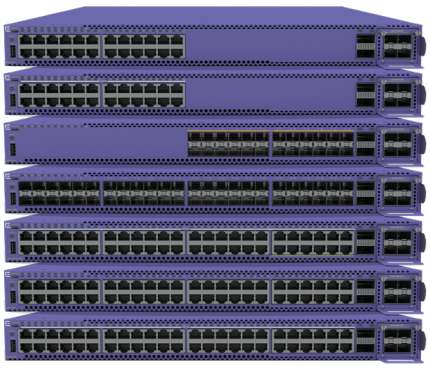
Highlights

- High-performance feature-rich fixed-form switches for enterprise edge and aggregation deployments
- Range of 24 and 48-port models with Gigabit, Multi-Gigabit and 10 Gigabit Ethernet connectivity
- Universal hardware platform providing end-to-end network segmentation and advanced policy with a choice of ExtremeSwitching operating systems
- 10Gb and 25Gb modular uplink options
- 30W, 60W and 90W PoE support (IEEE 802.3at/IEEE 802.3bt)
- Up to 8-unit 160Gb stacking
- MACsec on access and modular uplink ports for secure link encryption
- Layer 2/Layer 3 Fabric services for secure network segmentation and automation
- Extended Edge Switching controlling bridge in support of V300/V400 edge devices
- Non-blocking, wire-speed design

Smart Management Choices

- ExtremeCloud IQ for powerful, simple and secure public or private cloud management
- Extreme Management Center for centralized, unified management capabilities



ExtremeSwitching™ 5520 Series

Universal Edge/Aggregation Switch Platform

Product Overview

The ExtremeSwitching 5520 Series is a family of high-performance, feature-rich edge and aggregation switches designed for the next-generation digital enterprise. The 5520 Series universal hardware provides 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 5520 a uniquely flexible platform that can be deployed across a range of edge, aggregation and wiring-closet environments.

The 5520 Series includes 24- and 48-port 1 Gigabit models, 1/2.5/5 Gigabit multi-rate models, as well as a 24-port 10 Gigabit model. The family also offers 30/60/90W PoE making it an ideal wired backend for wireless APs or in support of next-gen powered Ethernet devices, such as digital signage, pan-tilt-zoom cameras, smart lighting or point-of-sale terminals. The 5520 further supports 10G and 25G modular uplinks for flexible linkage to other switches or devices over a range of media.

Extreme Elements™
ExtremeSwitching™ 5520

Sa Switches Access | Sc Switches Campus | Fa Fabric Automation | IQ Extreme Cloud IQ

Built to Suit Your Business Needs

Extreme Elements are the building blocks that allow you to tailor your network to your specific business environment, goals, and objectives. They enable the creation of an Autonomous Network that delivers the positive experiences and business outcomes most important to your organization.

Combining architecture, automation, and artificial intelligence, Extreme Elements enable you to ensure that your users get what they need — when and where they need it. Providing these superior user experiences is as simple as mixing and matching the right elements.

Learn more at extremenetworks.com/extreme-elements/.

Universal Hardware Platform

The 5520 Series as a universal hardware platform comes with a dual-persona capability allowing user choice of the switch operating system (OS). Either the ExtremeXOS or VSP Operating System (VOSS) persona can be enabled on 5520 hardware models. The desired persona can be selected at start-up or changed at a later stage. Once selected, the 5520 assumes the features/capabilities of the selected OS.

The 5520 persona activation can be done manually at boot-up, including via the system CLI. Or, it can be automated by pre-provisioning the 5520 persona in ExtremeCloud IQ. When first booted, the 5520 automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the 5520 system—eliminating the need for manual selection.

Ethernet Fabric Services

The 5520 supports a variety of Ethernet Fabric services, including Extreme's Fabric Connect when running VOSS and Extreme's IP Fabric when running ExtremeXOS. 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 5520 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.

Extended Edge Switching

The 5520 models support Extended Edge Switching, an innovative solution that simplifies the deployment and operation of edge switches. As the controlling bridge of an Extended Edge Switching solution, the 5520, when running EXOS, can be combined with Extreme's V300 and V400 Series access devices to create a single logical switch architecture. The result is a simplified operational model that reduces costs.

