ExtremeXOS v32.7.3-Patch1-19 Release Notes

New Features, Improvements, and Known Issues

9038065-07 Rev AA
September 2025

Legal Notice

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

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

Trademarks

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

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

For additional information on Extreme Networks trademarks, see: https://www.extremenetworks.com/about-extreme-networks/company/legal/trademarks

Open Source Declarations

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

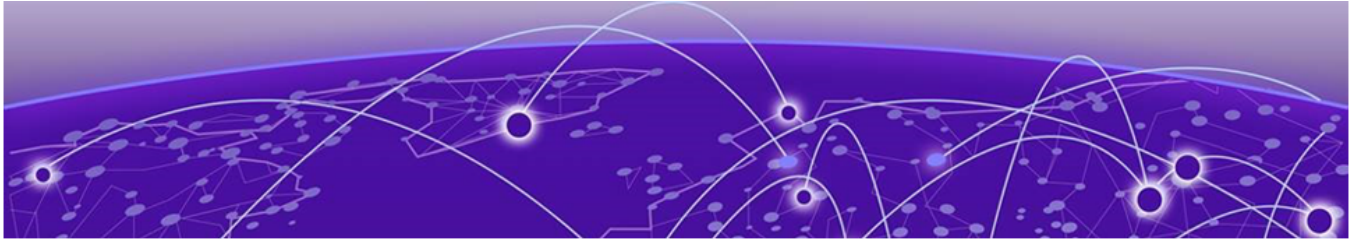
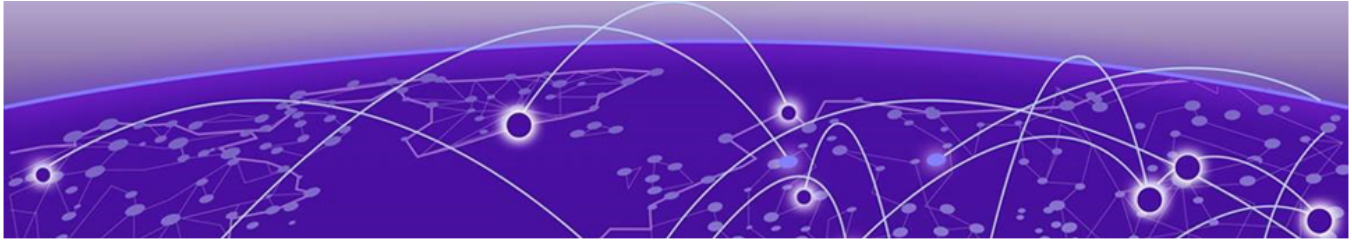


Table of Contents



Abstract

This release note for ExtremeXOS version 32.7.3-Patch1-19, published by Extreme Networks, Inc. in September 2025, documents new features, resolved issues, and security information. The update includes improvements to the CLI Interactive Startup Script for Static IP Configuration, DHCP Fingerprinting for DHCP Snooping, and availability of both HTTP and HTTPS by default. It also covers security assessments, including DoS, ICMP, and port scan vulnerabilities. This version adds support for the Static NSI Offset feature, and resolved issues for software version 32.7.3.15-Patch1-19. The document provides details on hardware and software compatibility, default settings, image file names, supported platforms, and guidance for upgrading. Additionally, it outlines limits for various licenses and features in the software.

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.

Conventions

To help you better understand the information presented in this guide, the following topics describe the formatting conventions used for notes, text, and other elements.

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 or routers, the product is referred to as *the switch* or *the router*.

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

Table 1: Notes and warnings (continued)

Icon	Notice type	Alerts you to...
	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.

Table 3: Command syntax (continued)

Convention	Description
...	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.

Platform-Dependent Conventions

Unless otherwise noted, all information applies to all platforms supported by ExtremeXOS software, which are the following:

- ExtremeSwitching® switches
- SummitStack™

When a feature or feature implementation applies to specific platforms, the specific platform is noted in the heading for the section describing that implementation in the ExtremeXOS command documentation (see the Extreme Documentation page at www.extremenetworks.com/documentation/). In many cases, although the command is available on all platforms, each platform uses specific keywords. These keywords specific to each platform are shown in the Syntax Description and discussed in the Usage Guidelines sections.

Terminology

When features, functionality, or operation is specific to a device family, such as ExtremeSwitching, the family name is used. Explanations about features and operations that are the same across all product families simply refer to the product as the *device*.

Send Feedback

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

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

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

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

Help and Support

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

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

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

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

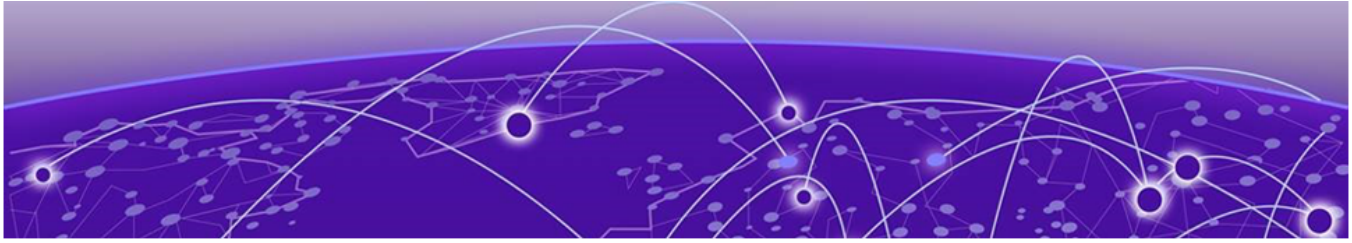
- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental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

Subscribe to Product Announcements

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

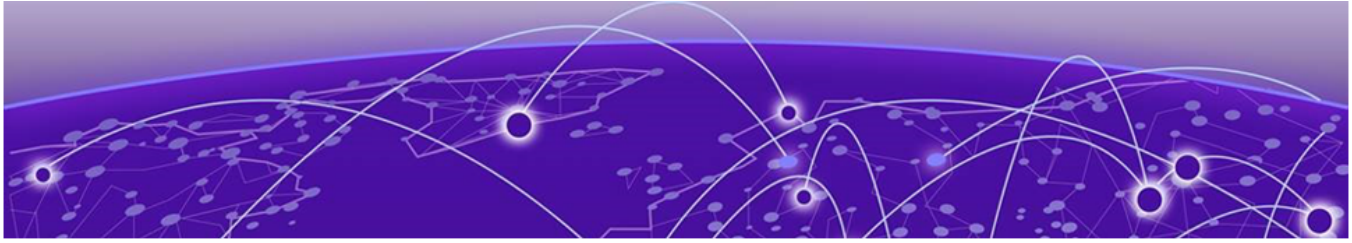
1. Go to The Hub.
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

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



Overview

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



Security Information

The following section covers important security information for ExtremeXOS .

Linux Kernel

ExtremeXOS uses Linux Kernel 5.10 for ExtremeSwitching X465, X590, X690, and X695 series switches, and Linux Kernel 4.14 for all other switches.

OpenSSL Version

ExtremeXOS uses FIPS openssl-fips-2.0.16.

Upgrading ExtremeXOS

For instructions about upgrading ExtremeXOS software, see *Software Upgrade and Boot Options* in .

An ExtremeXOS 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.` An ExtremeXOS modular software package (.xmod file) can still be downloaded and installed on either the active or alternate partition.

Note

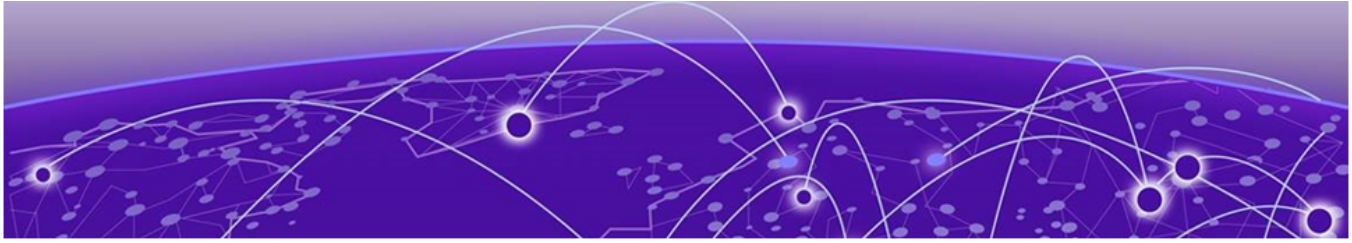
New ExtremeSwitching X435 PoE switches with a Giga device MCU part (switch default ships with supported EXOS versions from the factory) will prevent the switch downgrade to older EXOS versions.

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

```
Error: Failed to download image - summitlite_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.
```

The switch can be identified for the inclusion of the Giga device MCU by checking the PoE firmware revision (5.0 or later) by entering the `show inline-power stats` command (line four):

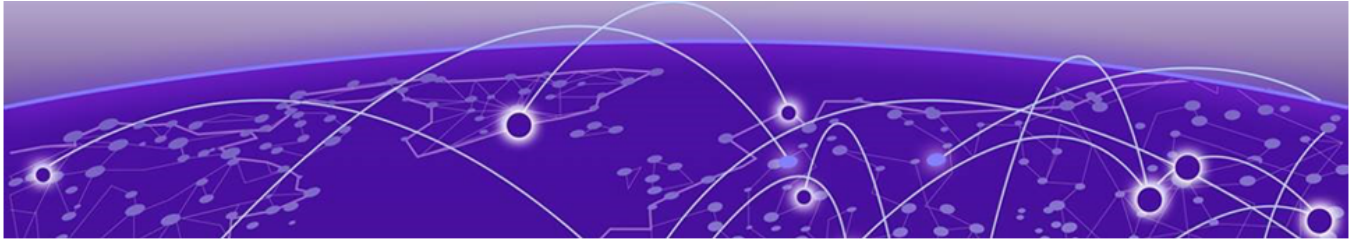
```
# show inline-power stats
Inline-Power Slot Statistics
Firmware status               : Operational
Firmware revision             : 5.0.0b4
Total ports powered           : 3
Total ports awaiting power    : 20
Total ports faulted           : 0
Total ports disabled          : 1
```



Newly Purchased Switches Require Software Upgrade

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

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



Default ExtremeXOS® Settings

The following table shows the default settings for ExtremeXOS starting with version 31.4, and shows any changes that have been made to these settings and in what version these changes were made.If you choose enhanced security mode when initially setting up the switch or after running unconfigure switch all.

Table 4: Default ExtremeXOS Settings

Feature	31.4 and earlier	31.5	31.6 and later
Account Lockout	After 3 consecutive login failures, account is locked for 5 minutes. The following table shows the default settings for ExtremeXOS starting with version 31.4, and shows any changes that have been made to these settings and in what version these changes were made.If you choose enhanced security mode when initially setting up the switch or after running unconfigure switch all.[1]		
AVB	Disabled.		
BFD Strict Session Protection	Disabled.		
BGP	Disabled.		
Bluetooth	Enabled.		
BOOTP Relay	Disabled.		
CDP	Enabled.		
Configuration auto save	Disabled.		
Clear-flow	Disabled.		

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

Table 4: Default ExtremeXOS Settings (continued)

Feature	31.4 and earlier	31.5	31.6 and later
Diagnostics	Admin level privileges required to show diagnostics.		
DHCP	Disabled.		
DNS Cache Resolver and Analytics	Disabled.		
IPFIX	Disabled.		
IP NAT	Disabled.		
EAPS	Disabled.		
EDP	Enabled on management port.		
ELRP	Disabled.		
ESRP	Disabled.		
Extended Edge Switching (VPEX)	Disabled.		
ExtremeCloud IQ	Enabled		
FEC	Disabled.		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. [1]		
Logging memory buffer	Generate an event when the logging memory buffer exceeds 90% of capacity. [1]		
MAC Security	Disabled.		
MLD	Disabled.		
MLD Snooping	Disabled.		
MPLS	Disabled.		

Table 4: Default ExtremeXOS Settings (continued)

Feature	31.4 and earlier	31.5	31.6 and later
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	Not supported.		
OSPF	Disabled.		
OVSDB	Disabled.		
Passwords	Plain text password entry not allowed.[1]		
PIM	Disabled.		
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.[1]		
SSH	Disabled.		
Stacking-support	Disabled, except for X450-G2, X465.		
Stacking auto-discovery	Enabled.		
STP	Enabled.		
Syslog	Disabled.		

Table 4: Default ExtremeXOS Settings (continued)

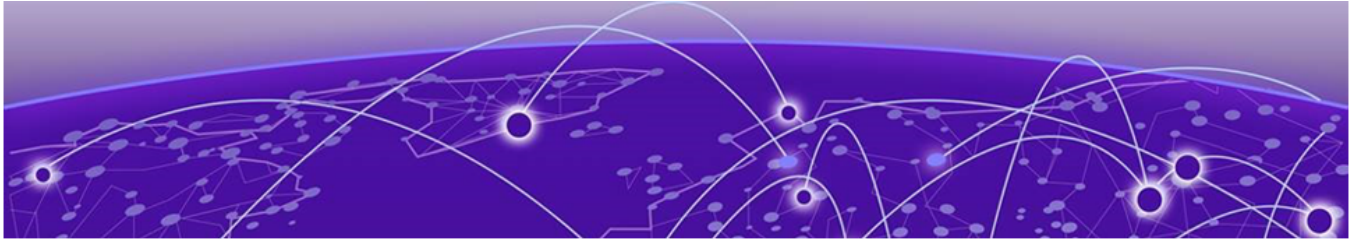
Feature	31.4 and earlier	31.5	31.6 and later
TACACS	Disabled.		
Telnet	Disabled.[1]		Enabled.
VPEX IP Multicast Replication	Controlling Bridge		
VPLS	All newly created VPLS instances are enabled.		
Watchdog	Enabled.		
Web HTTP server	Enabled.[1]		
Web HTTPS server	Disabled.[1]		

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: Image Types (Prefixes)

Switches	Image File Type (Prefix)
ExtremeSwitching X465, X695, and X590	`onie-` Example: `onie-22.2.1.2.xos` **Note:** These image files use the Open Network Install Environment (ONIE).
ExtremeSwitching X440-G2, X450-G2, X460-G2, and X620	`summitX-` Example: `summitX-22.2.1.2.xos`
ExtremeSwitching X435	`summitlite_arm-` Example: `summitlite_arm-30.5.0.102.xos`
ExtremeSwitching X690	`x690-` Example: `x690-32.5.1.4.xos`



New and Corrected Features in ExtremeXOS

This section lists the new and corrected features supported in the software:

Improvements to the CLI Interactive Startup Script for Static IP Configuration

Version 32.7.1 adds a management connectivity section to the initial CLI Safe Defaults script. If Auto-provisioning (ZTP+) is not successful or desired, you can perform manual IP configuration interactively as part of the `run provisioning` CLI command.

