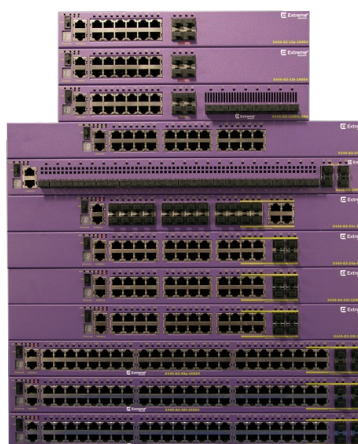


# X440-G2

## Highlights

- 12, 24, and 48-port models with Gigabit Ethernet connectivity
- 4 x 1Gb uplinks upgradeable to 10Gb
- 30W Power over Ethernet (PoE) support for powering edge devices
- Intuitive and centralized cloud-based network management with ExtremeCloud™ IQ and ExtremeCloud IQ – Site Engine
- Automated connectivity to Extreme Fabric Connect for simplified and secure network fabric services
- Choice of AC or DC power option
- Non-blocking, wire-speed design
- Stackable with up to eight switches with 40Gb per unit
- SFP and 100BASE-FX fiber model options



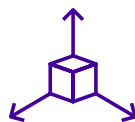
## Scalable Cost-Effective Campus Edge Switch

The X440-G2 Series is a scalable, cost-effective family of stackable edge switches designed for campus edge applications. Each X440-G2 model is powered by one of Extreme's flagship operating systems, ExtremeXOS, a resilient OS providing continuous uptime as well as manageability and operational efficiency to the campus edge. The X440-G2 Series switches provide high-performance routing and switching, flexible stacking, PoE support, and comprehensive security.

Available in 12, 24, and 48-port Gigabit Ethernet models with options for SFP and 100BASE-FX fiber models, the X440-G2 Series enable fine-grained control over traffic flows as well as controlled access to network services and applications by supporting intelligent Layer 2 switching and Layer 3 IPv4 or IPv6 routing, as well as a role-based access policy, bi-directional Access Control Lists, and granular ingress and egress bandwidth control.

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## Flexible 10Gb Upgrades

All X440-G2 models come equipped with four upgradeable 1Gb ports, located on either the faceplate or rear panel. Additional software licensing is required to upgrade to 10Gb Ethernet, allowing administrators to increase their switch's uplink speeds without replacing the entire switch.



## High-Performance Stacking

X440-G2 models support high-speed stacking when running ExtremeXOS SummitStack-V via its two built-in 10Gb ports. Up to eight switches can be stacked, providing 40Gb per unit and allows use of standard 10Gb Ethernet cabling and optics technologies for up to 40 km of connectivity.



## Cloud-Based Network Management

The X440-G2 Series can be managed by ExtremeCloud IQ and ExtremeCloud IQ – Site Engine for centralized cloud-based network management, giving you a consolidated view of users, devices, and applications for wired and wireless networks for efficient inventory and network topology management.

ExtremeCloud IQ enables zero touch provisioning, allowing you to quickly bring new X440-G2 switches online as well as enable the selection of the OS persona. Alternatively, X440-G2 on-box management can be done manually via a web-based GUI or generic command-line interface (CLI).

(Note: Please refer to the [ExtremeCloud IQ Release Notes: New Features and Enhancements](#) for latest list of ExtremeCloud IQ-supported X440-G2 models.)



## Role-Based Policy

X440-G2 models support role-based policies administered through the ExtremeControl policy manager. This policy framework allows your network administrators to define distinct roles or profiles to match your enterprise's operational groups. These defined roles can be granted access to your chosen network services or applications and enforce access privileges within both wired and wireless network access points.



## Power over Ethernet (PoE)

The X440-G2 Series includes 12, 24, and 48-port models supporting PoE that conform with IEEE 802.3at and IEEE 802.3af, enabling them to connect to standards-compliant PoE devices. X440-G2 48-port models are capable of supporting full 30W PoE power across all its 48 ports when deployed with an external redundant power supply (RPS).



