

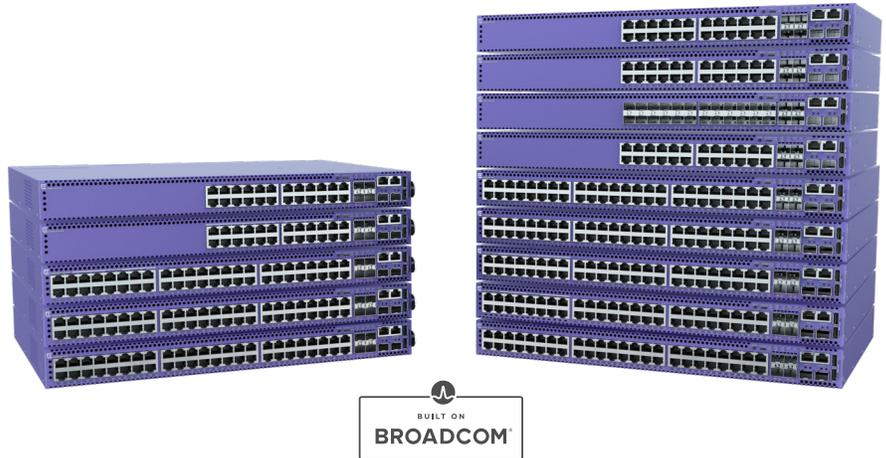
## Highlights

- High-performance, feature-rich fixed-form switches for enterprise edge deployments
- Universal hardware platform providing end-to-end network segmentation and advanced policy with a choice of ExtremeSwitching operating systems
- Fixed 24 and 48-port models with Gigabit and Multi-Gigabit Ethernet connectivity
- 4 x 1/10Gb SFP+ or 4 x 1/10/25Gb built-in uplink ports
- 30W, 60W and 90W PoE support (IEEE 802.3at/IEEE 802.3bt)
- Up to 8-unit 80Gb per unit stacking
- MACsec on 10/100/1000 access and uplink ports for secure link encryption\*
- Layer 2/Layer 3 Fabric services for secure network segmentation and automation
- Non-blocking, wire-speed design

## Smart Management Choices

- ExtremeCloud™ IQ for powerful, simple and secure public or private cloud management
- 1-year ExtremeCloud IQ Pilot subscription included with each 5420
- ExtremeCloud IQ – Site Engine for centralized, unified management capabilities

\* Supported on specific hardware revisions; please refer to the ExtremeSwitching™ 5420 Hardware Installation Guide for details.



# ExtremeSwitching™ 5420 Series

## Universal Edge Switch Platform

The ExtremeSwitching 5420 Series are high-performance, feature-rich edge switches designed for the next-generation digital enterprise. The 5420 Series universal hardware design 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 5420 a uniquely flexible platform that can be deployed across a range of edge and wiring-closet environments.

The 5420 Series consists of 14 models split across 5420M and 5420F families to address a variety of end-user needs and price points. 5420M models offer field-replaceable power supplies and fans, and 4 x 1/10/25Gb built-in uplink ports. 5420F models come with fixed power supply, fixed fan(s), 4 x 1/10Gb built-in uplink ports, with support for a second optional field-replaceable power supply.

Both 5420M and 5420F families include 24 and 48-port 1 Gigabit models, as well as 1/2.5 Gigabit multi-rate models. Both also provide 30/60/90W PoE capabilities making them an ideal wired backend for wireless APs or in support of next gen power Ethernet devices, such as digital signage, pan-tilt-zoom cameras, smart lighting, or point-of-sale terminals.



## Universal Hardware Platform

The 5420 Series as a universal hardware platform comes with a dual-persona capability allowing user choice of the switch operating system (OS). Either the Switch Engine (EXOS)<sup>1</sup> or Fabric Engine (VOSS)<sup>2</sup> persona can be enabled on 5420 hardware models. The desired persona can be selected at start-up or changed at a later stage. Once selected, the 5420 assumes the features/capabilities of the selected OS.

