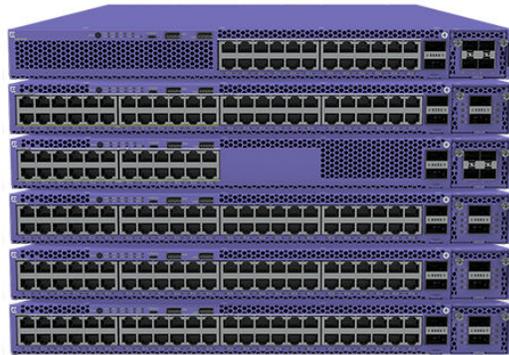


# X465 Series

## Highlights

- 24 and 48-port models with gigabit, multi-gigabit, and 1/10Gb fiber Ethernet connectivity
- Choice of 10Gb, 25Gb, and 40Gb modular uplink ports
- 30W, 60W, and 90W PoE (Power over Ethernet) support for powering connected 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
- MACsec on access and modular uplink ports for secure link encryption
- Integrated Application Hosting of third-party applications without impacting switch performance
- Stackable with up to eight switches with 168Gb per unit
- Hot-swappable, redundant power supplies and fans
- Non-blocking, wire-speed design



## Premium Stackable Switching Platform for Network Edge Deployments

The X465 Series is a premium stackable switch family providing high-performance, convergence-ready, resilient, and secure gigabit and multi-gigabit Ethernet connectivity. Powered by one of Extreme's flagship operating systems, ExtremeXOS, the X465 Series offers sophisticated routing and switching, high-speed stacking, modular uplink options, advanced PoE, and comprehensive security. This makes the X465 Series an ideal choice for high-end wiring closet and network edge deployments.

The X465 Series is available in 24 and 48-port 1Gb models, 1/ 2.5/ 5Gb multi-gigabit models, as well as 24-port 1Gb and 10Gb fiber models. X465 offers various PoE models, making it an ideal wired back-end for wireless APs or to power NextGen Ethernet edge devices (such as POS terminals, cameras, or LED light displays) and supports modular uplinks, enabling flexible linkage to devices over a range of media. Each model supports Extended Edge Switching, an innovative solution that simplifies deployment and operation of edge switches. As the controlling bridge, the X465 can be combined with Extreme's V300 and V400 Series access devices to create a single logical switch architecture, simplifying and reducing costs of operations.

## Integrated Application Hosting

Select X465 Series models support Extreme's Integrated Application Hosting\* which leverages the switch's hardware and software design to run onboard applications without impacting switch performance. X465 models equipped with a quad-core processor can run a Guest VM directly on the switch, supporting third-party or customized applications to meet specific business or operational needs. This can provide additional network insight or enable new network applications without need for a separate hardware device.

\* Requires a Core License

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## VIM Options for Flexible Uplinks

The X465 supports Versatile Interface Modules (VIMs) for both its uplink and two dedicated stacking ports, and each X465 model has one VIM slot available for uplinks. VIM options include two and four-port modules that support 10Gb, 25Gb, and 40Gb data rates, as well as modules with LRM and/or MACsec support.

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## Fabric Attach

Fabric Attach is available on all X465 models to provide you with an automated connection to Extreme's Fabric Connect solution. Providing zero touch edge provisioning, Fabric Attach gives you access to Extreme Fabric Connect infrastructure's virtualized services and advanced security capabilities.

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## MACsec Link Encryption

IEEE 802.1AE MACsec is supported on X465 Series access and uplink ports, enabling the encryption and decryption of packets between connected switches or devices. As a link-only encryption, X465 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 X465 provides the most secure link encryption.

## Role-Based Policy

X465 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 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.

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## Location LED

X465 models come equipped with a location LED on the chassis' front panel, allowing you to quickly identify a specific X465 switch deployed in a wiring closet or a stack.

