



Switch Engine v33.1.100 Release Notes

New Features, Improvements, and Known Issues

9039069-00 Rev AB
October 2024



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Abstract

Switch Engine v33.1.100 Release Notes by Extreme Networks, Inc., released in October 2024, provides new feature and software information, scaling limits, and open and known deficiencies and resolved issues. 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 SLX 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 <i>enter</i> and <i>type</i>	When you see the word <i>enter</i> 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 <i>type</i> .
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
<i>Words in italicized type</i>	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.
<i>italic text</i>	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, <i>member[member...]</i> .
\	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 Switch Engine 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 Switch Engine 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 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.

Related Publications

Switch Engine Publications

- *Switch Engine v33.1.1 Command References*
- *Switch Engine v33.1.1 Licensing Guide*
- *Switch Engine v33.1.1 User Guide*
- *Switch Engine v33.1.1 Release Notes*
- *Extreme Hardware/Software Compatibility and Recommendation Matrices*
- *Extreme Optics Compatibility*
- *Switch Configuration with Chalet for ExtremeXOS 21.x and Later*

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Overview

These release notes are intended for Korea Common Criteria V3 certification, and document Switch Engine 33.1.100, which adds features and resolves software deficiencies.



Note

Switch Engine 33.1.100 only supports the 5320 Series, 5420 Series, 5520 Series, 5720 Series, 7520 Series, and 7720 Series. The 4120 and the 4220 are not supported.



Supported Platforms

The Switch Engine 33.1.100 release only supports the 5320 Series, 5420 Series, 5520 Series, 5720 Series, 7520 Series, and 7720 Series. The 4120 and the 4220 are not supported.



Security Information

[Linux Kernel](#) on page 13

[OpenSSL Version](#) on page 13

The following section covers important security information for Switch Engine 33.1.100.

Linux Kernel

Switch Engine 33.1.100 uses Linux Kernel 5.10.

OpenSSL Version

Switch Engine 33.1.100 uses FIPS openssl-3.0.10.



Default Switch Engine Settings

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

Table 4: Default Switch Engine Settings

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

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

Table 4: Default Switch Engine Settings (continued)

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

Table 4: Default Switch Engine Settings (continued)

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



Switch Engine Image File Names

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

Table 5: Switch Engine Image Types (Prefixes)

Switches	Image File Type (Prefix)
ExtremeSwitching 5320, 5420, 5520	summit_arm Example: summit_arm-31.1.0.3.xos
ExtremeSwitching 5720, 7520, 7720	onie Example: onie-32.1.1.6.x86_64.xos



New and Corrected Features in Switch Engine 33.1.100

This section lists the new and corrected features supported in the 33.1.100 software:

Updated Password Policies

The following additional password policies have been added in this release to provide more security for user and password combinations:

- The password cannot be the same as the user name.
- Characters in the password cannot be repeated in succession, for example "aa" or "11".
- Characters cannot be sequential beyond three characters, for example "abcd", "1234", or "AbCd" or "!@#\$.
- A password cannot be reused within 90 days.

Updated SNMPv3 Password and Key policies

The following additional SNMPv3 password and key policies have been added in this release to provide more security:

- The encryption algorithm provides a security strength of 112 bits or more.
- Cryptographic keys are generated in a secure manner.
- Cryptographic keys that are created or used are safely destroyed.

CLI Command to Enable or Disable All Management Access Modes

The following command can be used to enable or disable all the management access modes in the switch:

```
enable/disable switch access
```

Entering the previous command results in the following actions:

- Enable/disable ssh2 (which also disables SFTP)
- Enable/disable telnet
- Enable/disable web (http|https), which also disables REST-API
- Enable/disable SNMP access

Confidential Information Stored on the Switch Is not Accessible

The confidential information, such as all passwords, keys (symmetric and shared), and SNMP authentication details stored in the switch are not displayed in the configuration or CLI output with simple encoding, like BASE64. They are salted and encrypted by an entropy provider that is SP800-90B compliant.

FIPS Mode Is Enabled When Korean CC Mode Is Enabled

When Korean CC mode is enabled on the switch from the CLI, FIPS mode is also enabled. FIPS mode remains enabled when switch is unconfigured after it was configured for Korean CC mode.

Notes for openssl Upgrade to 3.0.1

The following notes apply to an upgrade to openssl 3.0.1:

- rsaSHA based certificates are no longer supported; you must migrate to rsaSHA256 based certificates, such as SyslogTLS or RadiusTLS.
- SyslogTLS and RadiusTLS are only supported in TLSv1.2.
- TLSv1.3 support has been added for the HTTPS protocol.

The following TLS ciphers are supported in 33.1.100:

TLSv1.2:

TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
TLS_ECDHE_RSA_WITH_CHACHA20_POLY1305_SHA256
TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256

TLSv1.3:

TLS_AES_256_GCM_SHA384
TLS_CHACHA20_POLY1305_SHA256
TLS_AES_128_GCM_SHA256
TLS_AES_128_CCM_8_SHA256
TLS_AES_128_CCM_SHA256

CLI Commands for Security Profiles

This release has been updated so that a security profile can be configured for the switch for added security. When enabled, the profile remains enabled after upgrading the switch operating system and unconfiguring the switch.

The following command displays the security profile that is currently configured:

```
show security profile
```

In this example output, no profiles have been configured:

```
5420F-24S-4XE-SwitchEngine.10 # show security profile
Security profile (current)      : Off
Security profile (configured)   : Off
```

In this example output, the Korean CC profile has been configured and the switch has been rebooted:

```
5420F-24S-4XE-SwitchEngine.2 # show security profile
Security profile (current)      : Korean Common Criteria
Security profile (configured)   : Korean Common Criteria
```

The following command configures the Korean CC security profile:

```
configure security profile [korean-cc]
```

The following command can be used to unconfigure the security profile:



Note

This command returns the switch to factory default settings.

```
unconfigure switch erase [all | nvram]
```



Note

With security profile set to Korea-CC, both http/https is set to disabled when enhanced security mode is run. Even if http and https is enabled using the CLI - WEBUI Chalet will not work in Korean-CC security mode.

Software and Hardware Self-Test CLI Commands

A new hardware self-test is run during system initialization. The self-test checks the status of the CPU, memory, flash memory, network interface, and power, and then creates a report with pass/fail results of the self-test. The report can be displayed in the CLI and summary results are included in the audit log.

The following command displays the hardware self-test results on a standalone switch:

```
show diagnostics boot-time
```

Example:

```
# show diagnostics boot-time

Switch: 5520-48T-ACDC
Time:   Thu May 23 18:47:34 2024

Component      Result  Details
=====
CPU            PASS
Memory         PASS
Storage        PASS
Power          FAIL   PSU-1: Powered On, PSU-2: Power Failed
Mgmt interface PASS   Mgmt interface present, Link Up
```

There is an existing CLI command that performs a software self-test, consisting of software diagnostic checks, and then creates a summarized report on the results of the

self-test. The report is displayed in the CLI command output and in the audit log. The same software will only execute during switch bootup in Korean CC mode.

The following command displays the software self-test results on a standalone switch:

```
show process
```

Example:

# show process									
Process Name	Version	Restart	State	Start Time				Group	
aaa	3.0.0.4	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
acl	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
bfd	1.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
bgp	4.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
brm	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
cfgmgr	3.0.0.21	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
cli	3.0.0.22	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
devmgr	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
dirser	3.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Vital
dosprotect	3.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
dotlag	1.0.0.1	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
eaps	3.0.0.8	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
edp	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
elrp	3.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
elsm	3.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
ems	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
epm	3.0.0.4	0	Ready	Sat	Dec	11	22:42:26	2021	Vital
erps	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
esrp	3.0.0.4	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
ethoam	1.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
etmon	1.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
exacl	3.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exdhcpsnoop	1.0.0.1	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exdos	3.0.0.2	0	Ready	Sat	Dec	11	22:42:26	2021	Kernel
exfib	1.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exfipSnoop	1.0.0.0	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exosmc	3.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exosq	3.0.0.2	0	Ready	Sat	Dec	11	22:42:26	2021	Kernel
exsflow	1.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exsnoop	3.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
exsshd	6.5.1.69	0	Ready	Sat	Dec	11	22:42:29	2021	Other
exvlan	3.0.0.2	0	Ready	Sat	Dec	11	22:42:27	2021	Kernel
fcoe	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
fdb	7.1.0.0	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
gptp	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
hal	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
hclag	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
idMgr	1.0.1.1	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
ipSecurity	1.0.0.1	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
ipfix	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
isis	1.0.0.2	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
ismb	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
lACP	3.0.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
lldp	1.2.0.0	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
mcmgr	4.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
mpls	Not Started	0	No license	Not Started					Vital
mrp	1.0.0.0	0	Ready	Sat	Dec	11	22:42:29	2021	Vital
msdp	1.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
netLogin	2.1.0.1	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
netTools	3.0.0.2	0	Ready	Sat	Dec	11	22:42:28	2021	Vital
nettx	3.0.0.2	0	Ready	Sat	Dec	11	22:42:26	2021	Kernel
nodealias	1.0.0.1	0	Ready	Sat	Dec	11	22:42:29	2021	Vital