Power Over Ethernet

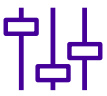
The 5520 Series includes Power over Ethernet (PoE) models with standards-based IEEE 802.3bt (30/60/90W) PoE support. This enables the 5520 to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. 5520 PoE models also support perpetual and fast PoE for even more efficient and reliable powered edge device operation.

VIM Options for Flexible Uplinks

Versatile Interface Modules (VIMs) on the 5520 provide flexible uplink capabilities – with 5520 models offering a single VIM slot for this purpose. VIM options include 4-port 10Gb or 25Gb modules that include LRM and 256-bit MACsec support.

High-Performance Stacking

The 5520 also supports high-speed 160Gb stacking when running ExtremeXOS via its two built-in QSFP28 ports. Up to eight systems can be stacked using qualified QSFP+ direct attach cables and optical transceivers.



Management

The 5520 can be managed by ExtremeCloud IQ or the Extreme Management Center (XMC) for comprehensive unified management with a consolidated view of users, devices and applications across wired and wireless networks.

Zero-touch provisioning from ExtremeCloud IQ or from XMC lets one quickly bring new 5520 switches online as well as enable the selection of the operating system (OS) persona. Alternatively, 5520 on-box management can be done manually via a web-based GUI or generic CLI.

Product Specifications

External Interfaces

Switch Model	Interfaces

5520-24T	• 24 x 10/100/1000Base-T ports
	  • Full/Half-Duplex (autosensing)
	  • MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot

5520-24W	• 24 x 10/100/1000Base-T 802.3bt (90W) ports
	  • Full/Half-Duplex (autosensing)
	  • MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot

5520-48T	• 48 x 10/100/1000Base-T ports
	  • Full/Half-Duplex (autosensing)
	  • MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot

5520-48W	• 48 x 10/100/1000Base-T 802.3bt (90W) ports
	  • Full/Half-Duplex (autosensing)
	  • MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot

5520-12MW-36W	• 12 x 100M/1/2.5/5GBase-T 802.3bt (90W) PoE ports
	  • Full-Duplex
	  • MACsec-capable
	• 36 x 10/100/1000Base-T 802.3bt (90W) PoE ports
	  • Full/Half-Duplex
	  • MACsec-capable
	• 2 x Stacking/QSFP28 ports* (unpopulated)
	• 1 x Serial console port (RJ-45)
	• 1 x 10/100/1000BASE-T out-of-band management port
	• 2 x USB A ports for management or external USB flash
	• 1 x USB Micro-B console port
	• 1 x VIM slot

5520-48SE	• 48 x 100/1000Base-X (SFP) ports (unpopulated) • MACsec-capable • 2 x Stacking/QSFP28 ports* (unpopulated) • 1 x Serial console port (RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 2 x USB A ports for management or external USB flash • 1 x USB Micro-B console port • 1 x VIM slot

Product Specifications

External Interfaces (Cont.)

Switch Model	Interfaces
5520-24X	• 24 x 10GBase-X (SFP+) ports (unpopulated) • 2 x Stacking/QSFP28 ports* (unpopulated) • 1 x Serial console port (RJ-45) • 1 x 10/100/1000BASE-T out-of-band management port • 2 x USB A ports for management or external USB flash • 1 x USB Micro-B console port • 1 x VIM slot
5520-VIM-4X	• 4 x 1/10GBase-X SFP+ ports (unpopulated)

5520-VIM-4XE	• 4 x 1/10Gbase-X SFP+ ports (unpopulated)
	  • LRM-capable
	  • MACsec-capable

5520-VIM-4YE	• 4 x 10/25Gbase-X SFP28 ports (unpopulated) • MACsec-capable

*The 2 x Stacking/QSFP28 ports can be used either for stacking or as Ethernet front panel ports
- Stacking mode data rate per port: 40Gb (supported with EXOS)
- Ethernet front panel QSFP28 data rate options per port, with channelization: 4 x 10Gb SFP+, 4 x 25Gb SFP28, 1 x 40Gb QSFP+, 2 x 50Gb (supported with EXOS and VOSS non-Fabric mode)

