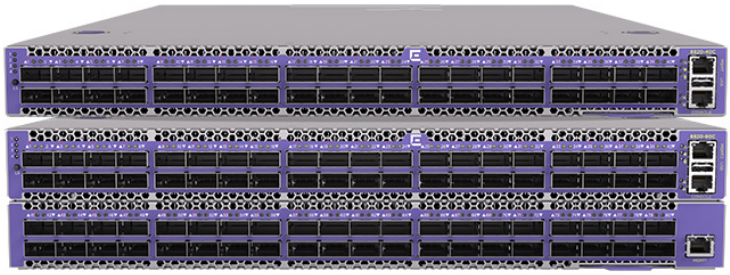
Extreme networks

Data Sheet

Extreme 8820

Highlights

- Fully featured Data Center Switch and Router with carrier-class MPLS, VXLAN, and Dual Stack IPv4/IPv6 functionality
- High-density,fixed form factor Switch and Router with either 80 x 100 GbE or 40 x l00GbE ports
- Ultra-deep buffers of up to 16GB to ensure optimal performance to handle traffic in virtually any network for bursty traffic patterns
- Supply chain, boot, and runtime protectionw ith Measured Boot
- Baseboard Management Controller (BMC) for lights-out management (LOM) for remote operations such as reboots, shutdowns, and out-of-band troubleshooting
- BGP EVPN-VXLAN for Data Center Spine and Data Center Interconnect (DCI) networking
- Integrated Application Hosting supports an open kernel-based virtual machine (KVM) environment to accommodate Extreme-provided or third-party customer specific applications, containers — with complete isolation from the networking operating system



BUILT ON BROADCOM

Next-Generation Router for Core Aggregation at Service Providers and Large Enterprise Data Centers

Cloud and 5G demand high performance networks that provide the necessary connectivity, bandwidth, and speed in large data centers for enterprises and service providers.

The Extreme 8820 platforms serve as demarcation between the enterprise networks and the service provider networks (Internet) where the ISP connections terminate. Basic requirements include support for a full Internet routing table, mainstream routing protocols BGP, OSPF and IS-IS, EVPN VxLAN, ACLs, BGP Internet peering scale, MPLS, deep buffer, device management, and entry level DDoS protection.

Extreme Networks offers a choice for selecting the right routing solution to meet your business needs. The options include the Extreme 8820 (1U) with 40 x 100 GbE ports and the Extreme 8820 (2U) with 80 x 100 GbE ports to deliver cost-effective solutions for the most demanding Enterprise and Service Provider customers.

As part of Extreme's Trusted Delivery initiative, the Extreme 8000 Series of Universal switches introduce powerful security enhancements with a combination of Secure Boot technology, enhanced by an industry-first Measured Boot implementation. Measured Boot extends the security posture of the system into the execution of the operating system itself for greater protection against threats.

Internet-Scale Routing Platform

The Extreme 8820 is designed to cost-effectively deliver the scale and performance needed to address the explosive growth in network bandwidth, devices, and services — today and well into the future. This flexible platform, powered by Extreme SLX-OS, provides carrier-class advanced features that leverage proven Extreme routing, MPLS, Carrier Ethernet, and VXLAN overlay technology currently deployed in the most demanding service provider, data center, and enterprise networks.

Ultra-Deep Buffers

The Extreme 8820 offers a deep buffering platform that is purpose-built for the most demanding service provider and enterprise networks. The border router is the interconnection point between internal networks and the internet. With more traffic moving across these routers, there is added demand for capacity, the ability to absorb speed mismatches and handle microbursts without compromising performance. The Extreme 8820-40C has 8GB and the Extreme 8820-80C has 16GB of deep packet buffers.

Trusted Delivery

Trusted Delivery from Extreme Networks is designed to protect your key service delivery infrastructure at remote, often-unattended sites, as well as within colocation and data center environments where shared facility access is a concern. With Measured Boot — a security mechanism designed to verify the boot and runtime processes — Extreme Networks provides the capability to validate hardware components, boot process, and the operating system from factory to installation. Combined with remote attestation, where a trusted off-box challenger provides an objective measurement of trust, Measured Boot provides ongoing binary-level validation during operation.

Integrated Application Hosting

The Extreme 8820 can run third-party VM-based applications alongside the routing OS — all without impacting performance. This flexible and open solution enables organizations to deploy Extreme-provided or third-party applications and tools directly on the router. This design does not impact the control plane or forwarding of data traffic.