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## Cloud-Based Network Management

The X465 can be managed by ExtremeCloud IQ and ExtremeCloud IQ – Site Engine for centralized switch management, giving you a consolidated view of users, devices, and applications across wired and wireless networks. ExtremeCloud IQ enables zero touch provisioning, allowing you to quickly bring new X465 switches online and a granular view that enables efficient inventory and network topology management.

Alternatively, X465 on-box management can be done manually via a web-based GUI or a generic command-line interface (CLI).

Note: Refer to the [ExtremeCloudIQ Release Notes: New Features and Enhancements](#) for the latest list of XIQ-supported X465 models.

# Specifications

## Performance and Scale

Switch Model	Max Active 10/100/1000Mb ports	Max Active 100Mb/1Gb /2.5Gb/5Gb ports	Max Active 100Mb/1Gb /2.5Gb/5Gb ports	Max Active 1/10Gb SFP+ports	Max Active 10/25Gb SPF28 ports	Max Active 40Gb QSFP+ VIM5 ports*	Max Active QSFP+ Stacking Ports	Aggregated Switch Bandwidth	Frame Forwarding Rate
X465-24W	24	0	0	4	2	1	2	316Gbps	235.1Mpps
X465-48T	48	0	0	4	2	1	2	364Gbps	270.8Mpps
X465-48P	48	0	0	4	2	1	2	364Gbps	270.8Mpps
X465-48W X465i-48W	48	0	0	4	2	1	2	364Gbps	270.8Mpps
X465-24MU	0	24	0	4	4	2	2	648Gbps	482.1Mpps
X465-24MU-24W	24	24	0	4	4	2	2	696Gbps	517.9Mpps
X465-24S	0	0	24	4	2	1	2	316Gbps	235.1Mpps
X465-24XE	0	0	0	28	4	2	2	888Gbps	660.7Mpps

\* 40Gb ports on the VIM5 module can also be broken out individually into 4 x 10Gb ports.

- Layer 2/MAC Addresses: 272K
- IPv4 LPM Entries: 256K max w/ALPM
- IPv4 Hosts
  - With min LPM IPv4 entries: 146K
  - With max LPM IPv4 entries: 3K
- IPv6 LPM (/64) Entries: 128K max w/ ALPM
- IPv6 Hosts: 32K max
- IP Multicast Groups: 4K
- IP Multicast (s,v,g) entries – 130K max
- Flexible Universal Forwarding Tables (UFT)
- 4092 user-created VLAN/VMANs
- 9216 Byte Max Packet Size (Jumbo Frame)
- 8 queues per port
- 8K ingress ACL rules
- 1K egress ACL rules
- OnePolicy Scaling
  - Up to 24,576 authenticated policy users per switch

- Policy Profiles: 63
- Unique Permit/Deny Rules per switch: 1976
- Default OnePolicy Profile
  - MAC Rules: 512
  - IPv4 Rules: 512
  - IPv6 Rules: 512
  - L2 Rules: 400

### Key Features

- VxLAN Tunneling End Point (VTEP)
- MPLS/VPLS
- Extended Edge Switching Controlling Bridge
- Priority Flow Control (PFC)
- SummitStack-V160 160GB stacking (full duplex)
  - Stacking with up to 8 X465/X590 systems
  - 2 dedicated 40Gb ports for stacking
- SFlow/Application Telemetry
- Y.1731 OAM in Hardware

## External Ports/Slots

Switch Model	Ports/Slots
X465-24W	24 x 10/100/1000BASE-T 802.3bt Type4 (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex</li> <li>• MACsec-capable</li> </ul> 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-48T	48 x 10/100/1000BASE-T ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex</li> <li>• MACsec-capable</li> </ul> 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-48P	48 x 10/100/1000BASE-T 802.3at (30W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex</li> <li>• MACsec-capable</li> </ul> 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-48W X465i-48W	48 x 10/100/1000BASE-T 802.3bt (90W) ports <ul style="list-style-type: none"> <li>• Full/Half-Duplex</li> <li>• MACsec-capable</li> </ul> 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-24MU	24 x 100M/1/2.5/5GBASE-T 802.3bt Type3 (60W) ports 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot

Switch Model	Ports/Slots
X465-24MU-24W	24 x 100M/1/2.5/5GBASE-T 802.3bt Type3 (60W) ports 24 x 10/100/1000BASE-T 802.3bt Type4 (90W) ports <ul style="list-style-type: none"> <li>• Full Duplex on 100M/1/2.5/5GBASE-T ports</li> <li>• Full/Half-Duplex on 10/100/1000BASE-T ports</li> <li>• MACsec-capable</li> </ul> 2 x 40GBASE-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial (console port RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-24S	24 x 100/1000Base-X (SFP) ports (unpopulated) 2 x 40GBase-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial console port (RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
X465-24XE	24 x 100Mb/1Gb/10Gb (SFP+) ports (unpopulated) <ul style="list-style-type: none"> <li>• MACsec-Capable</li> <li>• LRM-Capable</li> </ul> 2 x 40GBase-X QSFP+ dedicated stacking ports (unpopulated) 1 x Serial console port (RJ-45) 1 x 10/100/1000BASE-T out-of-band management port 1 x USB Micro-B console port 2 x USB A ports for external USB flash 1 x VIM5 slot
VIM5-4X*	4 x 1/10GBASE-X SFP+ (unpopulated)ports
VIM5-4XE*	4 x 1/10GBASE-X SFP+ (unpopulated) ports <ul style="list-style-type: none"> <li>• MACsec-Capable</li> <li>• LRM-Capable</li> </ul>
VIM5-4YE**	4 x 10/25GBASE-X SFP28 (unpopulated) ports <ul style="list-style-type: none"> <li>• MACsec-Capable</li> </ul>
VIM5-2Q***	2 x 40GBASE-X QSFP+ (unpopulated) ports

\* VIM5-4X and VIM5-4XE only support 10Gb operation (no 1Gb) when installed in X465-24MU, 24MU-24W and 24XE models

\*\* VIM5-4YE only supports 2 x 10Gb/ 25Gb port operation when installed in X465-24W, 48T, 48P, 48W and 24S models

\*\*\* VIM5-2Q only supports 1 x 10Gb/40Gb port when installed in X465-24W, 24S, 48T, 48P, 48W and 24S models

## Weights and Dimensions

### Switches

Part Number	Weight	Physical Dimensions
X465-24W	7.87 kg (17.35 lb)	Height: 43.18 mm (1.70 in.) Width: 440.44 mm (17.34 in.) Depth: 488.44 mm (19.23 in.)
X465-48T	8.0 kg (17.64 lb)	
X465-48P	8.39 kg (18.49 lb)	
X465-48W	8.37 kg (18.46 lb)	
X465-24MU	7.94 kg (17.5 lb)	
X465-24MU-24W	8.37 kg (18.45 lb)	
X465-24S	7.57 kg (16.69 lb)	
X465-24XE	7.77 kg (17.13 lb)	

### VIM Modules

Part Number	Weight	Physical Dimensions
VIM5-4X	0.17 kg (0.37lb)	Height: 40.89 mm (1.61 in.) Width: 48.77 mm (1.92 in.) Depth: 146.30 mm (5.76 in.)
VIM5-4XE	0.19 kg (0.41lb)	
VIM5-2Q	0.17 kg (0.37lb)	

### Power Supplies

Part Number	Weight	Physical Dimensions
10953 (350W AC)	1.08 kg (2.38 lb)	Height: 39.62 mm (1.56 in.) Width: 82.55 mm (3.25 in.) Depth: 292.10 mm (11.50 in.)
10951 (715W AC)	1.16 kg (2.55 lb)	
10941 (1100W AC)	1.16 kg (2.55 lb)	
XN-ACPWR-2000W-F (2000W AC)	1.16 kg (2.56 lb)	Height: 39.62 mm (1.56 in.) Width: 82.55 mm (3.25 in.) Depth: 292.10 mm (11.50 in.)