5420 persona activation can be done manually at boot-up, including via the system CLI. Or, it can be automated by pre-provisioning the 5420 persona in ExtremeCloud IQ. When first booted, the 5420 automatically connects to ExtremeCloud IQ to find its persona. The pre-provisioned OS persona is then remotely enabled on the 5420 system - eliminating the need for manual selection.



## Ethernet Fabric Services

The 5420 supports a variety of Ethernet Fabric services, including Extreme's Fabric Connect when running Fabric Engine (VOSS) and Extreme's IP Fabric when running Switch Engine (EXOS). 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 5420 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.



## Audio Video Bridging

The 5420 series supports IEEE 802.1 Audio Video Bridging when running Switch Engine (EXOS) 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.



## MACsec Link Encryption

IEEE 802.1AE MACsec\* is supported on the 5420 access ports, as well as on its built-in uplink ports. MACsec is a hop-by-hop security capability which encrypts/decrypts packets between connected switches or devices. As a link-only encryption, the switches can still apply services to the packet, such as policy or QoS, without compromising the security of packets across the link. With 128-bit and 256-bit Advanced Encryption Standard (AES) support, the 5420 provides the most secure link encryption.

\* Supported on specific hardware revisions; please refer to the ExtremeSwitching 5420 Hardware Installation Guide for details.



## High-Performance Stacking

The 5420 series also supports high-speed stacking when running ExtremeXOS via its two built-in SFP-DD stacking ports. Up to eight systems can be stacked using qualified SFP+/SFP-DD direct attach cables and optical transceivers.



## Power over Ethernet (PoE)

The 5420 Series includes Power over Ethernet models supporting standards-based IEEE 802.3bt (30/60/90W) PoE capabilities. This enables the 5420 to address the needs of powered edge devices, while eliminating the need for additional electrical cabling and circuits. In addition, 5420 PoE models also support perpetual and fast PoE for even more efficient and reliable powered edge device operation.

<sup>1</sup> Switch Engine is the new name for ExtremeXOS (EXOS) on all universal switch platforms, starting with Version 31.6

<sup>2</sup> Fabric Engine is the new name for the VSP Operating System Software (VOSS) on all universal switch platforms, starting with Version 8.6

## Management

The 5420 can be managed by ExtremeCloud™ IQ or ExtremeCloud IQ – Site Engine for comprehensive unified management with a consolidated view of users, devices and applications across wired and wireless networks. (NOTE: Each 5420 unit also includes a 1-year ExtremeCloudIQ Pilot subscription.)

Zero-touch provisioning from ExtremeCloud IQ lets one quickly bring new 5420 switches online as well as enable the selection of the operating system (OS) persona. Alternatively, 5420 on-box management can be done manually via a web-based GUI or generic CLI.

## External Interfaces

Switch Model	Interfaces
5420F-24T-4XE	24 x 10/100/1000Base-T ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-24P-4XE	24 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-24S-4XE	24 x 100/1000Base-X (SFP) ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-48T-4XE	48 x 10/100/1000Base-T ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-48P-4XE	48 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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

## External Interfaces (cont.)

Switch Model	Interfaces
5420F-48P-4XL	48 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> <li>• LRM-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-8W-16P-4XE	8 x 10/100/1000Base-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 16 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-16W-32P-4XE	16 x 10/100/1000Base-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 32 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420F-16MW-32P-4XE	16 x 100M/1G/2.5GBase-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 32 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10Gb SFP+ uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420M-24T-4YE	24 x 10/100/1000Base-T ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10/25Gb SFP28 uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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

## External Interfaces (cont.)

Switch Model	Interfaces
5420M-24W-4YE	24 x 10/100/1000Base-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10/25Gb SFP28 uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420M-48T-4YE	48 x 10/100/1000Base-T ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10/25Gb SFP28 uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420M-48W-4YE	48 x 10/100/1000Base-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10/25Gb SFP28 uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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
5420M-16MW-32P-4YE	16 x 100M/1G/2.5GBase-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 32 x 10/100/1000Base-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex (autosensing)</li> <li>• MACsec-capable</li> </ul> 4 x 1/10/25Gb SFP28 uplink ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-capable</li> </ul> 2 x Stacking/SFP-DD 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

