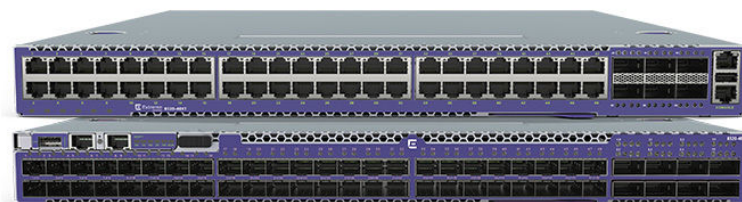# Extreme 8520

Highlights

- High-performance feature-rich, Fixed Form Factor Leaf Switches for Service Provider and Data Center
- Two models – 48 x 25/10/1G + 8 x 100/40G (fiber) and 48 x 10/1G copper connectivity + 6 x 100/40G GbE uplink options in a fixed 1U form factor
- Copper ports support 10G and 1G and Fiber ports support 25G, 10G and 1G
- Supply chain, boot, and runtime protection with Measured Boot
- Baseboard Management Controller (BMC) for lights-out management (LOM) for remote operations such as reboots, shutdowns, and out-of-band troubleshooting
- Full featured SLX operating system with advanced features supporting switching, IP Fabrics, BGP-EVPN and VXLAN
- Supports Integrated Application Hosting to enable organizations to deploy Extreme- provided or third-party applications and tools directly on the switch
- All models offer a choice of AC/DC power supplies and F/R fans
- ExtremeCloud Orchestrator leverages Integrated Application Hosting and enables plug-n-play IP fabrics for infrastructure provisioning and configuration of all tenant services across the entire fabric at no additional cost

Next Generation Secure Data Center and Mobile Edge Leaf Switches

Introducing the Extreme 8520 switches for large scale BGP-EVPN IP Fabric enterprise data centers and service provider fixed and mobile edge architectures. As a part of Extreme's Universal platform, the Extreme 8520 delivers scalable L2 and L3 services and deterministic network performance while simplifying deployment and reducing cost.

The Extreme 8520 platforms are top-of-rack, fixed form factor 1/10/25/40/100GbE leaf switches with 32MB of packet buffer and an overall non-blocking, in and out throughput of 2Tbps. There are two network hardware platforms, offering forty-eight 1/10/25 GbE SFP28 ports and either six or eight 100/40 GbE QSFP28 ports.

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.

The Extreme 8520 network hardware platforms enable organizations to design open networks that accommodate a variety of applications and east- west traffic patterns. With its high-density scale-out architecture, leading power efficiency, and airflow options, the Extreme 8520 platforms deliver cost-effective solutions that optimizes power, cooling, and data center space, wherever your center of data might be.

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.

Plug 'n Play

ExtremeCloud Orchestrator simplifies and accelerates the deployment of the data center IP Fabric. The on-box application runs as a service on the Integrated Application Hosting environment within the 8520 and uses industry-standard open API-based programmable interfaces to provide the easiest way to deploy, provision, and automate single or multiple data center IP Fabric networks in the fastest and most efficient way. ExtremeCloud Orchestrator is also the point of integration for VMware vCenter, Microsoft Hyper V, and OpenStack.

High Availability and Reliability

All 8520 models deliver the high performance and reliability required by modern enterprises and service provider data centers. 8520 software and hardware are designed for high availability, featuring a clear separation between the control plane and data plane and redundant power supplies and fan modules.

Modular, Virtualized Operating System

The 8520 runs Extreme SLX-OS, a fully virtualized Linux-based operating system that delivers process-level resiliency and fault isolation. SLX-OS supports advanced switching features and is highly programmable with support for REST API, Python, and NETCONF/RESTCONF. It is based on Linux, which offers all the advantages of open source and access to commonly used Linux tools.

With enhanced support for Trusted Delivery features, such as Measured Boot and strong security defaults, Extreme SLX-OS continues to further protect against ever-growing security threats to infrastructure.

Integrated Application Hosting

The 8520 can run onboard VM-based applications alongside the switch 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 switch for security, monitoring, troubleshooting, or extended network functionality—based on customer need—without a separate hardware device. This unique design does not impact the control and forwarding plane of the switch and provides dedicated CPUs, memory, and SSD storage for flexible packet capture and off-line processing.

Management

The 8520 can be managed in a variety of ways. REST, NETCONF management interface or simple on-box management functions are delivered with CLI for manual configuration.