Internet Exchange Points

The ever-increasing growth of IXPs traffic with new record highs demand wide spread 100 GbE connectivity at the edge of the network. Cost per port is a key factor as customers migrate from 10 GbE to 100 GbE and ultra-high density are essential with the right mix of technologies (for example, VPLS and EVPN) with the Extreme 8820.

Flexible Border Routing Solution

The Extreme 8820 is the industry's most powerful compact deep buffer dual stack IPv4/IPv6 Internet border router, providing a cost-efficient solution that is purpose-built for the most demanding service provider and enterprise data centers and MAN/WAN applications. The robust system architecture and a versatile feature set including IPv4, IPv6 and MPLS/VPLS combined with Carrier Ethernet 2.0 and OAM capabilities provides deployment flexibility. The Extreme 8820 supports true internet scale border routing solutions with support for a maximum of 3.5M IPv4/IPv6 unicast routes.

Extreme 8820 Specifications

Item	Extreme 8820-80C	Extreme 8820-40C
Maximum 100 GbE/40 GbE ports	80	40
Maximum 10/25 GbE	144 ports in breakout mode (36x4)	72 ports in breakout mode (18x4)
Switch fabric capacity (data rate, full duplex)	8.0Tbps in each direction (front panel ports, 80x100Gbps)	4.0 Tbps in each direction (front panel ports, 40x100Gbps)
Forwarding capacity (data rate, full duplex)	4000Mpps (packet size=284B)	2000Mpps (packet size=284B)
Airflow	Front to back or back to front (orderable option)	Front to back or back to front (orderable option)
Fan module slots	4 (3+ 1 redundancy)	6 (5+ 1 redundancy)
Maximum AC power supply rating	1600 W	1600 W
Power Supplies Modular	1600W AC/DC power supply (up to four PSUs)	1600W AC/DC power supply (up to two PSUs)
Height	3.41in / 8.66 cm	1.7in / 4.31 cm
Width	17.72in / 45.00 cm	17.72in / 45.00 cm
Depth chassis only without cable management or fan handles	25.2in / 64.00 cm	25.2in / 64.00 cm
Weight Chassis	4PS, 4 fans: 58.46 lb / 26.52 kg	2PS, 6 fans: 29.98 lb / 13.60 kg
Weight Chassis	4PS, 4 fans, rack mount kit (4 post): 64.99 lb / 29.48 kg	2PS, 6 fans, rack mount kit (4 post): 36.24 lb / 16.44 kg
Weight Empty chassis (no PS, no fans)	45.46 lb, 20.62 kg Fan: 0.71 lb, 0.32 kg PS: 2.54 lb, 1.15 kg	23.28 lb, 10.56 kg Fan: 0.27 lb, 0.13 kg PS: 2.54 lb, 1.15 kg
Port type	QSFP28 Port Configs: 80x100GbE, 80x40GbE, 144x25GbE, 144x10GbE	QSFP28 Port Configs: 40x100GbE, 40x40GbE, 72x25GbE, 72x10GbE
Packet buffers per switch	16 GB	8 GB
Operating Conditions	Operating temperature and operating altitude for airflow front to back: 0°C (32°F) to 40°C (104°F) up to 1800m (6000 ft)	
	Operating temperature and operating altitude for airflow back to front: 0°C (32°F) to 25°C (77°F) up to 1800 m (6000 ft)	
	Storage temperature: -40°C to 70°C (-40°F to 158°F)	
	Operating Relative Humidity: 5% to 95% (non-condensing)	

Power and Heat Dissipation

	1600W AC PSU	1600W DC PSU
Dimensions	3.4" x 1.58" x 9.45" 86.36 mm x 40.13 mm x 240.03 mm (WxHxD)	3.4" x 1.58" x 10.04" 86.36 mm x 40.13 mm x255.02 mm (WxHxD)
Weight	2.54 lb (1.15 kg)	2.54 lb (1.15 kg)
Voltage Input Range	fron tto back: 90 to 264 VAC; back to front: 180 to 264 VAC	+/-39 VDC to +/-72 VDC

	1600W AC PSU	1600W DC PSU
Line Frequency Range	47 to 63 Hz	NA
PSU Input Socke	IEC320, C14	Amphenol Connector C10-747795 or similar

Extreme 8820-80C Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 4 PSU)	Extreme8820-80C Maximum Power Dissipation (Watts) (Fans high, all ports 100% traffic, 4 PSU)
6592.26 BTU/hr	1932 W

Extreme 8820-40C Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 2 PSU)	Extreme 8820-40C Maximum Power Dissipation (Watts) (Fans high, all ports 100% traffic, 2 PSU)
3524.74 BTU/hr	1033 W