## Audio Video Bridging

The X440-G2 Series supports IEEE 802.1 Audio Video Bridging (AVB). This allows X440-G2 models to enable reliable, real-time audio/video transmission over Ethernet, meeting the quality of service required for today's high-definition, time-sensitive multimedia streams.

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# Product Specifications

## Performance and Scaling

Switch Model	Maximum 10/100/1000 BASE-T Ports	Maximum Active 1Gb SFP Ports	Maximum 10Gb SFP+ Ports	Aggregated Switch Bandwidth*	Frame Forwarding Rate*
X440-G2-12t-10GE4	12	4	4 via license	104Gbps	77.4Mpps
X440-G2-24t-10GE4	24	8 (4 + 4 Combo)	4 via license	128Gbps	95.2Mpps
X440-G2-48t-10GE4	48	8 (2 + 6 Combo)	4 via license	176Gbps	130.9Mpps
X440-G2-12p-10GE4	12	4	4 via license	104Gbps	77.4Mpps
X440-G2-24p-10GE4	24	8 (4 + 4 Combo)	4 via license	128Gbps	95.2Mpps
X440-G2-48p-10GE4	48	8 (2 + 6 Combo)	4 via license	176Gbps	130.9Mpps
X440-G2-24t-10GE4-DC	24	8 (4 + 4 Combo)	4 via license	128Gbps	95.2Mpps
X440-G2-48t-10GE4-DC	48	8 (2 + 6 Combo)	4 via license <sup>1</sup>	176Gbps	130.9Mpps
X440-G2-24x-10GE4	4 Combo	28 (24 + 4 Combo)	4 via license	128Gbps	95.2Mpps
X440-G2-24fx-GE4	24 100 BASE-FX	4	0	12.8Gbps	9.5Mpps
X440-G2-12t8fx-GE4	12 10/100/1000 + 8 100 BASE-FX	4	0	33.6Gbps	25.0Mpps
X440-G2-24t-GE4	24 10/100/1000	4	0	56Gbps	41.7Mpps

<sup>1</sup> 2 10GBase-T combo ports

<sup>2</sup> With 10Gb licenses if available with license

- Less than 4 microsecond latency (64-byte)
- Layer 2/MAC Addresses: 16K
- IPv4 LPM Entries: 480
- IPv4 Hosts: 1000
- IPv6 LPM (64-bit) Entries: 240
- 4096 user-created VLAN/VMANs \*
- 9216 Byte Max Packet Size (Jumbo Frame)
- 128 load sharing trunks, up to 8 members per trunk
- 1,024 ingress bandwidth meters, 256 egress meters
- Ingress and egress bandwidth policing/rate limiting per flow/ACL
- 8 QoS egress queues/port
- Egress bandwidth rate shaping per egress queue and per port.
- Rate Limiting Granularity: 8 Kbps
- Half-duplex 10/100 supported on the following 10/100/1000 ports:
  - 12 port switches: Ports 1-12
  - 24 port switches: Ports 1-16
  - 48 port switches: Ports 1-16 and Ports 25-40
- LRM support on rear-panel SFP/SFP+ ports on all 48-port switches
- Policy Capabilities
  - Policy Profiles: 63
  - Rules per Profile: Up to 440
  - Authenticated Policy Users per Switch: Up to 1,536
  - Authenticated Policy Users per Port: Up to 1,536
  - Unique Permit/Deny Rules per switch: 440
    - MAC Rules: N/A
    - IPv4 Rules: 256
    - IPv6 Rules: N/A
    - L2 Rules: 184
- Rate Limiting: Per Class of Service

<sup>1</sup> 2 VLANs reserved for system use



Zapraszamy do kontaktu!  
Więcej informacji: [www.kreski.pl](http://www.kreski.pl)

