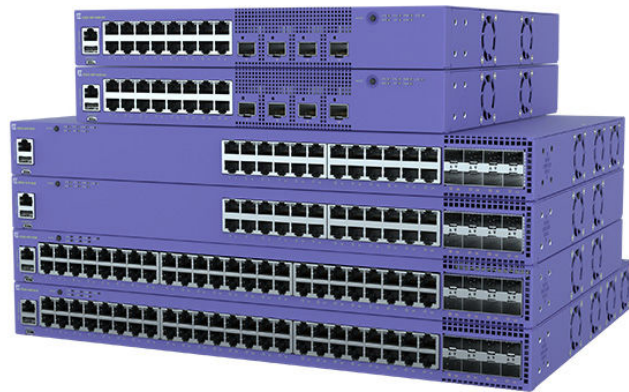# 5320 Series

Highlights

- Intuitive and centralized cloud-managed switching with ExtremeCloud™ IQ and ExtremeCloud IQ – Site Engine
- Fabric-enabled operations with Extreme Fabric Connect for simplified and secure network provisioning and automation
- Choice of operating system (OS) with universal dual-persona hardware

Key Hardware Features

- 30W PoE (Power over Ethernet) support for powering connected devices
- 4 x 1Gb SFP+ uplink ports upgradable to 10Gb on 16-port models / 8 x 1Gb SFP+ uplink ports upgradeable to 10Gb on 24 and 48-port models
- Silent operation at up to 35°C (95°F) on 16-port models
- Choice of AC or DC power option on 16-port models
- 40Gb per unit stacking of up to eight switches
- Secure link encryption with MACsec across both access and uplink ports
- Non-blocking wire speed design

Universal Edge Switch Platform

The 5320 Series is a family of high-performance, feature-rich edge switches designed for the next-generation digital enterprise. Available in 16, 24, and 48-port gigabit models, the 5320 is a stackable universal hardware switching platform, providing end-to-end secure network segmentation and advanced policy capabilities. Compatible with a choice of Extreme's flagship switch operating systems, the 5320 is a uniquely flexible platform that can be deployed across a range of edge and wiring-closet environments.

Cloud-Based Network Management

The 5320 can be managed by ExtremeCloud IQ and ExtremeCloud IQ—Site Engine for centralized switch management, giving you a consolidated view of users, devices, and applications across wired and wireless networks for efficient inventory and network topology management. ExtremeCloud IQ enables zero touch provisioning, allowing you to quickly bring new 5320 switches online as well as select the OS persona.

Alternatively, 5320 on-box management can be done manually via a web-based GUI or generic command-line interface (CLI).

Ethernet Fabric Services

The 5320 supports a variety of Ethernet Fabric services, including Extreme's Fabric Connect when running Fabric Engine and Extreme's IP Fabric when running Switch Engine. It also supports Fabric Attach for automated connection to either Layer 2 or Layer 3 Fabric services.

Extreme's Fabric Connect and IP Fabric enable the creation of virtualized networks that automate network operations, simplify network provisioning, and enhance security, all while reducing the strain on network and IT personnel.

Universal Hardware Platform

The 5320 comes with a dual-persona capability, allowing you to choose your OS. Either the Switch Engine (EXOS)[1] or Fabric Engine (VOSS)[2] OS can be selected at switch start-up or changed at a later stage. When selected, the switch assumes the features and capabilities of that OS.

5320 OS selection can also be automated with ExtremeCloud IQ so that the desired OS can be automatically loaded at switch start-up, facilitating remote OS enablement.

[1] Switch Engine is the new name for ExtremeXOS (EXOS) on all universal switch platforms, starting with Version 31.6.

[2] Fabric Engine is the new name for the VSP Operating System Software (VOSS) on all universal switch platforms, starting with Version 8.6.

Power Over Ethernet (PoE)

All 5320 models support 30W PoE that conforms with IEEE 802.3at. This enables the 5320 to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. In addition, 5320 PoE models support perpetual and fast PoE for even more efficient and reliable powered edge device operation.

Audio Video Bridging

The 5320 Series supports IEEE 802.1 Audio Video Bridging (AVB) when running Switch Engine OS. This allows 5320 models to deliver reliable, real-time audio/ video transmission over Ethernet, meeting the quality of service required for today's high-definition, time-sensitive multimedia streams.