The CLI command `configure switch safe-default-script`, which was used in prior releases to run the startup script, has been deprecated, and the `run provisioning` command should be used instead. The deprecated command `configure switch safe-default-script` is still valid when entered completely at the CLI.

Supported Platforms

All platforms.

DHCP Fingerprinting for DHCP Snooping

Version 32.7.1 adds DHCP Fingerprinting information to the DHCP snooping CLI command. Telegraf support is also added in this release.

Supported Platforms

All platforms.

Set Autonegotiation to Legacy Default Mode

Version 32.7.1 adds a CLI command that lets you switch to *legacy default mode* for autonegotiation for 10G ports with 1G optics inserted.

Supported Platforms

All platforms.

HTTPS and HTTP Are Both Available By Default

Version 32.7.1 enables HTTPS as a default under certain conditions so that both HTTP and HTTPS are active and available for use at the same time.

Supported Platforms

All platforms.

New Date and Time Options for upload debug Command

Version 32.7.1 adds options to the upload debug command to not append the date and time to the file name, or to choose a format for the date and time appended to the file name.

Supported Platforms

All platforms.

Static NSI Offset

Beginning with this version, you can associate tagged VLANs to be mapped with a NSI value using static NSI offset configuration. When the NSI offset value is configured, any tagged VLAN that does not have a NSI associated will be applied with a NSI value, which is the sum of the configured NSI offset value and VLAN ID. The NSI offset applied to a VLAN will be removed if an NSI of higher precedence is applied to the VLAN.

Supported Platforms

All platforms.

New CLI Command

```
configure fabric attach [isid-nsi-offset [isid_nsi_offset | none]]
```

ExtremeCloud IQ Agent Support

ExtremeXOS supports ExtremeCloud IQ. For network administrators looking for unified management of access points, switches, and 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, and 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 release supports device discovery, basic monitoring, visibility into homogenous stacking, and the ability to configure an optional user-defined virtual router (VR) and server address for ExtremeCloud IQ agent to connect to. These values are used instead of any auto-detected values.

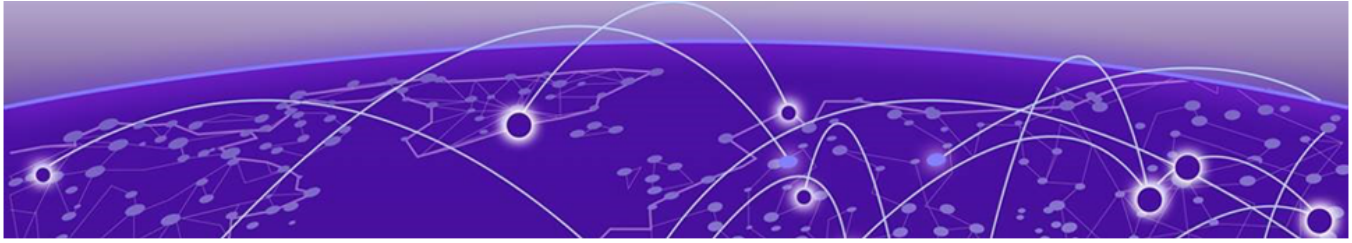
For more information about ExtremeCloud IQ, go to https://www.extremenetworks.com/support/documentation/extremecloud-iq/.

Table 6: Supported Platforms

Switch Series	Switch Models
ExtremeSwitching X435	X435-8T-4S X435-8P-4S X435-8P-2T-W X435-24T-4S X435-24P-4S
ExtremeSwitching X440-G2	X440-G2-24P-10GE4 X440-G2-48P-10GE4 X440-G2-12T-10GE4 X440-G2-12P-10GE4 X440-G2-24T-10GE4 X440-G2-48T-10GE4

Table 6: Supported Platforms (continued)

Switch Series	Switch Models
ExtremeSwitching X450-G2	X450-G2-24P-10GE X450-G2-48P-10GE X450-G2-24P-GE4 X450-G2-48P-GE4
ExtremeSwitching X460-G2	X460-G2-24P-10GE4 X460-G2-48P-10GE4 X460-G2-16MP-32P-10GE4 X460-G2-24P-48HP-10GE4
ExtremeSwitching X465	X465-48P X465-24MU-24W X465-24W X465-48W X465-24MU



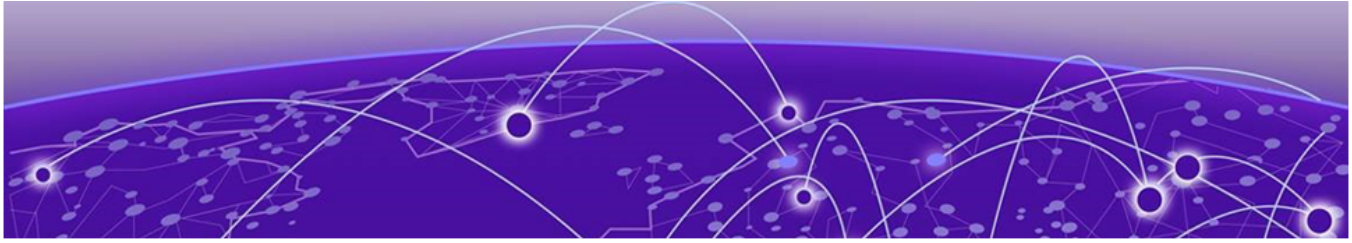
Extreme Hardware/Software Compatibility and Recommendation Matrices

ExtremeXOS and Switch Engine Software Support provides information about the minimum version of ExtremeXOS 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.

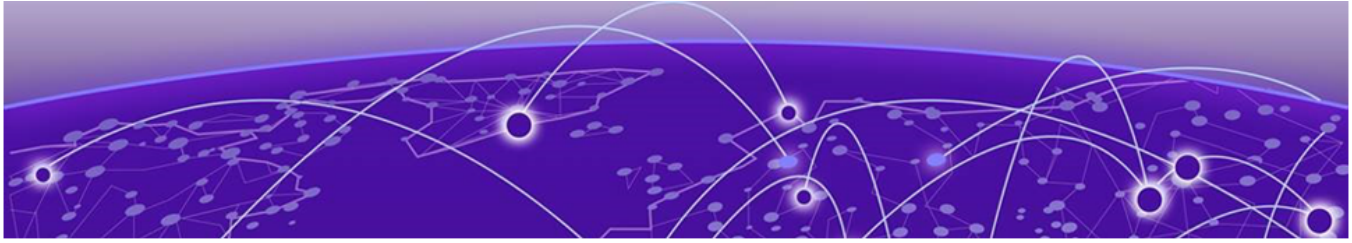
To find the recommended ExtremeXOS versions for specific hardware platforms, see *ExtremeXOS and Switch Engine Release Recommendations*.

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



Compatibility with ExtremeCloud IQ Site Engine

ExtremeXOS is compatible with the version of ExtremeCloud IQ Site Engine shown in this table: http://emc.extremenetworks.com/content/common/releasenotes/extended_firmware_support.htm

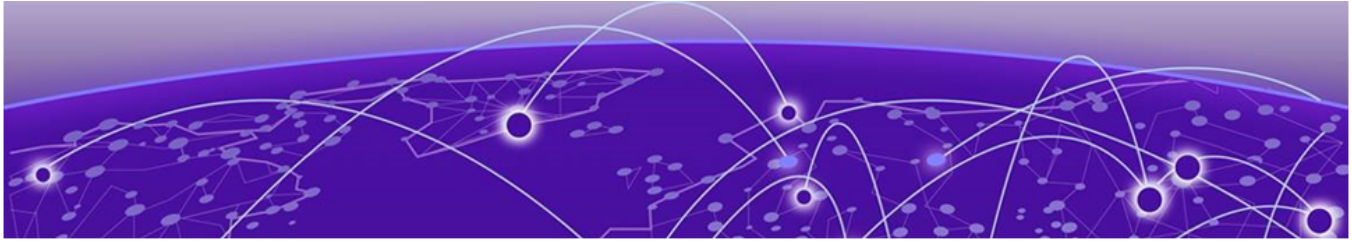


Supported MIBs

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 .



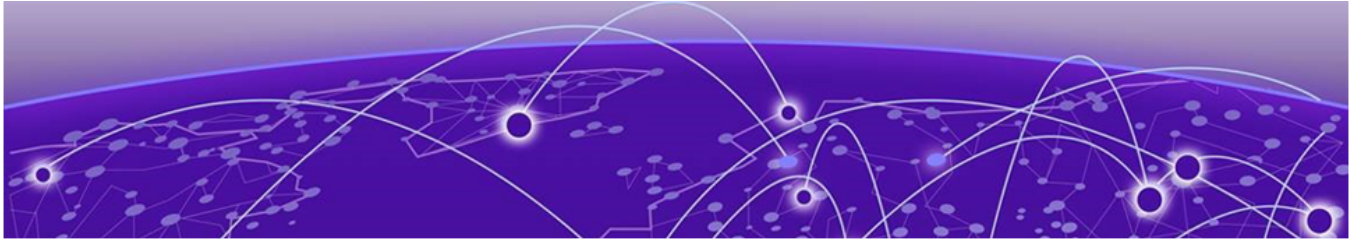
Tested Third-Party Products

The following third-party products have been tested for ExtremeXOS .

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

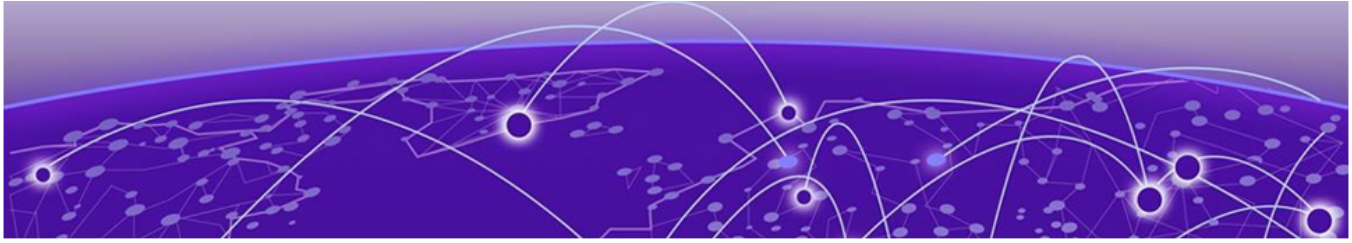
Tools used to assess ICMP attack vulnerability:

- SSPing
- Twinge
- Nuke
- WinFreeze

Port Scan Assessment

Tools used to assess port scan assessment:

- Nessus



Limits

This chapter summarizes the supported limits in ExtremeXOS and Switch Engine .

Limits Overview

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

- Value Edge License Limits on page 30
- Edge License Limits on page 43
- Advanced Edge License Limits on page 69
- Core License Limits on page 79

Non-universal switches include the following license levels:

Switch Category	Switches	Applicable License Levels
Non-universal switches	X435 *, X440-G2, X450-G2, X460-G2, X465, X590, X620, X690, X695	Value Edge *, Edge, Advanced Edge, Core
Note: * The X435 is the only switch that supports the Value Edge license level.		

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

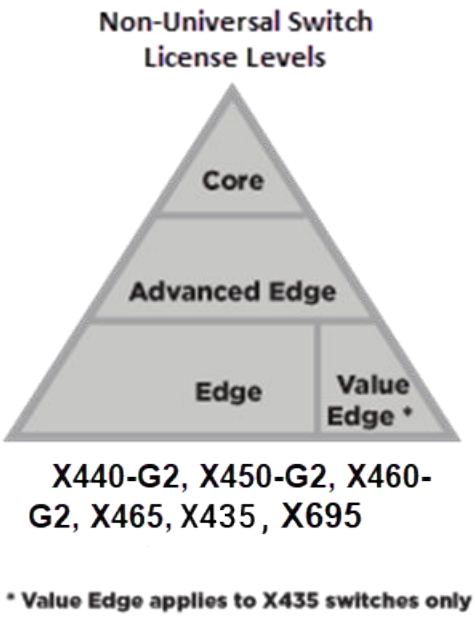


Figure 1: License Levels for non-Universal Switches

For more information about licenses, see .

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 ExtremeXOS 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 Extended Edge Switching 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 Extended Edge Switching 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.