\* Notes on use of the 2 x Stacking/SFP-DD ports

1. With Switch Engine (EXOS), the 2 x SFP-DD ports can be used either for stacking or as Ethernet uplink ports (when not stacking).
2. With Fabric Engine (VOSS), the 2 x SFP-DD ports can be used as Ethernet uplinks when in non-Fabric mode.
3. SFP-DD ports support either 10Gb or 20Gb data rates with the use of appropriate transceivers/cables.
4. When used as uplinks, 5420M models support up to 2 x 10Gb channels on each SFP-DD port
5. When used as uplinks, 5420F models support a single 10Gb channel on each SFP-DD port.

## 5420F Performance and Scale

Switch Model	Max Active 10/100/1000Mb Ports	Max Active 100Mb/1Gb/2.5Gb Ports	Max Active 100Mb/1Gb SFP ports	Max Active 1/10Gb SFP+ Ports	Max Active 1/10/25Gb SFP28 Ports	Max Active 20Gb Stacking Ports***	Aggregated Switch Bandwidth	Frame Forwarding Rate
5420F-24T-4XE	24	0	0	6*	0	2	208 Gbps	154.8 mpps
5420F-24P-4XE	24	0	0	6*	0	2	208 Gbps	154.8 mpps
5420F-24S-4XE	0	0	24	6*	0	2	208 Gbps	154.8 mpps
5420F-48T-4XE	48	0	0	6*	0	2	256 Gbps	190.5 mpps
5420F-48P-4XE	48	0	0	6*	0	2	256 Gbps	190.5 mpps
5420F-48P-4XL	48	0	0	6*	0	2	256 Gbps	190.5 mpps
5420F-8W-16P-4XE	24	0	0	6*	0	2	208 Gbps	154.8 mpps
5420F-16W-32P-4XE	48	0	0	6*	0	2	256 Gbps	190.5 mpps
5420F-16MW-32P-4XE	32	16	0	6*	0	2	304 Gbps	226.2 mpps

## 5420M Performance and Scale

Switch Model	Max Active 10/100/1000Mb Ports	Max Active 100Mb/1Gb/2.5Gb Ports	Max Active 100Mb/1Gb SFP ports	Max Active 1/10Gb SFP+ Ports	Max Active 1/10/25Gb SFP28 Ports	Max Active 20Gb Stacking Ports***	Aggregated Switch Bandwidth	Frame Forwarding Rate
5420M-24T-4YE	24	0	0	8**	4	2	328 Gbps	244.0 mpps
5420M-24W-4YE	24	0	0	8**	4	2	328 Gbps	244.0 mpps
5420M-48T-4YE	48	0	0	8**	4	2	376 Gbps	279.7 mpps
5420M-48W-4YE	48	0	0	8**	4	2	376 Gbps	279.7 mpps
5420M-16MW-32P-4YE	32	16	0	8**	4	2	424 Gbps	315.5 mpps

\* Includes 2 x 1/10G ports available using the SFP-DD ports when these ports are not used for stacking with Switch Engine (EXOS), or when in non-Fabric mode with Fabric Engine (VOSS)

\*\* Includes 4 x 1/10Gb ports available through channelization of the 2 x SFP-DD ports when these ports are not used for stacking with Switch Engine (EXOS), or when in non-Fabric mode with Fabric Engine (VOSS). It also includes the 4 x SFP28 uplink ports when run at 1/10Gb

\*\*\* Switch Engine (EXOS) only: 20Gb stacking requires SFP-DD transceivers/cables; 10Gb stacking supported using SFP+ transceivers/cables

# 5420 Software Scaling Values

## 5420F Series with Switch Engine (EXOS)

- MAC Table: 32,000
- IPv4 ARP Table: 16,000
- IPv4 Route Table: 12,000
- IP Multicast Entries (S,G,V): 6,000
- IPv6 Route Table: 6,000
- IPv6 Neighbor Table 6,000
- ACL (Ingress/Egress): 8,000/1,024
- QoS Egress Queues/Port: 8
- VLANs: 4,094
- IP Interfaces (aka Routed VLANs): 1,533