## Power Supply Unit Specifications

	10953	10951	10941	XN-ACPWR-2000W-F*
Voltage Input Range (Nominal)	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC	100-127/200-240 VAC
Line Frequency Range	50 Hz to 60 Hz			
Power Supply Input Socket	IEC/EN60320 C14	IEC/EN60320 C16	IEC/EN60320 C16	IEC/EN60320 C16

	10953	10951	10941	XN-ACPWR-2000W-F*
Power Cord Input Plug	IEC/EN60320 C15	IEC/EN60320 C15	IEC/EN60320 C15	IEC/EN60320 C15
Operating Temperature	0°C to 55°C (32°F to 131°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 55°C (32°F to 131°F) Normal Operation

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

	XN-ACPWR-350W-FB	XN-ACPWR-715W-FB	XN-ACPWR-1100W-FB	XN-ACPWR-2000W-FB*
Voltage Input Range (Nominal)	100-240VAC	100-240VAC	100-240VAC	100-240VAC
Line Frequency Range	50 Hz to 60 Hz			
Power Supply Input Socket	IEC/EN60320 C14	IEC/EN60320 C16	IEC/EN60320 C16	IEC/EN60320 C16
Power Cord Input Plug	IEC/EN60320 C15	IEC/EN60320 C15	IEC/EN60320 C15	IEC/EN60320 C15
Operating Temperature	0°C to 55°C (32°F to 131°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation	0°C to 50°C (32°F to 122°F) Normal Operation

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

## PoE Power Budget

Switch Model	1 x 715W	2 x 715W	1 x 1100W	2 x 1100W	1 x 2000W @ 200- 240VAC	1 x 2000W @ 100- 120VAC	2 x 2000W @ 200- 240VAC	2 x 2000W @ 100- 120VAC
X465-24W	486W	1071W	871W	1771W	1771W	871W	2160W	1865W
X465-48P	460W	1045W	845W	1440W	1440W	845W	1440W	1440W
X465-48W X465i-48W	430W	1015W	815W	1715W	1715W	815W	3523W	1809W
X465-24MU	440W	1025W	825W	1440W	1440W	825W	1440W	1440W
X465- 24MU-24W	383W	968W	768W	1668W	1668W	768W	3476W	1762W

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

## Minimum/Maximum Power Consumption and Heat Dissipation

Switch Model	Minimum Power Consumption (W)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (W)*	Maximum Heat Dissipation (BTU/hr)**
X465-24W	61	207	2485	1110
X465-48T	73	250	176	600
X465-48P	74	254	1746	1046
X465-48W	75	255	4024	1708
X465i-48W	77	261	4032	1762

Switch Model	Minimum Power Consumption (W)	Minimum Heat Dissipation (BTU/hr)	Maximum Power Consumption (W)*	Maximum Heat Dissipation (BTU/hr)**
X465-24MU	68	230	1722	963
X465-24MU-24W	84	285	3941	1614
X465-24S	52	179	173	590
X465-24XE	80	271	207	707

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

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

## Product Specifications

### CPU/Memory

X465-24W / X465-48T / X465-48P / X465-48W / X465-24S models

- Dual Core x86 CPU
- 2GB DRAM
- 8GB eMMC NVRAM

X465i-48W / X465-24MU / X465-24MU-24W / X465-24XE models

- Dual Core x86 CPU
- 8GB DRAM
- 8GB eMMC NVRAM

### Environmental

Environmental Specifications

- EN/ETSI300 019-2-1 v2.1.2 - Class 1.2 Storage
- EN/ETSI300 019-2-2 v2.1.2 - Class 2.3 Transportation
- EN/ETSI300 019-2-3 v2.1.2 - Class 3.1e Operational
- EN/ETSI300 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