Performance and Scale

Switch Model	Max Active 10/100/1000Mb ports	Max Active 100Mb/1Gb/2.5Gb/5Gb ports	Max Active 100Mb/1Gb SFP ports	Max Active 1/10Gb SFP+ ports*	Max Active 25Gb SFP28 ports*	Max Active 40Gb QSFP+ ports**	Max Active 50Gb ports**	Max Active 40Gb Stacking ports***	Aggregated Switch Bandwidth	Frame Forwarding Rate
5520-24T	24	0	0	12	12	2	4	2	648 Gbps	482.1 mpps
5520-24W	24	0	0	12	12	2	4	2	648 Gbps	482.1 mpps
5520-48T	48	0	0	12	12	2	4	2	696 Gbps	517.8 mpps
5520-48W	48	0	0	12	12	2	4	2	696 Gbps	517.8 mpps
5520-12MW-36W	36	12	0	12	12	2	4	2	792 Gbps	589.3 mpps
5520-48SE	0	0	48	12	12	2	4	2	696 Gbps	517.8 mpps
5520-24X	0	0	0	36	12	2	4	2	1080 Gbps	803.5 mpps

* When stacking is enabled, 8 of the 1/10Gb SFP+ and 25Gb SFP28 ports are unavailable
** When stacking is enabled, the 40Gb QSFP+ ports and 50Gb ports are unavailable
*** Stacking supported in EXOS mode only

Weights and Dimensions

Switch Model	Weight*	Physical Dimensions
5520 Systems		
5520-24T	12.2 lb / 5.54 kg	17.4 in W / 1.7 in H /17.4 in D 441 mm x 44 mm x 442 mm
5520-24W	13.8 lb / 6.25 kg	
5520-48T	12.7 lb / 5.76 kg	
5520-48W	13.4 lb / 6.06 kg	
5520-12MW-36W	14.0 lb / 6.33 kg	
5520-48SE	12.6 lb / 5.7 kg	
5520-24X	13.8 lb / 6.25 kg	
VIM Modules		
5520-VIM-4X	0.37 lb / 0.17 kg	1.7 in W / 1.5 in H / 7.2 in D 43mm / 38 mm / 182 mm
5520-VIM-4XE	0.44 lb / 0.20 kg	
5520-VIM-4YE	0.46 lb / 0.21 kg	

*Switch weights include fans but no PSUs

Power Supply Unit Specifications

	350W AC PSU	715W AC PSU	1100W AC PSU	2000W AC PSU*
Voltage Input Range (Nominal)	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC
Line Frequency Range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
Power Supply Input Socket	IEC/EN 60320 C14	IEC/EN 60320 C16	IEC/EN 60320 C16	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15	IEC/EN 60320 C15
Operating Temperature	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation	0° C to 45° C**

*200-240 VAC is required to achieve full 2000W output. If run at 100-120VAC, output is limited to 1100W.

**At sea-level, 0° C to 40° C at 1500m; 0° C to 35° C at 3000m.

PoE Power Budget

Switch Model	1 x 715W	2 x 715W	1 x 1100W	2 x 1100W	1 x 2000W @ 100-120VAC	1 x 2000W @ 200-240VAC	2 x 2000W @ 100-120VAC	2 x 2000W @ 200-240VAC
5520-24W	502W	1087W	887W	1789W	887W	1787W	1877W	2160W
5520-48W	490W	1075W	875W	1777W	875W	1775W	1865W	3575W
5520-12MW-36W	448W	1033W	833W	1735W	833W	1733W	1823W	3533W

Note: It 's recommended that primary and secondary power supply units (PSUs) be of the same type to support optimal PoE operation.

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)**
5520-24T	52	176	142	483
5520-24W	54	182	2480	1092
5520-48T	60	205	171	584
5520-48W	59	203	4136	1828
5520-12MW-36W	66	224	4151	1878
5520-48SE	61	209	255	872
5520-24X	48	165	171	585

*Includes maximum PoE load (W) through the switch

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

Environmental and Regulatory

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
China RoHS	SJ/T 11363-2006
Taiwan RoHS	CNS 15663(2013.7)

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 shocks
- 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 62368-1
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)
- CAN/CSA 22.2 No. 60950-1
- CAN/CSA No. 22.2 62368-1-14

