Highlights

Performance

- 48-port or 24-port Gigabit Ethernet models
- 4 ports of SFP+ 10GbE/1GbE or 4 ports of SFP 1GbE on front faceplate
- All configurations Non-blocking full duplex
- Copper and PoE-Plus models
- Built-in 21Gbps stacking ports on rear panel for all models (SummitStack-V84)
- Optional SummitStack-V 40 Gbps stacking across two 10Gb front-panel ports

Features

- Secure Network Access through Rolebased policy or Identity Management
- Front-to-Back airflow
- Modular PoE power supplies
- 850W of PoE-Plus budget with 1 PSU
- 1440W of PoE-Plus Budget with 2 PSUs
- Y.1731 OAM Measurements in hardware for accuracy
- Energy Efficient Ethernet – IEEE 802.3az
- Hot-swappable fan tray and PoE power supplies

ExtremeSwitching™ X450-G2

Scalable advanced aggregation switch with ExtremeXOS® modular operating system.

The ExtremeSwitching X450-G2 series is based on Extreme Networks revolutionary ExtremeXOS, a highly resilient OS that provides continuous uptime, manageability and operational efficiency. Each switch offers the same high-performance, nonblocking hardware technology, in the Extreme Networks tradition of simplifying network deployments through the use of common hardware and software throughout the network.

The X450-G2 switches are effective campus edge switches with IEEE 802.3at PoEplus. The X450-G2 series is also an option for DSLAM or CMTS aggregation, or for active Ethernet access.

Comprehensive Security Management

- Role-based policy and host integrity enforcement, and identity management
- Universal Port Dynamic Security Profiles to provide fine granular security policies in the network
- Threat detection and response instrumentation to react to network intrusion with CLEAR-Flow Security Rules Engine
- Denial of Service (DoS) protection and IP security against man-in-the-middle and DoS attacks to harden the network infrastructure
- Role-based Policy enables support for policy profiles to secure and provision network resources based upon the role the user or device plays within the network.

Flexible Port Configuration

All models come equipped with either 4 ports of SFP+ 10 GbE or 4 ports of SFP 1GbE resident on the faceplate of each model.

High-Performance Stacking

Up to eight X450-G2 switches can be stacked using two different methods of stacking: SummitStack-V, and SummitStack-V84. Each X450-G2 unit comes equipped with 2 ports of 21 Gigabit stacking ports via a QSFP interface. Standard passive 40Gb copper cables can be used for stacking X450-G2s together.

SUMMITSTACK-V — Flexible Stacking Over 10 Gigabit Ethernet

ExtremeXOS supports the SummitStack-V capability using 2 of the native 10 GbE ports on the faceplate as stacking ports, enabling the use of standard cabling and optics technologies used for 10 GbE SFP+. SummitStack-V provides long-distance stacking connectivity of up to 40 km while reducing the cable complexity of implementing a stacking solution. SummitStack-V is compatible with X440-G2, X450-G2 and X460-G2 switches with 10Gb uplinks, as well as X480, X670, X670V, X670-G2 and X770 switches. SummitStack-V enabled 10 GbE ports must be physically direct-connected with all switches running the same version of ExtremeXOS.

SUMMITSTACK-V84 — High-Speed Stacking Over Dedicated Stacking Ports

The X450-G2 also supports high-speed 84 Gbps stacking, which is ideal for demanding applications where a high volume of traffic traverses through the stacking links, yet bandwidth is not compromised through stacking. SummitStack-V84 is supported over passive copper QSFP cables (up to 7m). SummitStack-V84 is only supported on X450-G2 switches running the same version of ExtremeXOS.

NOTE: SummitStack-V84 is NOT interoperable with SummitStack-V80

Intelligent Switching

The X450-G2 Series supports sophisticated and intelligent Layer 2 switching, as well as Layer 3 IPv4/IPv6 routing including policy-based switching/routing, Provider Bridges, bidirectional ingress and egress Access Control Lists, and bandwidth control by 8 Kbps granularity both for ingress and egress.