- Temperature: 0°C to 45°C (32°F to 113°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

- UL60950-1
- UL62368-1
- Complies with FCC 21CFR 1040.10 (U.S. Laser Safety)
- CDRH Letter of Approval (US FDA Approval)
- CAN/CSA 22.2 No. 60950-1
- CAN/CSA No. 22.2 62368-1-14

European ITE

- EN60950-1, EN 62368-1
- EN60825-1 Class 1 (Lasers Safety)
- 2014 / 35/ EU Low Voltage Directive

International ITE

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

### EMI/EMC Standards

North American EMC for ITE

- FCC CFR 47 part 15 Class A (USA)
- ICES-003 Class A (Canada)

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
- EN 55011 Class A

#### International EMC Certifications

- CISPR32, Class A (International Emissions)
- AS/NZS CISPR32
- CISPR 24 Class A (International Immunity)
- IEC 61000-4-2 / EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A
- IEC 61000-4-3 / EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4 / EN 61000-4-4 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5 / EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C
- IEC 61000-4-8 / EN 61000-4-8
- CISPR 11 Class A
- GB/T 9254-2008

#### Country Specific

- VCCI Class A (Japan Emissions)
- ACMA RCM (Australia Emissions)

- CCC Mark (China)
- KCC Mark, EMC Approval (Korea)
- EAC Mark (Custom Union)
- NRCS/ICASA Mark (South Africa)
- BSMI Mark (Taiwan)

#### Telecom Standards

- CE 2.0 Compliant

#### IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.3bz 2.5G/5GBASE-T
- IEEE 802.3ae 10GBASE-X
- IEEE 802.3aq 10GBASE-LRM
- IEEE 802.3at PoE Plus
- IEEE 802.3bt Type3/Type4 PoE
- 25Gb Ethernet implemented per Ethernet Consortium specification and IEEE 802.3 standard
- IEEE 802.3ba / 802.3bm 40GBASE-X

## Ordering Notes

X465 Series switches are available in both unbundled and bundled versions. X465 unbundled versions include the X465 system, fans, rack-mount kit, and EXOS Advanced Edge license.

X465 bundled versions additionally include a designated Power Supply. With both versions, VIM5 modules, additional power supplies, power cords, transceivers/optics and optional Software Feature Packs must be ordered separately.

## Ordering Information

### X465 Systems

Part Number	Product Name	Product Description
X465-24W	X465-24W (unbundled)	X465-24W with 24 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE MACsec-capable ports, includes 2 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license
X465-24W-B1	X465-24W+ 1100W PSU Bundle	X465-24W with 24 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE MACsec-capable ports, includes 2 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license
X465-24W-B2	X465-24W+ 2000W PSU Bundle	X465-24W with 24 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE MACsec-capable ports, includes 2 fan modules, 1 VIM5 slot, 1 x 2000W AC PSU FB (XN-ACPWR-2000W-F), rack-mount kit, EXOS Advanced Edge license
X465-48T	X465-48T (unbundled)	X465-48T with 48 10/100/1000Base-T Full/Half-Duplex MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license
X465-48T-B3	X465-48T+ 350W PSU Bundle	X465-48T with 48 10/100/1000Base-T Full/Half-Duplex MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, 1 x 350W AC PSU FB (10953), rack-mount kit, EXOS Advanced Edge license

