes) across all platforms.	All platforms except 4120 and 4220.	100
Identity management—recommended number of ACL entries per identity. **Note:** Number of ACLs per identity, based on system ACL limitation.	All platforms except 4120 and 4220.	20
Identity management—maximum number of dynamic ACL entries configured as an individual dynamic rule, or as an ACL entry in a policy file.	All platforms except 4120 and 4220.	500
IGMP snooping per VLAN filters—maximum number of VLANs supported in per-VLAN IGMP snooping mode.	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, 7520, 7720	1,500
	4220, ExtremeSwitching 5320-24T-4X-XT	500
	4120	48
	5120	100
IGMPv1/v2 SSM-map entries—maximum number of IGMPv1/v2 SSM mapping entries.	5320, 5420, 5520, 5720, 7520, 7720	6
	5120	60
IGMPv1/v2 SSM-map entries—maximum number of sources per group in IGMPv1/v2 SSM mapping entries.	All platforms except 4120 and 4220.	50
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per port. [n]	5320 (except 5320-24T-4X-XT), 5420, 7520, 7720 ,5720,5520	4,000
	4220, 5320-24T-4X-XT	1,000
	4120, 5120	250

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per switch. [n]	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520	20,000
	ExtremeSwitching 5720-MW, 7520, 7720	45,000
	ExtremeSwitching 5720-MXW	54,000
	4220, 5320-24T-4X-XT	1,000
	4120, 5120	256
IGMPv3 maximum source per group—maximum number of source addresses per group.	All platforms	250
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per port. [n]	5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, 7520, 7720	4,000
	4220, 5320-24T-4X-XT	1,000
	4120, 5120	250
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per switch. [n]	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520	20,000
	ExtremeSwitching 5720-MW, 7520, 7720	45,000
	ExtremeSwitching 5720-MXW	54,000
	4220, 5320-24T-4X-XT	1,000
	4120, 5120	256
IP ARP entries in software—maximum number of IP ARP entries in software. **Note:** Might be limited by hardware capacity of FDB (maximum L2 entries).	4120, 5120	400
	4220, 5320-16P-2MXT-2X	4,000
	5320 (except 5320-16P-2MXT-2X), 5420F models	12,000
	5420M models	24,000
	5520	74,750 [h]
	5720-MW	100,000
	7520, 7720	184,318 (up to)
	ExtremeSwitching 5720-MXW	221,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IPv4 ARP entries in hardware with minimum LPM routes—maximum recommended number of IPv4 ARP entries in hardware, with minimum LPM routes present. Assumes number of IP route reserved entries is 100 or less.	4120, 5120	397
	4220	4,000
	5320	12,000
	5320-16P-2MXT-2X	4,000
	ExtremeSwitching 5420M models	24,000
	ExtremeSwitching 5420F models	12,000
	ExtremeSwitching 5520	60,000 [h]
	ExtremeSwitching 5720-MW	80,000 [h]
	7520, 7720	146,000 [h]
	ExtremeSwitching 5720-MXW	172,000 [h]
IPv4 ARP entries in hardware with maximum LPM routes—maximum recommended number of IPv4 ARP entries in hardware, with maximum LPM routes present. Assumes number of IP route reserved entries is “maximum.”	4120, 5120	384
	4220	3,000
	5320	10,000
	5320-16P-2MXT-2X	3,000
	ExtremeSwitching 5420M models	21,000
	ExtremeSwitching 5420F models	10,000
	ExtremeSwitching 5520	49,000 [h]
	ExtremeSwitching 5720-MW	70,000 [h]
	7520, 7720	125,000 [h]
	ExtremeSwitching 5720-MXW	156,000 [h]
IP flow information export (IPFIX)—number of simultaneous flows.	ExtremeSwitching 5420	4,000 (IPv4 and IPv6 flows)
	ExtremeSwitching 5520	32,000 (IPv4 flows) 18,000 (IPv6 flows)
	ExtremeSwitching 5720	257,000 (IPv4 flows) 112,000 (IPv6 flows)

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IPv4 remote hosts in hardware with zero LPM routes—maximum recommended number of IPv4 remote hosts (hosts reachable through a gateway) in hardware when LPM routing is not used. Assumes number of IP route reserved entries is 0, and number of IPv4 ARP entries present is 100 or less.	4120, 5120	450
	4220	4,000
	5320	20,000
	5320-16P-2MXT-2X	7,000
	ExtremeSwitching 5320-24T/P, 5320-16P	24,000
	ExtremeSwitching 5420M	36,000
	ExtremeSwitching 5420F	24,000 [h]
	ExtremeSwitching 5520	102,000 [h]
	ExtremeSwitching 5720-MW	139,000 [h]
	7520, 7720	241,000 (up to)
	5720-MXW (with ALPM enabled)	245,000 [h]
IPv4 routes—maximum number of IPv4 routes in software (combination of unicast and multicast routes), including static and from all routing protocols.	5520	81,000
	4120, 4220, 5120, 5320, 5420	25,000
	5720-MW	163,000
	5720-MXW	288,000
	7520, 7720	350,000
IPv4 routes (LPM entries in hardware)— number of IPv4 routes in hardware.	4120, 5120	64 [q]
	4220, 5320-16P-2MXT-2X	992
	5320-16T/P, 5320-24T/P	8,000
	5320-48T/P, 5420	12,000
	5520	81,000 [q]
	ExtremeSwitching 5720-MW	163,000 [q]
	7520, 7720	262,000 up to 350,000 [q]
	ExtremeSwitching 5720-MXW	288,000 [q]
IPv6 6in4 tunnel—maximum number of IPv6 6in4 tunnels.	All platforms except 4120, 5120	255
IPv6 6to4 tunnel—maximum number of IPv6 6to4 tunnels.	All platforms except 4120, 5120	1 (per virtual router)
IPv6 addresses on an interface—maximum number of IPv6 addresses on an interface.	All platforms	255
IPv6 addresses on a switch—maximum number of IPv6 addresses on a switch.	All platforms	2,048

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IPv6 host entries in hardware—maximum number of IPv6 neighbor entries in hardware.	4120, 5120	200
	4220	2,000
	5320	6,000
	5320-16P-2MXT-2X	3,000
	5420M models	12,000
	ExtremeSwitching 5420F models	6,000
	ExtremeSwitching 5520	18,000 s
	ExtremeSwitching 5720-MW	24,000 s
	7520, 7720	57,000 h
	ExtremeSwitching 5720-MXW	78,000 s
IPv6 routes in software—maximum number of IPv6 routes in software, including static routes and routes from all routing protocols.	ExtremeSwitching 5520	18,000 q
	4120, 4220, 5320, 5420	25,000
	5720-MW	70,000 q
	7520, 7720	196,000 q
	ExtremeSwitching 5720-MXW	213,000 q
IPv6 routes (LPM entries in hardware)—maximum number of IPv6 routes in hardware.	4120, 5120	64 q
	4220	512
	ExtremeSwitching 5520	40,000 q
	ExtremeSwitching 5420	6,000
	ExtremeSwitching 5720-MW	107,000 q
	7520, 7720	131,000 up to 196,000 q
	5720-MXW	213,000 q
IPv6 routes with a mask greater than 64 bits in hardware—maximum number of such IPv6 LPM routes in hardware.	5320, 5420	256
	4220, 5520, 7520, 7720	8,192 r 32,000 r
	5720-MW	16,000 r
	5720-MXW	24,000 r
IPv6 route sharing in hardware—route mask lengths for which ECMP is supported in hardware.	4120, 4220, 5120, 5320, 5420	0–64, >64 single path only
	5520, 5720, 7520, 7720	0–128 r