nodealias_snoop	1.0.0.1	0	Ready	Sat Dec 11 22:42:27 2021	Kernel
nodemgr	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
ntp	4.2.6.3	0	Ready	Sat Dec 11 22:42:29 2021	Vital
ospf	3.0.0.3	0	Ready	Sat Dec 11 22:42:28 2021	Vital
ospfv3	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
otm	1.0.0.1	0	Ready	Sat Dec 11 22:42:29 2021	Vital
pim	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
polMgr	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
policy	1.0.0.1	0	Ready	Sat Dec 11 22:42:29 2021	Vital
pwmib	1.0.0.0	0	Ready	Sat Dec 11 22:42:28 2021	Vital
rip	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
ripng	3.0.0.1	0	Ready	Sat Dec 11 22:42:28 2021	Vital
rtmgr	4.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
snmpMaster	4.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
snmpSubagent	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
stp	3.0.4.4	0	Ready	Sat Dec 11 22:42:28 2021	Vital
techSupport	1.0.0.0	0	Ready	Sat Dec 11 22:42:28 2021	Vital
telnetd	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Other
tftpd	3.0.0.2	0	Ready	Sat Dec 11 22:42:28 2021	Vital
thttpd	1.0.0.0	0	Ready	Sat Dec 11 22:42:29 2021	Other
twamp	1.0.0.1	0	Ready	Sat Dec 11 22:42:29 2021	Vital
upm	1.0.0.1	0	Ready	Sat Dec 11 22:42:29 2021	Vital
vlan	4.1.0.3	0	Ready	Sat Dec 11 22:42:28 2021	Vital
vmt	1.0.1.1	0	Ready	Sat Dec 11 22:42:29 2021	Vital
vrrp	3.0.0.5	0	Ready	Sat Dec 11 22:42:28 2021	Vital
vsm	1.0.0.2	0	Ready	Sat Dec 11 22:42:29 2021	Vital
xmlc	1.0.1.0	0	Ready	Sat Dec 11 22:42:29 2021	Vital
xmld	1.0.0.0	0	Ready	Sat Dec 11 22:42:28 2021	Vital

Changes in ACL Syntax

This version makes the mask field of IPv4 and IPv6 address in ACL an optional field. If the mask is not added to the IPv4 address, it is internally assumed to be a 32-bit mask. For an IPv6 address, it is assumed to be a 128-bit mask.



Changing the Network Operating System

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

Making Your Initial Network Operating System Selection

You can make your initial selection of the operating system using manually during boot-up:

- **Bootloader**—When you see the message `Starting Default Bootloader ...Press` and hold the `<spacebar>` to enter the bootrom, press and hold the **space bar** until the boot menu is displayed (you have 30 seconds):

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

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

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



Note

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

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

Changing Your Network Operating System

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



Caution

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



Note

If you anticipate ever changing the operating system to Fabric Engine, and you want to statically assign IP addresses on the DHCP server, then it is recommended to assign them based on the DHCP client ID.

- **CLI Command**—run the `download [url url {vr vrname} | image [active | inactive] [[hostname | ipaddress] filename {{vr} vrname} {block-size block_size}] {partition} {install {reboot}}` command specifying a VOSS image.



Note

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



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/.



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.



Tested Third-Party Products

The following third-party products have been tested for Switch Engine 33.1.100.

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

[Limits Overview](#) on page 29

[Base License Limits](#) on page 31

[Premier License Limits](#) on page 68

[Notes for Limits Tables](#) on page 76

This chapter summarizes the supported limits in Switch Engine 33.1.100.



Note

Switch Engine 33.1.100 only supports the 5320 Series, 5420 Series, 5520 Series, 5720 Series, 7520 Series, and 7720 Series. The 4120 and the 4220 are not supported.

Limits Overview

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

- [#unique_26](#)
- [#unique_27](#)

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

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

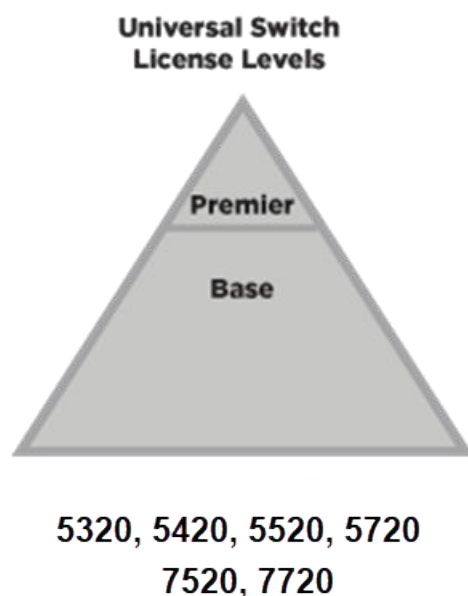


Figure 1: License Levels for Universal Switches

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

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

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

In the 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.

Base License Limits

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



Note

Switch Engine 33.1.100 only supports the 5320 Series, 5420 Series, 5520 Series, 5720 Series, 7520 Series, and 7720 Series. The 4120 and the 4220 are not supported.

Table 6: Supported Limits for the Base License

Metric	Product	Limit
AAA (local) —maximum number of admin and local user accounts.	All platforms	16
Access lists (meters) —maximum number of meters.	4120	512 ingress 128 egress
	4220	2048 ingress 256 egress
	ExtremeSwitching 5320, 5420	6,144 ingress 512 egress
	Extreme Networks 7520, 7720	6,000 ingress 2,000 egress
	ExtremeSwitching 5520	2,048 ingress 512 egress
	ExtremeSwitching 5720-MW	6,144 ingress 3,072 egress
	ExtremeSwitching 5720-MXW	6,144 ingress 6,144 egress
Access lists (policies) —suggested maximum number of lines in a single policy file.	All platforms	300,000

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Access lists (policies) — maximum number of rules in a single policy file. ^a	ExtremeSwitching 5320-48T/P, Extreme Networks 7520, 7720	8,192 ingress 1,024 egress
	ExtremeSwitching 5320-24T/P, 5320-16P	8,192 ingress 512 egress
	ExtremeSwitching 5420M	18,000 (rules double- wide (160- bit)) ingress 36,000 (rules single-wide (80-bit, default)) ingress 1,024 egress
	ExtremeSwitching 5420F	8,000 (rules double- wide (160- bit)) ingress 16,000 (rules single-wide (80-bit, default)) ingress 1,024 egress
	ExtremeSwitching 5520	9,216 ingress 1,024 egress
	ExtremeSwitching 5720-MW	18,432 (80- bit) ingress 8,192 egress
	ExtremeSwitching 5720-MXW	36,864 (80- bit), 18,432 (160-bit) ingress 12,288 egress
Access lists (policies) — maximum number of rules in a single policy file in first stage (VFP).	ExtremeSwitching 5520, 5720	2,048 ingress only
	ExtremeSwitching 5320-48T/P, 5420, Extreme Networks 7520, 7720	1,024 ingress only
	4120, 4220, ExtremeSwitching 5320-16P, 5320-24T-4X-XT	512 ingress only

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Access lists (slices) —number of ACL slices.	ExtremeSwitching 5720, Extreme Networks 7520, 7720	12 ingress 4 egress
	ExtremeSwitching 5320-48T/P, 5420, 5520	18 ingress 4 egress
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	8 ingress 4 egress
Access lists (slices) —number of ACL slices in first stage (VFP).	All platforms	4 ingress only
ACL Per Port Meters —number of meters supported per port.	All platforms	16
ACL port ranges.	All platforms	32
Meters Packets-Per-Second Capable.	All platforms	N/A
AVB (audio video bridging) —maximum number of active streams.	ExtremeSwitching 5320 (except extended temperature models), 5420	1,024
	ExtremeSwitching 5520, 5720, Extreme 7520	4,096
BFD sessions (Software Mode) —maximum number of BFD sessions.	All platforms except 4120 and 4220 (default timers—1 sec).	512
BFD IPv4 sessions (Hardware Assisted) —maximum number of IPv4 BFD sessions.	Extreme 7520, 7720	900 (PTP not enabled) 425 (PTP enabled) 256 (with 3 ms transmit interval)
BFD IPv6 sessions (Hardware Assisted) —maximum number of IPv6 BFD sessions.	Extreme 7520, 7720	425 (PTP not enabled)
BGP (multicast address-family routes) —maximum number of multicast address-family routes.	ExtremeSwitching 5520, 5720-MXW, Extreme Networks 7520, 7720	25,000
	ExtremeSwitching 5420, 5720-MW	20,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT)	8,000
	ExtremeSwitching 5320-24T-4X-XT. 5320-24T-24S-4XE-XT	2,000