Acoustics

Sound Pressure	Extreme 8820-40C (F-8)	Extreme 8820-40C (B-F)	Extreme 8820-80C (F-8)	Extreme 8820-80C (B-F)
Front	57.3 dBA, re: 20 µPa	61.7 dBA, re: 20 µPa	61.3 dBA, re: 20 µPa	69 dBA, re: 20 µPa
Rear	60.2 dBA, re: 20 µPa	65.1 dBA, re: 20 µPa	65.2 dBA, re: 20 µPa	70.8d BA, re: 20 µPa
Right	50.5 dBA, re: 20 µPa	54.9 dBA, re: 20 µPa	55.5 dBA, re: 20 µPa	62.9 dBA, re: 20 µPa
Left	51.9 dBA, re: 20 µPa	55.9 dBA, re: 20 µPa	55.9 dBA, re: 20 µPa	64 dBA, re: 20 µPa
Average	55 dBA, re: 20 µPa	59.4 dBA, re: 20 µPa	59.5 dBA, re: 20 µPa	66.7 dBA, re: 20 µPa

IEEE Compliance

Ethernet

For more information on the supported RFCs, visit the Extreme Documentation Portal.

Access the 'Extreme SLX-OS Scale and Standards Matrix' document for your version of SLX-OS.

802.3-2005 CSMA/CD Access Method and Physical Layer Specifications

802.3ab 1000BASE-T

802.3ae 10 Gigabit Ethernet

802.3u 100BASE-TX, 100BASE-T4, 100BASE-FX Fast Ethernet at 100Mbps with Auto-Negotiation

802.3x Flow Control

802.3z 1000BASE-X Gigabit Ethernet over fiber optic at 1 Gbps

802.3ad Link Aggregation

802.1q Virtual Bridged LANs

802.1d MAC Bridges

802.1w Rapid STP

802.1s Multiple Spanning Trees

802.1ag Connectivity Fault Management(CFM)

802.3.bj 100 Gigabit Ethernet

802.1ab Link Layer Discovery Protocol

802.1x Port-Based Network Access Control

802.3ah Ethernet in the First Mile Link OAM3

ITU-T G.8013/Y.1731 OAM mechanisms for Ethernet

G.8032

Environmental Regulatory Compliance

EU RoHS - 2011/65/EU and amendment (EU) 2015/863

EU WEEE - 2012/19/EU

EU REACH - Regulation (EC) No 1907/2006

China RoHS 2- SJ/T 11364- 2014

Taiwan RoHS CNS 15663(2013.7)

Regulatory and Safety

North American ITE

CAN/CSA C22.2 NO. 60950-1-01, CAN/CSA C22.2 NO. 62368-1-14

UL60950-1, UL 62368-1

European ITE

EN 60950-1

EN 62368-1

EN 60825-1 Class 1 (Lasers Safety)

2014/35/EU Low Voltage Directive

ETS 300 132-1 Equipment Requirements for AC Power Equipment Derived from DC Sources

ETS 300 132-2 Equipment Requirements for DC Powered Equipment ETS 300 253 Facility Requirements

ETS 300 253 Facility Requirements

International ITE

CB Report & Certificate per IEC 60950-1 + National Differences

CB Report & Certificate IEC 62368-1

AS/NZS 60950-1 (Australia/New Zealand)

CNS 14336-1 (Taiwan)

GB 4943.1-2011 (China)

EMI/EMC Standards

North American EMC Standards

FCC CFR 47 part 15 Class A (USA)

ICES-003 Class A (Canada)

European EMC Standards

EN 55032 Class A

EN 55024

EN 55011

EN 61000-3-2: (Harmonics)

EN 61000-3-3 (Flicker)

EN 300 386 (EMC Telecommunications)

2014/30/EU EMC Directive

International EMC Standards

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, 16kV Air, Criteria B

IEC 61000-4-3/EN 61000-4-3 Radiated Immunity 10V/m, Criteria A

IEC 61000-4-4/EN 61000-4-4 Transient Burst, 2kV, Criteria B

IEC 61000-4-5/EN 61000-4-5 Surge, 1kV L-L, 2kV L-G, Level 3 Criteria B

IEC 61000-4- 6/EN 61000-4-6 Conducted Immunity, 0.15-80 Mhz, lOVrms, 80%AM (lkHz) Criteria A

IEC/EN 61000-4-11 Power Dips & Interruptions, >30%, 25 periods, Criteria C

CNS 13438 (Taiwan)