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IP router interfaces—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	4120, 5120	126
	5320-48T/P, 5420	1,533
	4220, 5320-24T/P, 5320-16P	509
	5320-16P-2MXT-2X	1,021
	5520, 5720, 7520, 7720	2,048
IP multicast static routes—maximum number of permanent multicast IP routes.	All platforms	1,024
IP unicast static routes—maximum number of permanent IP unicast routes.	All platforms	1,024
IP route sharing (maximum gateways)—Configurable maximum number of gateways used by equal cost multipath OSPF, BGP, IS-IS, static routes, or L2VPNs. Static routes, OSPF, and BGP are limited to 64 ECMP gateways per destination, while IS-IS is limited to 8. L2VPNs are limited to 16 LSPs per pseudowire on platforms that support 32 gateways, and 64 LSPs per pseudowire on platforms that support 64 gateways.	4120, 4220, 5120, 5320, 5420, 5520	2, 4, or 8
	5720, 7520, 7720	2, 4, 8, 16, 32, or 64

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
IP route sharing (total combinations of gateway sets)—maximum number of combinations of sets of adjacent gateways used by multipath OSPF, BGP, IS-IS, or static routes.	4120, 5120	62 (if maximum gateways is 2, 4, or 8)
	4220, 5320 **Note:** The values here represent the maximum attainable ECMP groups of which, due to the RIOT feature, half are reserved for overlay and half for underlay routing.	124 (if maximum gateways is 2) 124 (if maximum gateways is 4) 60 (if maximum gateways is 8)
	5420 **Note:** The values here represent the maximum attainable ECMP groups of which, due to the RIOT feature, half are reserved for overlay and half for underlay routing.	510 (if maximum gateways is 2) 254 (if maximum gateway is 4) 126 (if maximum gateways is 8)
	5520 **Note:** The values here represent the maximum attainable ECMP groups of which, due to the RIOT feature, half are reserved for overlay and half for underlay routing.	2,046 (if maximum gateways is 2) 1,022 (if maximum gateway is 4) 510 (if maximum gateways is 8)
	5720 if maximum gateways is 2 if maximum gateways is 4 if maximum gateways is 8 if maximum gateways is 16 (default) if maximum gateways is 32 if maximum gateways is 64	2,046 2,046 2,046 1,022 510 254

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
	Note: The values here represent the maximum attainable ECMP groups of which, due to the RIOT feature, half are reserved for overlay and half for underlay routing.	
	7520, 7720 if maximum gateways is 2 if maximum gateways is 4 if maximum gateways is 8 if maximum gateways is 16 (default) if maximum gateways is 32 if maximum gateways is 64 **Note:** The values here represent the maximum attainable ECMP groups of which, due to the RIOT feature, half are reserved for overlay and half for underlay routing.	4,094 4,094 2,046 1,022 510 254
IP multinetting (secondary IP addresses)—maximum number of secondary IP addresses per VLAN.	All platforms	255
Jumbo frames—maximum size supported for jumbo frames, including the CRC.	All platforms	9,216
Layer-2 IPMC forwarding caches—(IGMP/MLD/PIM snooping) in mac-vlan mode. **Note:** • The internal lookup table configuration used is "l2-and-l3". • IPv6 and IPv4 L2 IPMC scaling is the same for this mode. • Layer-2 IPMC forwarding cache limits—(IGMP/MLD/PIM snooping) in mixed-mode are the same. 4120 and 4220 do not support PIM snooping.	4120, 5120 4220, 5320 5420 5520 5720-MW 7520, 7720 5720-MXW	192 32,000 64,000 32,768 49,152 73,000 81,920

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Layer-3 IPv4 Multicast—maximum number of <S,G,V> entries installed in the hardware (IP multicast compression enabled). Note: • Limit value is the same for MVR senders, PIM Snooping entries. PIM SSM cache, IGMP senders, PIM cache. • Assumes source-group-vlan mode as look up key. • Layer 3 IPMC cache limit in mixed mode also has the same value.	4120, 5120	192
	4220	2,000
	5320 (except 5320-24T-4X-XT)	8,000
	ExtremeSwitching 5420M	12,000
	ExtremeSwitching 5420F	6,000
	5520	43,000
	ExtremeSwitching 5720-MW	61,000
	7520, 7720	104,000
	ExtremeSwitching 5720-MXW	110,000
	ExtremeSwitching 5320-24T-4X-XT	2000
Layer-3 IPv6 Multicast—maximum number of <S,G,V> entries installed in the hardware (IP multicast compression enabled). Note: • Limit value is the same for MLD sender per switch, PIM IPv6 cache. • Assumes source-group-vlan mode as lookup key. 4120 and 4220 do not support PIM snooping, but MLD cache is supported in the hardware.	4120, 5120	100
	4220	1,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT)	4,000
	ExtremeSwitching 5420M	6,000
	ExtremeSwitching 5420F	3,000
	ExtremeSwitching 5520	21,500
	ExtremeSwitching 5720-MW	30,500
	7520, 7720	52,000
	ExtremeSwitching 5720-MXW	55,000
	ExtremeSwitching 5320-24T-4X-XT	1,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Load sharing—maximum number of load sharing groups. **Note:** The actual number of load-sharing groups that can be configured is limited by the number of physical ports present in the switch or SummitStack.	All platforms	128
Load sharing—maximum number of ports per load-sharing group.	For standalone and stacked: 4120, 4220, 5120, 5320, 5420 For standalone: ExtremeSwitching 5520, 5720, 7520, 7720 For stacked: ExtremeSwitching 5520, 5720, 7520, 7720	8 32 64
Logged messages—maximum number of messages logged locally on the system.	All platforms	20,000
MAC-based security—maximum number of MAC-based security policies.	All platforms	1,024
MAC Locking—Maximum number of MAC locking stations that can be learned on a port.	All platforms	64 (static MAC locking stations) 600 (first arrival MAC locking stations)
Meters—maximum number of meters supported.	All platforms	2,048
Maximum mirroring instances.	All platforms except 4120 and 5120 4120, 5120	4 total, 2 egress 6 defined, max 4 enabled (max 1 egress)
Mirroring (filters)—maximum number of mirroring filters. **Note:** This is the number of filters across all the active mirroring instances.	All platforms	128

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Mirroring, one-to-many (filters)—maximum number of one-to-many mirroring filters. **Note:** This is the number of filters across all the active mirroring instances.	All platforms	128
Mirroring, one-to-many (monitor port)—maximum number of one-to-many monitor ports.	All platforms	16
MLAG ports—maximum number of MLAG ports allowed. **Note:** The number of MLAG ports that can be configured is limited by the number of physical ports present in the system.	5120, 5320 5720 4120, 4220 5420, 5520 7520, 7720	55 63 59 61
MLAG peers—maximum number of MLAG peers allowed.	All platforms	2
Multicast listener discovery (MLD) snooping per-VLAN filters—maximum number of VLANs supported in per-VLAN MLD snooping mode.	5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, 7520, 7720 4220, 5320-24T-4X-XT 4120, 5120	1,500 250 32
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per port. [n]	5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, 7520, 7720 4220, 5320-24T-4X-XT 4120, 5120	4,000 1,000 100
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per switch. [n]	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520 ExtremeSwitching 5720-MW 7520, 7720 ExtremeSwitching 5720-MXW 4220, 5320-24T-4X-XT 4120, 5120	10,000 30,000 45,000 54,000 1,000 100