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
BGP (non-unique routes) —maximum number of nonunique BGP routes.	ExtremeSwitching 5420, 5520, 5720MXW, Extreme Networks 7520, 7720	75,000
	ExtremeSwitching 5720-MW	60,000
	ExtremeSwitching 5320 48T/P , 5320-24T-24S-4XE-XT	36,000
	ExtremeSwitching 5320 16P, 24T/P	24,000
	ExtremeSwitching 5320-24T-4X-XT	2,700
BGP (peers) —maximum number of BGP peers.	All platforms except 4120 and 4220.	2
BGP (unicast address-family routes) —maximum number of unicast address-family routes.	ExtremeSwitching 5420, 5520, 5720MXW, Extreme Networks 7520, 7720 (at default)	25,000
	ExtremeSwitching 5720-MW	20,000
	ExtremeSwitching 5320 48T/P , 5320-24T-24S-4XE-XT	12,000
	ExtremeSwitching 5320 16P, 24T/P	8,000
	ExtremeSwitching 5320-24T-4X-XT	900
	ExtremeSwitching 5720-MW (with ALPM enabled)	163,000
	ExtremeSwitching 5720-MXW (with ALPM enabled)	288,000
	ExtremeSwitching 5520 (with ALPM enabled)	80,000
BGP auto-peering —maximum number of auto-peering nodes and VTEPs.	All platforms except 4120 and 4220.	64
BGP auto-peering attached IPv4 hosts —maximum number of attached IPv4 hosts.	All platforms except 4120 and 4220.	64,000
BGP auto-peering attached IPv6 hosts —maximum number of attached IPv6 hosts.	All platforms except 4120 and 4220.	8,000
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 5720, Extreme Networks 7520, 7720	16*
	ExtremeSwitching 5320, 5420, 5520	4*

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
BGP auto-peering maximum IPv4 prefixes with ECMP —Maximum number of IPv4 Network prefixes with ECMP.	ExtremeSwitching 5320, 5420, 5520, 5720	16,000
	Extreme Networks 7520, 7720	64,000
BGP auto-peering maximum IPv6 prefixes with ECMP —Maximum number of IPv6 Network prefixes with ECMP.	ExtremeSwitching 5320, 5420, 5520, 5720	254
	Extreme Networks 7520, 7720	64,000
BGP auto-peering MLAG peers —maximum MLAG peers per AutoBGP node.	All platforms except 4120 and 4220.	1
BGP auto-peering VRFs —maximum number of VRFs.	All platforms except 4120 and 4220.	64
BGP auto-peering EVPN instances —maximum EVPN instances.	All platforms except 4120 and 4220.	1,024
BGPv6 (unicast address family routes) —maximum number of unicast address family routes.	ExtremeSwitching 5320 48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720-MW	6,000
	ExtremeSwitching 5720-MW (with ALPM enabled)	107,000
	ExtremeSwitching 5720-MXW, Extreme Networks 7520, 7720	10,000
	ExtremeSwitching 5720-MXW (with ALPM enabled)	213,000
	ExtremeSwitching 5520 (with ALPM enabled)	40,000
	ExtremeSwitching 5320 16P, 24T/P	4,000
	ExtremeSwitching 5320-24T-4X-XT	400
BGPv6 (non-unique routes) — maximum number of nonunique BGP routes.	ExtremeSwitching 5420, 5520, 5720-MW	18,000
	ExtremeSwitching 5720-MXW, Extreme Networks 7520, 7720	30,000
	ExtremeSwitching 5320	14,000
	ExtremeSwitching 5320 16P, 24T/P	12,000
	ExtremeSwitching 5320-24T-4X-XT	1,200
BOOTP/DHCP relay —maximum number of BOOTP or DHCP servers per virtual router.	All platforms	8
BOOTP/DHCP relay —maximum number of BOOTP or DHCP servers per VLAN.	All platforms	8

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
BOOTP/DHCP relay —maximum number of DHCPv4/v6 relay agents	All platforms	4,000
Connectivity fault management (CFM) —maximum number of CFM domains.	All platforms	8
CFM —maximum number of CFM associations.	All platforms	256
CFM —maximum number of CFM up end points.	All platforms	32
CFM —maximum number of CFM down end points.	All platforms	32
CFM —maximum number of CFM remote end points per up/down end point.	All platforms	2,000
CFM —maximum number of dot1ag ports.	All platforms	128
CFM —maximum number of CFM segments.	All platforms	1,000
CFM —maximum number of MIPs.	All platforms	256
CLEAR-Flow —total number of rules supported. The ACL rules plus CLEAR-Flow rules must be less than the total number of supported ACLs.	4120, 4220, ExtremeSwitching 5320, 5420, 5720, Extreme Networks 7520, 7720	8,192
	ExtremeSwitching 5520	9,215
Data Center Bridging eXchange (DCBX) protocol Type Length Value (TLVs) —maximum number of DCBX application TLVs.	All platforms	8
DHCPv6 Prefix Delegation Snooping —Maximum number of DHCPv6 prefix delegation snooped entries.	All platforms	256 (with underlying protocol RIPng) 128 (with underlying protocol OSPFv3) 1,024 (with static routes)
DHCP snooping entries —maximum number of DHCP snooping entries.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	2,050
	Extreme Networks 7520, 7720	2,048

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Dynamic ACLs —maximum number of ACLs processed per second. Note: Limits are load-dependent.	All platforms with 50 DACLs with 500 DACLs	10 5
EAPS domains —maximum number of EAPS domains. Note: An EAPS ring that is being spatially reused cannot have more than four configured EAPS domains.	Extreme Networks 7520, 7720 ExtremeSwitching 5720 ExtremeSwitching 5320-24T/P, 5320-16P ExtremeSwitching 5320-48T/P, 5420, 5520	4 128 32 64
EAPSV1 protected VLANs —maximum number of protected VLANs.	ExtremeSwitching 5320-24T/P, 5320-16P	1,000
	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	2,000
EAPSV2 protected VLANs —maximum number of protected VLANs.	ExtremeSwitching 5320, 5420, 5520	500
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	2,000
ELSM (vlan-ports) —maximum number of VLAN ports.	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	4,000
	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	5,000
ERPS domains —maximum number of ERPS domains with or without CFM configured.	All platforms except 4120 and 4220.	32
ERPSV1 protected VLANs —maximum number of protected VLANs.	ExtremeSwitching 5320-24T/P, 5320-16P	1,000
	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	2,000
ERPSV2 protected VLANs —maximum number of protected VLANs.	ExtremeSwitching 5320-24T/P, 5320-16P	500
	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	2,000
ESRP groups —maximum number of ESRP groups	All platforms except 4120 and 4220.	32
ESRP domains —maximum number of ESRP domains.	All platforms except 4120 and 4220.	64
ESRP L2 VLANs —maximum number of ESRP VLANs without an IP address configured.	All platforms except 4120 and 4220.	1,000

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
ESRP L3 VLANs —maximum number of ESRP VLANs with an IP address configured.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	511
	ExtremeSwitching 5320-24T/P, 5320-16P	509
ESRP (maximum ping tracks) —maximum number of ping tracks per VLAN.	All platforms except 4120 and 4220.	8
ESRP (IP route tracks) —maximum IP route tracks per VLAN.	All platforms except 4120 and 4220.	8
ESRP (VLAN tracks) —maximum number of VLAN tracks per VLAN.	All platforms except 4120 and 4220.	1
Extended Edge Switching maximum BPEs —maximum number of attached bridge port extenders (BPEs).	ExtremeSwitching 5520, 7520-48Y	48
	ExtremeSwitching 5420	20
Extended Edge Switching maximum cascade ports —maximum number of upstream ports on bridge port extenders (BPEs).	ExtremeSwitching 5420, 5520, 7520-48Y	2 on V400-24 and V300 models 4 on V400-48 models
Extended Edge Switching maximum tiers —maximum number of cascade levels (tiers) of bridge port extenders (BPEs).	ExtremeSwitching 5420, 5520, 7520-48Y	4 (except for V300-8P-2T-W, which support 1 tier)
Extended Edge Switching maximum ring BPEs —maximum number of bridge port extenders (BPEs) in a ring topology.	ExtremeSwitching 5420, 5520, 7520-48Y	8
Extended Edge Switching maximum VLANs —maximum number of VLANs - Includes all VLANs	ExtremeSwitching 5520, 7520-48Y	4,094
	ExtremeSwitching 5420	1,024