1Gb Uplinks Upgradeable to 10Gb

5320 models are equipped with 1Gb SFP+ capable uplink ports that are upgradeable to 10Gb. 16-port models come with four 1Gb SFP+ uplinks, and 24 and 48-port models come with eight 1Gb SFP+ uplinks. Additional software licensing is required to upgrade to 10Gb SFP+, and two uplink ports are available for Switch Engine stacking, enabling the support of 10Gb by default.

Silent Operation

Silent mode operation at temperatures up to 35⁰C is supported on 5320 16-port AC and DC-powered models. This makes these models ideal for classrooms, hospitality suites, retail sites, or other noise sensitive environments, especially outside of the wiring closet environment.

External Interfaces

Switch Model	Interfaces
5320-16P-4XE	16 x 10/100/1000BASE-T 802.3at (30W) ports • Full / Half-Duplex (autosensing) • MACsec-capable 4 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port
5320-16P-4XE-DC	16 x 10/100/1000BASE-T 802.3at (30W) ports • Full / Half-Duplex (autosensing) • MACsec-capable 4 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port
5320-24T-8XE	24 x 10/100/1000BASE-T ports • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable • 100Mb operation supported on last 4 uplink ports 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port
5320-24P-8XE	24 x 10/100/1000BASE-T 802.3at (30W) ports • Full / Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable • 100Mb operation supported on last 4 uplink ports 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port

Switch Model	Interfaces
5320-48T-8XE	48 x 10/100/1000BASE-T ports • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable • 100Mb operation supported on last 4 uplink ports 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port
5320-48P-8XE	48 x 10/100/1000BASE-T 802.3at (30W) ports • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) • Can be upgraded to 10Gb SFP+ via software license • MACsec-capable • 100Mb operation supported on last 4 uplink ports 1 x Serial console port (RJ-45) 1 x USB A ports for management or external USB flash 1 x USB Micro-B console port

Performance and Scale

Switch Model	Max Active 10/100/1000Mb ports	Max Active 1Gb/10GbSFP/SFP+ ports*	Max Active 10Gb Stacking ports**	Aggregated Switch Bandwidth	Max Frame Forwarding Rate
5320-16P-4XE	16	4	2	112Gbps	83.3Mpps
5320-16P-4XE-DC	16	4	2	112Gbps	83.3Mpps
5320-24T-8XE	24	8***	2	208Gbps	154.8Mpps
5320-24P-8XE	24	8***	2	208Gbps	154.8Mpps
5320-48T-8XE	48	8***	2	256Gbps	190.5Mpps
5320-48P-8XE	48	8***	2	256Gbps	190.5Mpps

* 10Gb port upgrade license required for 10Gb operation

** 10Gb upgrade license not required for stacking

*** 100Mb operation also supported on last 4 uplink ports for 24 and 48-port models

Software Scaling Values

5320 with Switch Engine

MAC Table: 32,000

IPv4 ARP Table: 16,000

IPv4 Route Table: 12,000 (48-port models); 8,000 (16 and 24-port models)

IP Multicast Entries (S,G,V): 6,000

IPv6 Neighbor Table: 6,000

IPv6 Route Table: 6,000 (48-port models); 4,000 (16 and 24-port models)

ACLs (Ingress/Egress): 8,000/1,024 (48-port models); 8,000/512 (16 and 24-port models)

QoS Egress Queues per port: 8

VLANs: 4,094

Routed VLANs: 1533 (48-port models); 509 (16 and 24-port models)

One Policy Scaling

Policy Profiles: 63

Unique Permit/Deny Rules per switch: 4,024

5320 with Fabric Engine

MAC Table: 32,000

IPv4 ARP Table: 15,000 (48-port models); 8,000 (16 and 24-port models)

IPv4 Route Table: 12,000 (48-port models); 8,000 (16 and 24-port models)

IP Multicast Entries (S,G,V): 4,000 (48-port models); 2,000 (16 and 24-port models)

IPv6 Neighbor Table: 8,000

IPv6 Route Table: 6,000 (48-port models); 4,000 (16 and 24-port models)

ACLs (Ingress/Egress): 1,024/400 (48-port models); 1,024/190 (16 and 24-port models)