Value Edge License Limits

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

Table 7: Supported Limits for Value Edge License

Metric	Product	Limit
AAA (local)—maximum number of admin and local user accounts.	ExtremeSwitching X435	16
Access lists (meters)—maximum number of meters.	ExtremeSwitching X435	512 ingress
Access lists (policies)—suggested maximum number of lines in a single policy file.	ExtremeSwitching X435	300,000
Access lists (policies)—maximum number of rules in a single policy file.[a]	ExtremeSwitching X435	1,024 ingress
Access lists (slices)—number of ACL slices.	ExtremeSwitching X435	8 ingress only
ACL Per Port Meters—number of meters supported per port.	ExtremeSwitching X435	8
ACL port ranges	ExtremeSwitching X435	32
Meters Packets-Per-Second Capable	ExtremeSwitching X435	Yes
AVB (audio video bridging)—maximum number of active streams.	ExtremeSwitching X435	512
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per virtual router.	ExtremeSwitching X435	8
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per VLAN.	ExtremeSwitching X435	8
BOOTP/DHCP relay—maximum number of DHCPv4/v6 relay agents.	ExtremeSwitching X435	30
Connectivity fault management (CFM)—maximum number or CFM domains.	ExtremeSwitching X435	8
CFM—maximum number of CFM associations.	ExtremeSwitching X435	256
CFM—maximum number of CFM up end points.	ExtremeSwitching X435	32

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
CFM—maximum number of CFM down end points.	ExtremeSwitching X435	32
CFM—maximum number of CFM remote end points per up/down end point.	ExtremeSwitching X435	2,000
CFM—maximum number of dot1ag ports.	ExtremeSwitching X435	128
CFM—maximum number of CFM segments.	ExtremeSwitching X435	1,000
CFM—maximum number of MIPs.	ExtremeSwitching X435	256
DHCPv6 Prefix Delegation Snooping—Maximum number of DHCPv6 prefix delegation snooped entries.	ExtremeSwitching X435	30 (with static routes)
DHCP snooping entries—maximum number of DHCP snooping entries.	ExtremeSwitching X435	30
Dynamic ACLs—maximum number of ACLs processed per second. **Note:** Limits are load-dependent.	ExtremeSwitching X435 with 50 DACLs with 500 DACLs	10 5
EAPS domains—maximum number of EAPS domains.	ExtremeSwitching X435	4
EAPSv1 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X435	1,000
ERPS domains—maximum number of ERPS domains with or without CFM configured.	ExtremeSwitching X435	4
ERPSv1 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X435	1,000
ELSM (vlan-ports)—maximum number of VLAN ports.	ExtremeSwitching X435	2,000
Forwarding rate—maximum L3 software forwarding rate.	ExtremeSwitching X435	7,844 pps
FDB (unicast blackhole entries)—maximum number of unicast blackhole FDB entries.	ExtremeSwitching X435	16,019

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
FDB (multicast blackhole entries)—maximum number of multicast blackhole FDB entries.	ExtremeSwitching X435	16,384
FDB (maximum L2 entries)—maximum number of MAC addresses.	ExtremeSwitching X435	16,384 [g]
FDB (maximum L2 entries)—maximum number of multicast FDB entries.	ExtremeSwitching X435	512
Identity management—maximum number of Blacklist entries.	ExtremeSwitching X435	512
Identity management—maximum number of Whitelist entries.	ExtremeSwitching X435	512
Identity management—maximum number of roles that can be created.	ExtremeSwitching X435	64
Identity management—maximum role hierarchy depth allowed.	ExtremeSwitching X435	5
Identity management—maximum number of attribute value pairs in a role match criteria.	ExtremeSwitching X435	16
Identity management—maximum number of child roles for a role.	ExtremeSwitching X435	8
Identity management—maximum number of policies/dynamic ACLs that can be configured per role.	ExtremeSwitching X435	8
Identity management—maximum number of LDAP servers that can be configured.	ExtremeSwitching X435	8
Identity management—maximum number of Kerberos servers that can be configured.	ExtremeSwitching X435	20
Identity management—maximum database memory size.	ExtremeSwitching X435	512

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X435	100
Identity management—recommended number of ACL entries per identity. **Note:** Number of ACLs per identity, based on system ACL limitation.	ExtremeSwitching X435	20
Identity management—maximum number of dynamic ACL entries configured as an individual dynamic rule, or as an ACL entry in a policy file.	ExtremeSwitching X435	500
IGMP snooping per VLAN filters—maximum number of VLANs supported in per-VLAN IGMP snooping mode.	ExtremeSwitching X435	500
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per port.[n]	ExtremeSwitching X435	2,500
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per switch.[n]	ExtremeSwitching X435	12,500
IGMPv3 maximum source per group—maximum number of source addresses per group.	ExtremeSwitching X435	250
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per port.[n]	ExtremeSwitching X435	1,000
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per switch.[n]	ExtremeSwitching X435	10,000

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
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).	ExtremeSwitching X435	20,424
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.	ExtremeSwitching X435	509 [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.”	ExtremeSwitching X435	500 [h]
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.	ExtremeSwitching X435	3,100 [h]
IPv4 routes—maximum number of static IPv4 routes in software (combination of unicast and multicast routes).	ExtremeSwitching X435	32
IPv4 routes (LPM entries in hardware)— number of IPv4 routes in hardware.	ExtremeSwitching X435	32
IPv6 addresses on an interface—maximum number of IPv6 addresses on an interface.	ExtremeSwitching X435	15
IPv6 addresses on a switch—maximum number of IPv6 addresses on a switch.	ExtremeSwitching X435	15

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
IPv6 host entries in hardware—maximum number of IPv6 neighbor entries in hardware.	ExtremeSwitching X435	500
IPv6 routes in software—maximum number of static IPv6 routes in software.	ExtremeSwitching X435	16
IPv6 routes (LPM entries in hardware)—maximum number of IPv6 routes in hardware.	ExtremeSwitching X435	16
IP router interfaces—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	ExtremeSwitching X435	30
IP unicast static routes—maximum number of permanent IP unicast routes.	ExtremeSwitching X435	32
IP multinetting (secondary IP addresses)—maximum number of secondary IP addresses per VLAN.	ExtremeSwitching X435	30
Jumbo frames—maximum size supported for jumbo frames, including the CRC.	ExtremeSwitching X435	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.	ExtremeSwitching X435	5,000

Table 7: Supported Limits for Value Edge 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.	ExtremeSwitching X435	1,500
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.	ExtremeSwitching X435	700
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.	ExtremeSwitching X435	8
Load sharing—maximum number of ports per load-sharing group.	ExtremeSwitching X435 (standalone only)	8
Logged messages—maximum number of messages logged locally on the system.	ExtremeSwitching X435	20,000

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
MAC-based security—maximum number of MAC-based security policies.	ExtremeSwitching X435	1,024
MAC Locking—Maximum number of MAC locking stations that can be learned on a port.	ExtremeSwitching X435	64 (static MAC locking stations) 600 (first arrival MAC locking stations)
Meters—maximum number of meters.	ExtremeSwitching X435	512
Maximum mirroring instances.	ExtremeSwitching X435	1 (egress)
Mirroring (filters)—maximum number of mirroring filters. **Note:** This is the number of filters across all the active mirroring instances.	ExtremeSwitching X435	128
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.	ExtremeSwitching X435	128
Mirroring, one-to-many (monitor port)—maximum number of one-to-many monitor ports.	ExtremeSwitching X435	1
Multicast listener discovery (MLD) snooping per-VLAN filters—maximum number of VLANs supported in per-VLAN MLD snooping mode.	ExtremeSwitching X435	63
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per port.[n]	ExtremeSwitching X435	2,500
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per switch.[n]	ExtremeSwitching X435	12,500

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per port.[n]	ExtremeSwitching X435	2,000
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per switch.[n]	ExtremeSwitching X435	10,000
Multicast listener discovery (MLD)v2 maximum source per group—maximum number of source addresses per group.	ExtremeSwitching X435	200
Network Login—maximum number of clients being authenticated on MAC-based VLAN enabled ports.	ExtremeSwitching X435	1,024
Network Login—maximum number of dynamic VLANs.	ExtremeSwitching X435	1,024
Network Login VLAN VSAs—maximum number of VLANs a client can be authenticated on at any given time.	ExtremeSwitching X435	10
Network Service Identifiers (NSI)/VLAN mappings—maximum number of VLANs to NSI mappings.	ExtremeSwitching X435	94
ONEPolicy Roles/Profiles—maximum number of policy roles/profiles.	ExtremeSwitching X435	63
ONEPolicy Rules per Role/Profile—maximum number of rules per role/policy.	ExtremeSwitching X435	IPv4 Rules: 128 L2 Rules: 56
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.	ExtremeSwitching X435	192

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
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 X435	187
ONEPolicy Permit/Deny Traffic Classification Rules Types—total maximum number of unique permit/deny traffic classification rules types (system/stack).	ExtremeSwitching X435	184
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 X435	128
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique Layer 2 permit/deny traffic classification rules (ethertype/port).	ExtremeSwitching X435	56
Policy-based routing (PBR) redundancy—maximum number of flow-redirects.	ExtremeSwitching X435	256 [o]
Policy-based routing (PBR) redundancy—maximum number of next hops per each flow-direct.	ExtremeSwitching X435	32 [o]
Private VLANs—maximum number of subscribers. Assumes a minimum of one port per network and subscriber VLAN.	ExtremeSwitching X435	15

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X435	15
Private VLANs—maximum number of private VLANs in an L2-only environment.	ExtremeSwitching X435	15
Route policies—suggested maximum number of lines in a route policy file.	ExtremeSwitching X435	10,000
Spanning Tree (maximum STPDs)—maximum number of Spanning Tree Domains on port mode EMISTP.	ExtremeSwitching X435	16
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, on a 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).	ExtremeSwitching X435	128
Spanning Tree—maximum number of multiple spanning tree instances (MSTI) domains.	ExtremeSwitching X435	16
Spanning Tree—maximum number of VLANs per MSTI. **Note:** Maximum number of 10 active ports per VLAN when all 100 VLANs are in one MSTI.	ExtremeSwitching X435	100

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
Spanning Tree—maximum number of VLANs on all MSTP instances.	ExtremeSwitching X435	256
Spanning Tree (802.1d domains)—maximum number of 802.1d domains per port.	ExtremeSwitching X435	1
Spanning Tree (number of ports)—maximum number of ports including all Spanning Tree domains.	ExtremeSwitching X435	1,024
Spanning Tree (maximum VLANs)—maximum number of STP-protected VLANs (dot1d and dot1w).	ExtremeSwitching X435	256
SSH (number of sessions)—maximum number of simultaneous SSH sessions.	ExtremeSwitching X435	8
Static MAC multicast FDB entries—maximum number of permanent multicast MAC entries configured into the FDB.	ExtremeSwitching X435	1,024
Syslog servers—maximum number of simultaneous Syslog servers that are supported.	ExtremeSwitching X435	16
Syslog targets—maximum number of configurable Syslog targets.	ExtremeSwitching X435	16
Telnet (number of sessions)—maximum number of simultaneous Telnet sessions.	ExtremeSwitching X435	8
Virtual routers—maximum number of user-created virtual routers that can be created on a switch.	ExtremeSwitching X435	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.	ExtremeSwitching X435	16 (local-only VRFs)

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
VLAN aggregation—maximum number of port-VLAN combinations on any one superVLAN and all of its subVLANs.	ExtremeSwitching X435	1,000
VLANs—includes all VLANs.	ExtremeSwitching X435	4,094
VLANs (Layer 2)—maximum number of Layer 2 VLANs.	ExtremeSwitching X435	4,094
VLANs (Layer 3)—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	ExtremeSwitching X435	IPv4: 30 IPv6: 15
VLANs (maximum active port-based)—maximum active ports per VLAN when 1,000 VLANs are configured with default license.	ExtremeSwitching X435	28
VLAN Port Interfaces (VPIF)—maximum number of VLAN port interfaces.	ExtremeSwitching X435	4,090
VLANs (maximum active protocol-sensitive filters)—number of simultaneously active protocol filters in the switch.	ExtremeSwitching X435	16
VLAN translation—maximum number of translation VLANs. Assumes a minimum of one port per translation and member VLAN.	ExtremeSwitching X435	15
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 private VLANs in an L2-only environment if the configuration has tagged and translated ports.	ExtremeSwitching X435	15
VLAN translation—maximum number of translation VLAN pairs in an L2-only environment.	ExtremeSwitching X435	15

Table 7: Supported Limits for Value Edge License (continued)

Metric	Product	Limit
VMAN CEP—maximum number of CVIDs.	ExtremeSwitching X435	192
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.	ExtremeSwitching X435	10 with 100 DACLs

Edge License Limits

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

Table 8: Supported Limits for Edge License

Metric	Product	Limit
AAA (local)—maximum number of admin and local user accounts.	All platforms, except X435	16
Access lists (meters)—maximum number of meters.	ExtremeSwitching X620, X440-G2	1,024 ingress 256 egress
	ExtremeSwitching X450-G2, X460-G2	1,024 ingress 512 egress
	ExtremeSwitching X590, X465, X690	2,048 ingress 512 egress
	ExtremeSwitching X695	6,000 ingress 2,000 egress
Access lists (policies)—suggested maximum number of lines in a single policy file.	All platforms, except X435	300,000
Access lists (policies)—maximum number of rules in a single policy file.[a]	ExtremeSwitching X460-G2, X450-G2	4,096 ingress 1,024 egress
	ExtremeSwitching X620, X440-G2	2,048 ingress 512 egress
	ExtremeSwitching X590, X465, X690, X695	8,192 ingress 1,024 egress
Access lists (policies)—maximum number of rules in a single policy file in first stage (VFP).	ExtremeSwitching X450-G2, X460-G2, X590, X465	2,048 ingress only
	ExtremeSwitching X690, X695	1,024 ingress only
	ExtremeSwitching X620, X440-G2	512 ingress only

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Access lists (slices)—number of ACL slices.	ExtremeSwitching X460-G2, X450-G2	16 ingress 4 egress
	ExtremeSwitching X590, X465, X690, X695	12 ingress 4 egress
	ExtremeSwitching X440-G2, X620	8 ingress 4 egress
Access lists (slices)—number of ACL slices in first stage (VFP).	ExtremeSwitching X450-G2, X460-G2, X465, X620, X440-G2, X590, X690, X695	4 ingress only
ACL Per Port Meters—number of meters supported per port.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X690, X465, X695	16
ACL port ranges.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	32
Meters Packets-Per-Second Capable.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X690, X465, X695	Yes
AVB (audio video bridging)—maximum number of active streams.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2	1,024
	ExtremeSwitching X465, X695, X590, X690	4,096
BFD sessions (Software Mode)—maximum number of BFD sessions.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695 (default timers—1 sec)	512
	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695 (minimal timers—100 msec)	10 [C]
BFD IPv4 sessions (Hardware Assisted)—maximum number of IPv4 BFD sessions.	ExtremeSwitching X460-G2, X590, X690, X465, X695	900 (PTP not enabled) 425 (PTP enabled) 256 (with 3 ms transmit interval)
BFD IPv6 sessions (Hardware Assisted)—maximum number of IPv6 BFD sessions.	ExtremeSwitching X460-G2, X590, X690, X465, X695	425 (PTP not enabled)
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per virtual router.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X465, X620, X590, X690, X695	8
BOOTP/DHCP relay—maximum number of BOOTP or DHCP servers per VLAN.	ExtremeSwitching X460-G2, 450-G2, X440-G2, X465, X620, X590, X690, X695	8

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
BOOTP/DHCP relay—maximum number of DHCPv4/v6 relay agents	ExtremeSwitching X460-G2, X450-G2, X440-G2, X465, X620, X590, X690, X695	4,000
Connectivity fault management (CFM)—maximum number or CFM domains. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	8
CFM—maximum number of CFM associations. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	256
CFM—maximum number of CFM up end points. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	32
CFM—maximum number of CFM down end points. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695 ExtremeSwitching X460-G2	32 256 (non-load shared ports) 32 (load shared ports)
CFM—maximum number of CFM remote end points per up/down end point. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	2,000
CFM—maximum number of dot1ag ports. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	128
CFM—maximum number of CFM segments. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	1,000