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
FDB (maximum L2 entries) —maximum number of MAC addresses.	4120	16,384
	4220, ExtremeSwitching 5320	32,000
	ExtremeSwitching 5420M	65,536
	ExtremeSwitching 5420F	32,768 ⁹
	ExtremeSwitching 5520	114,688 ⁹
	ExtremeSwitching 5720-MW	163,840 ⁹
	ExtremeSwitching 5720-MXW, Extreme Networks 7520, 7720	294,912 ⁹
FDB (maximum L2 entries) —maximum number of multicast FDB entries.	ExtremeSwitching 5520, Extreme Networks 7520, 7720	4,096
	4120, 4220, ExtremeSwitching 5320, 5420	1,024
	ExtremeSwitching 5720	16,000
GRE Tunnels —maximum number of GRE tunnels.	All platforms	255
Identity management —maximum number of Blacklist entries.	All platforms except 4120 and 4220.	512
Identity management —maximum number of Whitelist entries.	All platforms except 4120 and 4220.	512
Identity management —maximum number of roles that can be created.	All platforms except 4120 and 4220.	64
Identity management —maximum role hierarchy depth allowed.	All platforms except 4120 and 4220.	5
Identity management —maximum number of attribute value pairs in a role match criteria.	All platforms except 4120 and 4220.	16
Identity management —maximum number of child roles for a role.	All platforms except 4120 and 4220.	8
Identity management —maximum number of policies/dynamic ACLs that can be configured per role.	All platforms except 4120 and 4220.	8
Identity management —maximum number of LDAP servers that can be configured.	All platforms except 4120 and 4220.	8

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
IPv6 host entries in hardware —maximum number of IPv6 neighbor entries in hardware.	4120	200
	4220	2,000
	ExtremeSwitching 5320	6,000
	ExtremeSwitching 5420M models	12,000
	ExtremeSwitching 5420F models	6,000
	ExtremeSwitching 5520	18,000 ^s
	ExtremeSwitching 5720-MW	24,000 ^s
	Extreme Networks 7520, 7720	57,000 ^h
	ExtremeSwitching 5720-MXW	78,000 ^s
IPv6 routes in software —maximum number of IPv6 routes in software, including static routes and routes from all routing protocols.	ExtremeSwitching 5520	18,000 ^q
	4120, 4220, ExtremeSwitching 5320, 5420	25,000
	ExtremeSwitching 5720-MW	07,000 ^q
	Extreme Networks 7520, 7720	1196,000 ^q
	ExtremeSwitching 5720-MXW	213,000 ^q
IPv6 routes (LPM entries in hardware) —maximum number of IPv6 routes in hardware.	4120	32
	4220	512
	ExtremeSwitching 5520	40,000 ^q
	ExtremeSwitching 5420	6,000
	ExtremeSwitching 5720-MW	107,000 ^q
	Extreme Networks 7520, 7720	131,000 up to 196,000 ^q
	ExtremeSwitching 5720-MXW	213,000 ^q
IPv6 routes with a mask greater than 64 bits in hardware —maximum number of such IPv6 LPM routes in hardware.	ExtremeSwitching 5320, 5420	256
	ExtremeSwitching 5520	8,192 ^r
	Extreme Networks 7520, 7720	32,000 ^r
	ExtremeSwitching 5720-MW	16,000 ^r
	ExtremeSwitching 5720-MXW	24,000 ^r
IPv6 route sharing in hardware —route mask lengths for which ECMP is supported in hardware.	4120, 4220, ExtremeSwitching 5320, 5420	0–64, >64 single path only
	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	0–128 ^r

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
	<p>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.</p>	
	<p>Extreme Networks 7520, 7720</p> <p>if maximum gateways is 2</p> <p>if maximum gateways is 4</p> <p>if maximum gateways is 8</p> <p>if maximum gateways is 16 (default)</p> <p>if maximum gateways is 32</p> <p>if maximum gateways is 64</p> <p>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.</p>	<p>4,094</p> <p>4,094</p> <p>2,046</p> <p>1,022</p> <p>510</p> <p>254</p>
IP multinetting (secondary IP addresses) —maximum number of secondary IP addresses per VLAN.	All platforms	255
Jumbo frames —maximum size supported for jumbo frames, including the CRC.	All platforms	9,216
<p>Layer-2 IPMC forwarding caches—(IGMP/MLD/PIM snooping) in mac-vlan mode.</p> <p>Note:</p> <ul style="list-style-type: none"> The internal lookup table configuration used is "I2-and-I3". 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. <p>4120 and 4220 do not support PIM snooping.</p>	<p>4120</p> <p>4220, ExtremeSwitching 5320</p> <p>ExtremeSwitching 5420</p>	<p>16,000</p> <p>32,000</p> <p>64,000</p>

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
	ExtremeSwitching 5520	32,768
	ExtremeSwitching 5720-MW	49,152
	Extreme Networks 7520, 7720	73,000
	ExtremeSwitching 5720-MXW	81,920
Layer-3 IPv4 Multicast — maximum number of <S,G,V> entries installed in the hardware (IP multicast compression enabled). Note: <ul style="list-style-type: none"> Limit value is the same for MVR senders, PIM Snooping entries. PIM SSM cache, IGMP senders, PIM cache. Assumes source-group-vlan mode as look up key. Layer 3 IPMC cache limit in mixed mode also has the same value. 	4120	256
	4220	2,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT)	8,000
	ExtremeSwitching 5420M	12,000
	ExtremeSwitching 5420F	6,000
	ExtremeSwitching 5520	43,000
	ExtremeSwitching 5720-MW	61,000
	Extreme Networks 7520, 7720	104,000
	ExtremeSwitching 5720-MXW	110,000
	ExtremeSwitching 5320-24T-4X-XT	2000
Layer-3 IPv6 Multicast — maximum number of <S,G,V> entries installed in the hardware (IP multicast compression enabled).	4120	128

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Note: <ul style="list-style-type: none"> Limit value is the same for MLD sender per switch, PIM IPv6 cache. Assumes source-group-vlan mode as lookup key. <p>4120 and 4220 do not support PIM snooping, but MLD cache is supported in the hardware.</p>	4220	1,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT)	4,000
	ExtremeSwitching 5420M	6,000
	ExtremeSwitching 5420F	3,000
	ExtremeSwitching 5520	21,500
	ExtremeSwitching 5720-MW	30,500
	Extreme Networks 7520, 7720	52,000
	ExtremeSwitching 5720-MXW	55,000
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 5320-24T-4X-XT	1,000
	All platforms	128
Load sharing —maximum number of ports per load-sharing group.	For standalone and stacked: 4120, 4220, ExtremeSwitching 5320, 5420	8
	For standalone: ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	32
	For stacked: ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	64
Logged messages —maximum number of messages logged locally on the system.	All platforms	20,000
MAC-based security —maximum number of MAC-based security policies.	All platforms	1,024

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
MAC Locking —Maximum number of MAC locking stations that can be learned on a port.	All platforms	64 (static MAC locking stations) 600 (first arrival MAC locking stations)
Meters —maximum number of meters supported.	All platforms	2,048
Maximum mirroring instances.	All platforms except 4120. 4120	4 total, 2 egress 6 defined, max 4 enabled (max 1 egress)
Mirroring (filters) —maximum number of mirroring filters. Note: This is the number of filters across all the active mirroring instances.	All platforms	128
Mirroring, one-to-many (filters) —maximum number of one-to-many mirroring filters. Note: This is the number of filters across all the active mirroring instances.	All platforms	128
Mirroring, one-to-many (monitor port) —maximum number of one-to-many monitor ports.	All platforms	16
MLAG ports —maximum number of MLAG ports allowed. Note: The number of MLAG ports that can be configured is limited by the number of physical ports present in the system.	ExtremeSwitching 5320 ExtremeSwitching 5720 ExtremeSwitching 5420, 5520	55 63 59