QoS Egress Queues per port: 8

VLANs: 4,059

IP Interfaces (Routed VLANs): 248

Fabric Connect Scaling

Fabric Adjacencies per switch: 64

Fabric nodes per area (BEB + BCB): 500

L2 VSNs: 500 (48-port models); 250 (16 and 24-port models)

L3 VSNs: 64 (48-port models); 1 (16 and 24-port models)

Weights and Dimensions

Switch Model	Weight	Physical Dimensions
5320-16P-4XE	3.0 kg (6.6 lb.)	Height: 43.2 mm (1.7 in.) Width: 309.9 mm (12.2 in.) Depth: 299.7 mm (11.8 in.)
5320-16P-4XE-DC	3.0 kg (6.6 lb.)	
5320-24T-8XE	3.7 kg (8.2 lb.)	Height: 43.2 mm (1.7 in.) Width: 439.4 mm (17.3 in.) Depth: 279.4 mm (11.0 in.)
5320-24P-8XE	4.0 kg (8.8 lb.)	
5320-48T-8XE	4.2 kg (9.3 lb.)	Height: 43.2 mm (1.7 in.) Width: 439.4 mm (17.3 in.) Depth: 279.4 mm (11.0 in.)
5320-48P-8XE	5.0 kg (11.0 lb.)	Height: 43.2 mm (1.7 in.) Width: 439.4 mm (17.3 in.) Depth: 330.20 mm (13.0 in.)

5320 Max PoE Power Budget

Switch Model	PoE Budget
5320-16P-4XE	185W
5320-16P-4XE-DC	185W
5320-24P-8XE	370W
5320-48P-8XE	740W

Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum Power Consumption (W)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (W)*	Maximum Heat Dissipation (BTU/hr)**
5320-16P-4XE	17	57	246	208
5320-16P-4XE-DC	20	67	260	256
5320-24T-8XE	18	60	50	171
5320-24P-8XE	21	70	480	375

Switch Model	Minimum Power Consumption (W)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (W)*	Maximum Heat Dissipation (BTU/hr)**
5320-48T-8XE	25	85	64	217
5320-48P-8XE	30	104	924	629

* Includes maximum PoE load (W) through the switch

** Does not include PoE load heat dissipated through external electronic load

5320 Acoustic Noise

Switch Model	Bystander Sound Pressure (dB(A))	Declared Sound Power (Bels)
5320-16P-4XE	All ports link up with full traffic, 8 PoE ports	
	Fan off 0°C to 35°C (32°F to 95°F) 19.8 (35°C to 40°C)	Fan off 0°C to 35°C (32°F to 95°F) 29.4 (35°C to 40°C)
5320-16P-4XE-DC	All ports link up with full traffic, 8 PoE ports	
	Fan off 0°C to 35°C (32°F to 95°F) 19.0 (35°C to 40°C)	Fan off 0°C to 35°C (32°F to 95°F) 29.1 (35°C to 40°C)
5320-24T-8XE	All ports link up with full traffic, 0°C to 35°C (32°F to 95°F)	
	19.5	2.86
5320-24P-8XE	All ports link up with full traffic, 12 PoE ports, 0°C to 35°C (32°F to 95°F)	
	20.3	2.86
5320-48T-8XE	All ports link up with full traffic	
	20.8	2.90
5320-48P-8XE	All ports link up with full traffic, 50% PoE budget load, 0°C to 35°C (32°F to 95°F)	
	20.9	2.87

Environmental

Environmental Specifications

EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage

EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation

EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational

EN/ETSI 300 753 (1997-10) - Acoustic Noise

ASTM D3580 Random Vibration Unpackaged 1.5 G

Environmental Compliance

EU RoHS - 2011/65/EU

EU WEEE - 2012/19/EU

EU REACH – Regulation (EC) No 1907/2006 Reporting

China RoHS - SJ/T 11363-2006

Taiwan RoHS - CNS 15663(2013.7)

Environmental Operating Conditions

Temp: 0°C to 50°C (32°F to 122°F)

Humidity: 10% to 95% relative humidity, non-condensing

Altitude: 0 to 3,000 meters (9,850 feet)