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
CFM—maximum number of MIPs. **Note:** With Advanced Edge license or higher.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	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.	ExtremeSwitching X460-G2, X450-G2 ExtremeSwitching X440-G2, X620 ExtremeSwitching X590, X465, X690, X695	4,094 1,024 8,192
Data Center Bridging eXchange (DCBX) protocol Type Length Value (TLVs)—maximum number of DCBX application TLVs.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X465, X690, X695	8
DHCPv6 Prefix Delegation Snooping—Maximum number of DHCPv6 prefix delegation snooped entries.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	256 (with underlying protocol RIPng) 128 (with underlying protocol OSPFv3) 1,024 (with static routes)
DHCP snooping entries—maximum number of DHCP snooping entries.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X690, X465, X695	2,048
Dynamic ACLs—maximum number of ACLs processed per second. **Note:** Limits are load-dependent.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X690, X465, X695 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. **Note:** You can increase the number of domains by upgrading to the Advanced Edge license.	ExtremeSwitching X450-G2, X460-G2, X440-G2, X620, X590, X690, X465, X695	4

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
EAPSv1 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2-24T/P	1,000
	ExtremeSwitching X590, X690, X465, X695	2,000
ERPS domains—maximum number of ERPS domains with or without CFM configured. **Note:** You can increase the number of domains by upgrading to the Advanced Edge license.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X690, X465, X695	4
ERPSv1 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X590, X690, X465, X695	2,000
	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2-24T/P	1,000
ERPSv2 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X450-G2, X460-G2, X590, X690, X465, X695	2,000
	ExtremeSwitching X620, X440-G2-24T/P	500
ELSM (vlan-ports)—maximum number of VLAN ports.	ExtremeSwitching X450-G2, X460-G2, X620, X590, X465, X690, X695	5,000
	ExtremeSwitching X440-G2-24T/P	4,000
Extended Edge Switching maximum BPEs—maximum number of attached bridge port extenders (BPEs).	ExtremeSwitching X465, X590, X690	48
Extended Edge Switching maximum cascade ports—maximum number of upstream ports on bridge port extenders (BPEs).	ExtremeSwitching X465, X590, X690	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 X465, X590, X690	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 X465, X590, X690	8

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Extended Edge Switching maximum VLANs—maximum number of VLANs - Includes all VLANs	ExtremeSwitching X465, X590, X690	4,094
Extended Edge Switching VLAN+ port memberships—maximum number of VLAN+ (extended) port memberships.	ExtremeSwitching X465, X590, X690	12,000 in hash mode (default) 131,000 in port-group mode
Forwarding rate—maximum L3 software forwarding rate.	ExtremeSwitching X440-G2	6,460 pps
	ExtremeSwitching X450-G2	16,000 pps
	ExtremeSwitching X465	28,497 pps
	ExtremeSwitching X460-G2	17,000 pps
	ExtremeSwitching X590	18,162 pps
	ExtremeSwitching X620	6,968 pps
	ExtremeSwitching X690	17,000 pps
	ExtremeSwitching X695	34,813 pps
FDB (unicast blackhole entries)—maximum number of unicast blackhole FDB entries.	ExtremeSwitching X460-G2	49,152[f]
	ExtremeSwitching X450-G2	34,816[f]
	ExtremeSwitching X620, X440-G2	16,384[f]
	ExtremeSwitching X590, X465, X690	278,528[f]
	ExtremeSwitching X695	294,912[f]
FDB (multicast blackhole entries)—maximum number of multicast blackhole FDB entries.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	1,024
	ExtremeSwitching X590, X465, X690, X695	4,096
FDB (maximum L2 entries)—maximum number of MAC addresses.	ExtremeSwitching X460-G2	98,300[g]
	ExtremeSwitching X450-G2	68,000[g]
	ExtremeSwitching X620, X440-G2	16,384
	ExtremeSwitching X590, X465, X690, X695	278,528[g]
	ExtremeSwitching X695	294,912[g]
FDB (maximum L2 entries)—maximum number of multicast FDB entries.	ExtremeSwitching X590, X465, X690, X695	4,096
	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2	1,024
Identity management—maximum number of Blacklist entries.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	512

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Identity management—maximum number of Whitelist entries.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	512
Identity management—maximum number of roles that can be created.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	64
Identity management—maximum role hierarchy depth allowed.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	5
Identity management—maximum number of attribute value pairs in a role match criteria.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16
Identity management—maximum number of child roles for a role.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
Identity management—maximum number of policies/dynamic ACLs that can be configured per role.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
Identity management—maximum number of LDAP servers that can be configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
Identity management—maximum number of Kerberos servers that can be configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	20
Identity management—maximum database memory size.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	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.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	100

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Identity management—recommended number of ACL entries per identity. **Note:** Number of ACLs per identity, based on system ACL limitation.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	20
Identity management—maximum number of dynamic ACL entries configured as an individual dynamic rule, or as an ACL entry in a policy file.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	500
IGMP snooping per VLAN filters—maximum number of VLANs supported in per-VLAN IGMP snooping mode.	ExtremeSwitching X460-G2, X695	1,500
	ExtremeSwitching X450-G2	2,048
	ExtremeSwitching X620, X440-G2	1,000
	ExtremeSwitching X590, X690, X465	4,000
IGMPv1/v2 SSM-map entries—maximum number of IGMPv1/v2 SSM mapping entries.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	500
IGMPv1/v2 SSM-map entries—maximum number of sources per group in IGMPv1/v2 SSM mapping entries.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	50
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per port.[n]	ExtremeSwitching X590, X465, X690, X695, X460-G2, X450-G2	4,000
	ExtremeSwitching X440-G2, X620	3,500
IGMPv2 subscriber—maximum number of IGMPv2 subscribers per switch.[n]	ExtremeSwitching X460-G2, X450-G2	20,000
	ExtremeSwitching X620, X440-G2	17,500
	ExtremeSwitching X465, X590, X690, X695	45,000
IGMPv3 maximum source per group—maximum number of source addresses per group.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	250
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per port.[n]	ExtremeSwitching X440-G2, X620	3,500
	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	4,000

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
IGMPv3 subscriber—maximum number of IGMPv3 subscribers per switch.[n]	ExtremeSwitching X460-G2, X450-G2	20,000
	ExtremeSwitching X620, X440-G2	17,500
	ExtremeSwitching X590, X465, X690, X695	45,000
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).	ExtremeSwitching X460-G2	57,344 (up to)[h]
	ExtremeSwitching X450-G2	47,000 (up to)[h]
	ExtremeSwitching X440-G2, X620	20,480
	ExtremeSwitching X590, X465, X690	157,694 (up to)[h]
	ExtremeSwitching X695	184,318 (up to)[h]
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.	ExtremeSwitching X460-G2	50,000 (up to)[h]
	ExtremeSwitching X450-G2	39,000 (up to)[h]
	ExtremeSwitching X620	1,500
	ExtremeSwitching X440-G2	1,000
	ExtremeSwitching X590, X465, X690	119,000 (up to)[h]
	ExtremeSwitching X695	146,000 (up to)[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."	ExtremeSwitching X460-G2	43,000 (up to)[h]
	ExtremeSwitching X450-G2	29,000 (up to)[h]
	ExtremeSwitching X620	1,500
	ExtremeSwitching X440-G2	1,000
	ExtremeSwitching X590, X465, X690	109,000 (up to)[h]
	ExtremeSwitching X695	125,000 (up to)[h]
IP flow information export (IPFIX)—number of simultaneous flows.	ExtremeSwitching X460-G2	2,048 ingress 2,048 egress
	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	N/A

Table 8: Supported Limits for Edge 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.	ExtremeSwitching X460-G2	73,000 [h]
	ExtremeSwitching X450-G2	61,000 (up to) [h]
	ExtremeSwitching X440-G2, X620	3,500
	ExtremeSwitching X590, X465, X690	216,000 (up to) [h]
	ExtremeSwitching X695	241,000 (up to) [h]
IPv4 routes—maximum number of IPv4 routes in software (combination of unicast and multicast routes), including static and from all routing protocols.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	25,000
	ExtremeSwitching X590, X465, X690, X695	131,000
IPv4 routes (LPM entries in hardware)— number of IPv4 routes in hardware.	ExtremeSwitching X460-G2	12,000
	ExtremeSwitching X450-G2	16,000
	ExtremeSwitching X590, X465, X690, X695	131,000 [q]
	ExtremeSwitching X620, X440-G2	480
IPv6 6in4 tunnel—maximum number of IPv6 6in4 tunnels.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	255
	ExtremeSwitching X440-G2, X620	N/A
IPv6 6to4 tunnel—maximum number of IPv6 6to4 tunnels.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	1 (per virtual router)
	ExtremeSwitching X440-G2, X620	N/A
IPv6 addresses on an interface—maximum number of IPv6 addresses on an interface.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	255
IPv6 addresses on a switch—maximum number of IPv6 addresses on a switch.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X620, X440-G2	510

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
IPv6 host entries in hardware—maximum number of IPv6 neighbor entries in hardware.	ExtremeSwitching X460-G2,	22,000 [h]
	ExtremeSwitching X450-G2	12,000 [h]
	ExtremeSwitching X440-G2	1,000
	ExtremeSwitching X620	1,500
	ExtremeSwitching X590, X465, X690	24,500 [s]
	ExtremeSwitching X695	57,000 [h]
IPv6 routes in software—maximum number of IPv6 routes in software, including static routes and routes from all routing protocols.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2	25,000
	ExtremeSwitching X590, X465, X690, X695	65,000 [g]
IPv6 routes (LPM entries in hardware)—maximum number of IPv6 routes in hardware.	ExtremeSwitching X460-G2	6,000
	ExtremeSwitching X450-G2	8,000
	ExtremeSwitching X590, X465, X690, X695	65,000 [g]
	ExtremeSwitching X620, X440-G2	240
IPv6 routes with a mask greater than 64 bits in hardware—maximum number of such IPv6 LPM routes in hardware.	ExtremeSwitching X590, X465, X690, X695	8,192 [h]
	ExtremeSwitching X440-G2, X620	1,024
	ExtremeSwitching X450-G2, X460-G2	2,048
IPv6 route sharing in hardware—route mask lengths for which ECMP is supported in hardware.	ExtremeSwitching X460-G2, X450-G2, X620	0–64 >64 single path only
	ExtremeSwitching X590, X465, X690, X695	0–128 [h]
	ExtremeSwitching X440-G2	Not supported
IP router interfaces—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	ExtremeSwitching X460-G2,X450-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X620, X440-G2	510
IP multicast static routes—maximum number of permanent multicast IP routes.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	1,024
IP unicast static routes—maximum number of permanent IP unicast routes.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	1,024
	ExtremeSwitching X620, X440-G2	480

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X460-G2, X450-G2, X620, X590, X465, X690, X695	2, 4, 8, 16, 32, or 64
	ExtremeSwitching X440-G2	N/A

Table 8: Supported Limits for Edge 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.	ExtremeSwitching X460-G2, X450-G2	
	if maximum gateways is 2	1,022
	if maximum gateways is 4	1,022
	if maximum gateways is 8	510
	if maximum gateways is 16 (default)	254
	if maximum gateways is 32	126
	if maximum gateways is 64	62
	ExtremeSwitching X620	
	if maximum gateways is 2	126
	if maximum gateways is 4	126
	if maximum gateways is 8	126
	if maximum gateways is 16 (default)	126
	if maximum gateways is 32	62
	if maximum gateways is 64	30
	ExtremeSwitching X590, X465, X690, X695	
	if maximum gateways is 2	4,094
	if maximum gateways is 4	4,094
	if maximum gateways is 8	2,046
	if maximum gateways is 16 (default)	1,022
	if maximum gateways is 32	510
	if maximum gateways is 64	254
	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. For more information about RIOT, see .	
	ExtremeSwitching X870	
	if maximum gateways is 2	2,046
	if maximum gateways is 4	2,046
	if maximum gateways is 8	2,046
	if maximum gateways is 16 (default)	1,022
	if maximum gateways is 32	510
	if maximum gateways is 64	254
	ExtremeSwitching X440-G2	N/A

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
IP multinetting (secondary IP addresses)—maximum number of secondary IP addresses per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	255
Jumbo frames—maximum size supported for jumbo frames, including the CRC.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	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.	ExtremeSwitching X695 ExtremeSwitching X460-G2 ExtremeSwitching X450-G2 ExtremeSwitching X620, X440-G2 ExtremeSwitching X590, X465, X690	73,000 24,000 14,000 5,000 67,000
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.	ExtremeSwitching X460-G2 ExtremeSwitching X450-G2 ExtremeSwitching X620, X440-G2 ExtremeSwitching X590, X465, X690 ExtremeSwitching X695	26,000 21,000 1,500 93,000 104,000

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X460-G2	14,000
	ExtremeSwitching X450-G2	10,000
	ExtremeSwitching X620, X440-G2	700
	ExtremeSwitching X590, X465, X690	48,000
	ExtremeSwitching X695	52,000
Load sharing—maximum number of load sharing groups. **Note:** • Limit value is the same for MLD sender per switch, PIM IPv6 cache. • Assumes source-group-vlan mode as lookup key.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	128
Load sharing—maximum number of ports per load-sharing group.	For standalone and stacked: ExtremeSwitching X620, X440-G2	8
	For standalone: ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	32
	For stacked: ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	64
Logged messages—maximum number of messages logged locally on the system.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	20,000
MAC-based security—maximum number of MAC-based security policies.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1,024
MAC Locking—Maximum number of MAC locking stations that can be learned on a port.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X695	64 (static MAC locking stations) 600 (first arrival MAC locking stations)

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Meters—maximum number of meters supported.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590 , X465, X690, X695	2,048
Maximum mirroring instances.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695 **Note:** Only two or four mirroring instances will be active at a time, depending on the mirroring filter added to it. There are four hardware resource slots. Each single instance uses one such slot, while each ingress plus egress instance uses two slots. You can use a total of four slots, while there are no more than two egress instances. The maximum possible combination for mirroring instances: 1. 4 ingress 2. 3 ingress + 1 egress 3. 2 ingress + 2 egress 4. 2 (ingress + egress) 5. 1 (ingress + egress) + 2 ingress 6. 1 (ingress + egress) + 1 egress + 1 ingress	16 (including default mirroring instance)
	ExtremeSwitching X620, X440-G2 **Note:** For stacks containing X620 or X440-G2, maximum supported egress mirror instances is 1.	1 (egress)
Mirroring (filters)—maximum number of mirroring filters. **Note:** This is the number of filters across all the active mirroring instances.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	128
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.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	128