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per port. [n]	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, 7520, 7720	4,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120, 5120	100
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per switch. [n]	4120, 4220, 5320 (except 5320-24T-4X-XT), 5420, 5520	10,000
	ExtremeSwitching 5720-MW	30,000
	7520, 7720	45,000
	ExtremeSwitching 5720-MXW	54,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120, 5120	100
Multicast listener discovery (MLD)v2 maximum source per group—maximum number of source addresses per group.	All platforms except 4120, 5120	200
	4120, 5120	100
Multicast listener discovery (MLD) SSM-map entries—maximum number of MLD SSM mapping entries.	5320, 5420, 5520, 5720, 7520, 7720	500
Multicast listener discovery (MLD) SSM-MAP entries—maximum number of sources per group in MLD SSM mapping entries.	5120, 5320, 5420, 5520, 5720, 7520, 7720	50
Network Address Translation (NAT) VLANs—maximum number of NAT VLANs.	7520, 7720	4
Network Address Translation (NAT) Sessions—number of NAT sessions supported (non twice-NAT).	7520, 7720	1,023
Network Login—maximum number of clients being authenticated on MAC-based VLAN enabled ports.	All platforms	1,024
Network Login—maximum number of dynamic VLANs.	All platforms	1,024
Network Login VLAN VSAs—maximum number of VLANs a client can be authenticated on at any given time.	All platforms	10

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Network Service Identifiers (NSI)/VLAN mappings—maximum number of VLANs to NSI mappings.	All platforms	94
Node Alias—maximum number of entries per slot.	All platforms	8,192
ONEPolicy Dynamic ACL Rules—maximum number of Dynamic ACLs supported via RADIUS VSA 232 per user in Access-List mode.	All platforms	64
ONEPolicy Roles/Profiles—maximum number of policy roles/profiles.	All platforms	63

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
ONEPolicy Rules per Role/ Profile—maximum number of rules per role/policy.	5320-24T-4X-XT	IPv4 Rules: 256 IPv6 Rules: 0 MAC Rules: 0 L2 Rules: 184
	4120, 5120	IPv4:128 L2:56
	4220	IPv4:256 L2:184
	5320	IPv4 Rules: 1,024 IPv6 Rules: 0 MAC Rules: 0 L2 Rules: 952
	ExtremeSwitching 5420-F, 5320-24T-24S-4XE-XT 7520, 7720	IPv4 Rules: 512 IPv6 Rules: 512 MAC Rules: 512 L2 Rules: 440
	ExtremeSwitching 5720-MW	IPv4 Rules: 1,536 IPv6 Rules: 1,536 MAC Rules: 1,536 L2 Rules: 1,464
	ExtremeSwitching 5720-MXW	IPv4 Rules: 2,048 IPv6 Rules: 2,048 MAC Rules: 2,048 L2 Rules: 1 ,976
	ExtremeSwitching 5420-M, 5520	IPv4 Rules: 1,024

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
		IPv6 Rules: 1,024 MAC Rules: 1,024 L2 Rules: 952
ONEPolicy Authenticated Users per Switch—maximum number of authenticated users per switch only with TCI-Overwrite enabled.	ExtremeSwitching 5520, 5720	1,024
	ExtremeSwitching 5320-24T-4X-XT	128
	ExtremeSwitching 5320, 5420, 7520, 7720	512
	4120, 4220, 5120	256
	Stacking	Depends on the stack nodes, but the maximum is 1,024.
ONEPolicy Authenticated Users per Switch—maximum number of authenticated users per switch with TCI-Overwrite disabled. **Note:** The maximum values assume 75% utilization of VLAN-XLATE hash table.	Stacking	1,536–65,534
	7520, 7720	24,576
	ExtremeSwitching 5320-24T-4X-XT	384
	4120, 4220, ExtremeSwitching 5120, 5320, 5420	768
	ExtremeSwitching 5720	12,288
	ExtremeSwitching 5520	9,216
ONEPolicy Authenticated Users per Port per Switch — maximum number of authenticated users per port per switch with TCI overwrite disabled. **Note:** The maximum values assume 75% utilization of VLAN-XLATE hash table.	ExtremeSwitching 5320-24T-4X-XT	384
	4120, 4220, 5120, 5320, 5420	768
	7520, 7720	24,576
	ExtremeSwitching 5720	12,288
	ExtremeSwitching 5520	9,216
ONEPolicy Authenticated Users per Port per Switch — maximum number of authenticated users per port with only with TCI-Overwrite enabled.	4120, 5120	256
	4220	440
	5120, 5320, 5420, 7520, 7720	512
	5520, 5720	1,024

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
ONEPolicy Permit/Deny Traffic Classification Rules Types—total maximum number of unique permit/deny traffic classification rules types (system/stack).	5320, 5420-F, 7520, 7720	1,976
	5720-MW	6,072
	5720-MXW	8,120
	5420-M, 5520	4,024
	5320-24T-24S-4XE-XT	512
	4220	440
	4120, 5120	184
	5320-24T-4X-XT	128
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique MAC permit/deny traffic classification rules types (macsource/macdest).	5420-M, 5520	1,024
	5420-F, 5320-24T-24S-4XE-XT 7520, 7720	512
	5720-MW	1,536
	5720-MXW	2,048
	4120, 4220, 5120, 5320	N/A
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique IPv6 permit/deny traffic classification rules types (ipv6dest).	ExtremeSwitching 5420-M. 5520	1,024
	ExtremeSwitching 5420-F, 5320-24T-24S-4XE-XT 7520, 7720	512
	ExtremeSwitching 5720-MW	1,536
	ExtremeSwitching 5720-MXW	2,048
	4120, 4220, 5120, 5320	N/A
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique IPv4 permit/deny traffic classification rules (typesipsource / ipdest / ipfrag / udpsourceportIP / udpdestportIP / tcpsourceportIP / tcpdestportIP / ipttl / iptos / iptype).	ExtremeSwitching 5320-24T-4X-XT	256
	5120, 5320, 5420-F, 5520	1,024
	ExtremeSwitching 5720-MW	1,536
	ExtremeSwitching 5720-MXW	2,048
	ExtremeSwitching 5420-M, 5320-24T-24S-4XE-XT 7520, 7720	512
	4220	256
	4120, 5120	128
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique Layer 2 permit/deny traffic classification rules (ethertype/port).	ExtremeSwitching 5320-24T-24S-4XE-XT	440
	ExtremeSwitching 5320, 5420-M, 5520	952
	5720-MW	1,464
	5720-MXW	1,976
	5420-F, 7520, 7720	440
	4220, 5320-24T-4X-XT	184
	4120, 5120	56