European ITE

- EN 60950-1, EN 62368-1
- EN 60825-1Class 1 (Lasers Safety)
- 2014/35/EU Low Voltage Directive

International ITE

- CB Report and Certificate per IEC 60950-1 AS/NZS 60950-1 (Australia /New Zealand)
- IEC 62368-1
- GB 4943.1-2011
- CNS 14336-1

EMI/EMC Standards

North American EMC for ITE

- FCC CFR 47 Part 15 Class A (USA)
- ICES-003 Class A (Canada)
- RoHS Directive 2011/65/EU

European EMC Standards

- EN 55032 Class A
- EN 55024
- EN 55035
- EN 61000-3-2,2014 (Harmonics)
- EN 61000-3-3 2013 (Flicker)
- EN 300 386 (EMC Telecommunications)
- 2014/30/EU EMC Directive
- EN 55011 Class A

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 A
- IEC 61000-4-3 /EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4/EN 61000-4-4 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5 /EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C
- IEC 61000-4-8/EN 61000-4-8
- CISPER 11 Class A
- GB/T 9254-2008

Country Specific

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)
- CCC Mark (China)
- KCC Mark, EMC Approval (Korea)
- EAC Mark (Custom Union)
- NRCS/ICASA Mark (South Africa)
- BSMI Mark (Taiwan)

Telecom Standards

- CE 2.0 Compliant

IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3bz 2.5G/5GBASE-T
- IEEE 802.3bt Type4 PoE
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3aq 10GBASE-LRM
- IEEE 802.3by 25GBASE-X
- IEEE 802.3ba/802.3bm 40GBASE-X and 100GBASE-X
- IEEE 802.3az Energy Efficient Ethernet

Ordering Information

Part Number	Product Name	Product Description
5520 Systems		
5520-24T	5520 24-port Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-24W	5520 24-port 90w PoE Switch	5520 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48T	5520 48-port Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48W	5520 48-port 90w PoE Switch	5520 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-12MW-36W	5520 48-port 90w PoE with 12 ports multi-rate Switch	5520 Universal Switch with 12 x 100Mb/1Gb/2.5Gb/5Gb 802.3bt 90W PoE MACsec-capable ports plus 36 x 10/100/1000BASE-T full/half duplex MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-48SE	5520 48-port SFP Switch	5520 Universal Switch with 48 x 100M/1Gb SFP MACsec-capable ports, includes 2 x Stacking/QSFP28 ports, 3 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-24X	5520 24-port SFP+ Switch	5520 Universal Switch with 24 x 100Mb/1Gb/10Gb SFP+ ports, includes 2 Stacking/QSFP28 ports, 2 fan modules, 1 VIM slot, 2 unpopulated modular PSU slots, Base software license
5520-VIM-4X	4-port SFP+ module	5520 Versatile Interface Module with 4 x 10Gb SFP+ ports
5520-VIM-4XE	4-port SFP+ module LRM/MACsec capable	5520 Versatile Interface Module with 4 x 10Gb SFP+ LRM and MACsec-capable ports
5520-VIM-4YE	4-port SFP28 module MACsec capable	5520 Versatile Interface Module with 4 x 10/25Gb SFP28 MACsec-capable ports
Accessories		
10953	350W AC PSU FB	350W AC PSU supported on 5520
10951	715W AC PSU FB	715W AC PSU supported on 5520
10941	1100W AC PSU FB	1100W AC PSU supported on 5520
XN-ACPWR-2000W-F	2000W AC PSU FB	2000W AC PSU supported on 5520
17115	Spare Fan Module FB	Fan module for 5520, Front to Back airflow
XN-4P-RMKIT-005	4-Post Rack Mount Kit	Spare 4-Post Rack Mount Kit for 5520
Software Licenses		
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

Warranty

All 5520 Series models are covered under Extreme's Limited Lifetime Warranty. For warranty details, please visit: www.extremenetworks.com/support/policies.

Power Cords

In support of Extreme Networks Green initiatives, power cords are not included with the 5520, but can be ordered separately. They should be specified at time of ordering.

Optics/Transceivers

For a list of the optics/transceivers supported on the 5520 Series hardware, refer to our Extreme Optics Compatibility Tool at https://optics.extremenetworks.com.

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.

Extreme networks

http://www.extremenetworks.com/contact