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Mirroring, one-to-many (monitor port)—maximum number of one-to-many monitor ports.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16
MLAG ports—maximum number of MLAG ports allowed.	ExtremeSwitching X690, X695	61
	ExtremeSwitching X440-G2, X450-G2	51
	ExtremeSwitching X460-G2	53
	ExtremeSwitching X620	15
	ExtremeSwitching X590	35
	ExtremeSwitching X465	55
	Stacking	480
MLAG peers—maximum number of MLAG peers allowed.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	2
Multicast listener discovery (MLD) snooping per-VLAN filters—maximum number of VLANs supported in per-VLAN MLD snooping mode.	ExtremeSwitching X460-G2	768
	ExtremeSwitching X450-G2	508
	ExtremeSwitching X620, X440-G2	256
	ExtremeSwitching X590, X465, X690, X695	1,500
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per port.[n]	ExtremeSwitching X450-G2, X460-G2	4,000
	ExtremeSwitching X620, X440-G2	3,500
	ExtremeSwitching X590, X465, X690, X695	4,000
Multicast listener discovery (MLD)v1 subscribers—maximum number of MLDv1 subscribers per switch.[n]	ExtremeSwitching X460-G2, X450-G2, X620, X440-G2	10,000
	ExtremeSwitching X590, X465, X690, X695	45,000
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per port.[n]	ExtremeSwitching X460-G2, X450-G2	4,000
	ExtremeSwitching X620, X440-G2	3,500
	ExtremeSwitching X590, X465, X690, X695	4,000
Multicast listener discovery (MLD)v2 subscribers—maximum number of MLDv2 subscribers per switch.[n]	ExtremeSwitching X460-G2, X450-G2, X620, X440-G2	10,000
	ExtremeSwitching X590, X465, X690, X695	45,000

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Multicast listener discovery (MLD)v2 maximum source per group—maximum number of source addresses per group.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	200
Multicast listener discovery (MLD) SSM-map entries—maximum number of MLD SSM mapping entries.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695 ExtremeSwitching X440-G2, X620	500 50
Multicast listener discovery (MLD) SSM-MAP entries—maximum number of sources per group in MLD SSM mapping entries.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	50
Network Login—maximum number of clients being authenticated on MAC-based VLAN enabled ports.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1,024
Network Login—maximum number of clients being authenticated with policy mode enabled with TCI overwrite enabled.	ExtremeSwitching X450-G2, X460-G2, X590, X465 ExtremeSwitching X690, X695 ExtremeSwitching X620, X440-G2	1,024 512 256
Network Login—maximum number of dynamic VLANs.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695 ExtremeSwitching X440-G2, X620	2,000 1,024
Network Login VLAN VSAs—maximum number of VLANs a client can be authenticated on at any given time.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	10
Network Service Identifiers (NSI)/VLAN mappings—maximum number of VLANs to NSI mappings.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	94
Network Address Translation (NAT) VLANs—maximum number of NAT VLANs.	ExtremeSwitching X465, X590, X690, X695	4

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Network Address Translation (NAT) Sessions—number of NAT sessions supported (non twice-NAT).	ExtremeSwitching X465, X590, X690, X695	1,023
Node Alias—maximum number of entries per slot.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X690, X465, X695	8,192
ONEPolicy Dynamic ACL Rules—maximum number of Dynamic ACLs supported via RADIUS VSA 232 per user in Access-List mode.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	64
ONEPolicy Roles/Profiles—maximum number of policy roles/profiles.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	63
ONEPolicy Rules per Role/Profile—maximum number of rules per role/policy.	ExtremeSwitching X450-G2, X460-G2	IPv6 rules: 256 IPv4 rules: 256 L2 Rules: 184 MAC Rules: 256
	ExtremeSwitching X620, X440-G2	IPv6 and Mac Rules: 0 Ipv4 Rules: 256 (per switch) L2 Rules: 184 (per switch)
	ExtremeSwitching X465, X590, X690, X695	IPv4 Rules: 512 IPv6 Rules: 512 MAC Rules: 512 L2 Rules: 440
ONEPolicy Authenticated Users per Switch—maximum number of authenticated users per switch only with TCI-Overwrite enabled.	ExtremeSwitching X450-G2, X460-G2, X590, X465	1,024
	ExtremeSwitching X690, X695	512
	ExtremeSwitching X620, X440-G2	256
	Stacking	Depends on the stack nodes, but the maximum is 65,535.

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X590, X465, X690	24,576
	ExtremeSwitching X460-G2,, X695	12,288
	ExtremeSwitching X450-G2	6,144
	ExtremeSwitching X620, X440-G2	1,536
	Stacking	1,536–65,534
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 X450-G2	6,144
	ExtremeSwitching X460-G2, X695	12,288
	ExtremeSwitching X590, X465, X690	24,576
	ExtremeSwitching X440-G2, X620	1,536
ONEPolicy Authenticated Users per Port per Switch — maximum number of authenticated users per port with only with TCI-Overwrite enabled.	ExtremeSwitching X450-G2, X460-G2, X590, X465	1,024
	ExtremeSwitching X690, X695	512
	ExtremeSwitching X620, X440-G2	256
ONEPolicy Permit/Deny Traffic Classification Rules Types—total maximum number of unique permit/deny traffic classification rules types (system/stack).	ExtremeSwitching X450-G2, X460-G2	952
	ExtremeSwitching X620, X440-G2	440
	ExtremeSwitching X590, X465, X690, X695	1,976
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique MAC permit/deny traffic classification rules types (macsource/macdest).	ExtremeSwitching X450-G2, X460-G2	256
	ExtremeSwitching X620, X440-G2	N/A
	ExtremeSwitching X590, X465, X690, X695	512
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique IPv6 permit/deny traffic classification rules types (ipv6dest).	ExtremeSwitching X450-G2, X460-G2	256
	ExtremeSwitching X620, X440-G2	N/A
	ExtremeSwitching X590, X465, X690, X695	512

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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 X450-G2, X460-G2, X620, X440-G2,	256
	ExtremeSwitching X590, X465, X690, X695	512
ONEPolicy Permit/Deny Traffic Classification Rules Types—maximum number of unique Layer 2 permit/deny traffic classification rules (ethertype/port).	ExtremeSwitching X450-G2, X460-G2	184
	ExtremeSwitching X620, X440-G2	184
	ExtremeSwitching X590, X465, X690, X695	440
OnePolicy Maximum number of rules supported in AccessList mode—maximum number of rules in AcessList mode.	ExtremeSwitching X450-G2, X460-G2	3,000
	ExtremeSwitching X440-G2, X620	952
	ExtremeSwitching X690, X695	3,512
	ExtremeSwitching X435	440
	ExtremeSwitching X590	4,024
Policy-based routing (PBR) redundancy—maximum number of flow-redirects.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590 , X465, X690, X695	256 [o]
Policy-based routing (PBR) redundancy—maximum number of next hops per each flow-direct.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	32 [o]
Private VLANs—maximum number of subscribers. Assumes a minimum of one port per network and subscriber VLAN.	ExtremeSwitching X460-G2	53
	ExtremeSwitching X450-G2	51
	ExtremeSwitching X440-G2	47
	ExtremeSwitching X620	15
	ExtremeSwitching X690, X695	71
	ExtremeSwitching X590, X465	31

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	1,024
	ExtremeSwitching X450-G2	510
	ExtremeSwitching X440-G2	255
	ExtremeSwitching X620	510
Private VLANs—maximum number of private VLANs in an L2-only environment.	ExtremeSwitching X460-G2, X590, X465, X690, X695	1,280
	ExtremeSwitching X450-G2	597
	ExtremeSwitching X440-G2, X620	255
Route policies—suggested maximum number of lines in a route policy file.	ExtremeSwitching X460-G2, X620, X440-G2, X590, X465, X690, X695	10,000
RIP Learned Routes—maximum number of RIP routes supported without aggregation.	ExtremeSwitchingX460-G2, X440-G2, X620, X590, X465, X690, X695	10,000
RIP interfaces on a single router—recommended maximum number of RIP routed interfaces on a switch.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	256
	ExtremeSwitching X440-G2, X620	128
RIPng learned routes—maximum number of RIPng routes.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	3,000
	ExtremeSwitching X440-G2, X620	N/A
Spanning Tree (maximum STPDs)—maximum number of Spanning Tree Domains on port mode EMISTP.	ExtremeSwitching X450-G2, X460-G2, X620, X590, X465, X690, X695	64
	ExtremeSwitching X440-G2	32

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
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, on a 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).	ExtremeSwitching X620 ExtremeSwitching X460-G2, X450-G2, X440-G2 ExtremeSwitching X590, X465, X690, X695	256 128 384
Spanning Tree—maximum number of multiple spanning tree instances (MSTI) domains.	ExtremeSwitching X450-G2, X460-G2, X620, X590, X465, X690, X695 ExtremeSwitching X440-G2,	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.	ExtremeSwitching X460-G2, X450-G2, X620, X590, X465, X690, X695 ExtremeSwitching X440-G2	600 256
Spanning Tree—maximum number of VLANs on all MSTP instances.	ExtremeSwitching X460-G2, X450-G2, X620, X590, X465, X690, X695 ExtremeSwitching X440-G2	1,024 512
Spanning Tree (802.1d domains)—maximum number of 802.1d domains per port.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1
Spanning Tree (number of ports)—maximum number of ports including all Spanning Tree domains.	ExtremeSwitching X450-G2, X460-G2, X620, X590, X465, X690, X695 ExtremeSwitching X440-G2	4,096 2,048

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
Spanning Tree (maximum VLANs)—maximum number of STP-protected VLANs (dot1d and dot1w).	ExtremeSwitching X460-G2, X450-G2, X620, X590, X465, X690, X695	1,024
	ExtremeSwitching X440-G2	600
SSH (number of sessions)—maximum number of simultaneous SSH sessions.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
Static MAC multicast FDB entries—maximum number of permanent multicast MAC entries configured into the FDB.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1,024
Syslog servers—maximum number of simultaneous Syslog servers that are supported.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16
Syslog targets—maximum number of configurable Syslog targets.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16
Telnet (number of sessions)—maximum number of simultaneous Telnet sessions.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
Virtual routers—maximum number of user-created virtual routers that can be created on a switch.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	63
	ExtremeSwitching X440-G2, X620	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.	ExtremeSwitching X460-G2,X450-G2, X590, X465, X690, X695	960 *
	ExtremeSwitching X440-G2, X620	16 (local-only VRFs)
Virtual router protocols per VR—maximum number of routing protocols per VR.	ExtremeSwitching X460-G2,X450-G2, X590, X465, X690, X695	8
	ExtremeSwitching X440-G2, X620	N/A
Virtual router protocols per switch—maximum number of VR protocols per switch.	ExtremeSwitching X460-G2,X450-G2, X590, X465, X690, X695	64
	ExtremeSwitching X440-G2, X620	N/A

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
VLAN aggregation—maximum number of port-VLAN combinations on any one superVLAN and all of its subVLANs.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1,000
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.)	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	4,094
VLANs (Layer 2)—maximum number of Layer 2 VLANs.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	4,094
VLANs (Layer 3)—maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	ExtremeSwitching X460-G2,X450-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X440-G2, X620	510
VLAN Port Interfaces (VPIF)—maximum number of VLAN port interfaces.	ExtremeSwitching X440-G2, X450-G2, X460-G2, X620	65,536
	ExtremeSwitching X465, X590, X690, X695	131,585
VLANs (maximum active port-based)—maximum active ports per VLAN when 4,094 VLANs are configured with the default license.	ExtremeSwitching X590 , X465, X690, X695	32
	ExtremeSwitching X440-G2	28
	ExtremeSwitching X460-G2	26
	ExtremeSwitching X620	16
	ExtremeSwitching X450-G2	29
VLANs (maximum active protocol-sensitive filters)—number of simultaneously active protocol filters in the switch.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
VLAN translation—maximum number of translation VLANs. Assumes a minimum of one port per translation and member VLAN.	ExtremeSwitching X460-G2	53
	ExtremeSwitching X450-G2	51
	ExtremeSwitching X620	15
	ExtremeSwitching X440-G2	47
	ExtremeSwitching X690, X695	71
	ExtremeSwitching X590, X465	31
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 private VLANs in an L2-only environment if the configuration has tagged and translated ports.	ExtremeSwitching X465, X590, X690, X695	1,024
	ExtremeSwitching X450-G2	512
	ExtremeSwitching X620	510
	ExtremeSwitching X440-G2	255
VLAN translation—maximum number of translation VLAN pairs in an L2-only environment.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	2,046
	ExtremeSwitching X440-G2, X620	255
VMAN CEP—maximum number of CVIDs. Note: With 75% hash table utilization.	ExtremeSwitching X440-G2	1,500
	ExtremeSwitching X450-G2	6,000
	ExtremeSwitching X460-G2,	12,000
	ExtremeSwitching X590, X465, X690	24,000
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.	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X465, X690, X695	10 with 100 DACLs
XNV authentication—maximum number of VMs that can be processed (combination of local and network VMs).	ExtremeSwitching X460-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X450-G2, X440-G2, X620	1,024

Table 8: Supported Limits for Edge License (continued)

Metric	Product	Limit
XNV database entries—maximum number of VM database entries (combination of local and network VMs).	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	16,000
XNV database entries—maximum number of VPP database entries (combination of local and network VPPs).	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	2,048
XNV dynamic VLAN—Maximum number of dynamic VLANs created (from VPPs /local VMs).	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	2,048
XNV local VPPs—maximum number of XNV local VPPs.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	2,048 ingress 512 egress
XNV policies/dynamic ACLs—maximum number of policies/dynamic ACLs that can be configured per VPP.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8 ingress 4 egress
XNV network VPPs—maximum number of XNV network VPPs. p	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	2,048 ingress 512 egress

Advanced Edge License Limits

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

Table 9: Supported Limits for Advanced Edge License

Metric	Product	Limit
BGP auto-peering—maximum number of auto-peering nodes and VTEPs.	ExtremeSwitching X590, X465, X690, X695	64
BGP auto-peering attached IPv4 hosts— maximum number of attached IPv4 hosts.	ExtremeSwitching X590, X465, X690, X695	64,000
BGP auto-peering attached IPv6 hosts— maximum number of attached IPv6 hosts.	ExtremeSwitching X590, X465, X690, X695	8,000