### One Policy Scaling

- Policy Profiles: 63
- Unique Permit/deny rules per switch: 4,024

## 5420M Series with Switch Engine (EXOS)

- MAC Table: 64,000
- IPv4 ARP Table: 24,000
- IPv4 Route Table: 12,000
- IP Multicast Entries (S,G,V): 12,000
- IPv6 Route Table: 6,000
- IPv6 Neighbor Table 12,000
- ACL (Ingress/Egress): 18,000/1,024
- QoS Egress Queues/Port: 8
- VLANs: 4,094
- IP Interfaces (aka Routed VLANs): 1,533

### One Policy Scaling

- Policy Profiles: 63
- Unique Permit/deny rules per switch: 8,120

## 5420F Series with Fabric Engine (VOSS)

- MAC Table: 16,000 (32,000 non-Fabric)
- IPv4 ARP Table: 8,000
- IPv4 Route Table: 11,750
- IP Multicast Entries (S,G,V): 4,000
- IPv6 Route Table: 5,750
- IPv6 Neighbor Table 8,000
- ACL (Ingress/Egress): 1,024/336
- QoS Egress Queues/Port: 8
- VLANs: 4,059
- IP Interfaces (aka Routed VLANs): 248

### Fabric Connect Scaling

- Fabric Adjacencies per switch: 50
- Fabric nodes per area (BEB + BCB): 500
- BEB Nodes per VSN (I-SID): 500
- L2 VSNS: 512
- L3 VSNS: 64

## 5420M Series with Fabric Engine (VOSS)

- MAC Table: 32,000 (64,000 non-Fabric)
- IPv4 ARP Table: 24,000
- IPv4 Route Table: 11,750
- IP Multicast Entries (S,G,V): 4,000
- IPv6 Route Table: 5,750
- IPv6 Neighbor Table 16,000
- ACL (Ingress/Egress): 1,024/336
- QoS Egress Queues/Port: 8
- VLANs: 4,059
- IP Interfaces (aka Routed VLANs): 248

### Fabric Connect Scaling

- Fabric Adjacencies per switch: 50
- Fabric nodes per area (BEB + BCB): 500
- BEB Nodes per VSN (I-SID): 500
- L2 VSNS: 512
- L3 VSNS: 64

# Weights and Dimensions

Switch Model	Weight*	Physical Dimensions
5420 Systems		
5420F-24T-4XE	9.03 lb/4.10 kg	17.4 in W/1.7 in H/11.3 in D 441 mm x 44 mm x 287 mm
5420F-24P-4XE	10.23 lb/4.64 kg	
5420F-24S-4XE	9.08 lb/4.12 kg	
5420F-8W-16P-4XE	10.23 lb/4.64 kg	
5420F-48T-4XE	10.23 lb/4.64 kg	
5420F-48P-4XE	11.64 lb/5.28 kg	17.4 in W/1.7 in H/13.0 in D 441 mm x 44 mm x 330 mm
5420F-48P-4XL	11.64 lb/5.28 kg	
5420F-16W-32P-4XE	11.82 lb/5.36 kg	
5420F-16MW-32P-4XE	11.68 lb/5.30 kg	
5420M-24T-4YE	9.22 lb/4.18 kg	
5420M-24W-4YE	9.70 lb/4.40 kg	
5420M-48T-4YE	9.68 lb/4.39 kg	
5420M-48W-4YE	10.43 lb/4.73 kg	
5420M-16MW-32P-4YE	11.68 lb/5.30 kg	

\* Measured weight includes fan (XN-FAN-000) and PSU cover(s), but does not include optional power supply unit(s).