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
OnePolicy Maximum number of rules supported in AccessList mode—maximum number of rules in AcessList mode.	7520, 7720	3,512
	4120, 5120	440
	4220, 5320-24T-4X-XT	952
	5320, 5420-F, 5320-24T-24S-4XE-XT	4,024
	5420-M	8,120
	5720-MW	12,216
	5720-MXW	16,312
OSPFv2/v3 ECMP—maximum number of equal cost multipath OSPFv2 and OSPFv3.	4120, 4220, 5120, 5320, 5420, 5520, 5720	8
	7520, 7720	64
OSPFv2 areas—as an ABR, how many OSPF areas are supported within the same switch.	All platforms	8
OSPFv2 external routes—recommended maximum number of external routes contained in an OSPF LSDB.	5520	5,000
	5720, 7520, 7720	10,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5420	4,000
	5320-16P-2MXT-2X	992
	4220, 5320-24T-4X-XT	500
	4120, 5120	64
OSPFv2 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes contained in an OSPF LSDB with one ABR in OSPF domain.	5520, 5720-MXW, 7520, 7720	2,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5420	1,600
	5320-16P-2MXT-2X	992
	4220, 5320-24T-4X-XT	500
	4120, 5120	64
OSPFv2 inter-vr or leaking routes—recommended maximum number of inter-vr routes contained in an OSPF LSDB.	5420, 5520, 5720, 7520, 7720	2,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT)	1,600
	4120, 5120	64
OSPFv2 interfaces—recommended maximum number of OSPF interfaces on a switch (active interfaces only).	All platforms	4
OSPFv2 links—maximum number of links in the router LSA.	4120, 5320, 5420, 5520, 5720, 7520, 7720	400
	4220, 5120	64

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
OSPFv2 neighbors—maximum number of supported OSPF adjacencies.	All platforms	4
OSPFv2 routers in a single area—recommended maximum number of routers in a single OSPF area.	5520	50
	5720, 7520, 7720	100
	4120, 4220, 5120, 5320, 5420	40
OSPFv2 virtual links—maximum number of supported OSPF virtual links.	All platforms	32
OSPFv3 areas—as an ABR, the maximum number of supported OSPFv3 areas.	5520	16
	5720, 7520, 7720	100
	5120, 5320, 5420	12
OSPFv3 external routes—recommended maximum number of external routes.	5520, 5720-MXW, 7520, 7720	10,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5720-MW	7,500
	5420	6,000
	5320-24T-4X-XT	300
	5320-16P-2MXT-2X	496
	5120	64
OSPFv3 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes.	5520	3,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5720, 7520, 7720	4,000
	5420	6,000
	5320-24T-4X-XT	300
	5320-16P-2MXT-2X	496
	5120	64
OSPFv3 interfaces—maximum number of OSPFv3 interfaces (active interfaces only).	All platforms except 4120 and 4220	4
OSPFv3 neighbors—maximum number of OSPFv3 neighbors.	All platforms except 4120 and 4220	4
OSPFv3 virtual links—maximum number of OSPFv3 virtual links supported.	All platforms except 4120 and 4220	16
PIM IPv4 Limits—maximum number of multicast groups per dynamic rendezvous point.	5120	32

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
PIM IPv4 Limits—maximum number of multicast groups per static rendezvous point.	All platforms, except 4120 and 5120 4120, 5120	180 32
PIM IPv4 Limits—maximum number of multicast sources per group.	All platforms except 4120, 4220, 5120 4220, 5320-24T-XT 4120, 5120	5,000 2,000 192
PIM IPv4 Limits—maximum number of dynamic rendezvous points per multicast group.	All platforms	145
PIM IPv4 Limits—static rendezvous points.	All platforms	32
PIM IPv6 (maximum interfaces)—maximum number of PIM active interfaces.	All platforms	N/A
PIM IPv6 Limits—maximum number of multicast sources per group.	All platforms except 4120, 4220, 5120 4220, 5320-24T-XT 4120, 5120	1,750 1,000 70
PIM IPv6 Limits—maximum number of multicast groups per dynamic rendezvous point.	All platforms except 4120 and 4220	70
PIM IPv6 Limits—maximum number of multicast groups per static rendezvous point.	All platforms except 4120 and 5120 4120, 5120	3,000 (depends on policy file limits) 70
PIM IPv6 Limits—maximum number of dynamic rendezvous points per multicast group.	All platforms	64
PIM IPv6 Limits—maximum number of secondary addresses per interface.	All platforms	70
PIM IPv6 Limits—static rendezvous points.	All platforms	32
Policy-based routing (PBR) redundancy—maximum number of flow-redirects.	All platforms	256 [o]
Policy-based routing (PBR) redundancy—maximum number of next hops per each flow-direct.	All platforms	32 [o]

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Port-specific VLAN tags—maximum number of port-specific VLAN tags.	4120, 4220, 5120, 5320, 5420 5520, 5720, 7520, 7720	N/A 1,023
Port-specific VLAN tags—maximum number of port-specific VLAN tag ports.	4120, 4220, 5120, 5320, 5420 5520, 5720, 7520, 7720	N/A 4,000
Private VLANs—maximum number of subscribers. Assumes a minimum of one port per network and subscriber VLAN.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	36 71
Private VLANs—maximum number of private VLANs with an IP address on the network VLAN. **Note:** This limit is dependent on the maximum number of private VLANs in an L2-only environment if the configuration has tagged and translated ports.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	960 1,024
Private VLANs—maximum number of private VLANs in an L2-only environment.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	960 1,280
Route policies—suggested maximum number of lines in a route policy file.	All platforms	10,000
RIP Learned Routes—maximum number of RIP routes supported without aggregation.	5320-48T/P, 5320-24T-24S XT, 5420, 5520, 5720, 7520, 7720 5320-16P, 5320-24T/P 5320-24T-4X-XT 4220, 5320-16P-2MXT-2X 4120, 5120	10,000 7,000 900 992 64
RIP interfaces on a single router—recommended maximum number of RIP routed interfaces on a switch.	All platforms	256
RIPng learned routes—maximum number of RIPng routes.	5320-48T/P, 5320-24T-24S XT, 5420, 5520, 5720, 7520, 7720 5120 5320-16P, 5320-24T/P 5320-16P-2MXT-2X 5320-24T-4X-XT	3,000 64 2,000 496 400

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Spanning Tree (maximum STPDs)—maximum number of Spanning Tree Domains on port mode EMISTP.	5320-48T/P, 5420, 5520, 5720, 5320-24T-24S-4XE-XT, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P, 5320-24T-4X-XT	64 32
Spanning Tree PVST+—maximum number of port mode PVST domains. **Note:** For all platforms, the maximum number of active ports per PVST domain depends on the maximum number of spanning tree ports supported on given platform. For example, for an ExtremeSwitching switch that supports 256 PVST domains (maximum) and 4,096 STP ports (maximum), the maximum number of active ports per PVST domain would be 16 ports (4,096 ÷ 256).	4120, 4220, 5120, 5320, 5320-24T-4X-XT, 5320-24T-24S-4XE-XT, 5420, 5520, 5720 7520, 7720	128 384
Spanning Tree—maximum number of multiple spanning tree instances (MSTI) domains.	5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P, 5320-24T-4X-XT	64 32
Spanning Tree—maximum number of VLANs per MSTI. **Note:** Maximum number of 10 active ports per VLAN when all 500 VLANs are in one MSTI.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P; 5320-24T-4X-XT, 5320-24T-24S-4XE-XT	600 256
Spanning Tree—maximum number of VLANs on all MSTP instances.	5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P, 5320-24T-4X-XT	1,024 512
Spanning Tree (802.1d domains)—maximum number of 802.1d domains per port.	All platforms	1
Spanning Tree (number of ports)—maximum number of ports including all Spanning Tree domains.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P	4,096 2,048