Shock (half sine) 30m/s2 (3G), 11ms, 60 shocks

Random vibration: 3 to 500 Hz at 1.5 G rms

Packaging and Storage Specifications

Temp: -40°C to 70°C (-40°F to 158°F)

Humidity: 10% to 95% relative humidity, non-condensing

Packaged Shock (half sine): 180 m/s2 (18 G), 6 ms, 600

Packaged Vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G

Packaged Random Vibration: 5 to 20 Hz at 1.0 ASD w/–3 dB/oct. from 20 to 200 Hz

Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Regulatory and Safety

North American ITE
UL 60950-1

UL/CuL 62368-1 Listed

CSA 22.2 No. 60950-1 2nd edition 2014 (Canada)

Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)

CDRH Letter of Approval (US FDA Approval)

European ITE
EN 60950-1 2nd Edition

EN 62368-1

EN 60825-1 Class 1 (Lasers Safety)

2014/35/EU Low Voltage Directive

International ITE
CB Report and Certificate per IEC 60950-1

CB Report and Certificate IEC 62368-1

AS/NZS 60950-1 (Australia/New Zealand)

EMI/EMC Standards

North American EMC for ITE
FCC CFR 47 Part 15 Class A (USA)

ICES-003 Class A (Canada)

European EMC Standards
EN 55032 Class A

EN 55024

EN 61000-3-2,2014 (Harmonics)

EN 61000-3-3 2013 (Flicker)

EN 300 386 (EMC Telecommunications)

2014/30/EU EMC Directive

International EMC Certifications
CISPR 32, Class A (International Emissions)

AS/NZS CISPR32

CISPR 24 Class A (International Immunity)

IEC 61000-4-2/EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria B

IEC 61000-4-3/EN 61000-4-3 Radiated Immunity 10V/m, Criteria A

IEC 61000-4-4/EN 61000-4-4 Transient Burst, 2 kV, Criteria B

IEC 61000-4-5/EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria B

IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/rms, 80%AM (1kHz), Criteria A

IEC/EN 61000-4-11 Power Dips and Interruptions, >30%, 25 periods, Criteria C

Country Specific
VCCI Class A (Japan Emissions)

ACMA RCM (Australia Emissions)

CCC Mark (China)

KCC Mark, EMC Approval (Korea)

BSMI (Taiwan)

Anatel (Brazil)

NoM (Mexico)

EAC (Russia, Belarus, Kazakhstan)

NRCS (South Africa)

IEEE 802.3 Media Access Standards
IEEE 802.3ab 1000BASE-T

IEEE 802.3at PoE

IEEE 802.3ae 10GBASE-X

IEEE 802.3az Energy Efficient Ethernet

Ordering Notes

Customers ordering a 5320 Series switch receive the hardware switch along with Base software license, integrated power supply, fan module and rack-mount kit. Optical transceivers and power cords must be separately ordered. 10Gb upgrade licenses (4-port and 8-port), as well as Premier and MACsec licenses must also be ordered separately.

Base Software and Optional Premier License

The Base software included with each 5320 unit supports most available software features. Certain features, however, require a Premier License to operate:

For Switch Engine, a Premier License is required fo

- 5 or more OSPF interfaces
- PIM DM/PIM SSM
- Anycast RP (Rendezvous Point)
- MultiSource Discovery Protocol (MSDP)
- IS-IS/BGP4/MBGP
- GRE Tunneling
- Ethernet VPN (EVPN)

For Fabric Engine, a Premier License is required for:

- 5 or more OSPF active interfaces
- 3 or more BGP Peers
- Layer 3 Virtual Service Networks (L3 VSNs)*

* 5320 16- and 24-port models do not require a Premier License for the single L3 VSN supported in these models.

Notes on 5320 10Gb Upgrade Licenses

A 30-day evaluation of the 4-port 10Gb upgrade license is included with each 5320 unit to aid in set-up and onboarding. Otherwise, a 4-port or 8-port 10Gb upgrade license is required for

10Gb uplink operations on the 5320. 10Gb stacking, however, does not require a separate 10Gb upgrade license. Two 4-port 10Gb upgrade licenses cannot be combined to enable 8 x 10Gb uplinks; instead, an 8-port 10Gb upgrade license must be purchased. If you have a 4-port 10Gb license already installed and want to replace it with an 8-port 10Gb license, you can reuse the 4-port license on a different 5320.