Switch Specifications

Model	8520-48Y	8520-48XT
Ports	• 48 x 1/10/25GbE SFP28 ports • 8 x 40/100GbE QSFP28 ports • 1 x Serial console port RJ-45 • 1 x 10/100/1000BASE-T out -of-band management port • USB Type A storage port	• 48 x 1/10GbE 10GBaseT ports • 6 x 40/100GbE QSFP28 ports • 1 x Serial console port RJ-45 • 1 x 10/100/1000BASE-T out -of-band management port • USB Type A storage port
PowerSupplies	Modular 750W AC power supply (up to two PSUs) • Modular 750W DC power supply (up to two PSUs) • Front to Back and Back to Front airflow options	Modular 750W AC power supply (up to two PSUs) • Modular 750W DC power supply (up to two PSUs) • Front to Back and Back to Front airflow options
Fan Modules	• 6 fan modules • Front-Back and Back-Front airflow options	• 6 fan modules • Front-Back and Back-Front airflow options
Dimensions	17.3 in W / 21.24 in D / 1.7 in H (44.0cm / 53.95cm / 4.3cm)	17.3in W / 20.9 in D / 1.7 in H (44.0cm / 53.2cm / 4.3cm)
Performance	• Line rate 4Tbps Switching Capacity (2Tbps ingress, 2Tbps egress) • Typical Latency: 800 ns • Forwarding rate: 1000 Mpps	• Line rate 2.16 Tbps Switching Capacity (1.08Tbps ingress, 1.08Tbps egress) • Typical Latency: 2,400 ns • Forwarding rate: 1000 Mpps
CPU Memory	• 8-core Processor • 16GB DDR4 ECC memory • 128GB SSD memory	• 8-core Processor • 16GB DDR4 ECC memory • 128GB SSD memory
Packet Buffers	32MB	32MB
Operating Conditions	AC/DC, one fan failed, front-to-back: 0°C (32°F) to 50°C (122°F) at sea level; 0°C (32°F) to 40°C (104°F) up to 3000 m (10,000 ft)	AC/DC, one fan failed, back-to-front: 0°C (32°F) to 45°C (113°F) at sea level; 0°C (32°F) to 40°C (104°F) up to 3000 m (10,000 ft)

Power and Heat Dissipation

Switch Model	Minimum Heat Dissipation (BTU/hr) (Idle, no ports linked)	Minimum Power Consumption (Watts) (Idle, no ports linked)	Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic)	Maximum Power Consumption (Watts) (Fans high, all ports 100% traffic)
8520-48YAC	553BTU/ hr	167W	1600BTU/ hr	469W
8520-48YDC	553BTU/ hr	167W	1600BTU/ hr	469W
8520-48XTAC	642BTU/ hr	194W	1225BTU/ hr	359W
8520-48XTDC	642BTU/ hr	194W	1225BTU/ hr	359W

Power Supply Specifications

	750W AC PSU XN-ACPWR-750W-F/ R	750W DC PSU XN-DCPWR-750W-F/ R
Dimensions	3.15in W x 1.57in H x 8.11in D (8.0 cm x 4.0 cm x 20.6 cm)	3.15in W x 1.57in H x 8.11in 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	100-140 VAC / 20 0 -240 VAC	-48 to -60 VDC
Line Frequency Range	50 – 60 HZ	N/A
PSU Input Socket	IEC 320 C14	Terminal Block
PSU Output Cord	IEC 320 C13	N/A
Operating Conditions	0˚– 55˚C operation	0˚- 55˚C operation

Software Specifications

Maximum MAC addresses	64,000
Maximum VLANs	4,096
Maximum ACLs (IPv4/IPv6/L2)	2,000
Maximum members in a standard LAG	64
Maximum number of MCT switches	2
Maximum number of Bridge Domains	2,048
Maximum IPv4 unicast routes	128,000
Maximum IPv6 unicast routes	10,000
Maximum IPv4 host routes	47,000
Maximum IPv4 host routes	33,000
Maximum jumbo frame size	9,216 bytes
QoS priority queues (per port)	8

Technical Specs

IEEE Compliance
Ethernet

IEEE 802.1D Spanning Tree Protocol
IEEE 802.1S Multiple Spanning Tree
IEEE 802.1W Rapid Reconfiguration of Spanning Tree Protocol
IEEE 802.3 Ethernet
IEEE 802.3ad Link Aggregation with LACP
IEEE 802.3ab 1000BASE-T
IEEE 802.3z 1000BASE-X
IEEE 802.3ba / 80 2.3bm 40 GBASE-X and 100 GBASE-X
IEEE 802.1Q VLAN Tagging