IEEE 802.3AT PoE-Plus

IEEE 802.3af Power over Ethernet has been widely used in the campus enterprise edge network for Ethernet-powered devices such as wireless access points, Voice over IP phones, and security cameras. Ethernet port extenders such as Extreme Networks ReachNXT™ 100-8t can also utilize PoE, making installation and management easier and reducing maintenance costs. The newer IEEE 802.3at PoEplus standard expands upon Power over Ethernet by increasing the power limit up to 30 watts, and by standardizing power negotiation by using LLDP. The X450-G2 supports IEEE 802.3at PoE-plus and supports standards-compliant PoE devices today and into the future.

Role-Based Policy

Utilizing ExtremeManagement Policy Management, the role-based policy framework empowers a network administrator to define distinct roles or profiles that represent industry specific operational groups that may exist in an education or a business environment (e.g., administrator, teacher, student, guest). Each defined role is granted individualized access to specific network services and applications and these access privileges remain associated with users as they move across both wired and wireless network access points.

Users can be authenticated via IEEE 802.1X, MAC address, or web authentication, and then assigned a pre-defined operational role. Network operations can be seamlessly tailored to meet business-oriented requirements by providing each role with individualized access to network services and applications, thus aligning network resource utilization with business goals and priorities.

Audio Video Bridging

The X450-G2 series supports IEEE 802.1 Audio Video Bridging (AVB) to enable 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.

Ordering Notes

The X450-G2 base switches do not ship with fan trays—these must be ordered separately. The X450-G2 PoE switches support modular power supplies and these must be ordered separately. The non-PoE X450-G2 switches have a fixed internal power supply so a power supply does not need to be ordered separately.

Specifications

Performance and Scale

Switch Model	Maximum Active Gbe Ports	Maximum Active 10Gbe Ports	21Gbps Stacking Ports	Aggregated Switch Bandwidth*	Frame Forwarding Rate*
X450-G2-24t-10GE4	24	4	2	212 Gbps	157.7 Mpps
X450-G2-48t-10GE4	48	4	2	260 Gbps	193.4 Mpps
X450-G2-24p-10GE4	24	4	2	212 Gbps	157.7 Mpps
X450-G2-48p-10GE4	48	4	2	260 Gbps	193.4 Mpps
X450-G2-24t-GE4	28	0	2	140 Gbps	104.2 Mpps
X450-G2-48t-GE4	52	0	2	188 Gbps	139.9 Mpps
X450-G2-24p-GE4	28	0	2	140 Gbps	104.2 Mpps
X450-G2-48p-GE4	52	0	2	188 Gbps	139.9 Mpps

*Includes stacking ports.

- Less than 4 microsecond latency (64-byte)
- Layer 2/MAC Addresses: 68K
- IPv4 LPM Entries: 16K
- IPv6 LPM (64-bit) Entries: 8K
- IPv6 LPM (128-bit) Entries: 256
- 4094 VLAN/VMANs
- 9216 Byte Max Packet Size (Jumbo Frame)
- 128 load sharing trunks, up to 32 members per trunk
- 1,024 ingress bandwidth 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
- Rate Limiting: Per Class of Service
- All ports Full Duplex - half duplex operation is not supported

Policy Capabilities

- Policy Profiles: 63
- Rules per Profile: Up to 1464
- Authenticated Policy Users per Switch: Up to 1024
- Authenticated Policy Users per Port: Up to 1024
- Unique Permit/Deny Rules per switch: 1464
  - MAC Rules: 512
  - IPv4 Rules: 512
  - IPv6 Rules: 256
  - L2 Rules: 184

NOTE: Policy and rule limits here reflect support available in EXOS 22.1.

Specifications (cont.)

External Ports

Switch Hardware	Ports
X450-G2-24t-10GE4	• 24 x 10/100/1000BASE-T (RJ-45) • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-48t-10GE4	• 48 x 10/100/1000BASE-T (RJ-45) • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-24p-10GE4	• 24 x 10/100/1000BASE-T PoE-Plus • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-48p-10GE4	• 48 x 10/100/1000BASE-T PoE-Plus • 4 x 10GBASE-X SFP+ (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-24t-GE4	• 24 x 10/100/1000BASE-T (RJ-45) • 4 x 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-48t-GE4	• 48 x 10/100/1000BASE-T (RJ-45) • 4 x 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbp stacking ports on the rear panel
X450-G2-24p-GE4	• 24 x 10/100/1000BASE-T PoE-Plus • 4 x 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel
X450-G2-48p-GE4	• 48 x 10/100/1000BASE-T PoE-Plus • 4 x 1GBASE-X SFP (unpopulated ports) • 1 x Serial (console port RJ-45) with RTS/CTS modem control • 1 x 10/100/1000BASE-T out-of-band management port • 1 x USB 2.0 port for external USB flash • 2 dedicated QSFP-form factor 21Gbps stacking ports on the rear panel

Specifications (cont.)

