

5320 Series

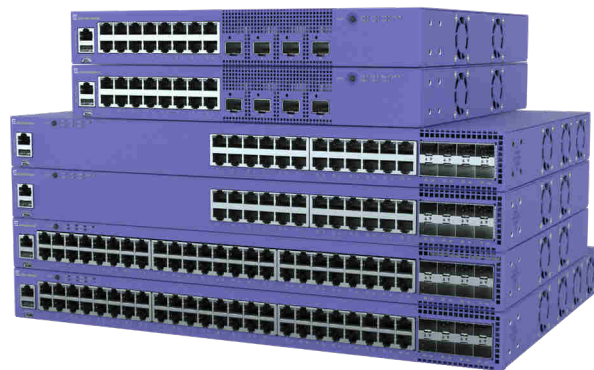
Universal Edge Switch Platform

Highlights

- Fixed 16, 24 and 48-port Gigabit Ethernet switches for enterprise edge deployments
- Universal dual-persona hardware allows user choice of switch operating systems
- ExtremeCloud IQ™ and ExtremeCloud IQ - Site Engine for powerful, secure and easy to use cloud-based network management.
- Fabric Connect for automated network operations, simplified network provisioning and enhanced security
- 1-year free ExtremeCloud IQ Pilot subscription included with each 5320 system

Key Hardware Features

- 8 x 1/10Gb SFP+ uplinks upgradeable to 10Gb via license on 24 and 48-port models
- 4 x 1/10Gb SFP+ uplinks upgradeable via license to 10Gb on 16-port models
- 30W PoE support (IEEE 802.3at)
- Silent mode operation up to 35°C on 16-port PoE models
- AC or DC Power option with 16-port PoE model
- Up to 8-unit 40Gb per unit stacking
- MACsec on 10/100/1000 access and uplink ports for secure link encryption
- Non-blocking, wire-speed design



The 5320 Series is a family of feature-rich edge switches designed for the next-generation digital enterprise. As a universal hardware platform, the 5320 Series end-to-end secure network segmentation, in addition to advanced policy capabilities, and offers a user-selectable choice of Extreme's flagship switch operating systems. This makes the 5320 a uniquely flexible platform that can be deployed across a range of edge and wiring-closet environments.

The 5320 Series includes fixed 16, 24, and 48-port 1 Gigabit models that are available in 30W PoE and non-PoE versions. The family also includes 16 port PoE models available with either AC or DC power options.



Management

The 5320 can be managed by ExtremeCloud IQ and ExtremeCloud IQ—Site Engine for comprehensive unified management with a consolidated view of users, devices and applications across wired and wireless networks. (NOTE: Each 5320 unit also includes a 1-year free ExtremeCloudIQ Pilot subscription.)

Zero-touch provisioning from ExtremeCloud IQ lets one quickly bring new 5320 switches online as well as enable the selection of the operating system (OS) persona. Alternatively, 5320 on-box management can be done manually via a web-based GUI or generic 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 on the 5320 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 Series comes with a dual-persona capability allowing user choice of the switch operating system (OS). Either the Switch Engine¹ or Fabric Engine² persona can be enabled on 5320 hardware models. The desired persona can be selected at start-up or changed at a later stage. Once selected, the 5320 assumes the features/capabilities of the selected OS.

5320 persona activation can be done manually at boot-up, including via the system CLI. Or, it can be automated by pre-provisioning the 5320 persona in ExtremeCloud IQ. When first booted, the 5320 automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the 5320 system – eliminating the need for manual selection.

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

The 5320 Series includes Power over Ethernet (PoE) models supporting standards-based 30W IEEE 802.3at PoE capabilities. 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 also 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 when running Switch Engine for reliable, real-time audio/ video transmission over Ethernet. AVB technology delivers the quality of service required for today's high-definition and time-sensitive multimedia streams.



1Gb Uplinks Upgradeable to 10Gb

All 5320 Series units include integrated SFP+ capable uplinks that support 1Gb SFP by default, but which can be upgraded to 10Gb via software. 24 and 48-port 5320 models come with 8 x 1Gb SFP uplinks; 16-port models offer 4 x 1Gb SFP uplinks. 1Gb SFP uplinks are upgradeable to 10Gb SFP+ through an optional software license. (Note: Two of the 5320 uplink ports are available for Switch Engine stacking and when used in this manner support 10Gb by default.)