## External Ports/Slot

Switch Hardware	Ports
X440-G2-12t-10GE4	<ul style="list-style-type: none"> <li>• 12 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated front-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• Coaxial Barrel Connector RPS port</li> </ul>
X440-G2-24t-10GE4	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-48t-10GE4	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 2 x 1GbE copper combo ports upgradable to 10GbE on rear-panel</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-12p-10GE4	<ul style="list-style-type: none"> <li>• 12 x 10/100/1000BASE-T PoE-Plus</li> <li>• 4 x 1GBASE-X SFP (unpopulated front-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-24p-10GE4	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T PoE-Plus</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-48p-10GE4	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T PoE-Plus</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 2 x 1GbE copper combo ports upgradable to 10GbE on rear-panel</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 9 RPS port</li> </ul>
X440-G2-24t-10GE4-DC	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-48t-10GE4-DC	<ul style="list-style-type: none"> <li>• 48 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated) combo ports</li> <li>• 2 x 1GbE copper combo ports upgradable to 10GbE on rear-panel</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-24x-10GE4	<ul style="list-style-type: none"> <li>• 24 x SFP (unpopulated)</li> <li>• 4 x 10/100/1000 combo ports</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports) upgradeable to 10Gb Ethernet via licensing</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-24fx-GE4	<ul style="list-style-type: none"> <li>• 24 x 100BASE-FX – LC connectors</li> <li>• 4 x 1GBASE-X SFP (unpopulated front-panel ports)</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>

Switch Hardware	Ports
X440-G2-12t8fx-GE4	<ul style="list-style-type: none"> <li>• 12 x 10/100/1000BASE-T with 8 x 100BASE-FX – LC connectors</li> <li>• 4 x 1GBASE-X SFP (unpopulated front-panel ports)</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>
X440-G2-24t-GE4	<ul style="list-style-type: none"> <li>• 24 x 10/100/1000BASE-T (RJ-45)</li> <li>• 4 x 1GBASE-X SFP (unpopulated rear-panel ports)</li> <li>• 1 x Serial (console port RJ-45) with RTS/CTS modem control</li> <li>• 1 x 10/100/1000BASE-T out-of-band management port</li> <li>• 2 x 7 RPS port</li> </ul>

## Physical

Switch Model	Weight	Height	Width	Depth
X440-G2-12t-10GE4	2.64 kg (5.82 lb.)	43.94 mm (1.73 in.)	305.05 mm (12.01 in.)	261.11 mm (10.28 in.)
X440-G2-24t-10GE4	3.66 kg (8.07 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)
X440-G2-48t-10GE4	5.09 kg (11.22 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	368.55 mm (14.51 in.)
X440-G2-12p-10GE4	3.02 kg (6.66 lb.)	43.94 mm (1.73 in.)	305.05 mm (12.01 in.)	261.11 mm (10.28 in.)
X440-G2-24p-10GE4	4.28 kg (9.44 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)
X440-G2-48p-10GE4	6.60 kg (14.55 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	368.55 mm (14.51 in.)
X440-G2-24t-10GE4-DC	3.66 kg (8.07 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)
X440-G2-48t-10GE4-DC	5.08 kg (11.20 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	368.55 mm (14.51 in.)
X440-G2-24x-10GE4	3.73 kg (8.22 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)
X440-G2-24fx-GE4	3.93 kg (8.66 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)
X440-G2-12t8fx-GE4	2.95 kg (6.50 lb.)	43.94 mm (1.73 in.)	305.05 mm (12.01 in.)	261.11 mm (10.28 in.)
X440-G2-24t-GE4	3.62 kg (7.98 lb.)	43.94 mm (1.73 in.)	440.94 mm (17.36 in.)	254.25 mm (10.01 in.)

## CPU/Memory

- 64-bit MIPS Processor, 1 GHz clock, single core
- 1GB ECC DDR3 DRAM
- 4GB eMMC Flash
- 1.5MB packet buffer on 12 - 24 port switches, 3.0MB packet buffer on 48-port switches

## LED Indicators

- Per port status LED including power status
- System Status LEDs: management, fan and power
- 7 segment display of stack number – operational on switches that support stacking

## Stacking

- SummitStack-V with support for up to eight switches per stack
- Mixed stacking with other ExtremeXOS Series switches, so long as all are running the same ExtremeXOS version
- Requires two of the four available X440-G2 uplink ports

**Note:** SummitStack-V stacking is enabled on two of the four X440-G2 uplink ports by default (no license required). All stacking ports operate at 10Gb, but do not use standard Ethernet protocols. X440-G2 uplink ports, when not used for stacking, run the standard Ethernet protocol. Non- stacking uplink ports are limited by default to 1GbE, unless upgraded via software license. 10GbE licenses are available, in both two- and four-port versions, as well as a license to upgrade a dual 10GbE uplink switch to a four 10GbE uplink switch, that enable X440-G2 uplink ports to run the 10Gb Ethernet protocol.