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
	Extreme Networks 7520, 7720	61
	Stacking	1
	Note: Maximum user ports	
MLAG peers —maximum number of MLAG peers allowed.	All platforms	2
Multicast listener discovery (MLD) snooping per-VLAN filters —maximum number of VLANs supported in per-VLAN MLD snooping mode.	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, Extreme Networks 7520, 7720	1,500
	4220, ExtremeSwitching 5320-24T-4X-XT	250
	4120	32
Multicast listener discovery (MLD)v1 subscribers —maximum number of MLDv1 subscribers per port. ⁿ	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, Extreme Networks 7520, 7720	4,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120	128
Multicast listener discovery (MLD)v1 subscribers —maximum number of MLDv1 subscribers per switch. ⁿ	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520	10,000
	ExtremeSwitching 5720-MW	30,000
	Extreme Networks 7520, 7720	45,000
	ExtremeSwitching 5720-MXW	54,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120	256
Multicast listener discovery (MLD)v2 subscribers —maximum number of MLDv2 subscribers per port. ⁿ	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520, 5720, Extreme Networks 7520, 7720	4,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120	128
Multicast listener discovery (MLD)v2 subscribers —maximum number of MLDv2 subscribers per switch. ⁿ	4120, 4220, ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420, 5520	10,000
	ExtremeSwitching 5720-MW	30,000
	Extreme Networks 7520, 7720	45,000
	ExtremeSwitching 5720-MXW	54,000
	4220, ExtremeSwitching 5320-24T-4X-XT	1,000
	4120	256

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Multicast listener discovery (MLD)v2 maximum source per group —maximum number of source addresses per group.	All platforms	200
Multicast listener discovery (MLD) SSM-map entries —maximum number of MLD SSM mapping entries.	All platforms except 4120 and 4220.	500
Multicast listener discovery (MLD) SSM-MAP entries —maximum number of sources per group in MLD SSM mapping entries.	All platforms except 4120 and 4220.	50
Network Address Translation (NAT) VLANs —maximum number of NAT VLANs.	Extreme 7520, 7720	4
Network Address Translation (NAT) Sessions —number of NAT sessions supported (non twice-NAT).	Extreme 7520, 7720	1,023
Network Login —maximum number of clients being authenticated on MAC-based VLAN enabled ports.	All platforms	1,024
Network Login —maximum number of dynamic VLANs.	All platforms	1,024
Network Login VLAN VSAs —maximum number of VLANs a client can be authenticated on at any given time.	All platforms	10
Network Service Identifiers (NSI)/VLAN mappings —maximum number of VLANs to NSI mappings.	All platforms	94
Node Alias —maximum number of entries per slot.	All platforms	8,192
ONEPolicy Dynamic ACL Rules —maximum number of Dynamic ACLs supported via RADIUS VSA 232 per user in Access-List mode.	All platforms	64
ONEPolicy Roles/Profiles —maximum number of policy roles/profiles.	All platforms	63

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
ONEPolicy Authenticated Users per Port per Switch — maximum number of authenticated users per port with only with TCI-Overwrite enabled.	4120	184
	4220	440
	ExtremeSwitching 5320, 5420, Extreme Networks 7520, 7720	512
	ExtremeSwitching 5520, 5720	1,024
ONEPolicy Permit/Deny Traffic Classification Rules Types —total maximum number of unique permit/deny traffic classification rules types (system/stack).	ExtremeSwitching 5320, 5420-F, Extreme Networks 7520, 7720	1,976
	ExtremeSwitching 5720-MW	6,072
	ExtremeSwitching 5720-MXW	8,120
	ExtremeSwitching 5420-M, 5520	4,024
	ExtremeSwitching 5320-24T-24S-4XE-XT	512
	4220	440
	4120	164
	ExtremeSwitching 5320-24T-4X-XT	128
ONEPolicy Permit/Deny Traffic Classification Rules Types —maximum number of unique MAC permit/deny traffic classification rules types (macsource/macdest).	ExtremeSwitching 5420-M, 5520	1,024
	ExtremeSwitching 5420-F, 5320-24T-24S-4XE-XT Extreme Networks 7520, 7720	512
	ExtremeSwitching 5720-MW	1,536
	ExtremeSwitching 5720-MXW	2,048
	4120, 4220, ExtremeSwitching 5320	N/A
ONEPolicy Permit/Deny Traffic Classification Rules Types —maximum number of unique IPv6 permit/deny traffic classification rules types (ipv6dest).	ExtremeSwitching 5420-M, 5520	1,024
	ExtremeSwitching 5420-F, 5320-24T-24S-4XE-XT Extreme Networks 7520, 7720	512
	ExtremeSwitching 5720-MW	1,536
	ExtremeSwitching 5720-MXW	2,048
	4120, 4220, ExtremeSwitching 5320	N/A
ONEPolicy Permit/Deny Traffic Classification Rules Types —maximum number of unique IPv4 permit/deny traffic classification rules (typesipsource / ipdest / ipfrag / udpsourceportIP / udpdestportIP / tcpsourceportIP / tcpdestportIP / ipttl / iptos / iptype).	ExtremeSwitching 5320-24T-4X-XT	256
	ExtremeSwitching 5320, 5420-F, 5520	1,024
	ExtremeSwitching 5720-MW	1,536
	ExtremeSwitching 5720-MXW	2,048
	ExtremeSwitching 5420-M, 5320-24T-24S-4XE-XT Extreme Networks 7520, 7720	512
	4220	256
	4120	128

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
ONEPolicy Permit/Deny Traffic Classification Rules Types —maximum number of unique Layer 2 permit/deny traffic classification rules (ethertype/port).	ExtremeSwitching 5320-24T-24S-4XE-XT	440
	ExtremeSwitching 5320, 5420-M, 5520	952
	ExtremeSwitching 5720-MW	1,464
	ExtremeSwitching 5720-MXW	1,976
	ExtremeSwitching 5420-F, Extreme Networks 7520, 7720	440
	4220, ExtremeSwitching 5320-24T-4X-XT	184
	4120	56
OnePolicy Maximum number of rules supported in AccessList mode —maximum number of rules in AccessList mode.	Extreme Networks 7520, 7720	3,512
	4120	440
	4220, ExtremeSwitching 5320-24T-4X-XT	952
	ExtremeSwitching 5320, 5420-F, 5320-24T-24S-4XE-XT	4,024
	ExtremeSwitching 5420-M	8,120
	ExtremeSwitching 5720-MW	12,216
	ExtremeSwitching 5720-MXW	16,312
OSPFv2/v3 ECMP —maximum number of equal cost multipath OSPFv2 and OSPFv3.	ExtremeSwitching 5320, 5420, 5520, 5720	8
	Extreme Networks 7520, 7720	64
OSPFv2 areas —as an ABR, how many OSPF areas are supported within the same switch.	All platforms except 4120 and 4220.	8
OSPFv2 external routes —recommended maximum number of external routes contained in an OSPF LSDB.	ExtremeSwitching 5520	5,000
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	10,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420	4,000
	ExtremeSwitching 5320-24T-4X-XT	500
OSPFv2 inter- or intra-area routes —recommended maximum number of inter- or intra-area routes contained in an OSPF LSDB with one ABR in OSPF domain.	ExtremeSwitching 5520, 5720-MXW, Extreme Networks 7520, 7720	2,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420	1,600
	ExtremeSwitching 5320-24T-4X-XT	500
OSPFv2 inter-vr or leaking routes —recommended maximum number of inter-vr routes contained in an OSPF LSDB.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	2,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT)	1,600
	ExtremeSwitching 5320-24T-4X-XT	500

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
OSPFv2 interfaces —recommended maximum number of OSPF interfaces on a switch (active interfaces only).	All platforms except 4120 and 4220.	4
OSPFv2 links —maximum number of links in the router LSA.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	400
	ExtremeSwitching 5320, 5420	320
OSPFv2 neighbors —maximum number of supported OSPF adjacencies.	All platforms except 4120 and 4220.	4
OSPFv2 routers in a single area —recommended maximum number of routers in a single OSPF area.	ExtremeSwitching 5520	50
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	100
	ExtremeSwitching 5320, 5420	40
OSPFv2 virtual links —maximum number of supported OSPF virtual links.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	32
	ExtremeSwitching 5320, 5420	25
OSPFv3 areas —as an ABR, the maximum number of supported OSPFv3 areas.	ExtremeSwitching 5520	16
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	100
	ExtremeSwitching 5320, 5420	12
OSPFv3 external routes —recommended maximum number of external routes.	ExtremeSwitching 5520, 5720-MXW, Extreme Networks 7520, 7720	10,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5720-MW	7,500
	ExtremeSwitching 5420	6,000
	ExtremeSwitching 5320-24T-4X-XT	300
OSPFv3 inter- or intra-area routes —recommended maximum number of inter- or intra-area routes.	ExtremeSwitching 5520	3,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5720, Extreme Networks 7520, 7720	4,000
	ExtremeSwitching 5420	6,000
	ExtremeSwitching 5320-24T-4X-XT	300
OSPFv3 interfaces —maximum number of OSPFv3 interfaces (active interfaces only).	All platforms except 4120 and 4220.	4
OSPFv3 neighbors —maximum number of OSPFv3 neighbors.	All platforms except 4120 and 4220.	4