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
Spanning Tree (maximum VLANs)—maximum number of STP-protected VLANs (dot1d and dot1w).	5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P, 5320-24T-4X-XT	1,024 600
SSH (number of sessions)—maximum number of simultaneous SSH sessions.	All platforms	8
Static MAC multicast FDB entries—maximum number of permanent multicast MAC entries configured into the FDB.	All platforms	1,024
Syslog servers—maximum number of simultaneous Syslog servers that are supported.	All platforms	16
Syslog targets—maximum number of configurable Syslog targets.	All platforms	16
Telnet (number of sessions)—maximum number of simultaneous Telnet sessions.	All platforms	8
Virtual routers—maximum number of user-created virtual routers that can be created on a switch.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P	63 16 (local-only VRs)
Virtual router forwarding (VRFs)—maximum number of VRFs that can be created on a switch. **Note:** * Subject to other system limitations.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P	960 * 16 (local-only VRs)
Virtual router protocols per VR—maximum number of routing protocols per VR.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P	8 N/A
Virtual router protocols per switch—maximum number of VR protocols per switch.	5320-48T/P, 5420, 5520, 5720, 7520, 7720 4120, 4220, 5120, 5320-24T/P, 5320-16P	64 N/A
VLAN aggregation—maximum number of port-VLAN combinations on any one superVLAN and all of its subVLANs.	All platforms	1,000

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
VLANs—includes all VLANs. **Note:** Only 4,092 user-configurable VLANs are supported. (VLAN 1 is the default VLAN, and 4,095 is the management VLAN, and you may not configure them.)	All platforms	4,094
VLANs (Layer 2)—maximum number of Layer 2 VLANs.	All platforms	4,094
VLANs (Layer 3)—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	5320-48T/P, 5420 4120, 5120 4220, 5320-24T/P, 5320-16P 5320-16P-2MXT-2X 5520, 5720, 7520, 7720	1,533 126 509 1,021 2,048
VLAN Port Interfaces (VPIF)—maximum number of VLAN port interfaces.	5120, 5320 5420 4120 4220 5520, 5720, 7520, 7720	40,000 60,000 32,000 65,549 131,585
VLANs (maximum active port-based)—maximum active ports per VLAN when 4,094 VLANs are configured with the default license.	5520, 5720, 7520, 7720 4120, 4220, 5120 5320, 5420	32 15 3
VLANs (maximum active protocol-sensitive filters)—number of simultaneously active protocol filters in the switch.	All platforms except 4120 and 4220.	16
VLAN translation—maximum number of translation VLANs. Assumes a minimum of one port per translation and member VLAN.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	36 71

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
VLAN translation—maximum number of translation VLAN pairs with an IP address on the translation VLAN. **Note:** This limit is dependent on the maximum number of translation VLAN pairs in an L2-only environment if the configuration includes tagged and translated ports.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	960 1,024
VLAN translation—maximum number of translation VLAN pairs in an L2-only environment.	4120, 4220, 5120, 5320, 5420, 5520, 5720 7520, 7720	960 2,046
VMAN CEP—maximum number of CVIDs. **Note:** With 75% hash table utilization.	4120, 4220, 5120, 5320, 5420 5520, 5720	768 9,000
VRRP (v2/v3-IPv4) (maximum instances)—maximum number of VRRP instances for a single switch. **Note:** These limits are applicable for Fabric Routing configuration also. **Note:** Number of groups configured should not exceed the number of individual VRs supported (that is, in normal mode) for that platform type.	**Normal Mode (as individual VRs):** All platforms except 4120, 4220, 5120 4220 4120, 5120 **Scaled Mode (with groups):** 5720, 7520, 7720 5120, 5320, 5420, 5520 **Sliced Mode:** All platforms except 4120, 4220, 5120 5120	 511 508 31 2,048 1,000 511 126

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
VRRP (v3-IPv6) (maximum instances)—maximum number of VRRP instances for a single switch. (VRRP-VRRPv3-IPv6) **Note:** These limits are applicable for Fabric Routing configuration also. **Note:** Number of groups configured should not exceed the number of individual VRs supported (that is, in normal mode) for that platform type.	**Normal Mode (as individual VRs):** All platforms except 4120, 4220, 5120 4220 4120, 5120 **Scaled Mode (with groups):** 5720, 7520, 7720 5120, 5320, 5420, 5520	 511 508 31 2,048 1,000
VRRP (v2/v3-IPv4/IPv6) (maximum VRID)—maximum number of unique VRID numbers per switch.	All platforms except 4120, 5120 4120, 5120	255 31
VRRP (v2/v3-IPv4/IPv6) (maximum VRIDs per VLAN)—maximum number of VRIDs per VLAN.	All platforms except 4120 and 5120 4120, 5120	255 31
VRRP (v2/v3-IPv4/IPv6) (maximum ping tracks)—maximum number of ping tracks per VLAN.	All platforms	8
VRRP (maximum ping tracks)—maximum number of ping tracks per VRRP Instance under 128 VRRP instances.	All platforms	8 (20 centisecond or 1 second hello interval)
VRRP (v3-IPv6) (maximum ping tracks)—maximum number of ping tracks per VRRP Instance under 128 VRRP instances.	All platforms	8 (20 centisecond or 1 second hello interval)
VRRP (v2/v3-IPv4/IPv6) (maximum iproute tracks)—maximum number of IP route tracks per VLAN.	All platforms	8
VRRP (v2/v3-IPv4/IPv6)—maximum number of VLAN tracks per VLAN.	All platforms	8

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
VXLAN—maximum virtual networks. Note: Every VPLS instance/ PSTag VLAN reduces this limit by 1. Note: Assumption is all BUM (broadcast/unknown-unicast/multicast) FDB entries are pointing to the same set of RTEPs when all VNETs use explicit flooding. Depends on whether all VNETs use standard or explicit and the number of tenant VLAN ports. Note: On ExtremeSwitching 5520 and 5420 switches, every VNET reduces this limit by 1. Every (VPLS/PSTag VLAN) + port reduces the limit by 1 on all platforms. Every VXLAN Underlay Multicast Tunnel reduces this limit by 1.	5520, 5720, 7520, 7720 5320, 5420	2,048–4,000 150-375
VXLAN—maximum tenant VLANs plus port combinations Note: Every (VPLS/PSTag VLAN) + port reduces the limit by 1.	5520, 5720, 7520, 7720 5320, 5420	4,096 150-375
VXLAN—maximum static MAC to IP bindings. Note: Every FDB entry configured reduces this limit by 1.	All supported platforms except 4120 and 4220	64,000
VXLAN—maximum RTEP IP addresses	All supported platforms except 4120 and 4220	512
VXLAN—maximum virtual networks with dynamic learning and OSPF extensions for VXLAN	5520, 5720, 7520, 7720 5320, 5420	4,000 375

Table 7: Supported Limits for the Base License (continued)

Metric	Product	Limit
VXLAN—or replicator role, maximum number of attached leafs per switch.	All supported platforms except 4120 and 4220	256
XML requests—maximum number of XML requests per second. Note: Limits are dependent on load and type of XML request. These values are dynamic ACL data requests.	All platforms	10 with 100 DACLs
XNV authentication—maximum number of VMs that can be processed (combination of local and network VMs).	All platforms except 4120 and 4220	2,048
XNV database entries—maximum number of VM database entries (combination of local and network VMs).	All platforms except 4120 and 4220	16,000
XNV database entries—maximum number of VPP database entries (combination of local and network VPPs).	All platforms except 4120 and 4220	2,048
XNV dynamic VLAN—Maximum number of dynamic VLANs created (from VPPs /local VMs).	All platforms except 4120 and 4220	2,048
XNV local VPPs—maximum number of XNV local VPPs.	All platforms except 4120 and 4220	2,048 ingress 512 egress
XNV policies/dynamic ACLs—maximum number of policies/dynamic ACLs that can be configured per VPP.	All platforms except 4120 and 4220	8 ingress 4 egress
XNV network VPPs—maximum number of XNV network VPPs. p	All platforms except 4120 and 4220	2,048 ingress 512 egress

Premier License Limits

The following table shows supported limits for features in the Premier License.