Mapping of the two default X440-G2 stacking ports to their respective physical chassis interface #'s — by chassis type — are listed below.

X440-G2 Switches*	Stack Port #	Physical Uplink Port # On Chassis
48 Port Models	1	49 (Rear Panel, Dedicated SFP+ Port)
	2	50 (Rear Panel, Dedicated SFP+ Port)
24 Port Models	1	27 (Rear Panel)
	2	28 (Rear Panel)
12 Port Models	1	15 (Front Panel)
	2	16 (Front Panel)

\*The three extended temperature X440-G2 models (16539, 16540 and 16541) do NOT stack.

## Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum <sup>1</sup> Heat Dissipation (BTU/HR)	Minimum <sup>1</sup> Power Consumption (W)	Maximum <sup>1</sup> Heat Dissipation (BTU/HR)	Maximum <sup>2</sup> Power Consumption (W)
X440-G2-12t-10GE4	52	15	109	32
X440-G2-24t-10GE4	87	26	136	40
X440-G2-48t-10GE4	141	41	208	61
X440-G2-12p-10GE4	72	21	216 (@200W PoE)	264
X440-G2-24p-10GE4	121	35	410 (@380W PoE)	500
X440-G2-48p-10GE4	196	53	755 (@740W PoE)	961
X440-G2-24t-10GE4-DC	77	23	134	39
X440-G2-48t-10GE4-DC	137	40	207	61
X440-G2-24x-10GE4	87	26	172	51
X440-G2-24fx-GE4	166	49	223	65
X440-G2-12t8fx-GE4	108	32	159	47
X440-G2-24t-GE4	76	22	130	38

<sup>1</sup> Idle no ports linked

<sup>2</sup> Fans high all ports 100% traffic

The Non-PoE Extended Temperature Switches (X440-G2-24FX-GE4, X440-G2-12T8FX-GE4, X440-G2-24T-GE4)

	Fixed Internal Power Supply
Voltage Input Range	100 - 240 VAC <sup>†</sup>
Line Frequency Range	50Hz to 60Hz (+/- 5%)
Power Supply Input Socket	IEC 320 C14
Power Cord Input Plug	IEC 320 C13
Operating Temperature	0°C to 60°C (32°F to 140°F) Normal Operation

The 12, 24, and 48 Port 10/100/1000 Models (Both PoE and Non-PoE)

	Fixed Internal Power Supply
Voltage Input Range	100 - 240 VAC <sup>†</sup>
Line Frequency Range	50Hz to 60Hz (+/- 5%)
Power Supply Input Socket	IEC 320 C14
Power Cord Input Plug	IEC 320 C13
Operating Temperature	0°C to 50°C (32°F to 122°F) Normal Operation

<sup>†</sup> The power supplies will continue to operate +/- 10% of the rated input to accommodate temporary loss of input voltage regulation.

## Power

Switch Model	Power Supply Input Socket	Power Supply Input Socket	Power Supply Cord Gauge	Redundant Power Supply Input Socket
X440-G2-12t-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	Coaxial Barrel Connect-or
X440-G2-24t-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-48t-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-12p-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-24p-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-48p-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 16 AWG/1.25 mm <sup>2</sup> (100-125VAC), Min. 18 AWG/.75 mm <sup>2</sup> (200-240VAC)	2x9 Terminal Block
X440-G2-24t-10GE4-DC	#6 Terminal Block	23	Min. 14 AWG/2.0 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-48t-10GE4-DC	#6 Terminal Block	40	Min. 14 AWG/2.0 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-24x-10GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-24fx-GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-12t8fx-GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block
X440-G2-24t-GE4	IEC 320 C14	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>	2x7 Terminal Block