## Optional Power Supply Unit Specifications

	XN-ACPWR-150W	XN-ACPWR-600W	XN-ACPWR-920W	XN-ACPWR-1200W*	XN-ACPWR-2000W**
Voltage Input Range (Nominal)	100-127/200-240 VAC	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	47 to 63 Hz
Power Supply Input Socket	IEC/EN 60320 C14	IEC/EN 60320 C14	IEC/EN 60320 C14	IEC/EN 60320 C16	IEC/EN 60320 C16
Power Cord Input Plug	IEC/EN 60320 C13	IEC/EN 60320 C13	IEC/EN 60320 C13	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 50° Normal Operation	0° C to 45° C***

\* 200-240 VAC is required to achieve full 1200W output. If run at 100-120 VAC, output is limited to 860W

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

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

## 5420F Internal Fixed and Secondary Power Supply Options

Model	Internal Fixed Power Supply Unit (PSU)*	Secondary Power Supply Unit (PSU)**
5420F-24T-4XE	120W AC PSU	XN-ACPWR-150W
5420F-24P-4XE	660W AC PSU	XN-ACPWR-600W
5420F-24S-4XE	150W AC PSU	XN-ACPWR-150W
5420F-48T-4XE	120W AC PSU	XN-ACPWR-150W
5420F-48P-4XE	860W AC PSU	XN-ACPWR-920W
5420F-48P-4XL	860W AC PSU	XN-ACPWR-920W
5420F-8W-16P-4XE	660W AC PSU	XN-ACPWR-600W
5420F-16W-32P-4XE	1200W AC PSU	XN-ACPWR-1200W
5420F-16MW-32P-4XE	1200W AC PSU	XN-ACPWR-1200W

\* Internal Fixed PSU is non-orderable and comes pre-installed with each 5420F model.

\*\* Secondary PSU provides power redundancy in 5420F non-PoE models and enables maximum PoE Power Budget in 5420F PoE models (see table below). Model/PSU combinations other than those listed above are blocked physically or in software.

## 5420F PoE Power Budget

Model	PoE Budget with Single Internal Fixed PSU	PoE Budget with Recommended Secondary PSU
5420F-24P-4XE	380W	720W
5420F-48P-4XE	740W	1480W
5420F-48P-4XL	740W	1480W
5420F-8W-16P-4XE	480W	960W
5420F-16W-32P-4XE	872W*/960W**	1437W*/1874W**
5420F-16MW-32P-4XE	860W*/960W**	1425W*/1862W**

\* @ 100-120 VAC

\*\* @ 200-240 VAC

## 5420M Primary and Secondary Power Supply Options

Model	Primary Power Supply Unit (PSU)*	Secondary Power Supply Unit (PSU)*
5420M-24T-4YE	XN-ACPWR-150W	XN-ACPWR-150W
5420M-24W-4YE	XN-ACPWR-920W	XN-ACPWR-920W
5420M-48T-4YE	XN-ACPWR-150W	XN-ACPWR-150W
5420M-48W-4YE	XN-ACPWR-920W or XN-ACPWR-2000W	XN-ACPWR-920W or XN-ACPWR-2000W
5420M-16MW-32P-4YE	XN-ACPWR-920W or XN-ACPWR-2000W	XN-ACPWR-920W or XN-ACPWR-2000W

\* Primary PSU is required; Secondary PSU provides power redundancy and enables maximum PoE Budget in 5420M PoE models (see table below). Model/PSU combinations other than those listed above are blocked physically or in software.

## 5420M PoE Power Budget

Model	1 x 920W	2 x 920W	1 x 2000W @ 100-120VAC	1 x 2000W @ 200-240VAC	1 x 920W & 1 x 2000W @ 100-120VAC	1 x 920W & 1 x 2000W @ 200-240VAC	2 x 2000W @ 100-120VAC	2 x 2000W @ 200-240VAC
5420M-24W-4YE	720W	1440W	—	—	—	—	—	—
5420M-48W-4YE	804W	1558W	884W	1440W	1212W	2076W	1704W	2880W
5420M-16MW-32P-4YE	787W	1541W	867W	1440W	1195W	2059W	1687W	2400W