Table 8: Supported Limits for the Premier License

Metric	Product	Limit
Anycast RP Using PIM—maximum number of IPv4 Anycast RP set per VR.	All platforms	32
Anycast RP Using PIM—maximum number of IPv6 Anycast RP set per VR.	All platforms	32
Anycast RP Using PIM—RP peers per Anycast RP set.	All platforms	10
BGP (aggregates)—maximum number of BGP aggregates.	5120, 5320, 5420, 5520, 5720, 7520, 7720	256
BGP (networks)—maximum number of BGP networks.	5120, 5320, 5420, 5520, 5720, 7520, 7720	1,024
BGP (peers)—maximum number of BGP peers. **Note:** With default keepalive and hold timers. **Note:** Each BGPv4/BGPv6 peer handles a maximum of 50 routes. **Note:** ECMP should not be enabled for BGP.	5120, 5320, 5420, 5520, 5720, 7520, 7720	300
BGP (peer groups)—maximum number of BGP peer groups.	5120, 5320, 5420, 5520, 5720, 7520, 7720	64
BGP (policy entries)—maximum number of BGP policy entries per route policy.	5120, 5320, 5420, 5520, 5720, 7520, 7720	256
BGP (policy statements)—maximum number of BGP policy statements per route policy.	5120, 5420, 5520, 5720, 7520, 7720 5320	1,024 820

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
BGP (multicast address-family routes)—maximum number of multicast address-family routes.	5520, 5720MW	13,000
	5720-MXW	20,000
	7520, 7720	25,000
	5320 48-port, 5420	12,000
	5320-16P-4XE, 5320 24-port except XT	8,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	992
	5120	64
BGP (unicast address-family routes)—maximum number of unicast address-family routes.	5520, 5720MW (at default)	13,000
	7520, 7720 (at deafult)	25,000
	5720-MXW (at default)	20,000
	5320 48-port, 5420	12,000
	5320-16P-4XE, 5320 24-port except XT	8,000
	5120	64
	5320-24T-4X-XT, 5320-16P-2MXT-2X	992
	5720-MW (with ALPM enabled)	163,000
	5720-MXW (with ALPM enabled)	288,000
	5520 (with ALPM enabled)	80,000
BGP (non-unique routes)—maximum number of non-unique BGP routes.	7520, 7720	75,000
	5320 48-port, 5420, 5520, 5720-MW	36,000
	5720-MXW	60,000
	5320-16P-4XE, 5320 24-port except XT	24,000
	5120	192
	5320-24T-4X-XT, 5320-16P-2MXT-2X	2,700
BGP ECMP—maximum number of equal cost paths per multipath for BGP and BGPv6.	5120, 5320, 5420, 5520, 7520, 7720	8
	5720	64

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
BGPv6 (unicast address-family routes)—maximum number of unicast address family routes.	5320 48-port, 5420, 5520, 5720-MW (at default)	6,000
	5720-MW (with ALPM enabled)	107,000
	5720-MXW, 7520, 7720 (at default)	10,000
	5720-MXW (with ALPM enabled)	213,000
	5320-16P-4XE, 5320 24-port except XT	4,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	496
	5120	64
	5520 (with ALPM enabled)	40,000
BGPv6 (non-unique routes)—maximum number of non-unique BGP routes.	5420, 5520, 5720-MW	18,000
	5720-MXW, 7520, 7720	30,000
	5320 (except 5320-24T-4X-XT, 5320-16P-2MXT-2X)	14,000
	5320-24T-4X-XT, 5320-16P-2MXT-2X	1,488
	5120	192
EVPN EVI instances—maximum number of EVI instances.	All platforms, except 4120 and 5120	1,024
IS-IS adjacencies—maximum number of supported IS-IS adjacencies.	All platforms	128
IS-IS ECMP—maximum number of equal cost paths per multipath for IS-IS.	All platforms	2, 4, or 8
IS-IS interfaces—maximum number of interfaces that can support IS-IS.	All platforms	255
IS-IS routers in an area—recommended maximum number of IS-IS routers in an area.	All platforms	256
IS-IS route origination—recommended maximum number of routes that can be originated by an IS-IS node.	All platforms	20,000
IS-IS IPv4 L1 routes in an L1 router—recommended maximum number of IS-IS Level 1 routes in a Level 1 IS-IS router.	All platforms	25,000

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
IS-IS IPv4 L2 routes—recommended maximum number of IS-IS Level 2 routes.	All platforms	25,000
IS-IS IPv4 L1 routes in an L1/L2 router—recommended maximum number of IS-IS Level 1 routes in an L1/L2 IS-IS router.	All platforms	20,000
IS-IS IPv6 L1 routes in an L1 router—recommended maximum number of IS-IS Level 1 routes in a Level 1 IS-IS router.	All platforms	10,000
IS-IS IPv6 L2 routes—recommended maximum number of IS-IS Level 2 routes.	All platforms	10,000
IS-IS IPv6 L1 routes in an L1/L2 router—recommended maximum number of IS-IS Level 1 routes in a L1/l2 router.	All platforms	10,000
IS-IS IPv4/IPv6 L1 routes in an L1 router—recommended maximum number of IS-IS Level 1 routes in a Level 1 IS-IS router. The numbers documented are based on 50% IPv4 routes and 50% IPv6 routes.	All platforms	20,000
IS-IS IPv4/IPv6 L2 routes in an L2 router—recommended maximum number of IS-IS Level 2 routes in a Level 2 IS-IS router. The numbers documented are based on 50% IPv4 routes and 50% IPv6 routes.	All platforms	20,000

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
IS-IS IPv4/IPv6 L1 routes in an L1/L2 router—recommended maximum number of IS-IS Level 1 routes in a Level 1/Level2 IS-IS router. The numbers documented are based on 50% IPv4 routes and 50% IPv6 routes.	All platforms	20,000
L2 VPN: VCCV (pseudowire Virtual Circuit Connectivity Verification) VPNs per switch—maximum number of VCCV enabled VPLS VPNs.	5520, 7520, 7720 5120, 5320, 5420, 5720	16 N/A
L2 VPN: VPLS MAC addresses—maximum number of MAC addresses learned by a switch.	5520 7520, 7720 5120, 5320, 5420, 5720	64,000 140,000 N/A
L2 VPN: VPLS VPNs—maximum number of VPLS virtual private networks per switch.	5520, 7520, 7720 5120, 5320, 5420, 5720	1,023 N/A
L2 VPN: VPLS peers—maximum number of VPLS peers per VPLS instance.	5520, 7520, 7720 5120, 5320, 5420, 5720	64 N/A
L2 VPN: LDP pseudowires—maximum number of pseudowires per switch.	5520 7520, 7720 5120, 5320, 5420, 5720	3,500 7,000 N/A
L2 VPN: static pseudowires—maximum number of static pseudowires per switch.	5520 7520, 7720 5120, 5320, 5420, 5720	3,500 7,000 N/A
L2 VPN: Virtual Private Wire Service (VPWS) VPNs—maximum number of virtual private networks per switch.	5520 7520, 7720 5120, 5320, 5420, 5720	1,023 4,090 N/A
MPLS RSVP-TE interfaces—maximum number of interfaces.	5520, 7520, 7720 5120, 5320, 5420, 5720	32 N/A
MPLS RSVP-TE ingress LSPs—maximum number of ingress LSPs.	5520, 7520, 7720 5120, 5320, 5420, 5720	2,000 N/A