## PoE Power Budget

Switch Model	Power Supply Input Socket	Redundant Power Supply Input Socket
X440-G2-12p-10GE4	200W	200W – Redundant Power Only
X440-G2-24p-10GE4	380W	380W – Redundant Power Only
X440-G2-48p-10GE4	740W	1440W – Additive Power 740W – Redundant Power

## 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) – all models
- Temp: 0°C to 60°C (32°F to 140°F) – extended temperature range models only (16539, 16540 and 16541)
- Humidity: 10% to 95% relative humidity, non-condensing
- Altitude: 0 to 3,000 meters (9,842 feet) – All Switch Models
- Shock (half sine): 30 m/s<sup>2</sup> (3 G), 11 ms, 6 shocks
- Random vibration: 3 to 500 Hz at 1.5 G rms

### Packaging and Storing 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 2nd edition A2:2014, Listed Device (U.S.)
- 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 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 2nd Ed.
- EN 60825-1:2007 / IEC 60825-1:2007 Class 1
- (Lasers Safety)
- 2014 / 35/ EU Low Voltage Directive

### International ITE

- CB Report & Certificate per IEC 60950-1 : 2005+A1:2009+A2:2013 + National Differences
- 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 55032:2015 Class A
- EN 55024:2010
- EN 61000-3-2: 2014 (Harmonics)
- EN 61000-3-3: 2013 (Flicker)
- EN 300 386 v1.6.1 (EMC Telecommunications)
- 2014/30/EU EMC Directive

#### International EMC Certifications

- CISPR 32:2015, Class A (International Emissions)
- AS/NZS CISPR32:2015
- CISPR 24:2010 Class A (International Immunity)
- IEC 61000-4-2:2008/EN 61000-4-2:2009 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria B
- IEC 61000-4-3:2010/EN 61000-4-3:2006 +A1:2008 +A2:2010 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4:2012. / EN 61000-4-4:2012 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5:2014 /EN 61000-4-5:2014 Surge, 1 kV L-L, 2 kV L-G, Level 3, Criteria B
- IEC 61000-4-6:2013/EN 61000-4-6:2014 Conducted Immunity, 0.15-80 MHz, 10Vrms, 80%AM (1kHz) Criteria A
- IEC/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C

#### Country Specific

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)
- CCC Mark
- KCC Mark, EMC Approval (Korea)

#### Telecom Standards

- CE 2.0 Compliant

#### IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z 1000BASE-X
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3at PoE-Plus



## Fan and Acoustic Noise

Switch Model	Acoustic Information	
Bystander Sound Pressure*	Declared Sound Power (LWAD)*	
X440-G2-12t-10GE4	0 dB(A) Fan Off	0 bels Fan Off
X440-G2-24t-10GE4	28.1 dB(A)	4.3 bels
X440-G2-48t-10GE4	37.9 dB(A)	5.4 bels
X440-G2-12p-10GE4	0 dB(A) Fan Off	0 bels Fan Off
X440-G2-24p-10GE4	39.4 dB(A)	5.5 bels
X440-G2-48p-10GE4	48.7 dB(A)	6.4 bels
X440-G2-24t-10GE4-DC	28.1 dB(A)	4.3 bels
X440-G2-48t-10GE4-DC	37.9 dB(A)	5.4 bels
X440-G2-24x-10GE4	26.8 dB(A)	4.0 bels
X440-G2-24fx-GE4	24.7 dB(A)	3.9 bels
X440-G2-12t8fx-GE4	23.3 dB(A)	4.0 bels
X440-G2-24t-GE4	28.1 dB(A)	4.3 bels

\*At 25°C and 50% PoE Load where applicable



## External Redundant Power Supplies For Non-PoE Switches

All X440-G2 Series non-PoE switches ship with one fixed internal power supply. If redundancy is required, an external RPS can be attached to the switch.