Physical

Switch Model	Weight	Physical Dimension
-G2-24t-10GE4 X450	13.71 lb (6.22 kg)	Height: 1 RU / 1.73 inches (4.4 cm) Width: 17.4 inches (44.2 cm) Depth: 19.2 inches (48.8 cm)
X450-G2-48t-10GE4	14.22 lb (6.45 kg)	
X450-G2-24p-10GE4	13.71 lb (6.22 kg)	
X450-G2-48p-10GE4	14.22 lb (6.45 kg)	
X450-G2-24t-GE4	13.93 lb (6.32 kg)	
X450-G2-48t-GE4	14.51 lb (6.58 kg)	
X450-G2-24p-GE4	13.93 lb (6.32 kg)	
X450-G2-48p-GE4	14.51 lb (6.58 kg)	
Front-to-Back fan module	1.0 lb (0.46 kg)	Height: 1.59 inches (4.04 cm) Width: 4.8 inches (12.2 cm) Depth: 6.2 inches (15.75 cm)

NOTE: Switch weights include installed fan module. PoE switches do not include PSUs.
* Please refer to the Summit Family Switches Hardware Installation Guide for packaged weight and dimensions.

CPU/Memory

- 64-bit MIPS Processor, 1 GHz clock, dual core
- 1GB ECC DDR3 DRAM
- 4GB eMMC Flash
- 4MB packet buffer

LED Indicators

- Per port status LED including power status
- System Status LEDs: management, fan and power
- 7 segment display of stack number

Power

Switch Model	Minimum Head Dissipation (BTU/HR)	Minimum Power Consumption (Watts)	Maximum Head Dissipation (BTU/HR)	Maximum Power Consumption* (Watts)
X450-G2-24t-10GE4	149.4	43.8	244.6	71.1
X450-G2-48t-10GE4	178.1	52.2	290.0	85.0
X450-G2-24p-10GE4	214.3	62.8	604.7	127.2
X450-G2-48p-10GE4	238.8	70.0	778	228
X450-G2-24t-GE4	149.4	43.8	244.6	71.1
X450-G2-48t-GE4	178.1	52.2	290.0	85.0
X450-G2-24p-GE4	214.3	62.8	604.7	127.2
X450-G2-48p-GE4	238.8	70.0	778	228

* For PoE switches, the value includes maximum PoE load through the switch

The Non-PoE Switches

	Fixed Internal Power Supply
Voltage Input Range	100-240 VAC †
Line Frequency Range	47 to 64 Hz
Power Supply Input Socket	IEC 320 C14
Power Cord Input Plug	IEC 320 C13
Operating Temperature	0° C to 50° C Normal Operation

PoE Power Supply Units (Only Front-to-Back Supplis Are Supported)

	715W AC PSU (10951)	1100W AC PSU (10941)
Dimensions	Height 40 mm (1.56 inches) Width 82.5 mm (3.25 inches) Depth 287 mm (11.3 inches)	Height 40 mm (1.56 inches) Width 82.5 mm (3.25 inches) Depth 287 mm (11.3 inches)
Weight	1.16kg (2.55 lbs)	1.16kg (2.55 lbs)
Voltage Input Range	100-127/200-240 VAC †	100-127/200-240 VAC †
Line Frequency Range	47 to 63 Hz	47 to 63 Hz
Power Supply Input Socket	IEC 320 C16	IEC 320 C16
Power Cord Input Plug	IEC 320 C15	IEC 320 C15
Operating Temperature	0° C to 50° C Normal Operation	0° C to 50° C Normal Operation