GB/T9254-2008 (China)

Country Specific

VCCI Class A (Japan Emissions)

ACMA RCM (Australia Emissions)

CCC Mark

KCC Mark, EMC Approval (Korea)

BSMI (Taiwan)

Anatel (Brazil)

NoM (Mexico)

EAC (Russian Belarus, Kazakhstan, Armenia, Kyrgyzstan)

NRCS (South Africa)

Ordering Information

Part Number	Description
8820-40C	Extreme 8820-40C base unit with 40x100GE/40GE QSFP28 ports with 2 unpopulated power supply slots, 6 unpopulated fan slots and a 4-post rack mount kit
8820-40C-AC-F	Extreme 8820-40C with Front-Back airflow. Base unit with 40x100GE/40GE QSFP28 ports with 2 AC power supplies, 6 fan modules and a 4-post rack mount kit.
8820-40C-AC-R	Extreme 8820-40C with Back-Front airflow. Base unit with 40x100GE/40GE QSFP28 ports with 2 AC power supplies, 6 fan modules and a 4-post rack mount kit.
8820-40C-DC-F	Extreme 8820-40C with Front-Back airflow. Base unit with 40x100GE/40GE QSFP28 ports with 2 DC power supplies, 6 fan modules and a 4-post rack mount kit.
8820-40C-DC-R	Extreme 8820-40C with Back-Front airflow. Base unit with 40x100GE/40GE QSFP28 ports with 2 DC power supplies, 6 fan modules and a 4-post rack mount kit.
8820-80C	Extreme 8820-80C. Base unit with 80x100GE/40GE QSFP28 ports with 4 unpopulated power supply slots, 4 unpopulated fan slots and a 4-post rack mount kit.
8820-80C-AC-F	Extreme 8820-80C with Front-Back airflow. Base unit with 80x100GE/40GE QSFP28 ports with 4 AC power supplies, 4 fan modules and a 4-post rack mount kit.
8820-80C-AC-R	Extreme 8820-80C with Back-Front airflow. Base unit with 80x100GE/40GE QSFP28 ports with 4 AC power supplies, 4 fan modules and a 4-post rack mount kit.
8820-80C-DC-F	Extreme 8820-80C with Front-Back airflow. Base unit with 80x100GE/40GE QSFP28 ports with 4 DC power supplies, 4 fan modules and a 4-post rack mount kit.
8820-80C-DC-R	Extreme 8820-80C with Back-Front airflow. Base unit with 80x100GE/40GE QSFP28 ports with 4 DC power supplies, 4 fan modules and a 4-post rack mount kit
XN-FAN-003-F	Extreme 8820 FAN Front to Back airflow for 8820-40C
XN-FAN-003-R	Extreme 8820 FAN Back to Front airflow for 8820-40C
XN-FAN-004-F	Extreme 8820 FAN Front to Back airflow for 8820-80C
XN-FAN-004-R	Extreme 8820 FAN Back to Front airflow for 8820-80C
XN-ACPWR-1600W-F	Extreme 8820 Fixed AC 1600W Power Supply Front to Back. Power cords not included.
XN-ACPWR-1600W-R	Extreme 8820 Fixed AC 1600W Power Supply Back to Front. Power cords not included.
XN-DCPWR-1600W-F	Extreme 8820 Fixed DC 1600W Power Supply Front to Back. Power cords not included.
XN-DCPWR-1600W-R	Extreme 8820 Fixed DC 1600W Power Supply Back to Front. Power cords not included.
8800-PRMR-LIC-P	Extreme 8800 Premier Feature License (includes Integrated Application Hosting)
XN-2P-RKMT299	2-Post Rail Kit for Extreme 8820-40C
XN-2P-RKMT300	2-Post Rail Kit for Extreme 8820-80C
XN-4P-RKMT301	4-Post Rail Kit for Extreme 8820-80C
XN-4P-RKMT302	4-Post Rail Kit for Extreme 8820-40C

Maintenance Services

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

Optics / Transceivers

For a list of the optics/transceivers supported on the 8820 Series hardware, refer to our Extreme Optics Compatibility Tool at https://optics.extremenetworks.com.

Power Cords

SLX series power cords can be ordered separately but need to be specified at time of ordering.

Refer to www.extremenetworks.com/powercords/ for details on power cord availability for this product.

Warranty

The Extreme 8820 is covered under Extreme's 1Year Warranty policy.

For warranty details, visit: http://www.extremenetworks.com/support/policies