X695 Series

Highlights

- High-Density 25 Gigabit switch for spine/leaf and aggregation applications
- 48 ports of 10/25 Gigabit Ethernet connectivity plus 8 ports of 40/100 Gigabit connectivity
- Compact 1U form factor for reduced power and footprint
- Extreme Integrated Application Hosting enables third-party applications without impact to switch performance
- Hot-swappable modular power supplies and fans
- Front-to-back and back-to-front airflow options
- AC and DC power supply options

High-performance 10/25 Gigabit Aggregation Switch

The X695 is a purpose-built 48 x 25Gb SFP28 port switch with 8 x 40/100Gb QSFP28 uplinks designed for high-performance enterprise and aggregation applications. The X695 can support a range of interface speeds, including 1Gb, 10Gb, 25Gb, 40Gb, 50Gb, and 100Gb, all in a compact 1RU form factor. This enables the X695 to be flexibly deployed in Enterprise LAN or top-of-rack applications. The following X695 switch model is available:

X695-48Y-8C

- 48x 1Gb/10Gb/25Gb SFP28 ports
- 8 x 10Gb/25Gb/40Gb/50Gb/100Gb QSFP28 ports

Flexible Deployment Options

The X695 can handle a range of high bandwidth applications, including high-density 10Gb/25Gb top of rack aggregation, as well as spine/leaf deployments as an edge leaf switch. It can also flexibly support uplinks at 25Gb, 40Gb, 50Gb, or even 100Gb rates. A range of SFP+ and QSFP+ optical transceivers are available to support 1Gb, 10Gb, and 40Gb Ethernet, while SFP28 and QSFP28 optical transceivers can be used to support 25Gb, 50Gb, and 100Gb Ethernet applications.

Intelligent L2/L3 Switching

The X695 supports intelligent Layer 2 switching, as well as Layer 3 IPv4/IPv6 routing, including policy-based switching and routing. The X695 can simplify network operation with its ExtremeXOS modular operating system, used across a wide range of Extreme's networking products. The high availability ExtremeXOS operating system reduces operational overhead with a single OS across the network.

Integrated Application Hosting

Extreme's Integrated Application Hosting leverages the X695 operating software and hardware to provide on-switch processing without impacting switching or network performance. This flexible and open solution enables organizations to deploy Extreme-provided and/ or third-party applications and tools directly on the X695 system for monitoring, troubleshooting, or extended network functionality, based on customer need.

Benefits of the Integrated Application Hosting on the X695 include:

- Flexible deployment of VM-based applications within the network using the hardware resources of the X695
- Ability of VM-based applications to extract data without disrupting forwarding or control plane traffic
- Availability of dedicated memory and SSD storage for flexible packet capture and off-line processing

High-Performance Stacking

The X695 supports either SummitStack-V400 or SummitStack-V160 high speed stacking via its 2 QSFP28 ports. Up to eight (8) X590, X690, X695 or X870 systems can be stacked when using SummitStack-V400. Alternatively, the X695 can cross-stack with X465 systems by using SummitStack-V160. Any of the supported QSFP28 direct attach cables and optical transceivers can be used for the stacking links.

Audio Video Bridging

The X695 series supports IEEE 802.1 Audio Video Bridging 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.

Management

The X695 can be centrally managed by ExtremeCloud IQ –Site Engine, which provides a consolidated view of users, devices, and applications for wired and wireless networks. Zero-touch provisioning lets one quickly bring new infrastructure online. A granular view of users, devices, and applications with an easy to understand dashboard enables efficient inventory and network topology management.

Network Intelligence

The X695 Series can provide insight and intelligence into the network via line-rate, hardware-accelerated sFlow support. With this capability, the X695 can deliver actionable insights into both network and application performance without the need for expensive sensors or collectors.