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
OSPFv3 virtual links —maximum number of OSPFv3 virtual links supported.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	16
	ExtremeSwitching 5320, 5420	12
PIM IPv4 (maximum interfaces) —maximum number of PIM active interfaces.	All platforms except 4120 and 4220.	N/A
PIM IPv4 Limits —maximum number of multicast groups per dynamic rendezvous point.	All platforms except 4120 and 4220.	180
PIM IPv4 Limits —maximum number of multicast groups per static rendezvous point.	All platforms except 4120 and 4220.	180
PIM IPv4 Limits —maximum number of multicast sources per group.	All platforms except 4120, 4220, ExtremeSwitching 5320 24T XT, 5520, 5720-MXW, Extreme Networks 7520, and 7720. ExtremeSwitching 5320 24T XT	5,000 2,000
PIM IPv4 Limits —maximum number of dynamic rendezvous points per multicast group.	All platforms except 4120 and 4220.	145
PIM IPv4 Limits —static rendezvous points.	All platforms except 4120 and 4220.	32
PIM IPv6 (maximum interfaces) —maximum number of PIM active interfaces.	All platforms except 4120 and 4220.	N/A
PIM IPv6 Limits —maximum number of multicast sources per group.	All platforms except 4120, 4220 ExtremeSwitching 5320 24T XT, 5520, 5720-MXW, Extreme Networks 7520, and 7720. ExtremeSwitching 5320 24T XT	1,750 1,000
PIM IPv6 Limits —maximum number of multicast groups per dynamic rendezvous point.	All platforms except 4120 and 4220.	70
PIM IPv6 Limits —maximum number of multicast groups per static rendezvous point.	All platforms except 4120 and 4220.	3,000 (depends on policy file limits)
PIM IPv6 Limits —maximum number of dynamic rendezvous points per multicast group.	All platforms except 4120 and 4220.	64

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
PIM IPv6 Limits —maximum number of secondary addresses per interface.	All platforms except 4120 and 4220.	70
PIM IPv6 Limits —static rendezvous points.	All platforms except 4120 and 4220.	32
Policy-based routing (PBR) redundancy —maximum number of flow-redirects.	All platforms	256 ^o
Policy-based routing (PBR) redundancy —maximum number of next hops per each flow-direct.	All platforms	32 ^o
Port-specific VLAN tags —maximum number of port-specific VLAN tags.	ExtremeSwitching 5320, 5420	N/A
	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	1,023
Port-specific VLAN tags —maximum number of port-specific VLAN tag ports.	ExtremeSwitching 5320, 5420	N/A
	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	4,000
Private VLANs —maximum number of subscribers. Assumes a minimum of one port per network and subscriber VLAN.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	36
	Extreme Networks 7520, 7720	71
Private VLANs —maximum number of private VLANs with an IP address on the network VLAN. Note: This limit is dependent on the maximum number of private VLANs in an L2-only environment if the configuration has tagged and translated ports.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	960
	Extreme Networks 7520, 7720	1,024
Private VLANs —maximum number of private VLANs in an L2-only environment.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	960
	Extreme Networks 7520, 7720	1,280
Route policies —suggested maximum number of lines in a route policy file.	All platforms	10,000

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
RIP Learned Routes —maximum number of RIP routes supported without aggregation.	ExrtemeSwitching 5320 48T/P, 5320 24T-24S XT, 5420, 5520, 5720, Extreme Networks 7520, 7720	10,000
	ExrtemeSwitching 5320 16P, 5320 24T/P	7000
	ExrtemeSwitching 5320-24T-4X-XT	900
RIP interfaces on a single router —recommended maximum number of RIP routed interfaces on a switch.	ExtremeSwitching 5320, 5420, 5520, 5720, Extreme Networks 7520, 7720	256
RIPng learned routes —maximum number of RIPng routes.	ExrtemeSwitching 5320 48T/P, 5320 24T-24S XT, 5420, 5520, 5720, Extreme Networks 7520, 7720	3,000
	ExrtemeSwitching 5320 16P, 5320 24T/P	2,000
	ExrtemeSwitching 5320-24T-4X-XT	400
Spanning Tree (maximum STPDs) —maximum number of Spanning Tree Domains on port mode EMISTP.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, 5320-24T-24S-4XE-XT, Extreme Networks 7520, 7720	64
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P, 5320-24T-4X-XT	32
Spanning Tree PVST+ —maximum number of port mode PVST domains. Note: For all platforms, the maximum number of active ports per PVST domain depends on the maximum number of spanning tree ports supported on given platform. For example, 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).	4120, 4220, ExtremeSwitching 5320, 5320-24T-4X-XT, 5320-24T-24S-4XE-XT, 5420, 5520, 5720	128
	Extreme Networks 7520, 7720	384
Spanning Tree —maximum number of multiple spanning tree instances (MSTI) domains.	ExtremeSwitching 5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, Extreme Networks 7520, 7720	64
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P, 5320-24T-4X-XT	32

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Spanning Tree —maximum number of VLANs per MSTI.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	600
Note: Maximum number of 10 active ports per VLAN when all 500 VLANs are in one MSTI.	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P; 5320-24T-4X-XT, 5320-24T-24S-4XE-XT	256
Spanning Tree —maximum number of VLANs on all MSTP instances.	ExtremeSwitching 5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, Extreme Networks 7520, 7720	1,024
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P, 5320-24T-4X-XT	512
Spanning Tree (802.1d domains) —maximum number of 802.1d domains per port.	All platforms	1
Spanning Tree (number of ports) —maximum number of ports including all Spanning Tree domains.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720	4,096
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	2,048
Spanning Tree (maximum VLANs) —maximum number of STP-protected VLANs (dot1d and dot1w).	ExtremeSwitching 5320-48T/P, 5320-24T-24S-4XE-XT, 5420, 5520, 5720, Extreme Networks 7520, 7720	1,024
	4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P, 5320-24T-4X-XT	600
SSH (number of sessions) —maximum number of simultaneous SSH sessions.	All platforms	8
Static MAC multicast FDB entries —maximum number of permanent multicast MAC entries configured into the FDB.	All platforms	1,024
Syslog servers —maximum number of simultaneous Syslog servers that are supported.	All platforms	16
Syslog targets —maximum number of configurable Syslog targets.	All platforms	16
Telnet (number of sessions) —maximum number of simultaneous Telnet sessions.	All platforms	8

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
Virtual routers —maximum number of user-created virtual routers that can be created on a switch.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720 4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	63 16 (local-only VRs)
Virtual router forwarding (VRFs) —maximum number of VRFs that can be created on a switch. Note: * Subject to other system limitations.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720 4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	960 * 16 (local-only VRs)
Virtual router protocols per VR —maximum number of routing protocols per VR.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720 4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	8 N/A
Virtual router protocols per switch —maximum number of VR protocols per switch.	ExtremeSwitching 5320-48T/P, 5420, 5520, 5720, Extreme Networks 7520, 7720 4120, 4220, ExtremeSwitching 5320-24T/P, 5320-16P	64 N/A
VLAN aggregation —maximum number of port-VLAN combinations on any one superVLAN and all of its subVLANs.	All platforms	1,000
VLANs —includes all VLANs. Note: Only 4,092 user-configurable VLANs are supported. (VLAN 1 is the default VLAN, and 4,095 is the management VLAN, and you may not configure them.)	All platforms	4,094
VLANs (Layer 2) —maximum number of Layer 2 VLANs.	All platforms	4,094
VLANs (Layer 3) —maximum number of VLANs performing IPv4 and/or IPv6 routing. Excludes sub-VLANs.	ExtremeSwitching 5320-48T/P, 5420 4120 4220, ExtremeSwitching 5320-24T/P, 5320-16P ExtremeSwitching 5520, 5720, Extreme 7520, 7720	1,533 126 509 2,048

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
VLAN Port Interfaces (VPIF) —maximum number of VLAN port interfaces.	ExtremeSwitching 5320	40,000
	ExtremeSwitching 5420	60,000
	4120, 4220	65,549
	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	131,585
VLANs (maximum active port-based) —maximum active ports per VLAN when 4,094 VLANs are configured with the default license.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	32
	4120, 4220	15
	ExtremeSwitching 5320, 5420	3
VLANs (maximum active protocol-sensitive filters) —number of simultaneously active protocol filters in the switch.	All platforms except 4120 and 4220.	16
VLAN translation —maximum number of translation VLANs. Assumes a minimum of one port per translation and member VLAN.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	36
	Extreme Networks 7520, 7720	71
VLAN translation —maximum number of translation VLAN pairs with an IP address on the translation VLAN. Note: This limit is dependent on the maximum number of translation VLAN pairs in an L2-only environment if the configuration includes tagged and translated ports.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	960
	Extreme Networks 7520, 7720	1,024
VLAN translation —maximum number of translation VLAN pairs in an L2-only environment.	4120, 4220, ExtremeSwitching 5320, 5420, 5520, 5720	960
	Extreme Networks 7520, 7720	2,046
VMAN CEP —maximum number of CVIDs. Note: With 75% hash table utilization.	ExtremeSwitching 5320, 5420	768
	ExtremeSwitching 5520, 5720	9,000
VRRP (v2/v3-IPv4) (maximum instances) —maximum number of VRRP instances for a single switch.	Normal Mode (as individual VRs):	