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
MPLS RSVP-TE egress LSPs—maximum number of egress LSPs.	5520, 7520, 7720 5120, 5320, 5420, 5720	2,000 N/A
MPLS RSVP-TE transit LSPs—maximum number of transit LSPs.	5520, 7520, 7720 5120, 5320, 5420, 5720	4,000 N/A
MPLS RSVP-TE paths—maximum number of paths.	5520 7520, 7720 5120, 5320, 5420, 5720	1,000 2,000 N/A
MPLS RSVP-TE profiles—maximum number of profiles.	5520 7520, 7720 5120, 5320, 5420, 5720	1,000 2,000 N/A
MPLS RSVP-TE EROs—maximum number of EROs per path.	5520, 7520, 7720 5120, 5320, 5420, 5720	64 N/A
MPLS LDP peers—maximum number of MPLS LDP peers per switch.	5520, 7520, 7720 5120, 5320, 5420, 5720	128 N/A
MPLS LDP adjacencies—maximum number of MPLS LDP adjacencies per switch.	5520, 7520, 7720 5120, 5320, 5420, 5720	64 N/A
MPLS LDP ingress LSPs—maximum number of MPLS LSPs that can originate from a switch.	5520, 7520, 7720 5120, 5320, 5420, 5720	2,048 N/A
MPLS LDP-enabled interfaces—maximum number of MPLS LDP configured interfaces per switch.	5520, 7520, 7720 5120, 5320, 5420, 5720	128 N/A
MPLS LDP transit LSPs—maximum number of MPLS transit LSPs per switch.	5520 7520, 7720 5120, 5320, 5420, 5720	3,500 4,000 N/A
MPLS LDP egress LSPs—maximum number of MPLS egress LSPs that can terminate on a switch.	5520 7520, 7720 5120, 5320, 5420, 5720	3,500 4,000 N/A
MPLS static egress LSPs—maximum number of static egress LSPs.	5520 7520, 7720 5120, 5320, 5420, 5720	3,500 8,000 N/A

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
MPLS static ingress LSPs—maximum number of static ingress LSPs.	5520	3,500
	7520, 7720	4,000
	5120, 5320, 5420, 5720	N/A
MPLS static transit LSPs—maximum number of static transit LSPs	5520	3,500
	7520, 7720	4,000
	5120, 5320, 5420, 5720	N/A
MSDP active peers—maximum number of active MSDP peers.	5120	16
	5320, 5420, 5520, 5720, 7520, 7720	64
MSDP SA cache entries—maximum number of entries in SA cache.	5120	192
	5320, 5420F	6,000
	5420M	8,000
	5520, 5720, 7520, 7720	14,000
MSDP maximum mesh groups—maximum number of MSDP mesh groups.	All platforms	16
OSPFv2/v3 ECMP—maximum number of equal cost multipath OSPFv2 and OSPFv3.	5120, 5320, 5420, 5520	8
	5720	64
OSPFv2 areas—as an ABR, how many OSPF areas are supported within the same switch.	All platforms	8
OSPFv2 external routes—recommended maximum number of external routes contained in an OSPF LSDB.	5120	64
	5520	5,000
	5720, 7520, 7720	10,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5420	4,000
	5320-16P-2MXT-2X	992
	5320-24T-4X-XT	500
OSPFv2 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes contained in an OSPF LSDB with one ABR in OSPF domain.	5120	64
	5520, 5720-MXW, 7520, 7720	2,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5420	1,600
	5320-16P-2MXT-2X	992
	5320-24T-4X-XT	500

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
OSPFv2 inter-vr or leaking routes—recommended maximum number of inter-vr routes contained in an OSPF LSDB.	5420, 5520, 5720, 7520, 7720	2,000
	5320 (5320-16P-2MXT-2X, 5320-24T-4X-XT)	1,600
	5120	64
OSPFv2 interfaces—recommended maximum number of OSPF interfaces on a switch (active interfaces only).	5420, 5520, 5720, 7520, 7720	400
	5320	320
	5120	64
OSPFv2 links—maximum number of links in the router LSA.	5420, 5520, 5720, 7520, 7720	400
	5320	320
	5120	64
OSPFv2 neighbors—maximum number of supported OSPF adjacencies.	5420, 5520, 5720, 7520, 7720	128
	5320	96
	5120	64
OSPFv2 routers in a single area—recommended maximum number of routers in a single OSPF area.	5420, 5520	50
	5720, 7520, 7720	100
	5120, 5320	40
OSPFv2 virtual links—maximum number of supported OSPF virtual links.	5420, 5520, 5720, 7520, 7720	32
	5120, 5320	25
OSPFv3 areas—as an ABR, the maximum number of supported OSPFv3 areas.	5420, 5520	16
	5720, 7520, 7720	100
	5120, 5320	12
OSPFv3 external routes—recommended maximum number of external routes.	5520, 5720-MXW, 7520, 7720	10,000
	5120, 5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5720-MW	7,500
	5420	6,000
	5320-16P-2MXT-2X	496
	5320-24T-4X-XT	300
	5120	64

Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
OSPFv3 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes.	5520	3,000
	5320 (except 5320-16P-2MXT-2X, 5320-24T-4X-XT), 5720, 7520, 7720	4,000
	5420	6,000
	5320-16P-2MXT-2X	496
	5320-24T-4X-XT	300
	5120	64
OSPFv3 interfaces—maximum number of OSPFv3 interfaces (active interfaces only).	5420, 5520, 5720, 7520, 7720	256
	5320	192
	5120	64
OSPFv3 neighbors—maximum number of OSPFv3 neighbors.	5420, 5520, 5720, 7520, 7720	64
	5120, 5320	48
OSPFv3 virtual links—maximum number of OSPFv3 virtual links supported.	All platforms except 4120 and 4220	16
PIM IPv4 (maximum interfaces)—maximum number of PIM active interfaces.	5320, 5420, 5520, 5720, 7520, 7720	255
	5120	60
PIM IPv4 Limits—maximum number of multicast groups per dynamic rendezvous point.	5120, 5320, 5420, 5520, 5720, 7520, 7720	180
PIM IPv4 Limits—maximum number of multicast groups per static rendezvous point.	5320, 5420, 5520, 5720, 7520, 7720	3,000 (depends on policy file limits)
	5120	192
PIM IPv4 Limits—maximum number of multicast sources per group.	5320, 5420, 5520, 5720, 7520, 7720	5,000
	5120	192
PIM IPv4 Limits—maximum number of dynamic rendezvous points per multicast group.	5320, 5420, 5520, 5720, 7520, 7720	145
	5120	32
PIM IPv4 Limits—static rendezvous points.	5120, 5320, 5420, 5520, 5720, 7520, 7720	32

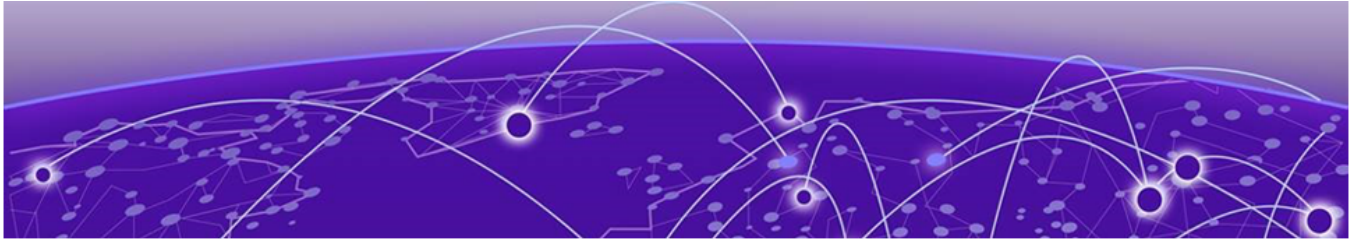
Table 8: Supported Limits for the Premier License (continued)