## 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)**
<b>5420F Switches</b>				
5420F-24T-4XE	24	81	62	211
5420F-24P-4XE	37	127	833	387
5420F-24S-4XE	35	119	114	388
5420F-48T-4XE	31	106	75	255
5420F-48P-4XE	48	164	1674	663
5420F-48P-4XL	49	168	1657	604
5420F-8W-16P-4XE	37	127	1092	452
5420F-16W-32P-4XE	46	156	2150	785
5420F-16MW-32P-4XE	50	172	2152	790
<b>5420M Switches</b>				
5420M-24T-4YE	28	95	57	194
5420M-24W-4YE	43	148	1601	551
5420M-48T-4YE	34	117	68	232
5420M-48W-4YE	72	245	3090	716
5420M-16MW-32P-4YE	69	234	2564	560

\* Includes maximum PoE load (W) through the switch

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

# Acoustic Noise

Switch Model	Bystander Sound Pressure - dB(A)*		Declared Sound Power - Bels*	
	1 PSU	2 PSUs	1 PSU	2 PSUs
5420F-24T-4XE	35.5	36.2	4.83	4.93
5420F-24P-4XE	39.6	39.9	5.16	5.24
5420F-24S-4XE	39.7	39.6	5.21	5.22
5420F-48T-4XE	35.3	34.9	4.78	4.77
5420F-48P-4XE	41.3	42.0	5.42	5.48
5420F-48P-4XL	44.0	42.6	5.67	5.57
5420F-8W-16P-4XE	42.3	43.2	5.52	5.63
5420F-16W-32P-4XE	44.3	54.1	5.72	6.62
5420F-16MW-32P-4XE	45.3	54.4	5.77	6.64
5420M-24T-4YE	33.5	33.0	4.59	4.65
5420M-24W-4YE	33.0	42.8	5.02	5.51
5420M-48T-4YE	33.4	33.0	4.56	4.59
5420M-48W-4YE**	52.7	59.8	6.42	6.97
5420M-16MW-32P-4YE**	51.7	50.5	6.30	6.25

\* Noise measurements are based on operational tests conducted at 25°C in compliance with ISO 7779

\*\* 5420M-48W-4YE and 5420M-16MW-32P-4YE results using 2000W PSUs (XN-ACPWR-2000W)

## 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/s<sup>2</sup> (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/s<sup>2</sup> (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/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 & Certificate per IEC 60950-1

CB Report & 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 & 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 10GBASE-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 802.3az Energy Efficient Ethernet

## Ordering Notes

Customers ordering a 5420F Series switch receive the hardware switch along with Base software license, integrated power supply, fan modules and rack-mount kit. 5420M Series switch customers receive the same components, except for power supplies which are not included with the unit. **In addition, each 5420 switch comes with a free 1-year ExtremeCloud IQ Pilot subscription.**

At least one Power Supply Unit (PSU) is required for 5420M operation. Additional power supplies (either for 5420F or 5420M switches), transceiver/optics, power cords, as well as Premier and/or MACsec licenses must be ordered separately.

## Base Software and Optional Premier License

The Base software included with each 5420 unit supports most available software features. Certain features, however, require a Premier License to operate:

**For Switch Engine (EXOS), 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 (VOSS), a Premier License is required for:**

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

\* Up to 2 BGP interfaces included in Base software with the ExtremeXOS 31.4 Release

