



Switch Engine™ v33.1.x Feature Matrix

Detailed Overview of Supported Features and Protocols

9039048-00 Rev AA
September 2024



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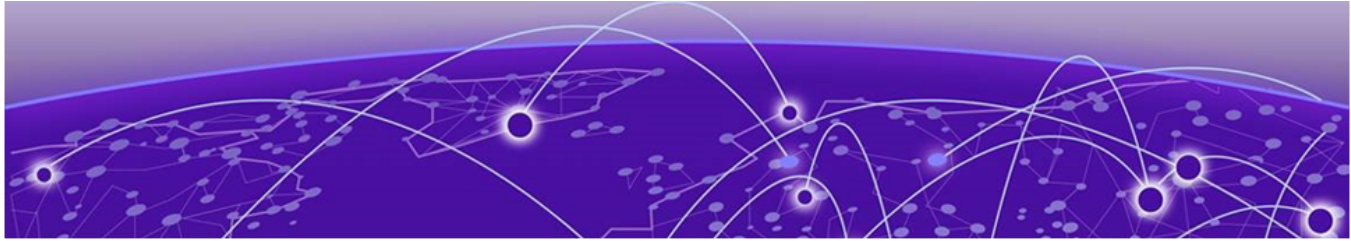
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Abstract

This feature support matrix document for Switch Engine version 33.1.x provides detailed information on the features available across various product series, including 4120, 4220, 5320, 5420, 5520, 5720, 7520, and 7720 series. The document lists features alphabetically, covering protocols and standards such as RFCs and IEEE. It includes data on Access Control Lists, Ethernet Audio Video Bridging, Auto-Discovery, Bidirectional Forwarding Detection, Border Gateway Protocol, and other key functionalities. Each entry specifies the product series and the release version where the feature was introduced, providing a comprehensive overview of the capabilities supported by the Switch Engine platform.



Preface

Read the following topics to learn about:

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

Text Conventions

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

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as Extreme Networks switches 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
	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
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
<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.
...	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.

Related Publications

Switch Engine Publications

-
-
-
-
-
- [ExtremeXOS Quick Guide](#)
- [Extreme Hardware/Software Compatibility and Recommendation Matrices](#)
- [Extreme Optics Compatibility](#)
-
- [ACL Solutions Guide](#)
- [ExtremeXOS and Switch Engine SNMP Traps Reference](#)

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- 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:

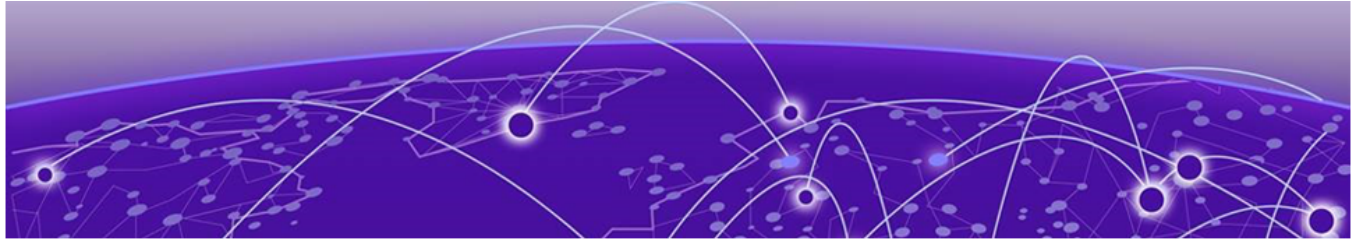
- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental 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.



About this Document

[Purpose of this Document](#) on page 9

[Documentation and Training](#) on page 9

The topics in this section discuss the purpose of this document, the conventions used, ways to provide feedback, additional help, and information regarding other Extreme Networks publications.

Purpose of this Document

This document provides information on features in Extreme Networks Switch Engine™. Features are listed alphabetically with associated protocols and standards, such as RFCs and IEEE. This release of Switch Engine runs on the following product families:

- 4120
- 4220
- 5320 Series
- 5420 Series
- 5520 Series
- 5720 Series
- 7520 Series
- 7720 Series



Note

Prior to Switch Engine 31.6, 5520 Series and 5420 Series platforms ran EXOS. EXOS support ends for these platforms with EXOS 31.6.

Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware and Software Compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

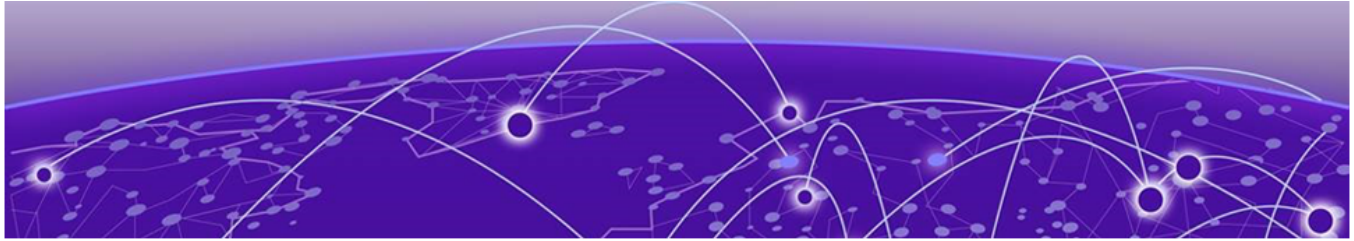
[Other Resources](#) such as articles, white papers, and case studies

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Features A to C

Table 4: Access Control Lists (ACL)

Feature	Product	Release introduced
Layer 2/3/4 ACLs	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RPF (Unicast Reverse Path Forwarding) Control via ACLs	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Wire-speed ACLs	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 4: Access Control Lists (ACL) (continued)

Feature	Product	Release introduced
Rate Limiting/Shaping by ACLs	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 5: Ethernet Audio Video Bridging (AVB)

Feature	Product	Release introduced
IEEE 802.1 AVB standards	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.2
	7520 Series	Switch Engine 33.1.1
	7720 Series	Not supported

Table 6: Auto-Discovery on Universal platforms

Feature	Product	Release introduced
Auto-Discovery on Universal platforms	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Not supported
	7720 Series	Not supported

Table 7: Bidirectional Forwarding Detection (BFD)

Feature	Product	Release introduced
draft-ietf-bfd-mib-14 BFD MIB	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 7: Bidirectional Forwarding Detection (BFD) (continued)

Feature	Product	Release introduced
draft-ietf-bfd-tc-mib-02 Definitions of Textual Conventions (TCs) for BFD Management	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 8: Border Gateway Protocol (BGP)

Feature	Product	Release introduced
Draft-ietf-idr-bgp4- mibv2-02.txt – Enhanced BGP-4 MIB	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1745 BGP4/IDRP for IP- OSPF Interaction	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1997 BGP Communities Attribute	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2439 BGP Route Flap Damping	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 8: Border Gateway Protocol (BGP) (continued)