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

PoE-Plus Power Budget

Switch Model	1 PSU of 715W	1 PSU of 1100W	2 PSUS of 715W	1 PSU of 715W and 1 PSU of 1100W	2 PSUS of 1100W
X450-G2-24p-10GE4	500W	720W	720W	720W	720W
X450-G2-48p-10GE4	500W	850W	1031W	1350W	1440W
X450-G2-24p-GE4	500W	720W	720W	720W	20W
X450-G2-48p-GE4	500W	850W	1031W	1350W	1440 W
X450-G2-24p-10GE4	16 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W
X450-G2-48p-10GE4	16 ports @ 30W 32 ports @ 15.4W	24 ports @ 30W 48 ports @ 15.4W	34 ports @ 30W 48 ports @ 15.4W	45 ports @ 30W 48 ports @ 15.4W	48 ports @ 30W 48 ports @ 15.4W
X450-G2-24p-GE4	16 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W	24 ports @ 30W 24 ports @ 15.4W
X450-G2-48p-GE4	16 ports @ 30W 32 ports @ 15.4W	28 ports @ 30W 48 ports @ 15.4W	34 ports @ 30W 48 ports @ 15.4W	45 ports @ 30W 48 ports @ 15.4W	48 ports @ 30W 48 ports @ 15.4W

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 5,000 meters (16,404 feet) – PoE switches
- Altitude: 0 to 2,000 meters (6,562 feet) – non-PoE switches
- Shock (half sine): 30 m/s2 (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/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 2nd Ed., Listed Device (U.S.)
  - CSA 22.2 #60950-1-03 2nd Ed. (Canada)
  - Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
  - CDRH Letter of Approval (US FDA Approval)
- European ITE
  - EN 60950-1:2007 2nd Ed.
  - EN 60825-1+A2:2001 (Lasers Safety)
  - TUV-R GS Mark by German Notified Body
  - 2006/95/EC Low Voltage Directive
- International ITE
  - CB Report & Certificate per IEC 60950-1 2nd Ed. + National Differences
  - AS/NZX 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 55022:2006+A1:2007 Class A
  - EN 55024:A2-2003 Class A includes IEC 61000-4-2, 3, 4, 5, 6, 11
  - EN 61000-3-2,8-2006 (Harmonics)
  - EN 61000-3-3 2008 (Flicker)
  - ETSI EN 300 386 v1.4.1, 2008-04 (EMC Telecommunications)
  - 2004/108/EC EMC Directive
- International EMC Certifications
  - CISPR 22: 2006 Ed 5.2, Class A (International Emissions)
  - CISPR 24:A2:2003 Class A (International Immunity)
  - IEC 61000-4-2:2008/EN 61000-4-2:2009 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A
  - IEC 61000-4-3:2008/EN 61000-4-3:2006+A1:2008 Radiated Immunity 10V/m, Criteria A
  - IEC 61000-4-4:2004 am1 ed.2./EN 61000-4-4:2004/A1:2010 Transient Burst, 1 kV, Criteria A
  - IEC 61000-4-5:2005 /EN 61000-4-5:2006 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
  - IEC 61000-4-6:2008/EN 61000-4-6:2009 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
  - IEC/EN 61000-4-11:2004 Power Dips & Interruptions, >30%, 25 periods, Criteria C

Country Specific

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

Telecom Standards

- ETSI EN 300 386:2001 (EMC Telecommunications)
- ETSI EN 300 019 (Environmental for Telecommunications)
- 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
- IEEE 802.3az (EEE)