Model Number	Description
RPS-90	External redundant power supply Unit 90W with cable for X440-G2-12t-10GE4, power cord ordered separately, order 10947 C5 to C14 Converter to utilize a C13 power cord.
STK-RPS-150PS	150W non-PoE redundant power supply for A, B, C, X450-G2 and X440-G2 switches, power cord ordered separately.
STK-RPS-150CH2	2-Slot modular shelf for rack-mounting 150W redundant power supplies (STK-RPS-150PS).
STK-RPS-150CH8	8-Slot modular shelf for rack-mounting 150W redundant power supplies (STK-RPS-150PS).
RPS-150XT	External redundant power supply unit 150W with cable - Extended Temperature Range from 0°C to 60°C, power cord ordered separately.
STK-RPS-1005CH3	3-Slot modular shelf for rack-mounting 150W extended temperature redundant power supplies (RPS-150XT) or 1005W PoE redundant power supplies (STK-RPS-1005PS).
EPS-C2	External Power System Chassis 2. Accepts up to three 750W AC PoE PSU 48 V power supplies. Accepts up to 5 EPSCBL-2x7 or up to 1 EPS-CBL-2x9 cables. Ships with one EPS-CBL-2x7 cable.
EPS-CBL-2x7	External Power System Cable (1M) that connects EPS-C2 to any X440 or X450-G2 non-PoE switch for providing redundant DC power.
750W AC PSU	AC Power Supply module for EPS-C2 Chassis Redundant Power Supply, power cord ordered separately.

## External Redundant Power Supplies For PoE X440-G2 Switches

All X440-G2 Series PoE switches ship with fixed internal power supplies.

RPS Use Table	RPS-90	STK-RPS-150PS	RPS-150XT	EPS-C2	RPS-500P	STK-RPS-1005PS
12t	X					
24t, 24x, 48t, 24fx, 12t8fx		X	X	X	X	
12p and 24p				X	X	
48p						X



RPS Model	Redundant Power Supply Output
RPS-90	Coaxial Barrel Connector
STK-RPS-150PS	1 terminal block of 2x7 pins provides system power and up to 150W of power
RPS-150XT	1 terminal block of 2x7 pins provides system power and up to 150W of power
EPS-C2	1 terminal block of 2x9 pins used for other Summit switches 5 terminal blocks of 2x7 pins used for Summit X440-G2's
RPS-500p	1 terminal block of 2x7 pins provides system power and up to 380W of IEEE802.3at power
STK-RPS-1005PS	1 terminal block of 2x9 pins provides system power and up to 740W of IEEE802.3at power

RPS Model	Allowable PSU	Power Cord Input Plug/Socket	Power Cord Gauge
RPS-90	Not Applicable	IEC 320 C5/C14	Min. 18 AWG/0.75 mm <sup>2</sup>
STK-RPS-150PS	Not Applicable	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>
RPS-150XT	Not Applicable	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>
EPS-C2	Summit 750W PoE AC PSU	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>
RPS-500p	Not Applicable	IEC 320 C13/C14	Min. 18 AWG/0.75 mm <sup>2</sup>
STK-RPS-1005PS	Not Applicable	IEC 320 C13/C16	Min. 16 AWG/1.25 mm <sup>2</sup> (100-125 VAC), Min. 18 AWG/.75 mm <sup>2</sup> (200-240 VAC)

RPS Model	Weight	Dimensions
RPS-90	0.33 kg (0.73 lb.)	Height: 26.92 mm (1.06 in.) Width: 132.08 mm (5.20 in.) Depth: 57.15 mm (2.25 in.)
STK-RPS-150PS	1.75 kg (3.85 lb.)	Height: 51.82 mm (2.04 in.) Width: 195.58 mm (7.70 in.) Depth: 256.54 mm (10.10 in.)
RPS-150XT	1.46 kg (3.22 lb.)	Height: 44.96 mm (1.77 in.) Width: 154.18 mm (6.07 in.) Depth: 330.20 mm (13.00 in.)
EPS-C2	1.03 kg (2.27 lb.)	Height: 43.94 mm (1.73 in.) Width: 441.96 mm (17.40 in.) Depth: 383.54 mm (15.10 in.)
RPS-500p	3.66 kg (8.06 lb.)	Height: 43.94 mm (1.73 in.) Width: 441.96 mm (17.40 in.) Depth: 200.66 mm (7.90 in.)
STK-RPS-1005PS	2.10 kg (4.63 lb.)	Height: 44.96 mm (1.77 in.) Width: 154.18 mm (6.07 in.) Depth: 340.11 mm (13.39 in.)