# Ordering Information

Part Number	Product Name	Description
5420F-24T-4XE	5420F 24-port Switch	5420 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-24P-4XE	5420F 24-port 30W PoE Switch	5420 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex 802.3at 30W PoE ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-24S-4XE	5420F 24-port SFP Switch	5420 Universal Switch with 24 x 100M/1Gb SFP ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-48T-4XE	5420F 48-port Switch	5420 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-48P-4XE	5420F 48-port 30W PoE Switch	5420 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex 802.3at 30W PoE ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-48P-4XL	5420F 48-port 30W PoE Switch w/LRM	5420 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex 802.3at 30W PoE ports, includes 4 x 1/10Gb SFP+ LRM and uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-8W-16P-4XE	5420F 24-port Switch w/8 ports 90W and 16 ports 30W PoE	5420 Universal Switch with 8 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE ports and 16 x 10/100/1000BASE-T full/half duplex 802.3at 30W PoE ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-16W-32P-4XE	5420F 48-port Switch w/16 ports 90W and 32 ports 30W PoE	5420 Universal Switch with 16 x 10/100/1000BASE-T full/half duplex 802.3bt 90W PoE ports and 32 x 10/100/1000BASE-T full/half duplex 802.3at 30W PoE ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420F-16MW-32P-4XE	5420F 48-port Switch with 16 ports 90W multi-rate and 32 ports 30W PoE	5420 Universal Switch with 16 x 100Mb/1Gb/2.5Gb 802.3bt 90W PoE ports plus 32 x 10/100/1000BASE-T full/half duplex 30W PoE ports, includes 4 x 1/10Gb SFP+ uplink ports, 2 x Stacking/SFP-DD ports, 1 internal fixed PSU, one unpopulated PSU slot, fixed fan module, Base software license, includes 1-year XIQ Pilot subscription
5420M-24T-4YE	5420M 24-port Switch	5420 Universal Switch with 24 x 10/100/1000BASE-T full/half duplex ports, includes 4 x 1/10/25Gb SFP28 uplink ports, 2 x Stacking/SFP-DD ports, two unpopulated PSU slots, modular fan module, Base software license, includes 1-year XIQ Pilot subscription
5420M-24W-4YE	5420M 24-port 90W PoE Switch	5420 Universal Switch with 24 x 10/100/1000BASE-T 802.3bt 90W PoE full/half duplex ports, includes 4 x 1/10/25Gb SFP28 uplink ports, 2 x Stacking/SFP-DD ports, two unpopulated PSU slots, modular fan module, Base software license, includes 1-year XIQ Pilot subscription
5420M-48T-4YE	5420M 48-port Switch	5420 Universal Switch with 48 x 10/100/1000BASE-T full/half duplex ports, includes 4 x 1/10/25Gb SFP28 uplink ports, 2 x Stacking/SFP-DD ports, two unpopulated PSU slots, modular fan module, Base software license, includes 1-year XIQ Pilot subscription
5420M-48W-4YE	5420M 48-port 90W PoE Switch	5420 Universal Switch with 48 x 10/100/1000BASE-T 802.3bt 90W PoE full/half duplex ports, includes 4 x 1/10/25Gb SFP28 uplink ports, 2 x Stacking/SFP-DD ports, two unpopulated PSU slots, modular fan module, Base software license, includes 1-year XIQ Pilot subscription
5420M-16MW-32P-4YE	5420M 48-port Switch with 16 ports 90W multi-rate and 32 ports PoE	5420 Universal Switch with 16 x 100Mb/1Gb/2.5Gb 802.3bt 90W PoE ports plus 32 x 10/100/1000BASE-T full/half duplex 30W PoE ports, includes 4 x 1/10/25Gb SFP28 uplink ports, 2 x Stacking/SFP-DD ports, two unpopulated PSU slots, modular fan module, Base software license, includes 1-year XIQ Pilot subscription
<b>Accessories</b>		
XN-ACPWR-150W	150W AC PSU FB	150W AC PSU supported on 5420 Series
XN-ACPWR-600W	600W AC PSU FB	600W AC PSU supported on 5420 Series
XN-ACPWR-920W	920W AC PSU FB	920W AC PSU supported on 5420 Series
XN-ACPWR-1200W	1200W AC PSU FB	1200W AC PSU supported on 5420 Series
XN-ACPWR-2000W	2000W AC PSU FB	2000W AC PSU supported on 5420 Series
XN-FAN-000	Spare Fan Module	Spare Fan Module for 5420 Series
<b>Software Licenses</b>		
5000-PRMR-LIC-P	Premier License for 5000 Series	Perpetual Premier License for 5000 Series switches
5000-MACSEC-LIC-P	MACsec License for 5000 Series	Perpetual MACsec license for 5000 Series switches

## Warranty

All 5420 Series models are covered under Extreme's Universal LLW policy. For warranty details, please visit: <http://www.extremenetworks.com/support/policies>.

## Power Cords

In support of Extreme Networks Green initiatives, power cords are not included with the 5420, 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 5420 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.



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

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