IEEE 802.1P Class of Service Prioritization and Tagging
IEEE 802.1V VLAN Classification by Protocol and Port
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
IEEE 802.3x Flow Control (Pause Frames)
IEEE 802.3ae 10 GBASE-X
IEEE 802.3 10 GBASE-T (up to 100 m using Cat6a cabling or better)

For more information on the supported RFCs, visit the Extreme Documentation Portal. Search for the *Extreme SLX-OS Scale and Standards Matrix* document for your version of SLX-OS.

Virtualization Support
VXLAN Routing VXLAN Bridging
VXLAN Tunnel End Point VXLAN Multi-VNI

Layer 2 Switching

Conversational MAC Learning

Virtual Link Aggregation Group (vLAG) spanning Layer 2 Access Control Lists (ACLs)

Address Resolution Protocol (ARP) RFC 826

Layer 2 Loop prevention in an overlay environment MLD Snooping IGMP v1/v2 Snooping MAC Learning and Aging

Link Aggregation Control Protocol (LACP) IEEE 802.3ad/802.1AX Virtual Local Area Networks (VLANs)

VLAN Encapsulation 802.1Q

Per-VLAN Spanning Tree (PVST+/PVRST+) Rapid Spanning Tree Protocol (RSTP) 802.1w Multiple Spanning Tree Protocol (MSTP) 802.1s STP PortFast, BPDU Guard, BPDU Filter

STP Root Guard Pause Frames 802.3x

Static MAC Configuration Multi-Chassis Trunking (MCT) DCB features (HW ready)

Layer 3 Routing

Border Gateway Protocol (BGP4+) DHCP Helper Layer 3 ACLs IGMPv2

OSPF v2/v3 Static routes IPv4/v6 ACL

Bidirectional Forwarding Detection (BFD) 64-Way ECMP VRF Lite

VRF-aware OSPF, BGP, VRRP, static routes VRRP v2 and v3 IPv4/IPv6 dual stack

ICMPv6 Route-Advertisement Guard Route Policies

IPv6 ACL packet filtering BGP Additional-Path BGP-Allow AS

BGP Generalized TTL Security Mechanism (GTSM) BGP Peer Auto Shutdown IPv6 routing

OSPF Type-3 LSA Filter

Wire-speed routing for IPv4 and IPv6 using any routing protocol BGP-EVPN Control Plane Signaling RFC 7432

BGP-EVPN VXLAN Standard-based Overlay Multi-VRF IP Unnumbered Interface VRRP-E

Automation and Programmability

gRPC Streaming protocol and API REST API with YANG data model Python PyNOS libraries

DHCP automatic provisioning NETCONF API

High Availability

Bidirectional Forwarding Detection (BFD)

Quality of Service

ACL-based QoS

Class of Service (CoS) IEEE 802.1p

DSCP Trust

DSCP to Traffic Class Mutation

DSCP to CoS Mutation

DSCP to DSCP Mutation

Random Early Discard

Per-port QoS configuration

ACL-based Rate Limit

Dual-rate, three-color token bucket

ACL-based remarking of CoS/DSCP/Precedence

ACL-based sFlow

Scheduling: Strict Priority (SP), Deficit Weighted Round-Robin (DWRR)

Management and Monitoring

Zero-Touch Provisioning (ZTP)

IPv4/IPv6 management

Industry-standard Command Line Interface (CLI)

NETCONF API

RESTCONF API with YANG data model

SSH/SSHv2

Link Layer Discovery Protocol (LLDP) IEEE 802.1AB

MIB II RFC 1213 MIB

Syslog (RASlog, AuditLog)

Management VRF

Switched Port Analyzer (SPAN)

Telnet

SNMPv1, v2c, v3

sFlow version 5

Out-of-band management

RMON-1, RMON-2

NTP

Management Access Control Lists (ACLs)

Role-Based Access Control (RBAC) Range CLI support

Python

DHCP Option 82 Insertion

DHCP Relay

Timestamping

Security

Port-based Network Access Control 802.1X RADIUS

AAA TACACS+

Secure Shell (SSHv2) TLS 1.1, 1.2 HTTP/HTTPS

BPDU Drop

Lightweight Directory Access Protocol (LDAP)