Table 6: Supported Limits for the Base License (continued)

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

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
VRRP (v3-IPv6) (maximum ping tracks) —maximum number of ping tracks per VRRP Instance under 128 VRRP instances.	All platforms except 4120 and 4220.	8 (20 centisecond or 1 second hello interval)
VRRP (v2/v3-IPv4/IPv6) (maximum iproute tracks) —maximum number of IP route tracks per VLAN.	All platforms except 4120 and 4220.	8
VRRP (v2/v3-IPv4/IPv6) —maximum number of VLAN tracks per VLAN.	All platforms except 4120 and 4220.	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. Note: On ExtremeSwitching 5520 and 5420 switches, every VNET reduces this limit by 1. Every (VPLS/PSTag VLAN) + port reduces the limit by 1 on all platforms. Every VXLAN Underlay Multicast Tunnel reduces this limit by 1.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720 4220, ExtremeSwitching 5320, 5420	2,048–4,000 150-375
VXLAN —maximum tenant VLANs plus port combinations Note: Every (VPLS/PSTag VLAN) + port reduces the limit by 1.	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720 4220, ExtremeSwitching 5320, 5420	4,096 150-375

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
VXLAN —maximum static MAC to IP bindings. Note: Every FDB entry configured reduces this limit by 1.	All supported platforms	64,000
VXLAN —maximum RTEP IP addresses	All platforms	512
VXLAN —maximum virtual networks with dynamic learning and OSPF extensions for VXLAN	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	4,000
	4220, ExtremeSwitching 5320, 5420	375
VXLAN —or replicator role, maximum number of attached leafs per switch.	All platforms	256
XML requests —maximum number of XML requests per second. Note: Limits are dependent on load and type of XML request. These values are dynamic ACL data requests.	All platforms	10 with 100 DACLs
XNV authentication —maximum number of VMs that can be processed (combination of local and network VMs).	All platforms except 4120 and 4220.	2,048
XNV database entries —maximum number of VM database entries (combination of local and network VMs).	All platforms except 4120 and 4220.	16,000
XNV database entries —maximum number of VPP database entries (combination of local and network VPPs).	All platforms except 4120 and 4220.	2,048
XNV dynamic VLAN —Maximum number of dynamic VLANs created (from VPPs /local VMs).	All platforms except 4120 and 4220.	2,048
XNV local VPPs —maximum number of XNV local VPPs.	All platforms except 4120 and 4220.	2,048 ingress 512 egress

Table 6: Supported Limits for the Base License (continued)

Metric	Product	Limit
XNV policies/dynamic ACLs —maximum number of policies/dynamic ACLs that can be configured per VPP.	All platforms except 4120 and 4220.	8 ingress 4 egress
XNV network VPPs —maximum number of XNV network VPPs. ^P	All platforms except 4120 and 4220.	2,048 ingress 512 egress

Premier License Limits

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

Table 7: Supported Limits for the Premier License

Metric	Product	Limit
Anycast RP Using PIM —maximum number of IPv4 Anycast RP set per VR.	All platforms	32
Anycast RP Using PIM —maximum number of IPv6 Anycast RP set per VR.	All platforms	32
Anycast RP Using PIM —RP peers per Anycast RP set.	All platforms	10
BGP (aggregates) —maximum number of BGP aggregates.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	256
	ExtremeSwitching 5320	204
BGP (networks) —maximum number of BGP networks.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	1,024
	ExtremeSwitching 5320	820
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 5420, 5520	128
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	300
	ExtremeSwitching 5320	100
BGP (peer groups) —maximum number of BGP peer groups.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	64
	ExtremeSwitching 5320	50

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

Metric	Product	Limit
BGP (policy entries) —maximum number of BGP policy entries per route policy.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	256
	ExtremeSwitching 5320	204
BGP (policy statements) —maximum number of BGP policy statements per route policy.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	1,024
	ExtremeSwitching 5320	820
BGP multicast address-family routes —maximum number of multicast address-family routes.	ExtremeSwitching 5520, 5720-MXW, Extreme Networks 7520, 7720	25,000
	ExtremeSwitching 5320, 5420, 5720-MW	20,000
BGP (unicast address-family routes) —maximum number of unicast address-family routes.	ExtremeSwitching 5420, 5520, 5720-MXW, Extreme Networks 7520, 7720 (at default)	25,000
	ExtremeSwitching 5320, 5720-MW	20,000
	ExtremeSwitching 5720-MW (with ALPM enabled)	163,000
	ExtremeSwitching 5720-MXW (with ALPM enabled)	288,000
	ExtremeSwitching 5520 (with ALPM enabled)	80,000
BGP (non-unique routes) —maximum number of non-unique BGP routes.	ExtremeSwitching 5420, 5520, 5720-MXW, Extreme Networks 7520, 7720	75,000
	ExtremeSwitching 5320, 5720-MW	60,000
BGP ECMP —maximum number of equal cost paths per multipath for BGP and BGPv6.	ExtremeSwitching 5320, 5420, 5520, Extreme Networks 7520, 7720	8
	ExtremeSwitching 5720	64
BGPv6 (unicast address-family routes) —maximum number of unicast address family routes.	ExtremeSwitching 5420, 5520, 5720-MW	6,000
	ExtremeSwitching 5720-MW (with ALPM enabled)	107,000
	ExtremeSwitching 5720-MXW, Extreme Networks 7520, 7720	10,000
	ExtremeSwitching 5720-MXW (with ALPM enabled)	213,000
	ExtremeSwitching 5320	4,800
	ExtremeSwitching 5520 (with ALPM enabled)	40,000
BGPv6 (non-unique routes) —maximum number of non-unique BGP routes.	ExtremeSwitching 5420, 5520, 5720-MW	18,000
	ExtremeSwitching 5720-MXW, Extreme Networks 7520, 7720	30,000
	ExtremeSwitching 5320	14,000

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

Metric	Product	Limit
EVPN EVI instances —maximum number of EVI instances.	All platforms	1,024
IS-IS adjacencies —maximum number of supported IS-IS adjacencies.	All platforms	128
IS-IS ECMP —maximum number of equal cost paths per multipath for IS-IS.	All platforms	2, 4, or 8
IS-IS interfaces —maximum number of interfaces that can support IS-IS.	All platforms	255
IS-IS routers in an area —recommended maximum number of IS-IS routers in an area.	All platforms	256
IS-IS route origination —recommended maximum number of routes that can be originated by an IS-IS node.	All platforms	20,000
IS-IS IPv4 L1 routes in an L1 router —recommended maximum number of IS-IS Level 1 routes in a Level 1 IS-IS router.	All platforms	25,000
IS-IS IPv4 L2 routes —recommended maximum number of IS-IS Level 2 routes.	All platforms	25,000
IS-IS IPv4 L1 routes in an L1/L2 router —recommended maximum number of IS-IS Level 1 routes in an L1/L2 IS-IS router.	All platforms	20,000
IS-IS IPv6 L1 routes in an L1 router —recommended maximum number of IS-IS Level 1 routes in a Level 1 IS-IS router.	All platforms	10,000
IS-IS IPv6 L2 routes —recommended maximum number of IS-IS Level 2 routes.	All platforms	10,000
IS-IS IPv6 L1 routes in an L1/L2 router —recommended maximum number of IS-IS Level 1 routes in a L1/L2 router.	All platforms	10,000