Silent Operation

Silent mode operation at temperatures up to 35°C 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 <ul style="list-style-type: none"> • Full/Half-Duplex (autosensing) • MACsec-capable 4 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Full/Half-Duplex (autosensing) • MACsec-capable 4 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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
5320-48T-8XE	48 x 10/100/1000Base-T ports <ul style="list-style-type: none"> - Full/Half-Duplex (autosensing) - MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Full/Half-Duplex (autosensing) • MACsec-capable 8 x 1Gb SFP uplink ports (includes 2 x Stacking ports @ 10Gb) <ul style="list-style-type: none"> • 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/10Gb SFP/SFP+ ports*	Max Active 10Gb Stacking ports**	Aggregated Switch Bandwidth	Max Frame Forwarding Rate
5320-16P-4XE	16	4	2	112 Gbps	83.3 mpps
5320-16P-4XE-DC	16	4	2	112 Gbps	83.3 mpps
5320-24T-8XE	24	8•••	2	208 Gbps	154.8 mpps
5320-24P-8XE	24	8•••	2	208 Gbps	154.8 mpps
5320-48T-8XE	48	8•••	2	256 Gbps	190.5 mpps
5320-48P-8XE	48	8•••	2	256 Gbps	190.5 mpps

* 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	6.6 lb/3.0 kg	12.2 in W/1.7 in H/11.8 in D 310 mm/43.6 mm/300 mm
5320-16P-4XE-DC	6.6 lb/3.0 kg	
5320-24T-8XE	8.2 lb/3.7 kg	17.3 in W/1.7 in H/11.0 in D 440 mm/43.6 mm/280 mm
5320-24P-8XE	8.8 lb/4.0 kg	
5320-48T-8XE	9.3 lb/4.2 kg	17.3 in W/1.7 in H/11.0 in D 440 mm/43.6 mm/280 mm
5320-48P-8XE	11.0 lb/5.0 kg	17.3 in W/1.7 in H/13.0 in D 440 mm/43.6 mm/330 mm

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 (Watts)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (Watts)*	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
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 (dB)
5320-16P-4XE	All ports link up with full traffic, 8 PoE ports	
	Fan on (0°C - 35°C) 19.8 (35°C - 40°C)	Fan on (0°C - 35°C) 29.4 (35°C - 40°C)
5320-16P-4XE-DC	All ports link up with full traffic, 8 PoE ports	
	Fan on (0°C - 35°C) 19.0 (35°C - 40°C)	Fan on (0°C - 35°C) 29.1 (35°C - 40°C)
5320-24T-8XE	All ports link up with full traffic, 0°C - 35°C	
	19.5	28.6
5320-24P-8XE	All ports link up with full traffic, 12 PoE ports, 0°C - 35°C	
	20.3	28.6
5320-48T-8XE	All ports link up with full traffic	
	20.8	29.0
5320-48P-8XE	All ports link up with full traffic, 50% PoE budget load, 0°C - 35°C	
	20.9	28.7

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. In addition, each 5320 switch comes with a free 1-year ExtremeCloud IQ Pilot subscription. 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 for:

- 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 (2) 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	5320 16-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 35C), 2-post rack-mount kit, Base software license, includes 1-year ExtremeCloud IQ Pilot Subscription
5320-16P-4XE-DC	5320 16-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 35C), 2-post rack-mount kit, Base software license, includes 1-year ExtremeCloud IQ Pilot Subscription
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, includes 1-year ExtremeCloud IQ Pilot Subscription
5320-24P-8XE	5320 24-port 30W 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, includes 1-year ExtremeCloud IQ Pilot Subscription
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, includes 1-year ExtremeCloud IQ Pilot Subscription
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, includes 1-year ExtremeCloud IQ Pilot Subscription
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	2 Post 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	4 x 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	8 x 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

Warranty

All 5320 Series models are covered under Extreme's Universal LLW policy. For warranty details, please visit: <http://www.extremenetworks.com/support/policies>

Maintenance Services

Extreme's maintenance and support services with 100% in-sourced engineering experts and over 90% first-person resolution ensure efficient operation of your business-essential network. 24x7x365 phone support, advanced parts replacement, and on-site support augment your staff with experienced resources that help you mitigate critical network issues fast. Visit [Extreme Maintenance Services](#) for more information.

Optics/Transceivers

For a list of the optics/transceivers supported on the 5320 Series hardware, refer to our Extreme Optics Compatibility Tool at <https://optics.extremenetworks.com>

Power Cords

In support of Extreme Networks green initiatives, power cords are not included with the 5320, but can be ordered separately. They should be specified at time of ordering.



<http://www.extremenetworks.com/contact>

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