Table 9: Supported Limits for Advanced Edge 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.	ExtremeSwitching X590, X465, X690, X695	16*
BGP auto-peering maximum IPv4 prefixes with ECMP—Maximum number of IPv4 Network prefixes with ECMP.	ExtremeSwitching X590, X465, X690, X695	64,000
BGP auto-peering maximum IPv6 prefixes with ECMP—Maximum number of IPv6 Network prefixes with ECMP.	ExtremeSwitching X590, X465, X690, X695	8,000
BGP auto-peering MLAG peers—maximum MLAG peers per AutoBGP node.	ExtremeSwitching X590, X465, X690, X695	1
BGP auto-peering VRFs—maximum number of VRFs.	ExtremeSwitching X590, X465, X690, X695	64
BGP auto-peering EVPN instances—maximum EVPN instances.	ExtremeSwitching X590, X465, X690, X695	1,024
EAPS domains—maximum number of EAPS domains. **Note:** An EAPS ring that is being spatially reused cannot have more than four configured EAPS domains.	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X450-G2, X460-G2 ExtremeSwitching X440-G2, X620	128 64 32
EAPSv2 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X450-G2, X460-G2, X440-G2, X620 ExtremeSwitching X590, X465, X690, X695	500 2,000
ERPS domains—maximum number of ERPS domains without CFM configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	32
ERPS domains—maximum number of ERPS domains with CFM configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	32
ERPSv1 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695 ExtremeSwitching X620, X440-G2	2,000 1,000

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
ERPSv2 protected VLANs—maximum number of protected VLANs.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	2,000
	ExtremeSwitching X620, X440-G2	500
ESRP groups—maximum number of ESRP groups	ExtremeSwitching X450-G2, X460-G2, X440-G2, X620, X590, X465, X690, X695	32
ESRP domains—maximum number of ESRP domains.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	64
ESRP L2 VLANs—maximum number of ESRP VLANs without an IP address configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1,000
ESRP L3 VLANs—maximum number of ESRP VLANs with an IP address configured.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	511
ESRP (maximum ping tracks)—maximum number of ping tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
ESRP (IP route tracks)—maximum IP route tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X695	8
ESRP (VLAN tracks)—maximum number of VLAN tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	1
L2 VPN: VCCV (pseudowire Virtual Circuit Connectivity Verification) VPNs per switch—maximum number of VCCV enabled VPLS VPNs.	ExtremeSwitching X460-G2, X590, X465, X690, X695	16
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
L2 VPN: VPLS MAC addresses—maximum number of MAC addresses learned by a switch.	ExtremeSwitching X590, X465, X690, X695	140,000
	ExtremeSwitching X460-G2	55,000
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
L2 VPN: VPLS VPNs—maximum number of VPLS virtual private networks per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	1,023
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
L2 VPN: VPLS peers—maximum number of VPLS peers per VPLS instance.	ExtremeSwitching X460-G2, X590, X465, X690, X695	64
	ExtremeSwitching X450-G2, X620, X440-G2	N/A

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
L2 VPN: LDP pseudowires—maximum number of pseudowires per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	7,000
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
L2 VPN: static pseudowires—maximum number of static pseudowires per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	7,000
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
L2 VPN: Virtual Private Wire Service (VPWS) VPNs—maximum number of virtual private networks per switch.	ExtremeSwitching X590, X465, X690, X695	4,090
	ExtremeSwitching X460-G2	1,023
	ExtremeSwitching X450-G2, X620, X440-G2	N/A
MPLS RSVP-TE interfaces—maximum number of interfaces.	ExtremeSwitching X460-G2, X590, X465,, X690, X695,	32
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE ingress LSPs—maximum number of ingress LSPs.	ExtremeSwitching X460-G2, X590,, , X465, X690, X695	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE egress LSPs—maximum number of egress LSPs.	ExtremeSwitching X460-G2, X590, X465, X690, X695	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE transit LSPs—maximum number of transit LSPs.	ExtremeSwitching X460-G2,	2,000
	ExtremeSwitching X590, X465, X690, X695	4,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE paths—maximum number of paths.	ExtremeSwitching X460-G2	1,000
	ExtremeSwitching X590, X465, X690, X695	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE profiles—maximum number of profiles.	ExtremeSwitching X460-G2	1,000
	ExtremeSwitching X590, X465, X690, X695	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS RSVP-TE EROs—maximum number of EROs per path.	ExtremeSwitching X460-G2, X590, X465, X690, X695	64
	ExtremeSwitching X450-G2, and ExtremeSwitching X440-G2, X620	N/A

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
MPLS LDP peers—maximum number of MPLS LDP peers per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	128
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS LDP adjacencies—maximum number of MPLS LDP adjacencies per switch.	ExtremeSwitching X460-G2	50
	ExtremeSwitching X590, X465, X690, X695	64
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS LDP ingress LSPs—maximum number of MPLS LSPs that can originate from a switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS LDP-enabled interfaces—maximum number of MPLS LDP configured interfaces per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	128
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS LDP transit LSPs—maximum number of MPLS transit LSPs per switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	4,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS LDP egress LSPs—maximum number of MPLS egress LSPs that can terminate on a switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	4,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS static egress LSPs—maximum number of static egress LSPs.	ExtremeSwitching X460-G2	7,116
	ExtremeSwitching X590, X465, X690, X695	8,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS static ingress LSPs—maximum number of static ingress LSPs.	ExtremeSwitching X460-G2, X590, X465, X690, X695	4,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
MPLS static transit LSPs—maximum number of static transit LSPs	ExtremeSwitching X460-G2, X590, X465, X690, X695	4,000
	ExtremeSwitching X450-G2, X440-G2, X620	N/A
OSPFv2/v3 ECMP—maximum number of equal cost multipath OSPFv2 and OSPFv3.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	64
	ExtremeSwitching X620	4
	ExtremeSwitching X440-G2	N/A

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
OSPFv2 areas—as an ABR, how many OSPF areas are supported within the same switch.	ExtremeSwitching X460-G2, X590, X465, X690, X695	8
	ExtremeSwitching X450-G2, X440-G2, X620	4
OSPFv2 external routes—recommended maximum number of external routes contained in an OSPF LSDB.	ExtremeSwitching X590, X465, X690, X695	10,000
	ExtremeSwitching X460-G2	5,000
	ExtremeSwitching X450-G2, X440-G2, X620	2,400
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.	ExtremeSwitching X590, X465, X690, X695	2,000
	ExtremeSwitching X460-G2	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	1,000
OSPFv2 inter-vr or leaking routes—recommended maximum number of inter-vr routes contained in an OSPF LSDB.	ExtremeSwitching X590, X465, X690, X695, X460-G2	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	1,000
OSPFv2 interfaces—recommended maximum number of OSPF interfaces on a switch (active interfaces only).	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	4
OSPFv2 links—maximum number of links in the router LSA.	ExtremeSwitching X460-G2, X590, X465, X690, X695	400
	ExtremeSwitching X450-G2, X620, X440-G2	4
OSPFv2 neighbors—maximum number of supported OSPF adjacencies.	ExtremeSwitching X450-G2, X460-G2, X440-G2, X620, X590, X465, X690, X695	4
OSPFv2 routers in a single area—recommended maximum number of routers in a single OSPF area.	ExtremeSwitching X590, X465, X690, X695	100
	ExtremeSwitching X460-G2	50
	ExtremeSwitching X450-G2, X440-G2, X620	4
OSPFv2 virtual links—maximum number of supported OSPF virtual links.	ExtremeSwitching X460-G2, X590, X465, X690, X695	32
	ExtremeSwitching X450-G2, X440-G2, X620	4
OSPFv3 areas—as an ABR, the maximum number of supported OSPFv3 areas.	ExtremeSwitching X590, X465, X690, X695	100
	ExtremeSwitching X460-G2	16
	ExtremeSwitching X450-G2, X440-G2, X620	4

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
OSPFv3 external routes—recommended maximum number of external routes.	ExtremeSwitching X460-G2,X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2, X440-G2, X620	1,200
OSPFv3 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes.	ExtremeSwitching X590, X465, X690, X695	4.000
	ExtremeSwitching X460-G2	3,000
	ExtremeSwitching X450-G2, X440-G2, X620	500
OSPFv3 interfaces—maximum number of OSPFv3 interfaces (active interfaces only).	ExtremeSwitching X460-G2, X450-G2, X440-G2, X620, X590, X465, X690, X695	4
OSPFv3 neighbors—maximum number of OSPFv3 neighbors.	ExtremeSwitching X450-G2, X460-G2,X440-G2, X620, X590, X465, X695	4
OSPFv3 virtual links—maximum number of OSPFv3 virtual links supported.	ExtremeSwitching X460-G2, X590, X465, X690, X695	16
	ExtremeSwitching X450-G2, X440-G2, X620	4
PIM IPv4 (maximum interfaces)—maximum number of PIM active interfaces.	ExtremeSwitching X460-G2, X450-G2,X440-G2, X620, X590, X465, X690, X695	4
PIM IPv4 Limits—maximum number of multicast groups per dynamic rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	180
PIM IPv4 Limits—maximum number of multicast groups per static rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	3,000 (depends on policy file limits)
PIM IPv4 Limits—maximum number of multicast sources per group.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	5,000
	ExtremeSwitching X440-G2, X620	1,500
PIM IPv4 Limits—maximum number of dynamic rendezvous points per multicast group.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	145
PIM IPv4 Limits—static rendezvous points.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	32
PIM IPv6 (maximum interfaces)—maximum number of PIM active interfaces.	ExtremeSwitching X460-G2, X450-G2,X440-G2, X620, X590 , X465, X690, X695	4

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
PIM IPv6 Limits—maximum number of multicast sources per group.	ExtremeSwitching X460-G2, X590 , X465, X690, X695	1,750
	ExtremeSwitching X450-G2	1,500
	ExtremeSwitching X440-G2, X620	550
PIM IPv6 Limits—maximum number of multicast groups per dynamic rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	70
PIM IPv6 Limits—maximum number of multicast groups per static rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	3,000 (depends on policy file limits)
PIM IPv6 Limits—maximum number of dynamic rendezvous points per multicast group.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	64
PIM IPv6 Limits—maximum number of secondary addresses per interface.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590 , X465, X690, X695	70
PIM IPv6 Limits—static rendezvous points.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590 , X465, X690, X695	32
Port-specific VLAN tags—maximum number of port-specific VLAN tags.	ExtremeSwitching X460-G2, X590 , X465, X690	1,023
	ExtremeSwitching X450-G2, X440-G2, X620, X695	N/A
Port-specific VLAN tags—maximum number of port-specific VLAN tag ports.	ExtremeSwitching X460-G2, X590, X465, X690	4,000
	ExtremeSwitching X450-G2, X440-G2, X620, X695	N/A
VLAN Port Interfaces (VPIF)—maximum number of VLAN port interfaces.	ExtremeSwitching X460-G2	65,536
	ExtremeSwitching X465, X590, X690, X695	131,585

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
VRRP (v2/v3-IPv4) (maximum instances)—maximum number of VRRP instances for a single switch, with Advanced Edge license or higher. **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):**	
	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	511
	ExtremeSwitching X440-G2, X620	128
	Scaled Mode (with groups):	
	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X440-G2, X620	128
VRRP (v3-IPv6) (maximum instances)—maximum number of VRRP instances for a single switch, with Advanced Edge or Base license, or higher. (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):**	
	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	511
	ExtremeSwitching X440-G2, X620	128
	Scaled Mode (with groups):	
	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	2,048
	ExtremeSwitching X440-G2, X620	128
VRRP (v2/v3-IPv4/IPv6) (maximum VRID)—maximum number of unique VRID numbers per switch.	ExtremeSwitching X460-G2, X450-G2 X440-G2, X620, X590, X465, X690, X695 **Note:** With Advanced Edge license or higher.	255
VRRP (v2/v3-IPv4/IPv6) (maximum VRIDs per VLAN)—maximum number of VRIDs per VLAN.	ExtremeSwitching X460-G2, X450-G2 X440-G2, X620, X590, X465, X690, X695 **Note:** With Advanced Edge license or higher.	255
VRRP (v2/v3-IPv4/IPv6) (maximum ping tracks)—maximum number of ping tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695 **Note:** With Advanced Edge license or higher.	8

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
VRRP (maximum ping tracks)—maximum number of ping tracks per VRRP Instance under 128 VRRP instances, with Advanced Edge license or higher.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	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, with Advanced Edge license or higher.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8 (20 centisecond or 1 second hello interval)
VRRP (v2/v3-IPv4/IPv6) (maximum iproute tracks)—maximum number of IP route tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
VRRP (v2/v3-IPv4/IPv6)—maximum number of VLAN tracks per VLAN.	ExtremeSwitching X450-G2, X460-G2, X620, X440-G2, X590, X465, X690, X695	8
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.	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	2,048–4,000 N/A
VXLAN—maximum tenant VLANs plus port combinations **Note:** Every (VPLS/PSTag VLAN) + port reduces the limit by 1.	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	4,096 N/A

Table 9: Supported Limits for Advanced Edge License (continued)

Metric	Product	Limit
VXLAN—maximum static MAC to IP bindings. Note: Every FDB entry configured reduces this limit by 1.	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	64,000 N/A
VXLAN—maximum RTEP IP addresses	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	512 N/A
VXLAN—maximum virtual networks with dynamic learning and OSPF extensions for VXLAN	ExtremeSwitching X590, X465, X690, X695 ExtremeSwitching X460-G2, X450-G2, X440-G2, X620	4,000 N/A
VXLAN—or replicator role, maximum number of attached leafs per switch.	ExtremeSwitching X465, X590,, X690, X695	256

Core License Limits

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

Table 10: Supported Limits for Core License

Metric	Product	Limit
Anycast RP Using PIM—maximum number of IPv4 Anycast RP set per VR.	ExtremeSwitching X440-G2, X450-G2, X460-G2, X620, X590, X465, X690, X695	32
Anycast RP Using PIM—maximum number of IPv6 Anycast RP set per VR.	ExtremeSwitching X440-G2, X450-G2, X460-G2, X620, X590, X465, X690, X695	32
Anycast RP Using PIM—RP peers per Anycast RP set.	ExtremeSwitching X440-G2, X450-G2, X460-G2, X620, X590, X465, X690, X695	10
BGP (aggregates)—maximum number of BGP aggregates.	ExtremeSwitching X460-G2, X590, X465, X690, X695 ExtremeSwitching X450-G2	256 204
BGP (networks)—maximum number of BGP networks.	ExtremeSwitching X460-G2, X590, X465, X690, X695 ExtremeSwitching X450-G2	1,024 820

Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X460-G2	128
	ExtremeSwitching X590, X465, X690, X695	300
	ExtremeSwitching X450-G2	100
BGP (peer groups)—maximum number of BGP peer groups.	ExtremeSwitching X460-G2, X590, X465, X690, X695	64
	ExtremeSwitching X450-G2	50
BGP (policy entries)—maximum number of BGP policy entries per route policy.	ExtremeSwitching X460-G2, X590, X465, X690, X695	256
	ExtremeSwitching X450-G2	204
BGP (policy statements)—maximum number of BGP policy statements per route policy.	ExtremeSwitching X460-G2, X590, X465, X690, X695	1,024
	ExtremeSwitching X450-G2	820
BGP multicast address-family routes—maximum number of multicast address-family routes.	ExtremeSwitching X460-G2, X590, X465, X690, X695	25,000
	ExtremeSwitching X450-G2	20,000
BGP (unicast address-family routes)—maximum number of unicast address-family routes.	ExtremeSwitching X460-G2, X590, X465, X695 (at default)	25,000
	ExtremeSwitching X590, X465 (with ALPM enabled)	100,000
	ExtremeSwitching X450-G2	20,000
BGP (non-unique routes)—maximum number of non-unique BGP routes.	ExtremeSwitching X460-G2, X590, X465, X690, X695	25,000
	ExtremeSwitching X450-G2	20,000
BGP ECMP—maximum number of equal cost paths per multipath for BGP and BGPv6.	ExtremeSwitching X460-G2, X590, X465, X690, X695	2, 4, 8, 16, 32, or 64
	ExtremeSwitching X450-G2	64
BGPv6 (unicast address-family routes)—maximum number of unicast address family routes.	ExtremeSwitching X460-G2	6,000
	ExtremeSwitching X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2	4,800

Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
BGPv6 (non-unique routes)—maximum number of non-unique BGP routes.	ExtremeSwitching X460-G2	18,000
	ExtremeSwitching X590, X465, X690, X695	24,000
	ExtremeSwitching X450-G2	14,000
EVPN EVI instances—maximum number of EVI instances.	ExtremeSwitching X590, X465, X690, X695	1,024
EVPN LAGs—maximum number of LAGs.	ExtremeSwitching X590, X465, X690, X695	128
GRE Tunnels—maximum number of GRE tunnels.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	255
	ExtremeSwitching X620, X440-G2	N/A
IS-IS adjacencies—maximum number of supported IS-IS adjacencies.	ExtremeSwitching X460-G2, X590, X465, X690, X695	128
	ExtremeSwitching X450-G2	N/A
IS-IS ECMP—maximum number of equal cost paths per multipath for IS-IS.	ExtremeSwitching X460-G2, X590, X465, X690, X695	2, 4, or 8
	ExtremeSwitching X450-G2	N/A
IS-IS interfaces—maximum number of interfaces that can support IS-IS.	ExtremeSwitching X460-G2, X590, X465, X690, X695	255
	ExtremeSwitching X450-G2	N/A
IS-IS routers in an area—recommended maximum number of IS-IS routers in an area.	ExtremeSwitching X460-G2, X590, X465, X690, X695	256
	ExtremeSwitching X450-G2	N/A
IS-IS route origination—recommended maximum number of routes that can be originated by an IS-IS node.	ExtremeSwitching X460-G2, X590, X465, X690, X695	20,000
	ExtremeSwitching X450-G2	N/A
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	25,000
	ExtremeSwitching X450-G2	N/A
IS-IS IPv4 L2 routes—recommended maximum number of IS-IS Level 2 routes.	ExtremeSwitching X460-G2, X590, X465, X690, X695	25,000
	ExtremeSwitching X450-G2	N/A
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	20,000
	ExtremeSwitching X450-G2	N/A

Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2	N/A
IS-IS IPv6 L2 routes—recommended maximum number of IS-IS Level 2 routes.	ExtremeSwitching X460-G2, X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2	N/A
IS-IS IPv6 L1 routes in an L1/L2 router—recommended maximum number of IS-IS Level 1 routes in a L1/l2 router.	ExtremeSwitching X460-G2, X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2	N/A
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	20,000
	ExtremeSwitching X450-G2	N/A
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	20,000
	ExtremeSwitching X450-G2	N/A
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.	ExtremeSwitching X460-G2, X590, X465, X690, X695	20,000
	ExtremeSwitching X450-G2	N/A
MSDP active peers—maximum number of active MSDP peers.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	64
MSDP SA cache entries—maximum number of entries in SA cache.	ExtremeSwitching X590, X465, X690, X695	14,000
	ExtremeSwitching X450-G2	8,000
	ExtremeSwitching X460-G2	10,000
MSDP maximum mesh groups—maximum number of MSDP mesh groups.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	16

Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
OSPFv2/v3 ECMP—maximum number of equal cost multipath OSPFv2 and OSPFv3.	ExtremeSwitching X460-G2, X450-G2, X590, X465, X690, X695	64
OSPFv2 areas—as an ABR, how many OSPF areas are supported within the same switch.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	8
OSPFv2 external routes—recommended maximum number of external routes contained in an OSPF LSDB.	ExtremeSwitching X590, X465, X690, X695	10,000
	ExtremeSwitching X460-G2	5,000
	ExtremeSwitching X450-G2	4,000
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.	ExtremeSwitching X590, X465, X690, X695	4,000
	ExtremeSwitching X460-G2	2,000
	ExtremeSwitching X450-G2	1,600
OSPFv2 inter-vr or leaking routes—recommended maximum number of inter-vr routes contained in an OSPF LSDB.	ExtremeSwitching X590, X465, X690, X695, X460-G2	2,000
	ExtremeSwitching X450-G2, X440-G2, X620	1,000
OSPFv2 interfaces—recommended maximum number of OSPF interfaces on a switch (active interfaces only).	ExtremeSwitching X460-G2, X590, X465, X690, X695	400
	ExtremeSwitching X450-G2	320
OSPFv2 links—maximum number of links in the router LSA.	ExtremeSwitching X460-G2, X590, X465, X690, X695	400
	ExtremeSwitching X450-G2	320
OSPFv2 neighbors—maximum number of supported OSPF adjacencies.	ExtremeSwitching X460-G2, X590, X465, X690, X695	128
	ExtremeSwitching X450-G2	96
OSPFv2 routers in a single area—recommended maximum number of routers in a single OSPF area.	ExtremeSwitching X590, X465, X690, X695	100
	ExtremeSwitching X460-G2	50
	ExtremeSwitching X450-G2	40
OSPFv2 virtual links—maximum number of supported OSPF virtual links.	ExtremeSwitching X460-G2, X590, X465, X690, X695	32
	ExtremeSwitching X450-G2	25
OSPFv3 areas—as an ABR, the maximum number of supported OSPFv3 areas.	ExtremeSwitching X590, X465, X690, X695	100
	ExtremeSwitching X460-G2	16
	ExtremeSwitching X450-G2	12

Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
OSPFv3 external routes—recommended maximum number of external routes.	ExtremeSwitching X460-G2, X590, X465, X690, X695	10,000
	ExtremeSwitching X450-G2	7,500
OSPFv3 inter- or intra-area routes—recommended maximum number of inter- or intra-area routes.	ExtremeSwitching X590, X465, X690, X695	4.000
	ExtremeSwitching X460-G2	3,000
	ExtremeSwitching X450-G2	500
OSPFv3 interfaces—maximum number of OSPFv3 interfaces (active interfaces only).	ExtremeSwitching X460-G2, X590, X465, X690, X695	256
	ExtremeSwitching X450-G2	192
OSPFv3 neighbors—maximum number of OSPFv3 neighbors.	ExtremeSwitching X460-G2, X590, X465, X690, X695	64
	ExtremeSwitching X450-G2	48
OSPFv3 virtual links—maximum number of OSPFv3 virtual links supported.	ExtremeSwitching X460-G2, X590, X465, X690, X695	16
	ExtremeSwitching X450-G2	12
PIM IPv4 (maximum interfaces)—maximum number of PIM active interfaces.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	255
PIM IPv4 Limits—maximum number of multicast groups per dynamic rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	180
PIM IPv4 Limits—maximum number of multicast groups per static rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	3,000 (depends on policy file limits)
PIM IPv4 Limits—maximum number of multicast sources per group.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	5,000
PIM IPv4 Limits—maximum number of dynamic rendezvous points per multicast group.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	145
PIM IPv4 Limits—static rendezvous points.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	32
PIM IPv6 (maximum interfaces)—maximum number of PIM active interfaces.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	255

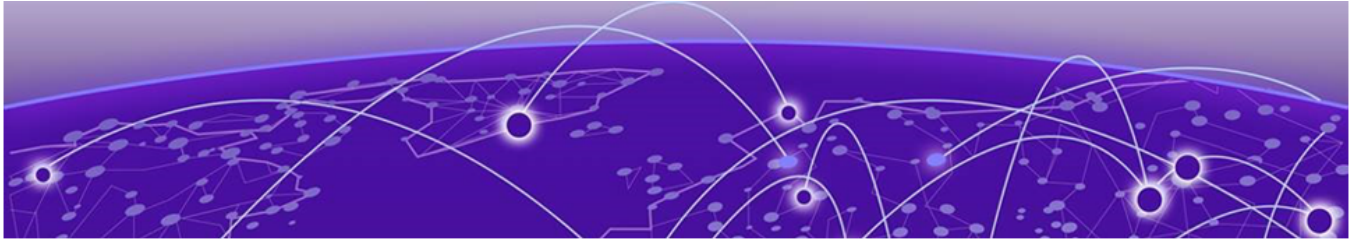
Table 10: Supported Limits for Core License (continued)

Metric	Product	Limit
PIM IPv6 Limits—maximum number of multicast sources per group.	ExtremeSwitching X460-G2, X590, X465, X690, X695	1,750
	ExtremeSwitching X450-G2	1,500
PIM IPv6 Limits—maximum number of multicast groups per dynamic rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	70
PIM IPv6 Limits—maximum number of multicast groups per static rendezvous point.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	3,000 (depends on policy file limits)
PIM IPv6 Limits—maximum number of dynamic rendezvous points per multicast group.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	64
PIM IPv6 Limits—maximum number of secondary addresses per interface.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	70
PIM IPv6 Limits—static rendezvous points.	ExtremeSwitching X450-G2, X460-G2, X590, X465, X690, X695	32

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 Edge Switching 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 chapter lists open software issues, limitations in ExtremeXOS and Switch Engine system architecture (known issues), and resolved issues in ExtremeXOS and Switch Engine.

Open Issues in ExtremeXOS 32.7.1

The following are new open issues for supported features found in version 32.7.1:

Table 11:

Defect Number	Description
General	
EXOS-36140	Checkpointing is not done on the stack for DHCP snooping fingerprinting.
Chalet	
EXOS-35888	Keystrokes not in Sync with CLI terminal window over HTTPS. When using the CLI terminal through the HTTPS URL, keystrokes are not in sync with what is displayed in the window. Workaround: Use the URL with HTTP.

Known Behaviors

The following is a limitation in EXOS architecture that has yet to be resolved.

Table 12: Known Issues, Platform-Specific, and Feature Change Requests (CRs)

Defect Number	Description
General	
EXOS-35439	"Error in script "/tmp/instaPortSetup.xsf" message is received when trying to assign an instant port profile to a port that has already been configured. All port configuration must be deleted before assigning an instant port profile to a port.

Resolved Issues in ExtremeXOS 32.7.3.15-Patch1-19

The following issues were resolved in ExtremeXOS 32.7.3.15-Patch1-19. Version 32.7.3.15-Patch1-19 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, and 32.7.x.

Table 13: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.3.15-Patch1-19

Key	Release Notes
General	
EXOS-38109	Unable to configure the **tacacs** command with server name as hostname on stack nodes.
CFD-14795	Error "configuration reply is too big" occurs when deleting multiple ports in a stack associated with admin-profiles.
CFD-14634	HAL process crashes randomly when VXLAN network port with IGMP multicast entries is flapped.
CFD-14630	Unable to remove ports in PVLAN subscriber VLAN after auto-move.
CFD-14585	FDB process crashes, causing switch reset.
CFD-14584	RX CRC errors on ports not displayed in the **show tech** command.
CFD-14482	VCC Voltage high warning observed with FORMERICAOE optics.
CFD-14459	Chalet incorrectly displays ports as tagged in VLAN despite being configured as untagged.
CFD-14268	User account lacks permission to execute **show fabric attach** commands.
CFD-14204	OSPF process memory leak when IP address is repeatedly configured and removed on VLAN interface.
CFD-14115	MACsec link goes down after link flap between LRM-MACsec adapter switch and native MACsec switch.
CFD-13881	BGP session fails to establish due to segmentation fault after restarting `exabgp` in Docker.

Table 13: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.3.15-Patch1-19 (continued)

Key	Release Notes
CFD-13880	BGP route failover delayed after BFD session goes down.
CFD-13879	`dcbgp` process crashes with signal 11.

Resolved Issues in ExtremeXOS 32.7.3.15

The following issues were resolved in ExtremeXOS 32.7.3.15. Version 32.7.3.15 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, and 32.7.x.

Table 14: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.3.15

Defect Number	Description
General	
CFD-13586	MIB files posted in the portal have the wrong checksum values.
CFD-13724	Optics with part number 10434 are shown as "unsupported".
CFD-13806	10067 optic doesn't link up after a restart if the port is configured for **`auto-negotiation off speed 100 duplex full.`**
CFD-13826	IDM role based VLANs are not working as expected.
CFD-13853	IGMP receivers are learned on the wrong MLAG ports after a restart of the MLAG peer or a restart of multiple MLAG ports at the same time.
CFD-13921	New telnet session couldn't be created to the switch when the software is being installed.
CFD-13933	Process Policy crashes with signal 6 leading to switch restarts.
CFD-13943	Traffic is briefly looped on multi-slot LAG ports when one of the slots is restarted.
CFD-13964	SNMPmaster process crash occurs when configuring the SNMP username with a space.
CFD-14004	The cloud-connector process has a memory leak when the switch contains multiple STP domains.
CFD-14036	The ISC port is not added back to FA VLANs even after the restarted Fabric Attach MLAG peer is up.
CFD-14104	The link doesn't always come up while using 10070H optics.
CFD-14113	Output of CLI **`show meter out-of-profile ports`**[] is not displaying counter values.
CFD-14139	Switch restarts due to EDP process crash while polling an OID with the wrong table indices.
CFD-14152	STP-related configuration is lost on the primary port of the LAG when sharing is disabled/enabled even though auto-bind is enabled for that VLAN.

Table 14: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.3.15 (continued)

Defect Number	Description
EXOS-38127	Multiple telegraf processes are simultaneously running on the switch.
EXOS-37870	New feature: Fabric Attach - support MVRP for VLAN management - Static NSI Offset.