Fan and Acoustic Noise

Switch Model	Acoustic Information	
X450-G2-24t-10GE4	**Fixed AC PS with Front to Back (FB) Air Flow**	
	Bystander Sound Pressure* • 49.8 dB(A), 0C to 39C • 64.9 dB(A), 50C	Declared Sound Power (LWAd)** • 6.1 bels, 0C to 39C • 7.6 bels, 50C
X450-G2-48t-10GE4	**Fixed AC PS with Front to Back (FB) Air Flow**	
	Bystander Sound Pressure* • 49.9 dB(A), 0C to 39C • 64.8 dB(A), 50C	Bystander Sound Pressure* • 49.9 dB(A), 0C to 39C • 64.8 dB(A), 50C
X450-G2-24p-10GE4	**Dual 715W AC PS with Front to Back (FB) Air Flow**	
	Bystander Sound Pressure* • 51.1 dB(A), 0C to 39C • 65.5 dB(A), 50C	Declared Sound Power (LWAd)** • 6.2 bels, 0C to 39C • 7.7 bels, 50C
	Dual 715W AC PS with Front to Back (FB) Air Flow (with applied POE Load)	
	Bystander Sound Pressure* • 50.1 dB(A), 0C to 39C • 64.5 dB(A), 50C	Declared Sound Power (LWAd)** • 6.1 bels, 0C to 39C • 7.6 bels, 50C
X450-G2-48p-10GE4	**Dual 1100W AC PS with Front to Back (FB) Air Flow**	
	Bystander Sound Pressure* • 50.8 dB(A), 0C to 39C • 65.4 dB(A), 50C	Declared Sound Power (LWAd)** • 6.2 bels, 0C to 39C • 7.6 bels, 50C
	Dual 1100W AC PS with Front to Back (FB) Air Flow (with applied POE Load)	
	Bystander Sound Pressure* • 56.5 dB(A), 0C to 39C • 66.8 dB(A), 50C	Declared Sound Power (LWAd)** • 6.8 bels, 0C to 39C • 7.8 bels, 50C

* Sound Pressure is presented for comparison per ISO 7779
**Declared Sound Power is presented in accordance with ISO-7779, ISO 9296 per ETSI/EN 300 753

Accessories

Modular Fan Tray for All x450-G2 Switches

- X460/X450-G2 fan module FB
  - Front-to-back airflow fan module for X460/X450-G2 series switches

External Redundant Power Supplies for Non-PoE Switches

All X450-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.

Modular Power Supplies for PoE X450-2 Switches

- STK-RPS-150PS
  - 150 watt non-PoE redundant power supply for X450-G2 switches
- EPS-C2
  - External Power System Chassis 2. Accepts up to three 750W AC PoE PSU 48V power supplies. Accepts up to 5 EPS-CBL-2x7 or up to 1 EPS-CBL-2x9 cables.
- EPS-CBL-2x7
  - External Power System Cable (1M) that connects EPS 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

The STK-RPS-150PS can be rack mounted into the two slot RPS chassis STK-RPS-150CH2 where the power supplies are horizontally mounted or the eight slot RPS chassis STK-RPS-150CH8 where the power supplies are vertically mounted.

All X450-G2 series PoE switches support modular power supplies and do NOT ship with a power supply. Either a 715 watt or 1100 watt power supply needs to be added.

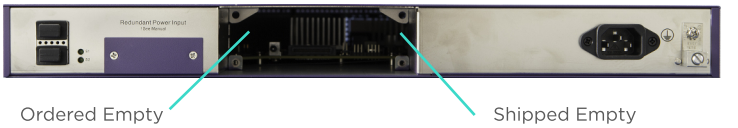
Only front-to-back power supplies and fans are certified for use in the X450-G2 PoE switches.

- 715W PoE AC PSU FB
  - 715W PoE AC PSU with front-to-back airflow is compatible with X450-G2-24p/48p switches and provides 500 watts of PoE-plus power budget per one supply. When two PSUs are installed, the total PoE-plus power budget becomes 1031 watts.
- 1100W PoE AC PSU FB
  - 1100W PoE AC PSU with front-to-back airflow is compatible with X450-G2-24p/48p switches and provides 850 watts of PoE-plus power budget per one supply. When two PSUs are installed, the total PoE-plus power budget becomes 1440 watts.