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

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

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

Metric	Product	Limit
L2 VPN: Virtual Private Wire Service (VPWS) VPNs —maximum number of virtual private networks per switch.	ExtremeSwitching 5520	1,023
	Extreme Networks 7520, 7720	4,090
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE interfaces —maximum number of interfaces.	ExtremeSwitching 5520, Extreme 7520, 7720	32
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE ingress LSPs —maximum number of ingress LSPs.	ExtremeSwitching 5520, Extreme 7520, 7720	2,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE egress LSPs —maximum number of egress LSPs.	ExtremeSwitching 5520, Extreme 7520, 7720	2,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE transit LSPs —maximum number of transit LSPs.	ExtremeSwitching 5520, Extreme 7520, 7720	4,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE paths —maximum number of paths.	ExtremeSwitching 5520	1,000
	Extreme 7520, 7720	2,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE profiles —maximum number of profiles.	ExtremeSwitching 5520	1,000
	Extreme 7520, 7720	2,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS RSVP-TE EROs —maximum number of EROs per path.	ExtremeSwitching 5520, Extreme 7520, 7720	64
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS LDP peers —maximum number of MPLS LDP peers per switch.	ExtremeSwitching 5520, Extreme 7520, 7720	128
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS LDP adjacencies —maximum number of MPLS LDP adjacencies per switch.	ExtremeSwitching 5520, Extreme 7520, 7720	64
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS LDP ingress LSPs —maximum number of MPLS LSPs that can originate from a switch.	ExtremeSwitching 5520, Extreme 7520, 7720	2,048
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS LDP-enabled interfaces —maximum number of MPLS LDP configured interfaces per switch.	ExtremeSwitching 5520, Extreme 7520, 7720	128
	ExtremeSwitching 5320, 5420, 5720	N/A

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

Metric	Product	Limit
MPLS LDP transit LSPs —maximum number of MPLS transit LSPs per switch.	ExtremeSwitching 5520, Extreme 7520, 7720	4,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS LDP egress LSPs —maximum number of MPLS egress LSPs that can terminate on a switch.	ExtremeSwitching 5520, Extreme 7520, 7720	4,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS static egress LSPs —maximum number of static egress LSPs.	ExtremeSwitching 5520	4,000
	Extreme 7520, 7720	8,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS static ingress LSPs —maximum number of static ingress LSPs.	ExtremeSwitching 5520, Extreme 7520, 7720	4,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MPLS static transit LSPs —maximum number of static transit LSPs	ExtremeSwitching 5520, Extreme 7520, 7720	4,000
	ExtremeSwitching 5320, 5420, 5720	N/A
MSDP active peers —maximum number of active MSDP peers.	All platforms	64
MSDP SA cache entries —maximum number of entries in SA cache.	ExtremeSwitching 5320, 5420F	6,000
	ExtremeSwitching 5420M	8,000
	ExtremeSwitching 5520, 5720, Extreme Networks 7520, 7720	14,000
MSDP maximum mesh groups —maximum number of MSDP mesh groups.	All platforms	16
OSPFv2/v3 ECMP —maximum number of equal cost multipath OSPFv2 and OSPFv3.	ExtremeSwitching 5320, 5420, 5520	8
	ExtremeSwitching 5720	64
OSPFv2 areas —as an ABR, how many OSPF areas are supported within the same switch.	All platforms	8
OSPFv2 external routes —recommended maximum number of external routes contained in an OSPF LSDB.	ExtremeSwitching 5520	5,000
	ExtremeSwitching 5720, Extreme Networks 7520, 7720	10,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5420	4,000
	ExtremeSwitching 5320-24T-4X-XT	400

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

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

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

Metric	Product	Limit
OSPFv3 inter- or intra-area routes —recommended maximum number of inter- or intra-area routes.	ExtremeSwitching 5520	3,000
	ExtremeSwitching 5320 (except 5320-24T-4X-XT), 5720, Extreme Networks 7520, 7720	4,000
	ExtremeSwitching 5420	6,000
	ExtremeSwitching 5320-24T-4X-XT	300
OSPFv3 interfaces —maximum number of OSPFv3 interfaces (active interfaces only).	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	256
	ExtremeSwitching 5320	192
OSPFv3 neighbors —maximum number of OSPFv3 neighbors.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	64
	ExtremeSwitching 5320	48
OSPFv3 virtual links —maximum number of OSPFv3 virtual links supported.	ExtremeSwitching 5420, 5520, 5720, Extreme Networks 7520, 7720	16
	ExtremeSwitching 5320	12
PIM IPv4 (maximum interfaces) —maximum number of PIM active interfaces.	All platforms	255
PIM IPv4 Limits —maximum number of multicast groups per dynamic rendezvous point.	All platforms	180
PIM IPv4 Limits —maximum number of multicast groups per static rendezvous point.	All platforms	3,000 (depends on policy file limits)
PIM IPv4 Limits —maximum number of multicast sources per group.	All platforms	5,000
PIM IPv4 Limits —maximum number of dynamic rendezvous points per multicast group.	All platforms	145
PIM IPv4 Limits —static rendezvous points.	All platforms	32
PIM IPv6 (maximum interfaces) —maximum number of PIM active interfaces.	All platforms	255
PIM IPv6 Limits —maximum number of multicast sources per group.	All platforms	1,750

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

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

Notes for Limits Tables

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

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- ^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 13-and-ipmc` or `configure forwarding internal-tables 12-and-13`.



Open Issues, Known Behaviors, and Resolved Issues

[Open Issues](#) on page 78

[Known Behaviors](#) on page 78

[Resolved Issues in Switch Engine 33.1.100.133](#) on page 78

[Resolved Issues in Switch Engine 33.1.1](#) on page 79

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

Open Issues

There are no open issues in this version.

Known Behaviors

The following are limitations in the Switch Engine architecture that have yet to be resolved.

- AVB is not supported on 7520 Series and 7720 Series.
- ExtremeCloud IQ and ExtremeCloud IQ Site Engine are not supported in this release.

Resolved Issues in Switch Engine 33.1.100.133

The following issues were resolved in Switch Engine 33.1.100.133. Version 33.1.100.133 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 8: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.1.100.133

Defect Number	Description
General	
CFD-12595	SNMP response to polling times out when SNMP inform is generated to unreachable trap receivers.
CFD-12597	SNMP user with privacy protocol AES-256 is not working after upgrading switches.
CFD-12641	Some ports have a problem on packet processing using dynamic VLAN by MAC auth.

Table 8: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.1.100.133 (continued)

Defect Number	Description
5420 Series	
EXOS-36968	When downloading and installing the 33.1.100.X.xos file, any installed Operational Diagnostics image will be removed. This means both primary and secondary banks of Operational Diagnostics are cleared. To have use of Operational Diagnostics again - download and install the matching summit_arm-33.1.100.X-diagnostics.xmod package.

Resolved Issues in Switch Engine 33.1.1

The following issues were resolved in Switch Engine 33.1.1. Version 33.1.1 includes all fixes up to and including versions 31.6, 31.7, 32.1, 32.2, 32.3, 32.4, 32.5, 32.6.x, and 32.7.x.

Table 9: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.1.1

Defect Number	Description
General	
CFD-9644	show port utilization occasionally displays random values for BPE ports.
CFD-9731	show switch management output is slow and sometimes results in the SNMP timeout.
CFD-10220	The following error log appears 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-10797	ARP proxy is not working when ARP entry is present on proxy configured switch.
CFD-10916	Configuration wrongly displays all events are deleted in the default filter when a particular event is excluded.
CFD-10987	"SSL" related commands issued by user accounts are executed properly, but it should be restricted for non-admin accounts.
CFD-11196	Unable to enforce Policy profile from ExtremeCloud IQ Site Engine, when the profile has <i>cos</i> options enabled.
CFD-11258	Port ID is incorrectly displayed when we poll the dot1d port table.
CFD-11267	When DHCP-Snooping is configured only on a PVLAN edge-port, DHCP bindings are not populated properly.
CFD-11275	Scheduled restart is not working as scheduled when the SNTP-client updates the switch time dynamically.
CFD-11349	Process VLAN crashes with signal 6 leading to a switch restart.
CFD-11367	Memory leak occurs in SNMPD process due to failed requests.

Table 9: Resolved Issues, Platform-Specific, and Feature Change Requests (CRs) in 33.1.1 (continued)

Defect Number	Description
CFD-11371	ELRP wrongly detects a loop when both the tenant VLAN and non-tenant VLAN are present in the ISC port.
CFD-11404	Unable to initiate SSH or telnet access to neighboring switches when port isolation is turned on in the connected port.
CFD-11518	Operating system returns different PVID values when dynamic authentication is done on the port while polling for dot1qPvid OID.
CFD-11559	Configuration or the dos-protect detail output does not reflect when the management port is configured as a trusted-port.
CFD-11659	In certain platforms, including X435, X465, and 4120, L3 routed packets with dot1q header having CFI/DEI bit set to 1 are processed in the CPU.
CFD-11815	The ELRP process crashes when ELRP with Hardware Assist is enabled and is run on a VLAN that has more than 128 ports.
CFD-11913	Option to synchronize the files created in the primary slot to the backup is included in the synchronize command.
5320 Series Switches	
CFD-11429	Policy disabled after a restart in 5320 series.
5520 Series Switches	
CFD-11278	10070H optic port on 5520-48SE does not come up after reinserting and when the port speed is configured as 100Mbps.
7520 Series	
CFD-11737	25G link does not come up after turning off/on Auto-neg settings in 7520.