Feature	Product	Release introduced
RFC 2545 Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2858 Multiprotocol Extensions for BGP-4 (Obsoletes RFC 2283)	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2918 Route Refresh Capability for BGP-4	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3107 Carrying Label Information in BGP-4	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4271 A Border Gateway Protocol 4 (BGP-4) (Obsoletes RFC 1771)	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 8: Border Gateway Protocol (BGP) (continued)

Feature	Product	Release introduced
RFC 4273 Definitions of Managed Objects for the Fourth Version of the Border Gateway Protocol (BGP-4) using SMIv2	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4360 BGP Extended Communities Attribute	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4456 BGP Route Reflection: An alternative to full mesh internal BGP (Obsoletes RFC 1966)	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4486 Subcodes for BGP Cease Notification message	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4724 Graceful Restart Mechanism for BGP	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 8: Border Gateway Protocol (BGP) (continued)

Feature	Product	Release introduced
RFC 4760 Multiprotocol extensions for BGP-4	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 5065 Autonomous System Confederations for BGP	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 5396 Textual Representation of Autonomous System (AS) Attributes	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 5492 Capabilities Advertisement with BGP-4	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 6793 BGP Support for Four-octet AS Number Space	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 9: Bootstrap Protocol (BOOTP)

Feature	Product	Release introduced
	5320 Series	Switch Engine 31.6

Table 9: Bootstrap Protocol (BOOTP) (continued)

Feature	Product	Release introduced
RFC 951, 1542 BootP	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2131 BOOTP/DHCP relay agent and DHCP server	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 951, 1542 BootP	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 10: Cisco Discovery Protocol (CDP)

Feature	Product	Release introduced
CDP v1	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 10: Cisco Discovery Protocol (CDP) (continued)

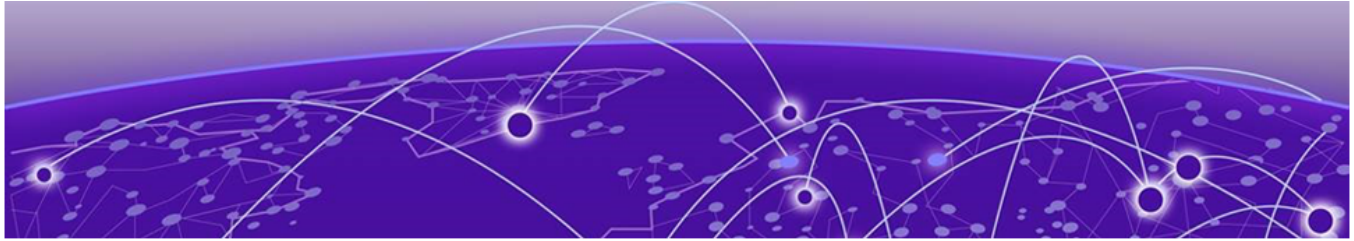
Feature	Product	Release introduced
CDP v2	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 11: Configuration auto-save

Feature	Product	Release introduced
Configuration auto-save	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 12: CLEAR-Flow

Feature	Product	Release introduced
CLEAR-Flow, threshold-based alerts and actions	4120 Series	Switch Engine 32.7.1
	4220 Series	Switch Engine 32.7.1
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features D to F

Table 13: Data Center

Feature	Product	Release introduced
Data Center Bridging eXchange (DCBX) (IEEE P802.1Qaz/D2.3)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 14: Direct Attach

Feature	Product	Release introduced
Direct Attach (IEEE 802 VEPA)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 15: Ethernet Automatic Protection Switching (EAPS)

Feature	Product	Release introduced
	4120	Not supported

Table 15: Ethernet Automatic Protection Switching (EAPS) (continued)

Feature	Product	Release introduced
EAPS MIB supports get functions	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
EAPS multiple rings	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
EAPsv2 Shared ports	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 15: Ethernet Automatic Protection Switching (EAPS) (continued)

Feature	Product	Release introduced
RFC 3619 Ethernet Automatic Protection Switching (EAPS) Version 1	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 16: Extreme Discover Protocol (EDP)

Feature	Product	Release introduced
EDP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 17: Extreme Link State Monitoring (ELSM)

Feature	Product	Release introduced
	4120	Switch Engine 32.7

Table 17: Extreme Link State Monitoring (ELSM) (continued)

Feature	Product	Release introduced
ELSM	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 18: Extreme Loop Recovery Protocol (ELRP)

Feature	Product	Release introduced
ELRP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 19: Extreme Standby Router Protocol (ESRP)

Feature	Product	Release introduced
ESRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 20: Equal Cost Multi Paths (ECMP)

Feature	Product	Release introduced
	4120	Switch Engine 32.7

Table 20: Equal Cost Multi Paths (ECMP) (continued)

Feature	Product	Release introduced
Static ECMP	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 21: Extended Edge Switching (VPEX)

Feature	Product	Release introduced
Extended Edge Switching Control Bridge	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Switch Engine 32.6.1 7520-48Y only
	7720 Series	Not supported

Table 22: Fabric Attach

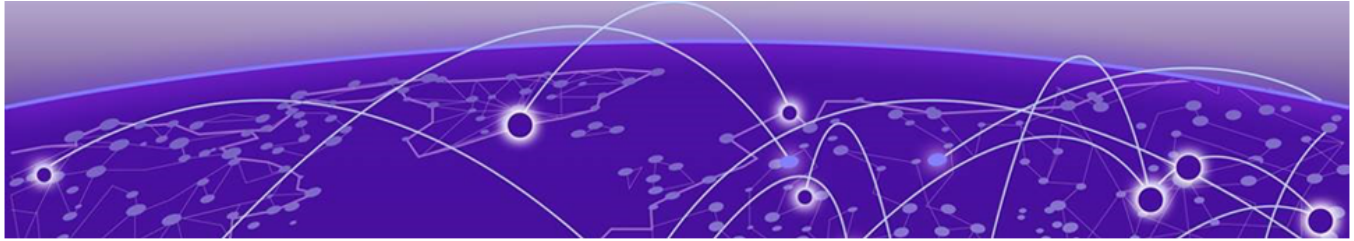
Feature	Product	Release introduced
Fabric Attach (interoperable with Extreme Fabric Connect)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 23: Flow Monitor

Feature	Product	Release introduced
	4120 Series	Not supported

Table 23: Flow Monitor (continued)

Feature	Product	Release introduced
Flow Monitor	4220 Series	Not supported
	5320 Series	Not supported
	5420 Series	Switch Engine 32.2
	5520 Series	Switch Engine 32.2
	5720 Series	Switch Engine 32.4
	7520 Series	Not applicable
	7720 Series	Not applicable



Features G to I

Table 24: Extreme Integrated Application Hosting (IAH)

Feature	Product	Release introduced
Extreme Integrated Application Hosting (IAH)	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.5

Table 25:

Feature	Product	Release introduced
Instant Port profile	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 26: Internet Control Message Protocol (ICMP)