Part Number	Product Name	Product Description
X465-48P-B1	X465-48P + 1100W PSU Bundle	X465-48P with 48 10/100/1000Base-T Full/Half-Duplex 802.3at 30W PoE MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license
X465-48W	X465-48W (unbundled)	X465-48W with 48 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 3 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license
X465-48W-B1	X465-48W + 1100W PSU Bundle	X465-48W with 48 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 3 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license
X465-48W-B2	X465-48W + 2000W PSU Bundle	X465-48W with 48 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 3 fan modules, 1 VIM5 slot, 1 x 2000W AC PSU FB (XN-ACPWR-2000W-F), rack-mount kit, EXOS Advanced Edge license
X465i-48W-B1-S1	X465i-48W+ 120GB SSD + 1100W PSU Bundle	X465i-48Wi with 48 10/100/1000Base-T Full/Half-Duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 120GB SSD, 3 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license, Insight Architecture-ready
X465i-48W	X465i-48W (unbundled)	X465i-48Wi with 48 10/100/1000Base-T Full/Half duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 120GB SSD, 3 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465i-48W-B2-S1	X465i-48W + 120GB SSD+ 2000W PSU Bundle	X465i-48W with 48 10/100/1000Base-T Full/Half duplex 802.3bt Type 4 90W PoE ports, MACsec-capable, includes 120GB SSD, 3 fan modules, 1 VIM5 slot, 1 x 2000W AC PSU FB (XN-ACPWR-2000W-F), rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465-24MU	X465-24MU (unbundled)	X465-24MU with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports, includes 2 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting ready
X465-24MU-B1	X465-24MU+ 1100W PSU Bundle	X465-24MU with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports, includes 2 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465-24MU-B2	X465-24MU+ 2000W PSU Bundle	X465-24MU with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports, includes 2 fan modules, 1 VIM5 slot, 1 x 2000W AC PSU FB (XN-ACPWR-2000W-F), rack-mount kit, EXOS Advanced Edge license, Insight Architecture-ready
X465-24MU-24W	X465-24MU-24W (unbundled)	X465-24MU-24W with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports and 24 10/100/1000Mb Full/Half-Duplex 802.3 Type 4 90W MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465-24MU-24W-B1	X465-24MU-24W+ 1100W PSU Bundle	X465-24MU-24W with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports and 24 10/100/1000Mb Full/Half-Duplex 802.3 Type 4 90W MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, 1 x 1100W AC PSU FB (10941), rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465-24MU-24W-B2	X465-24MU-24W+ 2000W PSU Bundle	X465-24MU-24W with 24 100Mb/1Gb/2.5Gb/5Gb 802.3bt Type 3 60W PoE ports and 24 10/100/1000Mb Full/Half-Duplex 802.3 Type 4 90W MACsec-capable ports, includes 3 fan modules, 1 VIM5 slot, 1 x 2000W AC PSU FB (XN-ACPWR-2000W-F), rack-mount kit, EXOS Advanced Edge license, Integrated Application Hosting-ready
X465-24S	X465-24S (unbundled)	X465-24S with 24 100/1000Base-X (SFP) ports, includes 2 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge License

Part Number	Product Name	Product Description
X465-24S-B3	X465-24S+ 350W PSU Bundle	X465-24S with 24 100/1000Base-X (SFP) ports, includes 2 fan modules, 1 VIM5 slot, 1 x 350W AC PSU (10953), rack-mount kit, EXOS Advanced Edge License
X465-24XE	X465-24XE (unbundled)	X465-24XE with 24 100M/1Gb/10Gb (SFP+) MACsec and LRM-capable ports, includes 2 fan modules, 1 VIM5 slot, rack-mount kit, EXOS Advanced Edge License, Integrated Application Hosting-ready
X465-24XE-B3	X465-24XE+ 350W PSU Bundle	X465-24XE with 24 100M/1Gb/10Gb (SFP+) MACsec and LRM-capable ports, includes 2 fan modules, 1 VIM5 slot, 1 x 350W AC PSU (10953), rack-mount kit, EXOS Advanced Edge License