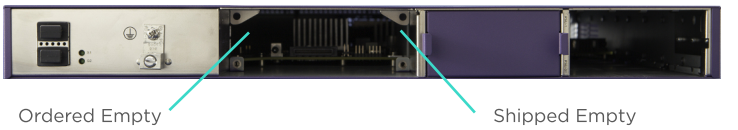
Warranty

- Limited Lifetime with eAHR-2
- For warranty details, visit http://www.extremenetworks.com/go/warranty

Non-PoE Switch - Fan Tray Must Be Ordered Separately



PoE Switch - Fan Tray and Power Supplies Must Be Ordered Separately



*Optional: Redundant or Additive Power Supply ordered separately
**Required: First Power Supply ordered separately

Ordering Information

Part Number	Name	Description
16172	X450-G2-24t-GE4-Base	X450-G2 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports, 1 Fixed AC PSU, 1 RPS port, fan module slot (unpopulated), ExtremeXOS Edge license
16173	X450-G2-24p-GE4-Base	X450-G2 24 10/100/1000BASE-T POE+, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports, 2 unpopulated power supply slots, fan module slot (unpopulated), ExtremeXOS Edge license
16174	X450-G2-48t-GE4-Base	X450-G2 48 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports (QSFP), 1 Fixed AC PSU, 1 RPS port, fan module slot (unpopulated), ExtremeXOS Edge license w Policy
16175	X450-G2-48p-GE4-Base	X450-G2 48 10/100/1000BASE-T POE+, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports, 2 unpopulated power supply slots, fan module slot (unpopulated), ExtremeXOS Edge license
16176	X450-G2-24t-10GE4-Base	X450-G2 24 10/100/1000BASE-T, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports, 1 Fixed AC PSU, 1 RPS port, fan module slot (unpopulated), ExtremeXOS Edge license
16177	X450-G2-24p-10GE4-Base	X450-G2 24 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports), 2 unpopulated power supply slots, fan module slot (unpopulated), ExtremeXOS Edge license
16178	X450-G2-48t-10GE4-Base	X450-G2 48 10/100/1000BASE-T, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports, 1 Fixed AC PSU, 1 RPS port, fan module slot (unpopulated), ExtremeXOS Edge license
16179	X450-G2-48p-10GE4-Base	X450-G2 48 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports, 2 unpopulated power supply slots, fan module slot (unpopulated), ExtremeXOS Edge license
16177T	X450-G2-24p-10GE4-FB-715-TAA	TAA 24 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports (QSFP), 2 power supply slots populated with 715W PS, fan module Front-to-Back, ExtremeXOS Edge license with Policy
16179T	X450-G2-48p-10GE4-FB-1100-TAA	TAA 48 10/100/1000BASE-T POE+, 4 10GBASE-X unpopulated SFP+, two 21Gb stacking ports (QSFP), 2 power supply slots populated with 1100W PS, fan module Front-to-Back, ExtremeXOS Edge license with Policy
16172T	X450-G2-24t-GE4-FB-TAA	TAA 24 10/100/1000BASE-T, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports (QSFP), 1 Fixed AC PSU, 1 RPS port, fan module Front-to-Back, ExtremeXOS Edge license with Policy
16173T	X450-G2-24p-GE4-FB-715-TAA	TAA 24 10/100/1000BASE-T POE+, 4 1000BASE-X unpopulated SFP, two 21Gb stacking ports (QSFP), 2 power supply slots populated with 715W PS, fan module Front-to-Back, ExtremeXOS Edge license with Policy

Ordering Information (cont.)