Feature	Product	Release introduced
	4120	Switch Engine 32.7

Table 26: Internet Control Message Protocol (ICMP) (continued)

Feature	Product	Release introduced
ICMP and IP-Option Response Control	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 792 ICMP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 1256 IPv4 ICMP Router Discovery (IRDP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 27: Internet Group Management Protocol (IGMP)

Feature	Product	Release introduced
IGMP v1/v2 Snooping with Configurable Router Registration Forwarding	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 27: Internet Group Management Protocol (IGMP) (continued)

Feature	Product	Release introduced
IGMP v3 Snooping with Configurable Router Registration Forwarding	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IGMP Filters	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1112 IGMP v1	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2236 IGMP v2	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 27: Internet Group Management Protocol (IGMP) (continued)

Feature	Product	Release introduced
RFC 3376 IGMP v3	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2933 IGMP MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1256 IPv4 ICMP Router Discovery (IRDP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 27: Internet Group Management Protocol (IGMP) (continued)

Feature	Product	Release introduced
Static IGMP Membership	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 28: IP Security

Feature	Product	Release introduced
IP Security – DHCP enforcement via Disable ARP Learning	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IP Security – DHCP Secured ARP/ARP Validation	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 28: IP Security (continued)

Feature	Product	Release introduced
IP Security – Gratuitous ARP Protection	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IP Security – RFC 3046 DHCP Option 82 with port and VLAN ID	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IP Security – Trusted DHCP Server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 29: Internet Protocol, Version 4 (IPv4) Host Services

Feature	Product	Release introduced
	4120	Not supported

Table 29: Internet Protocol, Version 4 (IPv4) Host Services (continued)

Feature	Product	Release introduced
IPv4 Network Address Translation	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
Mrinfo, the multicast router information tool based on Appendix-B of draft-ietf-idmr-dvmrp-v3-11	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
Multicast VLAN Registration (MVR)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 768 User Datagram Protocol (UDP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 29: Internet Protocol, Version 4 (IPv4) Host Services (continued)

Feature	Product	Release introduced
RFC 791 Internet Protocol (IP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 793 Transmission Control Protocol (TCP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 826 Address Resolution Protocol (ARP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 894 IP over Ethernet	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 29: Internet Protocol, Version 4 (IPv4) Host Services (continued)

Feature	Product	Release introduced
RFC 1027 Proxy ARP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1122 Requirements for internal hosts – Communication Layers	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1812 Requirements for IP Version 4 Routers	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2068 HTTP server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 29: Internet Protocol, Version 4 (IPv4) Host Services (continued)

Feature	Product	Release introduced
RFC 2096 IPv4 Forwarding Table MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3021 Using 31-Bit Prefixes on IPv4 Point-to-Point Links	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3587, Global Unicast Address Format	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4632 An architecture for IP Address allocation with CIDR	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 29: Internet Protocol, Version 4 (IPv4) Host Services (continued)

Feature	Product	Release introduced
Static Multicast Routes	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Static Unicast Routes	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services

Feature	Product	Release introduced
Ping over IPv6 transport	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services (continued)

Feature	Product	Release introduced
RFC 1981, Path MTU Discovery for IPv6, August 1996 – Host Requirements	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2460, Internet Protocol, Version 6 (IPv6) Specification	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2462, IPv6 Stateless Address Auto configuration – Host Requirements	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2463, Internet Control Message Protocol (ICMPv6) for the IPv6 Specification	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services (continued)

Feature	Product	Release introduced
RFC 2464, Transmission of IPv6 Packets over Ethernet Networks	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2465, IPv6 MIB, General Group and Textual Conventions	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2466, MIB for ICMPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3484, Default Address Selection for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services (continued)

Feature	Product	Release introduced
RFC 3513, Internet Protocol Version 6 (IPv6) Addressing Architecture	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4193, Unique Local IPv6 Unicast Addresses	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4293, Management Information Base for the Internet Protocol (partial)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4861, Neighbor Discovery for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services (continued)

Feature	Product	Release introduced
RFC 5095, IPv6 Specification	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 5722, Handling of Overlapping IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
SSH-2 server over IPv6 transport	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Telnet server over IPv6 transport	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 30: Internet Protocol, Version 6 (IPv6) Host Services (continued)

Feature	Product	Release introduced
Traceroute over IPv6 transport	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 31: IPv6 Interworking and Migration

Feature	Product	Release introduced
RFC 2893, Configured Tunnels	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3056, 6to4	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 32: IPv6 Router Services

Feature	Product	Release introduced
draft-ietf-vrrp-unified-mib-08.txt - Definitions	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6

Table 32: IPv6 Router Services (continued)

Feature	Product	Release introduced
of Managed Objects for VRRPv3	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 1981, Path MTU Discovery for IPv6, August 1996 – Router Requirements	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 2080, RIPng	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2462, IPv6 Stateless Address Auto Configuration – Router Requirements	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 32: IPv6 Router Services (continued)

Feature	Product	Release introduced
RFC 2740 OSPFv3, OSPF for IPv6	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4291, IP Version 6 Addressing Architecture	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4443, Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4862, IPv6 Stateless Address Autoconfiguration	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 32: IPv6 Router Services (continued)

Feature	Product	Release introduced
RFC 5798 Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 6106, IPv6 Router Advertisement Options for DNS Configuration	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 6164, Using 127-Bit IPv6 Prefixes on Inter-Router Links	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 32: IPv6 Router Services (continued)

Feature	Product	Release introduced
RFC 7166 Authentication Trailer	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Static Unicast routes for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 33: Intermediate System to Intermediate System (IS-IS)

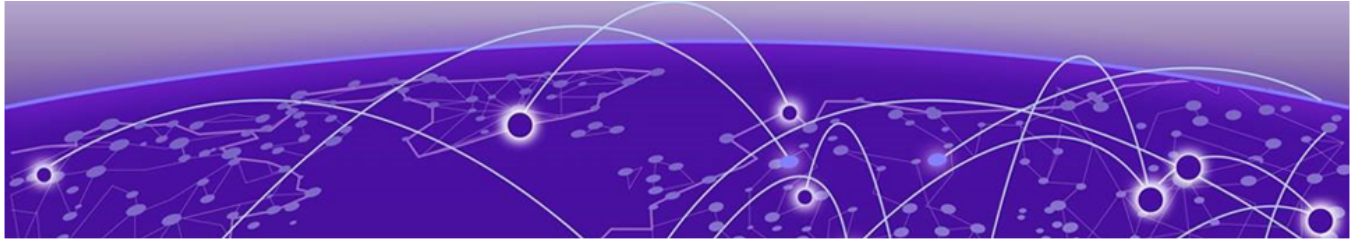
Feature	Product	Release introduced
Draft-ietf-isis-ipv6-06 Routing IPv6 with IS-IS	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 33: Intermediate System to Intermediate System (IS-IS) (continued)

