

# SLX 9540

## Highlights

- Enables flexible edge connectivity by cost-effectively delivering density, features, and performance optimized for data center interconnect, WAN edge, IXP, and colocation data center deployments
- Includes multiple configurations of dense 10 GbE and 100 GbE ports for diverse deployment options
- Delivers up to 720 Mpps forwarding capacity and up to 800 Gbps switch fabric capacity with an industry-leading 6 GB of tunable, ultra-deep packet buffers in a 1U form factor
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- Provides carrier-class forwarding, including full IPv4/v6 switching, MPLS, VPLS, VLL, and BGP-EVPN VXLAN overlay capabilities on a single platform
- Integrated Application Hosting enables Extreme-provided or 3rd-party applications without impacting switch performance



## Next-Generation Fixed Router with Flexible Edge Connectivity for the Digital Organization

With cloud services, 4K HD video streaming, Internet of Things (IoT), and mobile connectivity for billions of devices becoming standard, organizations must modernize the way they communicate and conduct business. In addition to consuming an enormous amount of network capacity, these services increase operational complexity just as organizations are striving to meet customer demands for greater business agility and performance.

To succeed in the digital era, organizations need network platforms that allow them to simplify and speed up operations, without increasing costs. Such platforms incorporate innovative software to analyze and automate network operations, thereby reducing OpEx, and provide flexible deployment options with forwarding performance and scale to dramatically reduce CapEx.

### A Flexible, High-Performance Switching Platform

The ExtremeRouting™ SLX 9540 is designed to cost-effectively deliver the 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. And it is all delivered through space- and power-efficient forwarding hardware.

The flexible architecture is designed for optimal operations, supporting diverse deployment options — such as data center edge, WAN edge, IXP, and colocation data center deployments — that require deep buffering for lossless forwarding, advanced MPLS, Carrier Ethernet features or VXLAN network virtualization overlays, and greater bandwidth. In addition, the SLX 9540 helps address the increasing agility and analytics needs of digital organizations with innovative network automation, visibility and the Extreme Integrated Application Hosting.

## Deployment Versatility with Ultra-Deep Buffers and MPLS

The SLX 9540 is the industry's most powerful compact deep buffer data center switch, 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 — supported by SLX-OS and a versatile feature set including IPv4, IPv6, and MPLS/VPLS — combines with Carrier Ethernet 2.0 and OAM capabilities to provide deployment flexibility. This enables the SLX 9540 to scale from the data center edge to data center interconnect and MAN/WAN environments.

Designed with state-of-the-art network processor technology, the SLX 9540 has a switching capacity of up to 800 Gbps in a 1U form factor. Advanced hardware with fine-grained QoS support enables full-duplex, high-speed performance for any mix of IPv4, IPv6, and MPLS/VPLS services.

SLX 9540 hardware is available in multiple configurations enabled through SLX-OS feature licenses. The SLX 9540-24S supports 24 10 GbE/1 GbE combination ports along with 24 1 GbE ports. The SLX 9540-48S supports 48 10 GbE/1 GbE combination ports along with 6 100 GbE/40 GbE combination ports. Individual SLX-OS software licenses are available to enable all 48 10 GbE/1 GbE and 6 100 GbE/40 GbE ports on the SLX 9540-24S, making it equivalent to the SLX 9540-48S. This approach provides financial and operational flexibility for diverse business and service deployment needs.

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## Modular, Virtualized Operating System

The SLX 9540 runs SLX-OS and supports advanced routing, MPLS, and Carrier Ethernet 2.0 features. It is highly programmable with support for REST and NETCONF.

SLX-OS runs in a virtualized environment over a KVM hypervisor, with the operating system compartmentalized and abstracted from the underlying hardware. The core operating system functions for the SLX 9540 are hosted in the system VM.