Ordering Information

Part Number	Product Name	Product Description
5320 Systems		
5320-16P-4XE	532016-port 30W PoE Switch w/AC Power	5320 Universal Switch with 16 x 10/100/1000BASE-T Full / Half-Duplex 802.3at 30W PoE ports, 4 x 1Gb SFP uplink ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed AC PSU, fixed fan module (fan-off mode up to 35°C/95°F), 2-post rack-mount kit, Base software license.
5320-16P-4XE-DC	532016-port 30W PoE Switch w/DC Power	5320 Universal Switch with 16 x 10/100/1000BASE-T Full / Half-Duplex 802.3at 30W PoE ports, 4 x 1Gb SFP uplink ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed DC PSU, fixed fan module (fan-off mode up to 35°C/95°F), 2-post rack-mount kit, Base software license.
5320-24T-8XE	5320 24-port Switch	5320 Universal Switch with 24 x 10/100/1000BASE-T Full / Half-Duplex ports, 8 x 1Gb SFP ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed AC PSU, fixed fan modules, 2-post rack-mount kit, Base software license.
5320-24P-8XE	5320 24-port30W PoE Switch	5320 Universal Switch with 24 x 10/100/1000BASE-T Full / Half-Duplex 802.3at 30W PoE ports, 8 x 1Gb SFP ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed AC PSU, fixed fan modules, 2-post rack-mount kit, Base software license.
5320-48T-8XE	5320 48-port Switch	5320 Universal Switch with 48 x 10/100/1000BASE-T Full / Half-Duplex ports, 8 x 1Gb SFP ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed AC PSU, fixed fan modules, 2-post rack-mount kit, Base software license.
5320-48P-8XE	5320 48-port 30w PoE Switch	5320 Universal Switch with 48 x 10/100/1000BASE-T Full / Half-Duplex 802.3at 30W PoE ports, 8 x 1Gb SFP ports upgradeable to 10Gb SFP+ (includes 2 x Stacking ports @10Gb), 1 internal fixed AC PSU, fixed fan modules, 2-post rack-mount kit, Base software license.
Accessories		
XN-2P-RMKIT-007	2 Post Rack Mount Kit for 5320 16 port switches	Spare two post rack mount kit for 5320 Series 16 port switches. Includes brackets for front or mid-mount of chassis in a two-post rack.
XN-2P-RMKIT-006	2Post Rack Mount Kit for 5320 24/48 port switches	Spare two post rack mount kit for 5320 Series 24 and 48 port switches. Includes brackets for front or mid-mount of chassis in a two-post rack.
5320-10GUPG-4X-LIC-P	4x 10Gb upgrade for 5320	10Gb Port Upgrade License for 4 ports of 1G SFP. Can be used on 16, 24 and 48-port 5320 switch models
5320-10GUPG-8X-LIC-P	8x 10Gb upgrade for 5320	10Gb Port Upgrade License for 8 ports* of 1Gb SFP. Applicable to 24 and 48 port 5320 switch models
5000-PRMR-LIC-P	Premier License for 5000 Series	Perpetual Premier License for 5000 Series switches
5000-MACSEC-LIC-P	MACsec License for the 5000 Series	Perpetual MACsec License for the 5000 Series switches

* When running Fabric Engine on 24 and 48-port 5320 models, 3 of the 8 uplink ports are blocked in support of Ethernet Fabric Connect (SPB) functionality

Optics/Transceivers

For a list of the optics and transceivers supported on the 5320 Series hardware, refer to our [Extreme Optics Compatibility Tool](#).

Power Cords

Power cords are not included with the 5320 in support of our green initiatives but can be ordered separately.

Warranty

All 5320 Series models are covered under Extreme's Universal LLW policy. For warranty details, please visit our [Policies and Warranties page](#).

Maintenance Services

Extreme's maintenance and support services are provided 100% by in-house engineering experts. We have a rate of over 90% first-person resolution, ensuring efficient operation of your business-essential network.

With 24x7x365 phone support, advanced parts replacement, and on-site support, we augment your staff with expert resources to help you mitigate critical network issues fast. Visit [Extreme Maintenance Services](#) for more information.

www.extremenetworks.com