Feature	Product	Release introduced
Draft-ietf-isis-restart-02 Restart Signaling for IS-IS	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Draft-ietf-isis-wg-multi- topology-11 Multi Topology (MT) Routing in IS-IS	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IOS 10589 OSI IS-IS Intra- Domain Routing Protocol (RFC 1142)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1195 Use of OSI IS-IS for Routing in TCP/IP and Dual Environments (TCP/IP transport only)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 33: Intermediate System to Intermediate System (IS-IS) (continued)

Feature	Product	Release introduced
RFC 2763 Dynamic Hostname Exchange Mechanism for IS-IS	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2966 Domain-wide Prefix Distribution with Two-Level IS-IS	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2973 IS-IS Mesh Groups	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3373 Three-way Handshake for IS-IS Point-to-Point Adjacencies	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features J to L

Table 34: Keychain Manager

Feature	Product	Release introduced
Keychain Manager	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 35: Layer 3 Virtual Private Networks (VPN)

Feature	Product	Release introduced
RFC 4364 BGP/MPLS IP Virtual Private Networks (VPNs)	4120	Not supported
	4220	Not supported
	5320 Series	Not Supported
	5420 Series	Not Supported
	5520 Series	EXOS 31.1 Full except for section 9 and 10
	5720 Series	Not Supported
	7520 Series	Switch Engine 32.5 Full except for section 9 and 10
	7720 Series	Switch Engine 32.5 Full except for section 9 and 10

Table 35: Layer 3 Virtual Private Networks (VPN) (continued)

Feature	Product	Release introduced
RFC 4382 MPLS/BGP Layer 3 VPN MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not Supported
	5420 Series	Not Supported
	5520 Series	EXOS 31.1 Full except for 1 table: mplsL3VpnVrfSecTable
	5720 Series	Not Supported
	7520 Series	Not Supported
	7720 Series	Not Supported

Table 36: Licensing

Feature	Product	Release introduced
Ability to extend the Factory Default Premier Trial License	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
License files signed using Extreme Networks signature.	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 36: Licensing (continued)

Feature	Product	Release introduced
Universal Hardware licenses	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 37: Link Aggregation Control Protocol (LACP)

Feature	Product	Release introduced
IEEE 802.1AX-2008 Link Aggregation	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.3ad Static load sharing configuration and LACP based dynamic configuration	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 37: Link Aggregation Control Protocol (LACP) (continued)

Feature	Product	Release introduced
LACP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 38: Link Layer Discovery Protocol (LLDP)

Feature	Product	Release introduced
IEEE 802.1AB – LLDP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
LLDP Media Endpoint Discovery (LLDP-MED), ANSI/TIA-1057, draft 08	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 39: Linux kernel version

Feature	Product	Release introduced
	4120	5.10 as of Switch Engine 32.7

Table 39: Linux kernel version (continued)

Feature	Product	Release introduced
Linux kernel version	4220	5.10 as of Switch Engine 32.7
	5320 Series	5.10 as of Switch Engine 32.6
	5420 Series	5.10 as of Switch Engine 32.6
	5520 Series	5.10 as of Switch Engine 32.6
	5720 Series	5.10 as of Switch Engine 32.6
	7520 Series	5.10 as of Switch Engine 32.6
	7720 Series	5.10 as of Switch Engine 32.6



Features M to O

Table 40: MACsec

Feature	Product	Release introduced
IEEE 802.1AE MACsec Link Encryption	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.4
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	32.6.1 7520-48YE-8CE only
	7720 Series	Not supported
LRM/MACsec Adapter	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Switch Engine 32.1
	7520 Series	Not supported
	7720 Series	Not supported
MAC Security – Lockdown and Limit	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.4
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	32.6.1 7520-48YE-8CE only
	7720 Series	Not supported

Table 40: MACsec (continued)

Feature	Product	Release introduced
MACsec Key Agreement	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.4
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	32.6.1 7520-48YE-8CE only
	7720 Series	Not supported

Table 41: Management and traffic analysis

Feature	Product	Release introduced
Application Telemetry	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Configuration logging	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
draft-ietf-hubmib-mau-mib-v3-02.txt	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-MAC-LOCKING	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-POLICY-PROFILE-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-UPN-TC-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
ENTERASYS-CLASS-OF-SERVICE-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-RADIUS-ACCT-CLIENT-EXT-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-RADIUS-AUTH-CLIENT-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-MULTI-AUTH-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
ENTERASYS-MAC-AUTHENTICATION-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-MULTI-USER-8021X-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ENTERASYS-VLAN-AUTHORIZATION-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Extreme Networks vendor MIBs (includes statistics, FDB, PoE, CPU, Memory, ACL, CLEAR-Flow etc MIBs)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
IEEE 802.1AB LLDP Basic MIB, LLDP-EXT-DOT1-MIB, LLDP-EXT-DOT3-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE-8021-PAE-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE802.1 Q BRIDGE MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE-8021x-EXTENSIONS-MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
IP Route Compression	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Multiple Images, Multiple Configs	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
PIM MIB draft-ietf-pim-mib-v2-01.txt	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 854 Telnet client and server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
RFC 1155 Structure of Management Information (SMIPv)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1212, RFC 1213, RFC 1215 MIB-II, Ethernet-Like MIB and TRAPs	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1350 TFTP Protocol (revision 2)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1493 Bridge MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
RFC 1591 DNS (client operation)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1573 Evolution of Interface	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1643 Ethernet MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1757 RMON 4 groups: Stats, History, Alarms and Events	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
RFC 2021 RMON2 (probe configuration)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2233 Interface MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2578 – 2580 SMIV2 (update to RFC 1902 – 1903)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2613 SMON MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
RFC 2665 – Definitions of Managed Objects for the Ethernet-like Interface types	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2668 802.3 Medium Attachment Units (MAU) MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2925 Ping/Traceroute MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3014 Notification Log MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
RFC 3315, Dynamic Host Configuration Protocol for IPV6 (DHCPv6), Client and Relay Function(Secondary IP address only) support	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3917 IPFIX	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC4805 - Managed Objects for DS1, J1, E1, DS2 and E2 interfaces	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 6933 Entity MIB v4	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
Secure FTP (SFTP) server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
SFF-8472 DDMI (Digital Diagnostics Monitoring Interface)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
sFlow version 5	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Web-based device management interface – ExtremeXOS Chalet	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 41: Management and traffic analysis (continued)

Feature	Product	Release introduced
XML APIs over Telnet/SSH and HTTP/HTTPS	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 42: Message Session Relay Protocol (MSRP)

Feature	Product	Release introduced
MSRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 43: Multi-Switch Link Aggregation Groups (MLAG)

Feature	Product	Release introduced
	4120	Not supported

Table 43: Multi-Switch Link Aggregation Groups (MLAG) (continued)

Feature	Product	Release introduced
MLAG	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 44: Multi-User, Multi-method authentication and policy

Feature	Product	Release introduced
Multi-User, Multi-method authentication and policy	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 45: MultiProtocol Label Switching (MPLS)