This approach provides clean failure domain isolation for the switch operating system while leveraging the x86 ecosystem — thereby removing single vendor lock-in for system tools development and delivery. In addition, it supports a guest VM, which is an open KVM environment for running third-party and customized monitoring, troubleshooting, and analytics applications.

## Versatile Compact Switch

Gain flexibility and scale. The SLX 9540 delivers space-, power-, and cost-efficient density along with high performance for data center interconnect, WAN edge, IXP, colocation data center, and metro Ethernet network deployments.

### SLX 9540 Architecture

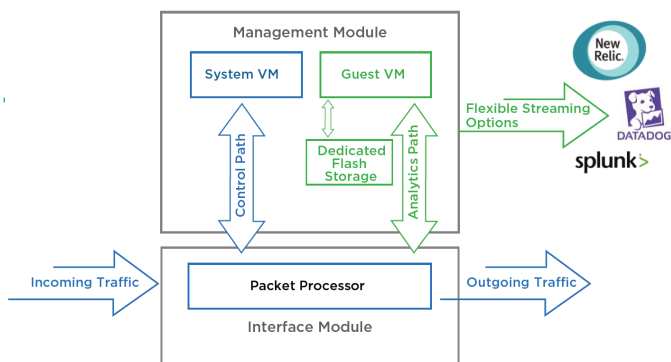
The SLX 9540 architecture is designed to support connectivity needs today and well into the future as bandwidth and application workload requirements change. Extreme Networks offers an array of SLX 9540 configurations with software licenses to help organizations optimize port density and capabilities. These switches leverage the latest Intel x86 CPU and merchant silicon packet processor technology for optimal space, power, and cooling in a highly reliable, carrier-class compact fixed switching platform.

The SLX 9540 delivers:

- Multiple 1/10/40/100 GbE configurations for deployment flexibility
- Ultra-deep buffers for lossless forwarding in demanding data center and WAN applications
- Advanced forwarding — including IPv4, IPv6, MPLS/VPLS, and BGP-EVPN — to support diverse use cases

## Embedded Network Visibility

The SLX 9540 includes the Extreme Integrated Application Hosting delivered through SLX-OS and SLX 9540 hardware innovation. This new approach to network monitoring and troubleshooting provides a highly differentiated solution that makes it faster, easier, and more cost-effective to get the comprehensive, real-time visibility needed for network operations and automation. By embedding network visibility on every switch or router, the Extreme Integrated Application Hosting can help organizations achieve pervasive visibility throughout the network to quickly and efficiently identify problems, accelerate mean-time-to-resolution, and improve overall service levels.



The highly flexible Extreme Integrated Application Hosting enables required data to be extracted from the network and optimized locally on-device for cost-effective delivery off-device to cloud-scale management, operational intelligence, and automation systems for additional analysis, action, or archiving.

Key components of the Extreme Integrated Application Hosting include:

- **Flexible Packet Filtering** – The Extreme Integrated Application Hosting begins with flexible packet filtering in the packet processors for each interface. Organizations have access to a rich set of filters for capturing the desired traffic type for visibility processing.
- **Guest VM** – Extreme Integrated Application Hosting provides an environment that runs third-party applications and customized monitoring, troubleshooting, and analytics tools. Enabled by SLX-OS, this preconfigured guest VM is on each SLX 9540 Switch. It hosts third-party network operations and analytics applications on every device, extending visibility to the entire network.
- **Dedicated Analytics Storage** – The SLX 9540 provides 64 GB of on-device storage dedicated to the Extreme Integrated Application Hosting for applications running in the open KVM environment. This enables real-time data capture for fast and easy access.