## VIM5 Modules

Part Number	Product Name	Product Description
VIM5-4X <sup>1</sup>	4-port SFP+ module	4 x 1G/10G SFP+ VIM supported on X465
VIM5-4XE <sup>1</sup>	4-port SFP+ module LRM/MACsec capable	4 x 1G/10G SFP+ LRM and MACsec-capable VIM supported on X465
VIM5-4YE <sup>2,4</sup>	4-port SFP28 module MACsec capable	4 x 10G/25G SFP28 MACsec-capable VIM supported on X465
VIM5-2Q <sup>3</sup>	2-port QSFP+ module	2 x 10G/40G QSFP+ VIM supported on X465

## Accessories

Part Number	Product Name	Product Description
10953	350W AC PS FB	350W AC PSU supported on X465-48T, also used on X450-G2, X460-G2
10941	1100W AC PS FB	1100W PoE PSU supported on all PoE models of X465, also used on X450-G2 and X460-G2
XN-ACPWR-2000W-F	2000W AC PS FB	2000W PoE PSU supported on all PoE models of the X465 Series
XN-ACPWR-350W-FB <sup>4</sup>	350W AC PSU FB	350W AC Power Supply Module - Front to Back airflow, also used on 5520 and VSP 4900
XN-ACPWR-715W-FB <sup>4</sup>	715W AC PSU FB	715W AC PoE Power Supply Module - Front to Back airflow, also used on 5520 and VSP 4900
XN-ACPWR-1100W-FB <sup>4</sup>	1100W AC PSU FB	1100W AC PoE Power Supply Module - Front to Back airflow, also used on 5520 and VSP 4900
XN-ACPWR-2000W-FB <sup>4</sup>	2000W AC PSU FB	2000W AC PoE Power Supply Module - Front to Back airflow, also used on 5520
XN-FAN-002-F	Spare Fan module	Spare Fan module used in X465 Series switches
XN-SSD-001-120	120GB SSD module	120GB Solid-State Drive (SSD) module for use with Integrated Application Hosting on the X465 Series
XN-4P-RKMT-001	Spare Four Post Rack Mount Kit	Spare Four Post Rack Mount Kit for use with X465 Series switches
XN-2P-RMKIT-001	Optional Two Post Rack Mount Kit	Optional Two Post Rack Mount Kit for use with X465 Series switches
EXOS-MACSEC-FP-X465	X465 MACsec Feature Pack	MACsec Feature Pack for ExtremeSwitching X465 Series
EXOS-MPLS-FP-X465	X465 MPLS Feature Pack	MPLS Feature Pack for ExtremeSwitching X465 Series

Part Number	Product Name	Product Description
EXOS-AVB-FP-X465	X465 AVB Feature Pack	Audio Video Bridging (AVB) Feature Pack for ExtremeSwitching X465 Series
EXOS-CORE-FP-X465	X465 Core License from Advanced Edge	Advanced Edge to Core Feature Pack for ExtremeSwitching X465 Series (includes Integrated Application Hosting)

<sup>1</sup> X465-24MU, -24MU-24W and -24XE models only support 10Gb operation (no 1Gb) on VIM5-4X and VIM5-4XE modules

<sup>2</sup> X465-24W, -48T, -48P, -48W and -24S models are limited to 2 x 10/25Gb ports on VIM5-4YE modules

<sup>3</sup> X465-24W, -48T, -48P, -48W and -24S models are limited to 1 x 10/40Gb port on VIM5-2Q module

<sup>4</sup> XN-ACPWR-xxx-FB power supply units cannot be used with the legacy 10941, 10951, 10953, or XN-ACPWR-2000W-F PSUs on the same switch.

## Warranty

All X465 Series models are covered under Extreme's Universal LLW policy. For warranty details, visit <https://www.extremenetworks.com/support/policies/>.

## Power Cords

Power cords are not included with the X465 in support of our green initiatives but can be ordered separately.

## Optics/Transceivers

For a list of the optics and transceivers supported on the X465 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 parts replacement, and on-site support, we augment your staff with expert resources to help you mitigate critical network issues fast. Visit [Extreme Maintenance Services](#) for more information.



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