Part Number	Name	Description
Firmware Licenses		
16190	X450-G2 Edge to Advanced Edge Lic	ExtremeXOS Advanced Edge License for X450 series switches
16191	X450-G2 Core Lic from Edge Lic	ExtremeXOS Advanced Core License upgrade from Edge License for ExtremeSwitching X450-G2 series switches
16192	X450-G2 Core Lic from Adv Edge	ExtremeXOS Advanced Core License upgrade from Advanced Edge License for ExtremeSwitching X450-G2 series switches
11011	Direct Attach Feature Pack	Direct Attach Feature Pack
16200	X450-G2 OpenFlow FeaturePack	ExtremeXOS SDN - OpenFlow Feature Pack for X450 series switches
16169	X450-G2 Multimedia(AVB) Feature Pck	ExtremeXOS Multimedia Service (Audio Video Bridging) Feature Pack for X450 series switches
Accessories		
10941	1100W PoE AC PSU FB	1100 Watt AC PoE Power Supply module for X460-G2 and X450-G2 series switches with Front-to-Back airflow
10951	715W AC PSU FB	715W AC PoE Power Supply Module for X460-G2 and X450-G2 series switches with front to back airflow
10945	X460/X450-G2 fan module FB	Fan Module for X460-G2/X450-G2 Series Switches - front to back airflow
16777	Four Piece Rack Mount Kit, Spare	Spare Four Piece Rack Mount Kit compatible with X450-G2
STK-RPS-150PS	150W Non-PoE RPS	150 watt non-PoE redundant power supply for A, B, C and X450-G2 switches
STK-RPS-150CH2	2-Slot Modular Shelf for 150W RPS	2 slot modular shelf for rack-mounting STK-RPS-150PS external redundant power supplies horizontally
STK-RPS-150CH8	8-Slot Modular Shelf for 150W RPS	8 slot modular shelf for rack-mounting STK-RPS-150PS external redundant power supplies vertically
10936	EPS-C2	External Power System Chassis 2. Accepts up to three
10939	EPS-CBL-2x7	External Power System Cable (1M) that connects EPS to any Summit X440 for providing redundant DC power
10931	Summit 750W AC PSU	AC Power Supply module for EPS-C2 Chassis Redundant Power Supply
16777	Four Piece Rack Mount Kit, Spare	Spare Rack Mount Kit for X450-G2
Optical Transceivers and Direct Attach Cables		
10301	10GBASE-SR SFP+	10GBASE-SR SFP+, 850nm, LC Connector, transmission length of up to 300m on MMF
10302	10GBASE-LR SFP+	10GBASE-LR SFP+, 1310nm, LC Connector, transmission length of up to 10km on SMF
10309	10GBASE-ER SFP+	10GBASE-ER SFP+, 1550nm, LC connector, transmission length of up to 40km on SMF
10303	SFP+ LRM Module	10 Gigabit Ethernet SFP+ module, 1310nm, legacy MMF 220m link, LC connector
10325	Tunable DWDM SFP+	10 Gigabit Ethernet SFP+ Tunable DWDM module, SMF 80km, LC connector
10051H	1000BASE-SX SFP, Hi	1000BASE-SX SFP, MMF 220 & 550 meters, LC connector, Industrial Temp
10052H	1000BASE-LX SFP, Hi	1000BASE-LX SFP, MMF 220 & 550 meters, SMF 10km, LC connector, Industrial Temp
10053H	1000BASE-ZX SFP, Hi	1000BASE-ZX SFP, SMF 70km, LC connector, Industrial Temp
10056H	1000BASE-BX-D BiDi SFP, Hi	1000BASE-BX-D SFP, 1490-nm TX/1310-nm RX wavelength, Industrial Temp
10057H	1000BASE-BX-U BiDi SFP, Hi	1000BASE-BX-U SFP, 1310-nm TX/1490-nm RX wavelength, Industrial Temp
10060H	100LX/1000LX SFP, Hi[1]	Dual-speed 100 LX / 1000 LX SFP, LC connector, Industrial Temp[1]
10064	LX100 mini-GBIC	Mini-GBIC, SFP, Extra long distance SMF 100 Km/30 dB budget, LC connector
10065	10/100/1000BASE-T SFP	10/100/1000BASE-T SFP module, CAT5 cable 100m link, RJ45-connector for Gigabit Ethernet SFP Port.
10071H	1000BASE-SX SFP 10 Pack, Hi	1000BASE-SX SFP 10 Pack, Industrial Temp
10072H	1000BASE-LX SFP 10 Pack, Hi	1000BASE-LX SFP 10 Pack, Industrial Temp
MGBIC-BX40-D	1000BASE-BX40-D SFP	1 Gb, 1000Base-BX40-D Single Fiber SM, Bidirectional, 1490nm Tx / 1310nm Rx, 40 Km, Simplex LC SFP (must be paired with MGBIC-BX40-U), -40°C to +60°C
MGBIC-BX40-U	1000BASE-BX40-U SFP	1 Gb, 1000Base-BX40-U Single Fiber SM, Bidirectional, 1310nm Tx / 1490nm Rx, 40 Km, Simplex LC SFP (must be paired with MGBIC-BX40-D), -40°C to +60°C
MGBIC-BX120-D	1000BASE-BX120-D SFP	1 Gb, 1000Base-BX120-D Single Fiber SM, Bidirectional, 1590nm Tx / 1490nm Rx, 120 Km, Simplex LC SFP (must be paired with MGBIC-BX120-U), -40°C to +60°C
MGBIC-BX120-U	1000BASE-BX120-U SFP	1 Gb, 1000Base-BX120-U Single Fiber SM, Bidirectional, 1490nm Tx / 1590nm Rx, 120 Km, Simplex LC SFP (must be paired with MGBIC-BX120-D), -40°C to +60°C

Ordering Information (cont.)