Feature	Product	Release introduced
RFC 2961 RSVP Refresh Overhead Reduction Extensions	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 45: MultiProtocol Label Switching (MPLS) (continued)

Feature	Product	Release introduced
RFC 3031 Multiprotocol Label Switching Architecture	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 3032 MPLS Label Stack Encoding	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 3811 Definitions of Textual Conventions (TCs) for MPLS Management	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 3812 MPLS Traffic Engineering (TE) Management Information Base (MIB)	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 45: MultiProtocol Label Switching (MPLS) (continued)

Feature	Product	Release introduced
RFC 3813 MPLS Label Switching Router (LSR) MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 3815 Definition of Managed Objects for the MPLS, Label Distribution Protocol (LDP)	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 4379 Detecting MPLS (MPLS) Data Plane Failures (LSP Ping)	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 45: MultiProtocol Label Switching (MPLS) (continued)

Feature	Product	Release introduced
RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 46: Multicast Listener Discovery (MLD)

Feature	Product	Release introduced
MLD	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
MLD Snooping	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 46: Multicast Listener Discovery (MLD) (continued)

Feature	Product	Release introduced
RFC 2710, IPv6 MLDv1 Protocol	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3810, IPv6 MLDv2 Protocol	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4541, Considerations for Internet Group Management Protocol (IGMP) and MLD Snooping Switches	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 47: Multicast Source Discovery Protocol (MSDP)

Feature	Product	Release introduced
	4120	Not supported

Table 47: Multicast Source Discovery Protocol (MSDP) (continued)

Feature	Product	Release introduced
RFC 3618 MSDP	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 48: Multiple Spanning Tree Protocol (MSTP)

Feature	Product	Release introduced
IEEE 802.1Q – 2003 (formerly IEEE 802.1s) Multiple Instances of STP, MSTP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 49: Multiple CLI Users

Feature	Product	Release introduced
Multiple CLI users per role	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 50: Network Login

Feature	Product	Release introduced
	4120	Switch Engine 32.7

Table 50: Network Login (continued)

Feature	Product	Release introduced
IEEE 802.1x – 2004 Port-Based Network Access Control for Network Login	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Multiple supplicants with multiple VLANs for Network Login (all modes)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
Network Login – 802.1x, Web and MAC-based mechanisms	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
RFC 1866 HTML – used for Web-based Network Login and ExtremeXOS Chalet	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 50: Network Login (continued)

Feature	Product	Release introduced
SSL/TLS transport – used for Web-based Network Login and ExtremeXOS Chalet	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 51: Network operating system personality

Feature	Product	Release introduced
Dual-boot personalities	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7720 Series	Switch Engine 32.4
	7520 Series	Switch Engine 32.4

Table 52: Network Time Protocol (NTP)

Feature	Product	Release introduced
NTPv4 client for IPv4	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 52: Network Time Protocol (NTP) (continued)

Feature	Product	Release introduced
NTPv4 client for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
NTPv4 master and restrict	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
NTP Authentication Key Obfuscation	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
NTP Server configuration using fully qualified domain name (FQDN)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 52: Network Time Protocol (NTP) (continued)

Feature	Product	Release introduced
RFC 5905 1 – NTP Version 4:Protocol and Algorithms Specification	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 53: ONEPolicy

Feature	Product	Release introduced
ONEPolicy	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Role Based Policy	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 54: OpenFlow

Feature	Product	Release introduced
	4120	Switch Engine 32.7

Table 54: OpenFlow (continued)

Feature	Product	Release introduced
OpenFlow	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 55: Open vSwitch Database (OVSDB)

Feature	Product	Release introduced
OVSDB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 56: Open Shortest Path First (OSPF)

Feature	Product	Release introduced
OSPF	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 56: Open Shortest Path First (OSPF) (continued)

Feature	Product	Release introduced
OSPF ECMP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
OSPF MD5 Authentication	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1850 OSPFv2 MIB	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2328 OSPF v2 (Edge-mode)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 56: Open Shortest Path First (OSPF) (continued)

Feature	Product	Release introduced
RFC 1587 OSPF NSSA Option	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1765 OSPF Database Overflow	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2370 OSPF Opaque LSA Option	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3623 OSPF Graceful Restart	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 56: Open Shortest Path First (OSPF) (continued)

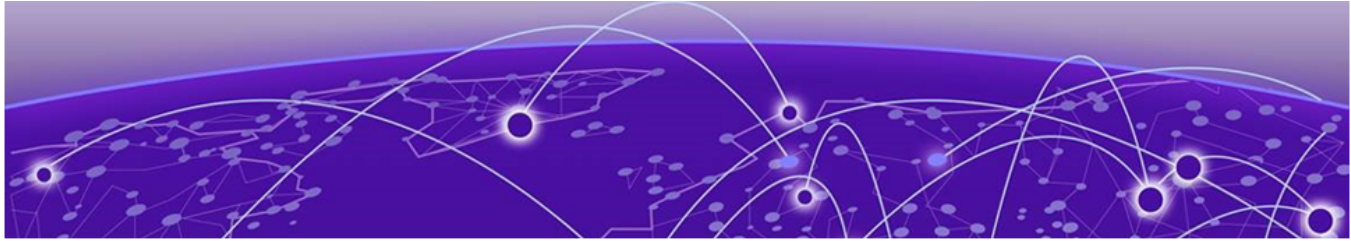
Feature	Product	Release introduced
Secure hash algorithm 1 (SHA-1) and SHA-2	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 57: Open Shortest Path First version 3 (OSPFv3)

Feature	Product	Release introduced
OSPFv3	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4552 Authentication/ Confidentiality for OSPFv3	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 57: Open Shortest Path First version 3 (OSPFv3) (continued)

Feature	Product	Release introduced
RFC 5187 OSPFv3 Graceful Restart	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 5340 OSPF for IPv6 (OSPFv3)(edited)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features P to R

Table 58: Port Mirroring

Feature	Product	Release introduced
Egress mirroring (port-based)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Ingress mirroring (port and flow-based)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 59: Power over Ethernet (PoE)

Feature	Product	Release introduced
Fast PoE	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6 5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.
	5420 Series	EXOS 31.3 5420F-24P-4XE, 5420F-48P-4XE

Table 59: Power over Ethernet (PoE) (continued)

Feature	Product	Release introduced
		5420F-8W-16P-4XE, , 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE , 5420F-48P-4XL, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE
	5520 Series	EXOS 31.1 5520-12MW-36W, 5520-24W and 5520-48W only
	5720 Series	Switch Engine 32.1 5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW
	7520 Series	Not Applicable
	7720 Series	Not Applicable
PoE	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6 5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.
	5420 Series	EXOS 31.3 5420F-24P-4XE, 5420F-48P-4XE, 5420F-48P-4XL, 5420F-8W-16P-4XE, 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE
	5520 Series	EXOS 31.1 5520-12MW-36W, 5520-24W and 5520-48W only
	5720 Series	Switch Engine 32.1 5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW
	7520 Series	Not Applicable
	7720 Series	Not Applicable