Metric	Product	Limit
PIM IPv6 (maximum interfaces)—maximum number of PIM active interfaces.	5320, 5420, 5520, 5720, 7520, 7720	255
	5120	30
PIM IPv6 limits—maximum number of multicast sources per group.	5320, 5420, 5520, 5720, 7520, 7720	1,750
	5120	70
PIM IPv6 limits—maximum number of multicast groups per dynamic rendezvous point.	5120, 5320, 5420, 5520, 5720, 7520, 7720	70
PIM IPv6 limits—maximum number of multicast groups per static rendezvous point.	5320, 5420, 5520, 5720, 7520, 7720	3,000 (depends on policy file limits)
	5120	70
PIM IPv6 limits—maximum number of multicast groups per dynamic rendezvous points per multicast group.	5320, 5420, 5520, 5720, 7520, 7720	64
	5120	20
PIM IPv6 limits—maximum number of secondary addresses per interface	5320, 5420, 5520, 5720, 7520, 7720	70
	5120	30
PIM IPv6 limits—maximum number of static rendezvous points.	5120, 5320, 5420, 5520, 5720, 7520, 7720	32
PTP/1588v2 Clock Ports	7520-48Y, 7720-32C	32 for boundary clock
PTP/1588v2 Clock Instances	5420, 5520, 5720	1 transparent clock
	7520-48Y, 7720-32C	1 boundary clock
PTP/1588v2 Unicast Static Masters	7520-48Y, 7720-32C	10 entries per clock type

Notes for Limits Tables

[a] The table shows the total available. When installing ACL rules bound to a set of ports, rules are replicated for each port if there are ACL counters and counter compression is not enabled, or if the ports are extended ports.

[c] When there are BFD sessions with minimal timer, sessions with default timer should not be used.
[f] Effective capacity varies based on actual MAC addresses and VLAN IDs used and hash algorithm selected.
[g] Based on "configure forwarding internal-tables more l2".
[h] Based on "configure forwarding internal-tables more l3-and-ipmc".
[j] The limit depends on setting configured with configure iproute reserved-entries.
[m] The IPv4 and IPv6 multicast entries share the same hardware tables, so the effective number of IPv6 multicast entries depends on the number of IPv4 multicast entries present and vice versa.
[n] If IGMP and MLD are simultaneously configured on the switch, the number of effective subscribers supported are lessened accordingly.
[o] The total of all PBR next hops on all flow redirects should not exceed 4,096.
[p] The number of XNV authentications supported based on system ACL limitations.
[q] Based on "configure forwarding internal-tables more routes".
[r] Based on `configure forwarding internal-tables more routes ipv6-mask-length 128`.
[s] Based on `configure forwarding internal-tables more l3-and-ipmc` or `configure forwarding internal-tables l2-and-l3`.



Open Issues, Known Behaviors, and Resolved Issues

This topic lists open software issues, limitations in system architecture (known issues), and resolved issues in Switch Engine.

Open Issues

There are no open issues for supported features found in this version.

Known Behaviors

The following table lists limitations in system architecture that have yet to be resolved.

Table 9: Known Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.6.1

Defect Number	Description
EXOS-39069	ACL rules that use the `vlan-format` match condition (for example, `vlan-format outer-tagged`) cannot be applied to the `any` or `vlan` binding points. Attempting to do so returns: `Error: ACL install operation failed - internal failure`. This condition is supported only when bound to a specific physical port. Workaround: Add a `source-physical-port` qualifier to the ACL entry. The rule can then be successfully installed on `any` or a VLAN binding point.
EXOS-39140	The IP Multicast NAT feature is not supported on stacking.

Resolved Issues in Switch Engine 33.6.1

The following issues were resolved in version 33.6.1. Version 33.6.1 includes all fixes up to and including versions 31.6, 31.7, 32.1, 32.2, 32.3, 32.4, 32.5, 32.6.x, 32.7.x, 33.2.1, 33.3.1, 33.4.1, and 33.5.x.

Table 10: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.6.1

Defect Number	Description
General	
CFD-12522	5520 stack fails after upgrading from version 31.7 to 32.7.
CFD-13169	The SNMPMaster process is unresponsive.
CFD-14756	During bootup of 7720 switches, "<Erro:EDP.ProcPDUFail>" messages appear intermittently.
CFD-14760	The nodealias table should be updated when the end host relearns the IP through authentication.
CFD-14877	Critical error log "Invalid Parameter ecpPktRx: Received non ECP packet: ethType = 4089" appears randomly in switches.
CFD-14924	The dirty bit is set even after the configuration is saved.
CFD-14925	IP connectivity fails for new endpoints over a MACsec-configured link.
CFD-15073	The wide option should be included in the "show port rate-limit flood" command.
CFD-15274	An EMS log is required when the number of users exceeds the allowed authenticated users.
CFD-15386	The "show ports utilization" output displays unrealistic values when "show port congestion" or congestion counters are queried via SNMP in parallel.
CFD-15387	The output of the "show port utilization" command periodically shows "0" although there is active traffic on the port.
CFD-15388	Stack port utilization is displayed only for one port and not all stack ports.
CFD-15485	Cloud Connector enables LLDP on all ports.
CFD-15516	SNMP response is incorrectly sent from the next-hop IPv6 interface.
CFD-15694	Netlogin can be enabled on the mirror loopback port.
CFD-15719	In a VPLS environment, the configured secondary EtherType is not used after reboot when LACP is enabled between the customer and provider edge.
CFD-15742	Simultaneous upgrade of both .xos and .xmod images from ExtremeCloud IQ Site Engine on a switch or stack fails.
CFD-15808	A CliMaster memory leak occurs when deleting and adding a port in a VLAN along with uploading the configuration.

Table 10: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.6.1 (continued)

Defect Number	Description
CFD-15811	Error messages are printed to the console session when CFM is enabled.
CFD-15848	The error log message "SNMP Bad community name" does not specify the IP address of the source host.
CFD-15866	Unable to forward jumbo packets when jumbo frame is enabled on only a select few ports.
CFD-15879	Traffic is not mirrored from a netlogin port if the "to ports-list" setting with a loopback interface is configured.
CFD-15882	The "enable debug-mode" command allows entry into debug mode with the wrong password if the correct password has not yet expired.
CFD-15928	Stack member MAC was seen in "show netlogin session" on link-down ports after a flap.
CFD-15976	L3 multicast streams are affected after ESRP failover.
CFD-16004	The secure flag is not set for the session_id attribute.
CFD-16118	FA fallback management VLAN is automatically created when upgrading the switch to 33.5.2.
CFD-16252	BGP password configuration is lost after reboot.
CFD-16418	SNMP polling for VRRPOperState of a VRRP backup switch with Fabric Routing enabled returns an undefined value.
CFD-16437	Ports are added to the NL VLAN when using SNMP SET, but the operation should fail.
EXOS-35813	The EXOS MIB for port utilization does not retrieve information on backup and standby slot ports.
EXOS-38198	The HAL process crashes, leading to a switch reset.