Secure Copy Protocol

Control Plane Policing (CPP)

LDAP/AD

SFTP

Port Security

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 2 GB/T 26572

Taiwan RoHS CNS 15663 (2013.7)

Ordering Information

Part Number	Description
8520-48Y-8C	Extreme 8520-48Y Switch with two empty power supply slots, six empty fan slots; Ships with one 4-post rack mount kit; Supports 48x25/10/1G and 8x100/40G ports
8520-48Y-8C-AC-F	Extreme 8520-48Y Switch with front-back airflow; Ships with two AC power supplies, six fans, one 4-post rack mount kit; Supports 48x25/10/1G and 8x100/40G ports
8520-48Y-8C-AC-R	Extreme 8520-48Y Switch with back-front airflow; Ships with two AC power supplies, six fans, one 4-post rack mount kit; Supports 48x25/10/1G and 8x100/40G ports
8520-48Y-8C-DC-F	Extreme 8520-48Y Switch with front-back airflow; Ships with two DC power supplies, six fans, one 4-post rack mount kit; Supports 48x25/10/1G and 8x100/40G ports
8520-48Y-8C-DC-R	Extreme 8520-48Y Switch with back-front airflow; Ships with two DC power supplies, six fans, one 4-post rack mount kit; Supports 48x25/10/1G and 8x100/40G ports
8520-48XT-6C	Extreme 8520-48XT Switch with two empty power supply slots, six empty fan slots; Ships with one 4-post rack mount kit; Supports 48x10/1G copper ports and 6x100/40G fiber ports
8520-48XT-6C-AC-F	Extreme 8520-48XT Switch with front-back airflow; Ships with two AC power supplies, six fans, one 4-post rack mount kit; Supports 48x10/1G copper ports and 6x100/40G fiber ports
8520-48XT-6C-AC-R	Extreme 8520-48XT Switch with back-front airflow; Ships with two AC power supplies, six fans, one 4-post rack mount kit; Supports 48x10/1G copper ports and 6x100/40G fiber ports
8520-48XT-6C-DC-F	Extreme 8520-48XT Switch with front-back airflow; Ships with two DC power supplies, six fans, one 4-post rack mount kit; Supports 48x10/1G copper ports and 6x100/40G fiber ports
8520-48XT-6C-DC-R	Extreme 8520-48XT Switch with back-front airflow; Ships with two DC power supplies, six fans, one 4-post rack mount kit; Supports 48x10/1G copper ports and 6x100/40G fiber ports
8000-PRMR-LIC-P	Extreme 8000 Premier Feature License (Includes Insight Architecture)
XN-ACPWR-750W-F	AC 750W PSU, Front to Back Airflow for use in VSP7400, SLX 9150, SLX9250, X695, 8520, 8720
XN-ACPWR-750W-R	AC 750W PSU, Back to Front Airflow for use in VSP7400, SLX 9150, SLX9250, X695, 8520, 8720
XN-DCPWR-750W-F	DC 750W PSU, Front to Back Airflow for use in VSP7400, SLX 9150, SLX9250, X695, 8520, 8720
XN-DCPWR-750W-R	DC 750W PSU, Back to Front Airflow for use in VSP7400, SLX 9150, SLX9250, X695, 8520, 8720
XN-FAN-001-F	Front to Back Fan for use in VSP 7400, SLX 9150, SLX 9250, X695, 8520, 8720
XN-FAN-001-R	Back to Front Fan for use in VSP 7400, SLX 9150, SLX 9250, X695, 8520, 8720
XN-4P-RKMT298	Four post rack mount rail kit supported on VSP 7400, SLX 9150, SLX 9250, X695, 8520, 8720
XN-2P-RKMT299	Two post rack mount rail kit supported on VSP 7400, SLX 9150, SLX9250, X695, 8520, 8720

Optics/Transceivers

For a list of the optics/transceivers supported on the 8520 Series, refer to our Extreme Optics Compatibility Tool.

Power Cords

In support of Extreme Networks green initiatives, power cords are not included with the 8520 but can be ordered separately. They should be specified at time of ordering.

Warranty

All 8520 Series models are covered under Extreme's Universal LLW policy. For warranty details, visit: http://www.extremenetworks.com/support/policies

Maintenance Services

Extreme's maintenance 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 our ExtremeWorks Maintenance Services page for more information.

Kreski

Zapraszamy do kontaktu!
Więcej informacji: **www.kreski.pl**