Table 59: Power over Ethernet (PoE) (continued)

Feature	Product	Release introduced
PoE/PoE+ allocation using LLDP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6 5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.
	5420 Series	EXOS 31.3 5420F-24P-4XE, 5420F-48P-4XE 5420F-8W-16P-4XE, , 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE , 5420F-48P-4XL, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE
	5520 Series	EXOS 31.1 5520-12MW-36W, 5520-24W and 5520-48W only
	5720 Series	Switch Engine 32.1 5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW
	7520 Series	Not Applicable
	7720 Series	Not Applicable

Table 59: Power over Ethernet (PoE) (continued)

Feature	Product	Release introduced
Perpetual PoE	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6 5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.
	5420 Series	EXOS 31.3 5420F-24P-4XE, 5420F-48P-4XE 5420F-8W-16P-4XE, , 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE , 5420F-48P-4XL, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE
	5520 Series	EXOS 31.1 5520-12MW-36W, 5520-24W and 5520-48W only
	5720 Series	Switch Engine 32.1 5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW
	7520 Series	Not Applicable
	7720 Series	Not Applicable

Table 59: Power over Ethernet (PoE) (continued)

Feature	Product	Release introduced
RFC 3621 PoE-MIB (PoE switches only)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	EXOS 31.6 5320-24P-8XE, 5320-48P-8XE, 5320-16P-4XE, and 5320-16P-4XE-DC.
	5420 Series	EXOS 31.3 5420F-24P-4XE, 5420F-48P-4XE 5420F-8W-16P-4XE, , 5420F-16W-32P-4XE, 5420F-16MW-32P-4XE , 5420F-48P-4XL, 5420M-24W-4YE, 5420M-48W-4YE, and 5420M-16MW-32P-4YE
	5520 Series	EXOS 31.1 5520-12MW-36W, 5520-24W and 5520-48W only
	5720 Series	Switch Engine 32.1 5720-24MW, 5720-48MW, 5720-24MXW, and 5720-48MXW
	7520 Series	Not supported
	7720 Series	Not supported

Table 60: Precision Time Protocol v2 (PTPv2)

Feature	Product	Release introduced
Boundary Clock	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Not supported
	7520-48Y	Switch Engine 33.1.1
	7720 Series	Switch Engine 33.1.1

Table 60: Precision Time Protocol v2 (PTPv2) (continued)

Feature	Product	Release introduced
Ordinary Clock	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported
Transparent Clock	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Switch Engine 33.1.1
	5520 Series	EXOS 32.6.1
	5720 Series	Switch Engine 32.7
	7520 Series	Not supported
	7720 Series	Not supported

Table 61: Priority Flow Control

Feature	Product	Release introduced
Priority Flow Control (IEEE 802.1Qbb)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 62: Protocol Independent Multicast (PIM)

Feature	Product	Release introduced
	4120	Not supported

Table 62: Protocol Independent Multicast (PIM) (continued)

Feature	Product	Release introduced
PIM ECMP Load Splitting	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
PIM over IPv6	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	
PIM Snooping	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	
RFC 2934 Protocol Independent Multicast MIB	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
7720 Series	Switch Engine 32.4	

Table 62: Protocol Independent Multicast (PIM) (continued)

Feature	Product	Release introduced
RFC 3446 Anycast RP using PIM and MSDP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 63: Protocol Independent Multicast-Source Specific Mode (PIM-SSM)

Feature	Product	Release introduced
draft-ietf-pim-mib-v2-01.txt	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
PIM-SSM for IPv4	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

**Table 63: Protocol Independent Multicast-Source Specific Mode (PIM-SSM)
(continued)**

Feature	Product	Release introduced
PIM-DM Draft IETF PIM Dense Mode draft-ietf-idmr-pim-dm-05.txt, draft-ietf-pim-dm-new-v2-04.txt	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	7520 Series	Switch Engine 32.1
	7720 Series	Switch Engine 32.4
	5720 Series	Switch Engine 32.4
RFC 3569, draft-ietf-ssm-arch-06.txt PIM-SSM PIM Source Specific Multicast	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 64: Protocol Independent Multicast - Sparse Mode (PIM-SM)

Feature	Product	Release introduced
PIM Infinite Threshold for IPv4 and IPv6	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 64: Protocol Independent Multicast - Sparse Mode (PIM-SM) (continued)

Feature	Product	Release introduced
PIM-SM for IPv4	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2362 PIM-SM (Edge-mode)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 65: Pseudowire

Feature	Product	Release introduced
Pseudowire LSP Loadsharing	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 65: Pseudowire (continued)

Feature	Product	Release introduced
RFC 4447 Pseudowire Setup and Maintenance using the Label Distribution Protocol (LDP)	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 5085 Pseudowire Virtual Circuit Connectivity Verification (VCCV)	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 5542 Definitions of Textual Conventions for Pseudowire (PW) Management	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
RFC 5602 Pseudowire over MPLS PSN MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 65: Pseudowire (continued)

Feature	Product	Release introduced
RFC 5603 Ethernet Pseudowire MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not applicable
	5420 Series	Not applicable
	5520 Series	EXOS 31.1
	5720 Series	Not applicable
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 66: Quality of Service (QoS) and Voice-over-IP (VoIP)

Feature	Product	Release introduced
Automatic QoS	4120	Not Supported
	4220	Not Supported
	5320 Series	Not Supported
	5420 Series	Not Supported
	5520 Series	Not Supported
	5720 Series	Not Supported
	7520 Series	Not Supported
	7720 Series	Not Supported
IEEE 802.1D – 1998 (802.1p) Packet Priority	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 66: Quality of Service (QoS) and Voice-over-IP (VoIP) (continued)

Feature	Product	Release introduced
RFC 2474 DiffServ Precedence, including 8 queues/port	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2598 DiffServ Expedited Forwarding (EF)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2597 DiffServ Assured Forwarding (AF)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2475 DiffServ Core and Edge Router Functions	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 66: Quality of Service (QoS) and Voice-over-IP (VoIP) (continued)

Feature	Product	Release introduced
Weighted Random Early Detection (WRED)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 67: Queue Profiles

Feature	Product	Release introduced
QoS per queue rate limiting	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 68: RADIUS

Feature	Product	Release introduced
RADIUS (IPv6)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 68: RADIUS (continued)

Feature	Product	Release introduced
RADIUS, community-based users (IPv4)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RADIUS over TLS	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RADIUS Security (RADSec)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2865 RADIUS Authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 68: RADIUS (continued)

Feature	Product	Release introduced
RFC 2866 RADIUS Accounting	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3579 RADIUS EAP support for 802.1x	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3580 IEEE 802.1x RADIUS Guidelines, Dynamic VLAN assignment via RADIUS tunnel attributes	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RADIUS Per-command Authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 68: RADIUS (continued)