Product Specifications

Model	X695-48Y-8C
Ports	• 48 x SFP28 1Gb/10Gb/25Gb ports • 8 x QSFP28 40Gb/100Gbports ◦ Up to 8 x 40Gb/100Gb Ethernet interfaces ◦ Up to 4 x 50Gb Ethernet interfaces (partitioned) ◦ Up to 8 x 10Gb/25Gb Ethernet interfaces (partitioned) • 1 x Serial console port RJ-45 • 1 x 10/100/1000BASE-T out-of-band management port • USB Type A storage port
Performance	Switching capacity: 4.0 Tbps Line Rate (2.0 Tbps ingress / 2.0 Tbps egress) Forwarding rate: 1,000 Mpps Average latency: 800 ns
Dimensions	17.3 in W / 20.9 in D / 1.7 in H (44.0 cm / 53.2 cm / 4.3 cm)
Weight	16.4 lb (7.42 kg) no PSU 20.0 lb (9.07 kg) with single PSU
Power Supply Options	Internal 750W AC power supply (up to 2 PSUs) Internal 750W DC power supply (up to 2 PSUs) Front-Back and Back-Front airflow options 1 + 1 redundancy
Fan Tray	6 fan modules Front-Back and Back-Front airflow options
CPU / Memory	8 Core Processor 16GB DDR4 ECC memory 128GB SSD memory
Packet Buffers	32MB
Operating Conditions	0°C - 45°C operation 5% to 95% relative humidity, non-condensing 0 - 3000 meters altitude

Power Supply Specifications

	750WAC PSU XN-ACPWR-750W-F/R	750WDC PSU XN-DCPWR-750W-F/R
Dimensions	3.15 in W x 1.57 in H x 8.11 in D (8.0 cm x 4.0 cm x 20 .6 cm)	3.15 in W x 1.57 in H x 8.11 in D (8.0 cm x 4.0 cm x 20 .6 cm)
Weight	1.79lb (0.81kg)	1.85lb (0.85 kg)
Voltage Input Range	100-140VAC / 200-240 VAC	-48to -60 VDC
Line Frequency Range	50-60 Hz	N/A
PSU Input Socket	IEC320 C14	Terminal Block

	750WAC PSU XN-ACPWR-750W-F/R	750WDC PSU XN-DCPWR-750W-F/R
PSU Output Cord	IEC 320 C13	N/A
Operating Conditions	0°C - 55°C operation	0°C - 55°C 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)**
X695-48Y-8C	167	553	469	1600

* Idle, no ports linked

** 100% fans, 100% traffic

IEEE 802.3 Media Access Standards

- IEEE 802.3by 25GBASE-X
- IEEE 802.3ba/bm 40GBASE-X and 100GBASE-X
- IEEE 802.3ae 10GBASE-X

Scaling and Performance

- MAC Addresses: 290K
- IPv4 LPM Entries: 128K max w/ALPM
- IPv4 Hosts:
  - with min LPM IPv4 entries: 180K
  - with max LPM IPv4 entries: 164K
- IPv6 LPM (/64) Entries: 64K max w/ALPM
- IPv6 Hosts: 56K max
- IP Multicast Groups - 8K
- IP Multicast (s,v,g) entries - 136K max
- Flexible Universal Forwarding Tables (UFT)
- 4092 user-created VLAN/VMANs
- 9216 Byte Max Packet Size (Jumbo Frame)
- 8 queues per port
- 8k ingress rules
- 1K egress rules
- Policy Capabilities
  - Up to 12288 authenticated policy users per switch
  - Policy Profiles: 63
  - Unique Permit/Deny Rules per switch: 1976
    - MAC Rules: 512
    - IPv4 Rules: 512
    - IPv6 Rules: 512
    - L2 Rules: 440
- SummitStack-V400 400Gb (full duplex) stacking
  - Stacking of up to 8 X590 / X690 / X695 / X870 systems
  - 2 x QSFP28 ports (at 100Gb) for stacking
- SummitStack-V160 160Gbps (full duplex) stacking
  - Stacking of up to 8 X465 / X695 systems
  - 2 x QSFP28 ports (at 40Gb) for stacking

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)

Packaging and Storage Specifications

- Temp: -40°C to 70°C (-40°F to 158°F)
- Humidity: 10% to 95% relative humidity, non-condensing
- Packaged Shock (half sine): 180 m/s2 (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5 to 62 Hz at velocity 5 mm/s, 62 to 500 Hz at 0.2 G
- Packaged Random Vibration: 5 to 20 Hz at 1.0 ASD w/–3 dB/oct. from 20 to 200 Hz
- Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Regulatory and Safety