Resolved Issues in ExtremeXOS v32.7.2-Patch1-32

The following issues were resolved in ExtremeXOS v32.7.2-Patch1-32. Version 32.7.2-Patch1-32 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, and 32.7.x.

Table 15: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.2-Patch1-32

Defect Number	Description
General	
CFD-11713	Link goes down randomly on ports with 100Fx optics inserted in it.
CFD-12789	With IPMC fast-path forwarding configuration in place, packets destined to local-network-range are not getting flooded anymore.
CFD-12892	ELRP HW assist flooding the network on Universal platforms.
CFD-12989	In a standalone X465 switch, the IGMP receiver is not learned if the same source is learned as a sender in IGMP snooping.
CFD-13058	Policy was not enabled due to resource allocation in X440-G2 platforms.
CFD-13241	SNMP stops responding briefly after sending two consecutive save config snmpset.
CFD-13290	After copying an EMS filter having strict match conditions to a new EMS filter, Climaster process crash occurs while executing the **show configuration ems** command.
CFD-13300	Process rtmgr crashes leading to switch restart.
CFD-13325	NAC client IP address resolved using ExtremeXOS Identity Management are printed in reverse order when they are fetched via SNMP commands.
CFD-13375	VOSS Zero Touch Fabric LLDP packet removes Fabric Attach bindings when it was received before LACP is completed.
CFD-13376	The following error is displayed: Command parse token stack overflow while using tab in the command: **show iproute ipv4**.
CFD-13388	Can't exit out of the output of the **show ports vlan statistics no-refresh** command.
CFD-13430	When the switch receives IGMP packet on its to-port of remote-mirroring, and if packet tag matches remote-mirroring tag, the switch sends back the same packet on the received port.

Table 15: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.2-Patch1-32 (continued)

Defect Number	Description
CFD-13510	Incorrect value is returned when polling the IfOperstatus of a stack slot that's powered off.
CFD-13517	Inconsistent logging behavior when a failsafe login fails.
CFD-13552	Memory depletion in the backup node due to a memory leak in the LLDP process.
CFD-13588	SNMP trap Virtual Router configuration is applied incorrectly when it is done using SNMPSet operation.
CFD-13605	BFD flag/configuration is not reset when executing the **`disable bfd vlan`** and **`unconfigure bfd vlan`** commands.
CFD-13616	Generic error is returned while trying to delete a node alias entry using SNMP in a stack.
CFD-13632	Memory leak in expy3 process while polling LLDP information that contains a custom TLV with subtype 0.
CFD-13655	ARP entry is not properly learned when a host moves from one sub-VLAN to another sub-VLAN
EXOS-37877	Unable to delete node alias entries associated with the ports from backup/standby slots using SNMP set.

Resolved Issues in ExtremeXOS v32.7.2

The following issues were resolved in ExtremeXOS v32.7.2. Version 32.7.2 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, and 32.7.x.

Table 16: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.2

Defect Number	Description
General	
CFD-12508	Not all Fabric Attach assignments are sent from the Fabric Attach proxy to the Fabric Attach server in certain scenarios.
CFD-12951	EDP process crash occurs when executing [extremeEdpNeighborTable|https://mibs.observium.org/mib/EXTREME-EDP-MIB/#extremeEdpNeighborTable] table.
CFD-12969	Continuous memory depletion occurs while polling DHCP snooping entries that contain Option code 0 via REST API.
CFD-13035	The following error log displays in a switch randomly: `<Warn:HAL.FDB.MacVlanAddFail> MAC-based VLAN entry 00:50:B6:BB:D2:17 vlan 100 addition to port 17 failed, Table full`
CFD-13108	Switch crashes when the internal dynamic VLAN counter becomes 0.
CFD-13156	Upgrading the switch through Chalet fails.

Table 16: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.2 (continued)

Defect Number	Description
CFD-13157	SNMP timeout occurs after enabling device and port statistics in ExtremeCloud IQ - Site Engine.
CFD-13159	While fetching optic information for bi-directional GBICs for the command line, the output displays opposite directions than intended one.
CFD-13168	ELRP Dynamic VLAN interval timers does not work.
EXOS-37198	Need provision to get logs for certain SNMP events, such as authorization failures.
SummitStack	
CFD-12878	When a slot boots up in a stack, SNMP traps are generated for ports even though those ports are marked as not present in the slot.

Resolved Issues in ExtremeXOS v32.7.1-Patch1-68

The following issues were resolved in ExtremeXOS v32.7.1-Patch1-49. Version 32.7.1-Patch1-49 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, and 32.7.x.

Table 17: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.1-Patch1-68

Defect Number	Description
General	
CFD-12331	When the UPM profile is associated with any UPM timer, then the successive UPM profiles are not getting listed in "show UPM profile" output.
CFD-12337	IPP is triggered for clients learned on a tagged VLAN.
CFD-12364	Incorrect values are returned when ipNetToPhysicalType is polled.
CFD-12401	ZTP using a USB does not load the port-related configuration.
CFD-12521	Enhancement needed in the warning message that appears when the part-partition setting is changed.
CFD-12565	UPM memory leak occurs when triggering an IPP rule.
CFD-12577	Policy can't be enabled after restarting.
CFD-12582	Netlogin clients are not getting authenticated into tenant VLAN if the same VLAN was added manually to the port and then removed.
CFD-12613	Ports are flapping continuously after restarting when auto-polarity was turned off and the peer switch port was configured with a speed of 100 Mbps.

Table 17: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in v32.7.1-Patch1-68 (continued)

Defect Number	Description
SummitStack	
CFD-12504	The amber light does not glow when a fan is removed from a stack slot.
CFD-12662	Response for several CLI commands is very slow after running cablediags on stacks.

Resolved Issues in ExtremeXOS 32.7.1-Patch1-49

The following issues were resolved in EXOS 32.7.1-Patch1-49. Version 32.7.1-Patch1-49 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, and 32.7.x.

Table 18: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1-Patch1-49

Defect Number	Description
General	
CFD-11338	Option to synchronize the files created in the primary slot to the backup is included in the **`synchronize`** command.
CFD-11544	Fabric Attach triggered signaling doesn't work when the NSID mapping occurs dynamically.
CFD-11789	Unable to initiate SSH or telnet access to neighboring switches when port isolation is turned on in the connected port.
CFD-11816	The ELRP process crashes when ELRP with Hardware Assist is enabled and is run on a VLAN that has more than 128 ports.
CFD-11819	Configuration or the dos-protect detail output does not reflect when the management port is configured as a trusted-port.
CFD-11835	SNMP response to polling times out sometimes when SNMP inform is generated to unreachable trap receivers.
CFD-11854	ARP proxy is not working when ARP entry is present on a proxy configured switch.
CFD-11890	Unable to query LLDP information using REST.
CFD-11970	Enforcing OnePolicy fails with RESTCONF errors.
CFD-12034	Software returns different PVID values when dynamic authentication is done on the port while polling for dot1qPvid OID.
CFD-12094	SNMP response to bulk requests is slow sometimes in Universal switches.
CFD-12182	AAA process crash occurs when pushing 64 DACLs.
CFD-12184	SNMP user with privacy protocol AES-256 is not working after upgrading switches.

Table 18: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1-Patch1-49 (continued)

Defect Number	Description
CFD-12239	In certain platforms like X435, X465, and 4120, L3 routed packets with dot1q header having CFI/DEI bit set to 1 is processed in the CPU.
EXOS-36920	Configuration push from ExtremeCloud IQ 24r6 fails on an X435.

Resolved Issues in ExtremeXOS 32.7.1-Patch1-26

The following issues were resolved in EXOS 32.7.1-Patch1-26. Version 32.7.1-Patch1-26 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, and 32.7.x.

Table 19: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1-Patch1-26

Defect Number	Description
General	
CFD-11320	Multicast delay occurs in MLAG test setup.
CFD-11394	Memory leak OCCURS in SNMPD process due to failed requests.
CFD-11450	When DHCP-Snooping is configured only on a PVLAN edge-port, DHCP bindings are not populated properly.
CFD-11454	Process VLAN crashes with signal 6 leading to a switch restart.
CFD-11465	Port ID is incorrectly displayed when we poll the dot1d port table.
CFD-11468	Policy is disabled after switch restarts.
CFD-11491	Configuration wrongly displays all events are deleted in default filter when a particular event is excluded.
CFD-11550	ARP Packets are not forwarded properly in the stack that contains X695 series and X690 series switches.
CFD-11625	Unable to enforce policy profile from ExtremeCloud IQ-SE when the profile has cos options enabled.
CFD-11692	ELRP wrongly detects a loop when both the tenant VLAN and non-tenant VLAN are present in the ISC port.
CFD-11700	Scheduled restart is not working as scheduled when the SNTP-client updates the switch time dynamically.
CFD-11753	A few IpsystemStatsTable entries are always zero.
CFD-11786	In an ExtremeXOS stack, console access to TPVM fails.
EXOS-36221	Process VLAN crashes with signal 6 leading to a switch restart.
EXOS-36378	Process snmpMaster crashes with signal 6 causing a switch restart.

Table 19: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1-Patch1-26 (continued)

Defect Number	Description
X450-G2	
CFD-11447	CLI session freezes after executing a few CLI commands in ExtremeXOS switches.

Resolved Issues in ExtremeXOS 32.7.1

The following issues were resolved in EXOS 32.7.1. Version 32.7.1 includes all fixes up to and including versions 31.6, 31.7, 32.1, 32.2, 32.3, 32.4, 32.5, and 32.6.x.

Table 20: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1

Defect Number	Description
General	
CFD-9602	When a new dot1x client is authenticated on a port, the accounting stop is not sent for the old dot1x client and the accounting start is not sent for the new client.
CFD-9616	Router-discovery configurations were missing after disabling/ enabling VRRP instance.
CFD-9636	Static fdb VxLAN entry is programmed with 30 minutes delay after switch restarts, even when the VxLAN tunnel is UP.
CFD-9690	Error message is not generated when there are failures in installing ACL rules enforced from XIQ-SE though policy profile.
CFD-9694	ACL Signal 11 crash is observed when ACL is added from a script and the process crash causes a switch reboot.
CFD-9882	IDmgr critical log was seen when flapping the port with 1000+ dynamically created VLANs.
CFD-9919	Switch restarts because of a kernel crash.
CFD-9973	CLI session hangs when applying PBR policy whose file name is 32 characters, and when file name exceeds 32 characters policy check fails.
CFD-9996	On a stack, the backup and Standby Slot port configuration information is not returned when ExtremePortConfigTable is polled.
CFD-10072	VRRP hello's were dropped when its forwarded over ISC.
CFD-10120	SNMP traps were not getting generated when there is an IP Security ARP violation despite the corresponding configuration being present in the switch.
CFD-10255	Netlogin Client not learnt on port after STP convergence.
CFD-10300	FDB process crash was seen when polling fdb.ipNetToPhysicalEnt MIB.

Table 20: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1 (continued)

Defect Number	Description
CFD-10311	A local file will be used to restore DHCP-binding information if the remote server is unreachable.
CFD-10352	Policy (.pol) files imported via the "Download URL" command are not synced to the backup node on summit stack switches.
CFD-10416	rtmgr process crash was seen when enabling BFD on ipv6 prefix.
CFD-10466	SSH-RSA public key authentication method fails with error "no mutual signature algorithm" in SSH client.
CFD-10474	`unconfigure switch all` does not remove the configure system port notation setting
CFD-10475	Netlogin allowed-uses does not work as expected.
CFD-10494	mcmgr process crash was seen when fast-leave is enabled and receiving leave message.
CFD-10575	Error was seen when executing `config account admin encrypted <pwd>` command.
CFD-10583	.cfg file transferred to swtich not available for use until reboot or copied to another file.
CFD-10613	Resource leak was seen in the hardware when deleting all ports in a VLAN.
CFD-10614	SSH key becomes invalid sometimes during the reboot of the switch.
CFD-10688	Accounts created using encrypted password, the expiry date was not shown.
CFD-10754	XML-Notification was not sent with the configured source IP.
CFD-10781	ACL process crash was seen when applying a policy with match condition OSPF on the VLAN.
CFD-10816	User list in Chalet becomes empty/blank when the number of users is one.
CFD-10918	L2VPN service name with 32 characters can hang CLI session.
CFD-10946	Switch brings up the ports when diagnostics tests are running.
CFD-10968	MVRP VLAN is not check-pointed to the MLAG peer when the corresponding remote MLAG port is inactive.
CFD-11018	Polling the dot1dTpFdbTable information through SNMP returns the value with an additional octet.
CFD-11160	Memory leak is observed in VLAN process when there are port flaps.
EXOS-31480	After a stack restart, a 25 Gbps port inserted with a 10 Gbps 10301 optic transceiver goes down in Backup and Standby nodes.
EXOS-31609	Loop is observed in MLAG topology when MACSEC is enabled on MLAG ports.

Table 20: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 32.7.1 (continued)

Defect Number	Description
EXOS-32500	DM error was seen when sending IPARP packets more than configured entries.
EXOS-32696	File uploaded from Chalet are not synced with the backup slot
EXOS-33307	Dot1x clients are randomly admin-reset as soon as they are authenticated.
EXOS-33850	Stack was rebooted after executing disable/enable mirror when stack port was added as loopback port in mirroring.
EXOS-35861	"Supported Limits" will need to change to TBD values for 7520/7720 IPv4 and IPv6 routes in hardware. (Perhaps 256K IPv4 and 128K IPv6 64-bit, depends on test results).
X440-G2 Series Switches	
CFD-10407	MACsec ports are not active after switch reboot.
X435 Series Switches	
EXOS-33298	expy process crashes with signal 6 observed sometimes.
Summit Stack	
CFD-9627	Image was not synced to standby node in the stack when copying the image by using SFTP put in the server.
CFD-9840	MLT session was not up after enable/disable jumbo-frames when EXOS stack is enabled with VPEX.
CFD-10056	Error message was seen when creating LAG with Master and backup node VIM ports.
CFD-10508	ARP probe packets are sent from the backup slot in a stack with its own physical MAC-address as the source-address.
CFD-10647	Switch started to respond for ARP requests with source MAC address as all zeroes or VRRP MAC.
VPEX	
CFD-9531	The show tech-support gets stuck at "show vpex" command with specific VPEX configuration.
CFD-9884	HAL process crash was seen when sending multicast packets to more than 33 BPEs and when disabling/enabling the ports in a BPE.