Feature	Product	Release introduced
RADIUS Server Load Balancing	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4668 RADIUS Authentication Client MIB for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 4670 RADIUS Accounting Client MIB for IPv6	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 69: Representational State Transfer Configuration Protocol (RESTCONF)

Feature	Product	Release introduced
	4120	Switch Engine 32.7

**Table 69: Representational State Transfer Configuration Protocol (RESTCONF)
(continued)**

Feature	Product	Release introduced
RESTCONF	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 70: Routing Information Protocol (RIP)

Feature	Product	Release introduced
RIP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RIPng	4120	Not supported
	4220	Not supported
	Switch Engine 31.6	Switch Engine 31.6
	EXOS 31.3	EXOS 31.3
	EXOS 31.1	EXOS 31.1
	Switch Engine 32.1	Switch Engine 32.1
	Switch Engine 32.4	Switch Engine 32.4
	Switch Engine 32.4	Switch Engine 32.4

Table 70: Routing Information Protocol (RIP) (continued)

Feature	Product	Release introduced
RFC 1058 RIP v1	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1724 RIPv2 MIB	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2453 RIP v2	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features S to U

Table 71: Secure Shell (SSH)

Feature	Product	Release introduced
SSH-2 client and server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Secure Copy (SCP-2) client and server	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
SSH-2, Secure Copy (SCP-2), and SFTP client/server with encryption/authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 71: Secure Shell (SSH) (continued)

Feature	Product	Release introduced
Access Policies for Telnet/ SSH-2/SCP-2	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 72: Security, switch, and network protection

Feature	Product	Release introduced
Secure Shell (SSH-2), Secure Copy (SCP-2), and SFTP client/server with encryption/authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Access Profiles on All Routing Protocols	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 72: Security, switch, and network protection (continued)

Feature	Product	Release introduced
Access Policies for Telnet/ SSH-2/SCP-2	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Fallback to local authentication database (MAC and Web-based methods)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Guest VLAN for 802.1x	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2267 Network Ingress Filtering	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 72: Security, switch, and network protection (continued)

Feature	Product	Release introduced
IP Broadcast Forwarding Control	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
SYN attack protection	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
CPU DoS Protection with traffic rate-limiting to management CPU	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1Q – 1998 Virtual Bridged Local Area Networks	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 72: Security, switch, and network protection (continued)

Feature	Product	Release introduced
Software Redundant Ports	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1ag L2 Ping and traceroute, Connectivity Fault Management	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ITU-T Y.1731 Frame Delay	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ITU-T Y.1731 Frame Loss	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 72: Security, switch, and network protection (continued)

Feature	Product	Release introduced
IEEE 802.3ah Ethernet OAM – Unidirectional Link Fault Management	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
ITU G.8032 Ethernet Ring Protection Switching	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 73: Security, router protection

Feature	Product	Release introduced
Routing protocol MD5 authentication	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 73: Security, router protection (continued)

Feature	Product	Release introduced
Identity Manager	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 74: Simple Network Management Protocol (SNMP)

Feature	Product	Release introduced
MEF-36 Y.1731 Compliant Performance Monitoring SNMP MIB	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1157 SNMPv1	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 74: Simple Network Management Protocol (SNMP) (continued)

Feature	Product	Release introduced
RFC 1650 Ethernet-Like MIB (update of RFC 1213 for SNMPv2)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 1901 to – 1908 SNMPv2c, SMIV2 and Revised MIB-II	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2418 – Management Information Base for SNMP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2576 Coexistence between SNMP Version 1, Version 2 and Version 3 of the Internet standard Network Management Framework	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 74: Simple Network Management Protocol (SNMP) (continued)

Feature	Product	Release introduced
RFC 3410 – 3415 SNMPv3, user based security, encryption and authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3416 – Protocol Operations for Version 2 of SNMP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3826 – The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 74: Simple Network Management Protocol (SNMP) (continued)

Feature	Product	Release introduced
SNMPv3 user based security, with encryption/ authentication	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 75: Simple Network Time Protocol (SNTP)

Feature	Product	Release introduced
RFC 2030 SNTP v4	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 76: Spanning Tree Protocol (STP)

Feature	Product	Release introduced
Draft-ietf-bridge-rstpmib-03.txt – Definitions of Managed Objects for Bridges with Rapid STP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 76: Spanning Tree Protocol (STP) (continued)

Feature	Product	Release introduced
IEEE 802.1D – 1998 STP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1D – 2004 (STP and RSTP)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1w – 2001 Rapid Reconfiguration for STP, RSTP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1Q – 2003 (formerly IEEE 802.1s) Multiple Instances of STP, MSTP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 76: Spanning Tree Protocol (STP) (continued)

Feature	Product	Release introduced
EMISTP, Extreme Multiple Instances of STP	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
PVST+, Per VLAN STP (802.1Q interoperable)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 77: Stacking

Feature	Product	Release introduced
Stacking auto-discovery	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	EXOS 31.5
	5520 Series	EXOS 31.5
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported

Table 77: Stacking (continued)

Feature	Product	Release introduced
SummitStack-V	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Switch Engine 31.3 Only on 5520-VIM-4X allowing cross-stack to 5320 and 5420 SummitStack- V40.
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported
SummitStack-V40	4120	Not supported
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	Not supported
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported
SummitStack-V80	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	EXOS 31.4
	5520 Series	EXOS 31.5 Only when cross-stacking with 5420.
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported

Table 77: Stacking (continued)

Feature	Product	Release introduced
SummitStack-V160	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Not supported
	7720 Series	Not supported
SummitStack-V200	4120	Switch Engine 32.7
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.6
	5720 Series	Switch Engine 32.1 Only when cross-stacking with 5520.
	7520 Series	Not supported
	7720 Series	Not supported
SummitStack-V400	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	EXOS 32.1 Only with themselves. No VIM ports.
	7520 Series	Switch Engine 32.4 Only with themselves or cross-stacking with 7720.
	7720 Series	Switch Engine 32.4 Only with themselves or cross-stacking with 7520.

Table 77: Stacking (continued)

Feature	Product	Release introduced
SummitStack-V400 Alternative Configuration	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	Not supported
	5720 Series	Switch Engine 32.2 Only with themselves. No VIM ports.
	7520 Series	Switch Engine 32.4 Only with themselves or cross-stacking with 7720.
	7720 Series	Switch Engine 32.4 Only with themselves or cross-stacking with 7520.