## Ordering Notes

All X440-G2 switches ship with fixed fans and power supplies:

- All the X440-G2 switches support optional external redundant power supplies (RPS).
- The following three switch models that support 0°C to 60°C are NOT upgradeable to 10GbE:
  - X440-G2-24fx-GE4
  - X440-G2-12t8fx-GE4
  - X440-G2-24t-GE4



## Ordering Information

Part Number	Product Name	Product Description
16530	X440-G2-12t-10GE4	X440-G2 12 10/100/1000BASE-T, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16531	X440-G2-12p-10GE4	X440-G2 12 10/100/1000BASE-T POE, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16531T	X440-G2-12p-10GE4-TAA	X440-G2 12 10/100/1000BASE-T POE, 4 1GbE unpopulated SFP upgradeable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, TAA model
16532	X440-G2-24t-10GE4	X440-G2 24 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16532T	X440-G2-24t-10GE4-TAA	X440-G2 24 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradeable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, TAA model
16533	X440-G2-24p-10GE4	X440-G2 24 10/100/1000BASE-T POE, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16533T	X440-G2-24p-10GE4-TAA	X440-G2 24 10/100/1000BASE-T POE, 4 SFP combo, 4 1GbE unpopulated SFP upgradeable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, TAA model
16534	X440-G2-48t-10GE4	X440-G2 48 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+ (2 combo/2 non-combo), 2 1GbE copper combo upgradable to 10GbE, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16535	X440-G2-48p-10GE4	X440-G2 48 10/100/1000BASE-T POE, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+ (2 combo/2 non-combo), 2 1GbE copper combo upgradable to 10GbE, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16535A	X440-G2-48p-10GE4	X440-G2 48 10/100/1000BASE-T POE, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+ (2 combo/2 non-combo), 2 1GbE copper combo upgradable to 10GbE, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license. (Note: alternative supply-chain SKU for Part # 16535)
16535T	X440-G2-48p-10GE4-TAA	X440-G2 48 10/100/1000BASE-T POE, 4 SFP combo, 4 1GbE unpopulated SFP upgradeable to 10GbE SFP+ (2 combo/2 non-combo), 2 1GbE copper combo upgradable to 10GbE, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS, TAA model
16536	X440-G2-24t-10GE4-DC	X440-G2 24 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed DC PSU, 1 RPS port, ExtremeXOS Edge license
16537	X440-G2-48t-10GE4-DC	X440-G2 48 10/100/1000BASE-T, 4 SFP combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+ (2 combo/2 non-combo), 2 1GbE copper combo upgradable to 10GbE, 1 Fixed DC PSU, 1 RPS port, ExtremeXOS Edge license
16538	X440-G2-24x-10GE4	X440-G2 24 unpopulated 1000BASE-X SFP (4 combo), 4 10/100/1000 combo, 4 1GbE unpopulated SFP upgradable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license
16538T	X440-G2-24x-10GE4-TAA	X440-G2 24 unpopulated 1000BASE-X SFP (4 combo), 4 10/100/1000 combo, 4 1GbE unpopulated SFP, upgradeable to 10GbE SFP+, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, TAA model
16539	X440-G2-24fx-GE4	X440-G2 24 fixed 100BASE-FX LC connectors, 4 1GBASE-X unpopulated SFP, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, 0°C to 60°C operation
16540	X440-G2-12t8fx-GE4	X440-G2 12 10/100/1000BASE-T plus 8 fixed 100BASE-FX LC connectors, 4 1GBASE-X unpopulated SFP, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, 0°C to 60°C operation
16541	X440-G2-24t-GE4	X440-G2 24 fixed 10/100/1000BASE-TX, 4 1GBASE-X unpopulated SFP, 1 Fixed AC PSU, 1 RPS port, ExtremeXOS Edge license, 0°C to 60°C operation
Firmware Licenses		
16521	X440 Adv. Edge License	ExtremeXOS Advanced Edge License for X440/X440-G2 Series switches
16522	X440 OpenFlow Feature Pack	ExtremeXOS SDN - OpenFlow Feature Pack for X440/X440-G2 Series switches
16523	X440 Multimedia(AVB) Feature Pack	ExtremeXOS Multimedia Service (Audio Video Bridging) Feature Pack for X440/X440-G2 Series switches
16778	X440-G2 MACsec Feature Pack	MACsec Feature Pack for X440-G2 Series switches. Enables MACsec when used with LRM/MACsec Adapter (10965)
16542	Dual 10GbE Upgrade License	License that converts the two non-stack 1GbE SFP ports to be 10GbE SFP+
16543	Quad 10GbE Upgrade License	License that converts four 1GbE SFP ports to be 10GbE SFP+
16546	Quad 10GbE Lic from Dual 10GbE Lic	Software license that upgrades an already licensed X440-G2 Dual 10GbE switch to a Quad 10GbE switch