North American ITE

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

European ITE

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

International ITE

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

EMI/EMC Standards

North American EMC for ITE

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

European EMC Standards

- EN 55032 Class A
- EN 55024
- 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
- EN 55011 Class A

International EMC Certifications

- CISPR 32, Class A (International Emissions)
- AS/NZS CISPR32
- CISPR 24 Class A (International Immunity)
- IEC 61000-4-2 / EN 61000-4-2 Electrostatic Discharge, 8kV Contact, 15 kV Air, Criteria A
- IEC 61000-4-3 /EN 61000-4-3 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4 / EN 61000-4-4 Transient Burst, 1 kV, Criteria A
- IEC 61000-4-5 /EN 61000-4-5 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- IEC 61000-4-6 Conducted Immunity, 0.15-80 MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11 Power Dips and 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 / SABS Mark (South Africa)
- BSMI Mark (Taiwan)

Telecom Standards

- CE 2.0 Compliant

Ordering Notes

Customers ordering an X695 switch receive the base switch along with an ExtremeXOS Advanced Edge software license. Power supplies, fan modules, power cords, transceiver/optics, and optional Software Feature Packs must be separately ordered. It should be noted that six (6) fan modules and at least one Power Supply Unit (PSU) are required to operate the X695. A second PSU is required for power redundancy. Airflow direction of the fan modules and PSU must be the same.

Ordering Information

ExtremeSwitching X695 System and Accessories

Part Number	Product Name	Product Description
X695-48Y-8C	X695-48Y-8C System	X695 system with 48 x 10/25Gbps SFP28 ports, 8 x 100Gbps QSFP28 ports, 8-core CPU, 16GB RAM, 128GB SSD, 4-post rack mount kit, No PSU, No Fans
XN-FAN-001-F	Front to Back Fan	Single Fan module, Front-to-Back Airflow supported on X695

Part Number	Product Name	Product Description
XN-FAN-001-R	Back to Front Fan	Single Fan module, Back-to-Front Airflow supported on X695
XN-ACPWR-750W-F	750W AC PSU Front to Back airflow	AC 750W PSU, Front-to-Back Airflow supported on X695
XN-ACPWR-750W-R	750W AC PSU Back to Front airflow	AC 750W PSU, Back-to-Front Airflow supported on X695
XN-DCPWR-750W-F	750W DC PSU Front to Back airflow	DC 750W PSU, Front-to-Back Airflow supported on X695
XN-DCPWR-750W-R	750W DC PSU Back to front airflow	DC 750W PSU, Back-to-Front Airflow supported on X695
XN-2P-RKMT299	Two Post Rail Kit	Spare two post rack mount kit supported on X695
XN-4P-RKMT298	Four Post Rail Kit	Spare four post rack mount rail kit supported on X695
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.

Software Licenses

Part Number	Product Name	Product Description
EXOS-CORE-FP-X695	EXOS Core Feature Pack	Core Feature Pack License for X695 (Includes Integrated Application Hosting)
EXOS-MACSEC-FP-X695	X695 MACsec Feature Pack	MACsec Feature Pack for the X695. Enables MACsec when used with LRM/MACsec Adapter (10965)
17133	X695 MPLS Feature Pack	MPLS Feature Pack License for the X695

Warranty

The X695 is covered under Extreme's Universal LLW policy. For warranty details, see: https://www.extremenetworks.com/support/policies.

Power Cords

In support of the Extreme Networks Green initiatives, power cords can be ordered separately, but need to be specified at time of ordering.

Optics/Transceivers

For a list of optics/transceivers supported on the X695, refer to our Extreme Optics Compatibility Tool at https://optics.extremenetworks.com

Maintenance Services

Extreme's maintenance and support services with 100% in-sourced engineering experts and over 90% first-person resolution ensure efficient operations of your business- essential network. 24x7x365 phone support, advanced part replacement, and on-site support augment your staff with experienced resources that help you mitigate critical network issues fast. Visit Extreme Maintenance Services for more information.