Part Number	Name	Description
10310	ZR SFP+ module	10 Gigabit Ethernet SFP+ module, 1550nm, SMF 80km, LC connector
10311	QSFP+ passive copper cable, 0.5M	QSFP+ passive copper cable, 0.5M
10312	QSFP+ passive copper cable, 1.0M	QSFP+ passive copper cable, 1.0M
10313	QSFP+ passive copper cable, 3.0M	QSFP+ passive copper cable, 3.0M
10323	QSFP+ passive copper cable, 5.0M	QSFP+ passive copper cable, 5.0M
10338	10Gb SFP+ 10GBASE-T[2]	10Gb SFP+, 10GBASE-T RJ45, 30m with Cat6a[2]
10GBBX10-U	10KM 10 GB, SINGLE FIBER SM, -U 10 KM	10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1270nm RX, 10Km, Simplex LC SFP+ (must be paired with 10GB-BX10-D)
10GB-BX10-D	10KM 10 GB, SINGLE FIBER SM, -D 10 KM	10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1270nm RX, 10Km, Simplex LC SFP+ (must be paired with 10GB-BX10-U)
10GB-BX40-U	10KM 10 GB, SINGLE FIBER SM, -U 40 KM	10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1270nm RX, 40Km, Simplex LC SFP+ (must be paired with 10GB-BX40-D)
10GB-BX40-D	10KM 10 GB, SINGLE FIBER SM, -D 40 KM	10Gb, Single Fiber SM, Bidirectional, 1330nm Tx / 1270nm RX, 40Km, Simplex LC SFP+ (must be paired with 10GB-BX40-U)
10GB-F10 SFPP	10 GB, ACTIVE OPTICAL DAC, 10 M	10Gb, Active optical direct attach cable with 2 integrated SFP+ transceivers, 10m
10GB-F20-SFPP	10 GB, ACTIVE OPTICAL DAC, 20 M	10Gb, Active optical direct attach cable with 2 integrated SFP+ transceivers, 20m
40GB-C0.5-QSFP	QSFP+ passive copper cable, 0.5M	40 Gb, Copper Direct Attach Cable with integrated QSPF+ transceivers, 0.5m
40GB-C01-QSFP	QSFP+ passive copper cable, 1.0M	40 Gb, Copper Direct Attach Cable with integrated QSPF+ transceivers, 1m
40GB-C03-QSFP	QSFP+ passive copper cable, 3.0M	40 Gb, Copper Direct Attach Cable with integrated QSPF+ transceivers, 3m
10304	10GBASE-CR SFP+ 1m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 1m
10305	10GBASE-CR SFP+ 3m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 3m
10306	10GBASE-CR SFP+ 5m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 5m
10307	10GBASE-CR SFP+ 10m	10GBASE-CR SFP+ pre-terminated twin-ax copper cable with link lengths of 10m
10336	3m QSFP+ Active Optical Cable	40 Gigabit QSFP+ active optical cable, 3m
10337	5m QSFP+ Active Optical Cable	40 Gigabit QSFP+ active optical cable, 5m
10315	10m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 10m length
10316	20m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 20m length
10318	100m QSFP+ Active Optical Cable	40 Gigabit Ethernet QSFP+ active optical cable assembly, 100m length

NOTE: PoE Power Supplies and fan tray MUST be ordered separately. Only non-PoE switches ships with a fixed internal power supply
[1] 1Gb Mode Only
[2] Supported configuration is to populate every other SFP+ port in system, with a maximum of half the 10Gb SFP+ ports configured with 10GBASE-T transceivers. An adjacent SFP+ port should remain unused for every 10GBASE-T SFP+ installed.

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