Part Number	Product Name	Product Description
Accessories		
10948	RPS-90	External Redundant Power Supply Unit 90W with cable, power cord ordered separately
10947	C5 to C14 Converter	Power dongle for converting an IEC C5 plug to IEC C14 plug – enables the use of to utilize a C13 power cord
STK-RPS-150PS	150W Non-PoE RPS	150W non-PoE redundant power supply for A, B, C and X450-G2 switches
STK-RPS-150CH2	2-Slot Modular Shelf	2-Slot Modular Shelf for rack mounting up to two 150W (STK-RPS-150PS) external redundant power supplies
STK-RPS-150CH8	8-Slot Modular Shelf	8-Slot Modular Shelf for rack mounting up to eight 150W (STK-RPS-150PS) external redundant power supplies
10932	RPS-150 XT	External Redundant Power Supply Unit 150W with cable - Extended Temperature Range from 0°C to 60°C, power cord ordered separately
10923	RPS-500p	External PoE Redundant Power Supply Unit 500W with cable, power cord ordered separately
STK-RPS-1005PS	1005 W RPS	1005W 802.3at PoE external redundant power supply for C5 PoE and X440-48p switches
STK-RPS-1005CH3	3-Slot Modular Shelf	3-Slot Modular Shelf for rack mounting up to three of any combination of extended temperature 150W (10932 - RPS-150 XT) or STK-RPS-1005PS external redundant power supplies
10936	EPS-C2	External Power System Chassis 2. Accepts up to three 750W AC PoE PSU 48 V power supplies. Accepts up to 5 EPS-CBL-2x7 or up to 1 EPS-CBL-2x9 cables
10939	EPS-CBL-2x7	External Power System Cable (1M with 2x7 pin) that connects EPS to any X440 or X450-G2 for providing redundant power
10931	750W AC PSU	AC Power Supply module for EPS-C2 Chassis Redundant Power Supply
10965	LRM/MACsec Adapter	LRM/MACsec Adapter, includes two host cables for host switch connection, and USB cable for optional power connection. Requires MACsec license on host switch.
10966	5-Unit Rack Mount Kit	Optional rack mount bracket for LRM/MACsec Adapter. Holds five units in 1RU
XN-2P-RMKIT-004	Spare Rack Mount Kit	Spare Rack Mount Kit for X440-G2 24 and 48-port models
ExtremeCloud IQ Pilot Licenses		
XIQ-PIL-S-C-EW	XIQ Pilot SAAS Subscription and EW support (1 device)	ExtremeCloud IQ Pilot SaaS Subscription and EW SaaS support for one device
XIQ-PIL-S-C-PWP	XIQ Pilot SAAS Subscription and PWP support (1 device)	ExtremeCloud IQ Pilot SaaS Subscription and PWP SaaS support for one device

## Warranty

All X440-G2 Series models are covered under Extreme's Universal LLW policy. For warranty details, please visit our [Policies and Warranties](#) page.

## Power Cords

Power cords are not included with X440-G2 models in support of our green initiatives but can be ordered separately.

## Optics/Transceivers

For a list of the optics and transceivers supported on the X440-G2 Series hardware, refer to our [Extreme Optics Compatibility Tool](#).

## 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 part replacement, and on-site support, we augment your staff with expert resources to help you mitigate critical network issues fast. Visit our [Extreme Maintenance Services](#) page for more information.



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

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