Table 78: Syslog

Feature	Product	Release introduced
RFC 3164 BSD Syslog Protocol with Multiple Syslog Servers – 999 Local Messages (criticals stored across reboots)	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 78: Syslog (continued)

Feature	Product	Release introduced
Syslog	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 79: Terminal Access Controller Access Control System (TACACS)

Feature	Product	Release introduced
RFC 1492 TACACS+	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features V to X

Table 80: Virtual LAN Services (VLAN) Services: VLANs, VMANs

Feature	Product	Release introduced
IEEE 802.1ad Provider Bridge Network, virtual MANs (vMANs)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1AK MVRP and MRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IEEE 802.1Q VLAN Tagging	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 80: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)

Feature	Product	Release introduced
IEEE 802.1v: VLAN classification by Protocol and Port	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
MAC-based VLANs	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Multiple STP domains per VLAN	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Multicast Support for PVLAN	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 80: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)

Feature	Product	Release introduced
Multicast Support for VLAN Aggregation	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Port-based VLANs	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Port-Specific VLAN tag	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Protocol-based VLANs	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 80: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)

Feature	Product	Release introduced
vMAN Ethertype Translation/Secondary vMAN Ethertype	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
vMAN Ethertype Translation/Secondary vMAN Ethertype	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
VLAN Aggregation	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 80: Virtual LAN Services (VLAN) Services: VLANs, VMANs (continued)

Feature	Product	Release introduced
VLAN Bridging	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 81: Virtual Router Redundancy Protocol (VRRP)

Feature	Product	Release introduced
IPv6 VRRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 2338 VRRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 81: Virtual Router Redundancy Protocol (VRRP) (continued)

Feature	Product	Release introduced
RFC 2787 VRRP MIB	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
RFC 3768 VRRPv2	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
VRRP	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
VRRPv3 for IPv4	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 81: Virtual Router Redundancy Protocol (VRRP) (continued)

Feature	Product	Release introduced
VRRPv3 for IPv6	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 82: Virtual Routing and Forwarding (VRF)

Feature	Product	Release introduced
Virtualization with IPv4 VRF <ul style="list-style-type: none"> • ARP • DHCP Relay • Inter-VRF Routing (static, dynamic, and policy) • Local routing • OSPFv2 • RIPv1 and v2 • Route policies • Static routing • VRRP 	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6 Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration.
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
	IBGP over user-created VRFs	4120
4220		Not supported
5320 Series		Switch Engine 31.6 Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration.
5420 Series		EXOS 31.3
5520 Series		EXOS 31.1
5720 Series		Switch Engine 32.1
7520 Series		Switch Engine 32.4
7720 Series		Switch Engine 32.4

Table 82: Virtual Routing and Forwarding (VRF) (continued)

Feature	Product	Release introduced
IPv6 Virtualization for the following features and functions: <ul style="list-style-type: none"> • IPv6 Interfaces and IPv6 Static Routes in VRFs and Layer 3 VSNs • ECMP and Alternative route • Route redistribution for static and direct routes • VRRPv3 for IPv6 • DHCP Relay • IPv6 Reverse Path Forwarding • ICMP Ping and Traceroute 	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6 Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration.
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
IPv6 Virtualization for the following features and functions: <ul style="list-style-type: none"> • Open Shortest Path First for IPv6 (OSPFv3) • IPv6 Border Gateway Protocol (IPv6 BGP) • IPv6 route redistribution enhancements 	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6 Only 5320-48P-8XE and 5320-48T-8XE support more than one VRF with IP configuration.
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 83: Virtual eXtensible Local Area Network (VXLAN)

Feature	Product	Release introduced
Address Resolution Protocol (ARP) Learning over Tunnels	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 83: Virtual eXtensible Local Area Network (VXLAN) (continued)

Feature	Product	Release introduced
Address Resolution Protocol (ARP) Suppression	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Assisted Replication	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Dynamic Virtual Networks	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Edge Automation	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 83: Virtual eXtensible Local Area Network (VXLAN) (continued)

Feature	Product	Release introduced
Load Balancing	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Multiprotocol Border Gateway Protocol (MBGP) support for VXLAN	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Policy and VXLAN	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Policy and VXLAN with static provisioning	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	Switch Engine 32.6.1
	5520 Series	Switch Engine 32.6.1
	5720 Series	Switch Engine 32.6.1
	7520 Series	Switch Engine 32.6.1
	7720 Series	Switch Engine 32.6.1

Table 83: Virtual eXtensible Local Area Network (VXLAN) (continued)

Feature	Product	Release introduced
OSPFv2 VXLAN Extensions	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Overlay Routing for VXLAN	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Quality of Service	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Redundant Access	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 83: Virtual eXtensible Local Area Network (VXLAN) (continued)

Feature	Product	Release introduced
Underlay multicast (multicast tunnel)	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Unicast and Multicast	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
Virtual Network Flood Modes	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4
VXLAN + VMAN Customer Edge Ports	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 83: Virtual eXtensible Local Area Network (VXLAN) (continued)

Feature	Product	Release introduced
VXLAN Learning	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 84: Virtual Private LAN Services (VPLS)

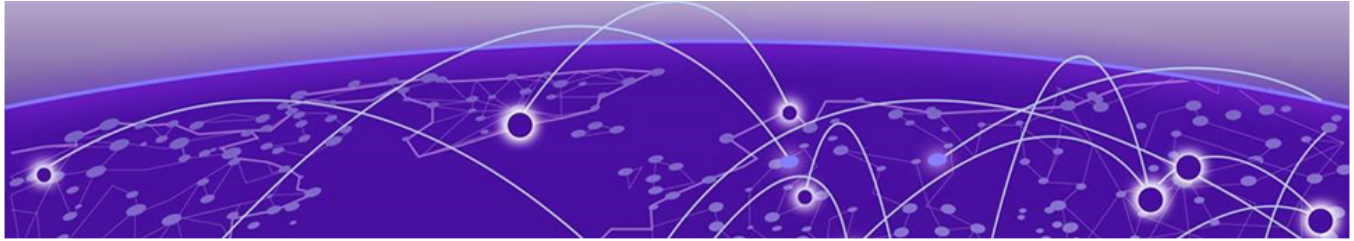
Feature	Product	Release introduced
draft-ietf-l2vpn-vpls-mib-02.txt VPLS MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5
draft-ietf-l2vpn-vpls-mib-02.txt VPLS MIB	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 84: Virtual Private LAN Services (VPLS) (continued)

Feature	Product	Release introduced
RFC 4762 VPLS using Label Distribution Protocol (LDP) Signaling	4120	Not supported
	4220	Not supported
	5320 Series	Not supported
	5420 Series	Not supported
	5520 Series	EXOS 31.1
	5720 Series	Not supported
	7520 Series	Switch Engine 32.5
	7720 Series	Switch Engine 32.5

Table 85: ExtremeXOS Network Virtualization (XNV)

Feature	Product	Release introduced
XNV	4120	Not supported
	4220	Not supported
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4



Features Y and Z

Table 86: Zero Touch Deployment

Feature	Product	Release introduced
Zero Touch Deployment	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4

Table 87: Zero Touch Fabric Configuration

Feature	Product	Release introduced
Zero Touch Fabric Configuration	4120	Switch Engine 32.7
	4220	Switch Engine 32.7
	5320 Series	Switch Engine 31.6
	5420 Series	EXOS 31.3
	5520 Series	EXOS 31.1
	5720 Series	Switch Engine 32.1
	7520 Series	Switch Engine 32.4
	7720 Series	Switch Engine 32.4