## SLX 9540 Switch Features



SLX 9540 Front View



SLX 9540 Rear View with Fan Modules

Item	Extreme SLX 9540
Maximum 100 GbE/40 GbE ports	6
Maximum 10 GbE/1 GbE ports	48
Switch fabric capacity (data rate, full duplex)	800 Gbps
Forwarding capacity (data rate, full duplex)	720Mpps
Airflow	Front to back or back to front (orderable option)
Fan module slots	6 (5+1 redundancy)
Maximum AC power supply rating	650W
Power Supplies	Modular 650W DC power supply (up to two PSUs)
Height	1.72 in/4.37 cm/1 RU
Width	17.32 in/44.00 cm
Depth (chassis only without cable management or fan handles)	16.63 in/42.2 cm
Weight (chassis only)	19.84 lb/9.00 kg

## Power and Heat Dissipation

	<b>650W AC PSU</b> <b>23-1000076-02/23-1000075-02</b>	<b>650W DC PSU</b> <b>23-1000078-02/23-1000077-02</b>
Dimensions	2.15" x 9.0" x 1.57" 54.5 mm x 228.6 mm x 40 mm	2.15" x 9.0" x 1.57" 54.5 mm x 228.6 mm x 40 mm
Weight	1.63 lb (0.741 kg)	1.74 lb (0.789 kg)
Voltage Input Range	90 to 264 Vac	-44 to -72 Vdc
Line Frequency Range	47 to 63 Hz	N/A
PSU Input Socket	IEC320, C14	IEC320, C14

<b>Maximum Heat Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 2 PSU)</b>	<b>Maximum Power Dissipation (BTU/hr) (Fans high, all ports 100% traffic, 2 PSU)</b>
1,314 BTU/hr	385W

## Acoustics

	Bystander Sound Pressure
Front	63.0 dBA
Rear	69.0 dBA
Right Side	63.2 dBA
Left Side	63.2 dBA
Average	64.6 dBA

## SLX 9540 Orderable Configurations – Specifications

Item	Configurations	
	Extreme SLX 9540-24S	Extreme SLX 9540-48S
100 GbE/40 GbE ports enabled per switch	N/A <sup>2</sup>	6
10GbE/1 GbE combo ports enabled per switch	24 <sup>2</sup>	48
1 GbE ports enabled per switch	24 <sup>2</sup>	N/A
Port type	10GbE SFP+, 1 GbE SFP+	100 GbE QSFP-28, 40 GbE QSFP+, 10 GbE SFP+, 1 GbE SFP+
Packet buffers per switch	6 GB	6 GB
Route scale	1,500,000 (IPv4), 140,000 (IPv6)	1,500,000 (IPv4), 140,000 (IPv6)
Jumbo frame (maximum size)	9,216 bytes	9,216 bytes
QoS priority queues (per port)	8	8
MPLS	With Extreme SLX-OS advanced feature license	With Extreme SLX-OS advanced feature license
OptiScale(TM) Internet Routing	With Extreme SLX-OS advanced feature license	With Extreme SLX-OS advanced feature license

<sup>2</sup> Software upgrade licenses are available for the Extreme SLX 9540-24S for Capacity on Demand (CoD) to enable additional 10 GbE/1 GbE support on the 1 GbE ports, and for Ports on Demand (PoD) to enable 100 GbE/40 GbE ports, making the Extreme SLX 9540-24S equivalent to the Extreme SLX 9540-48S.

## Specifications

### IEEE Compliance

#### Ethernet

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 100 Mbps 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)  
 802.3ba 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<sup>1</sup>  
 802.1ak for MVRP

<sup>1</sup> Supported with Extreme SLX-OS 17r.1.01 and later software

## RFC Compliance

For more information on the supported RFCs, visit the [Extreme Documentation Portal](#). Search for the Extreme SLX-OS Scale and Standards Matrix document and select the SLX-OS version.

## Environment

Operating temperature: 0°C to 40°C (32°F to 104°F)

Storage temperature: -25°C to 55°C (-13°F to 131°F)

Relative humidity: 5% to 90%, at 40°C (104°F), non-condensing

Storage humidity: 95% maximum relative humidity, non-condensing

Operating altitude: 6,600 ft (2,012 m)

Storage altitude: 15,000 ft (4,500 m) maximum

## Safety Agency Approvals

CAN/CSA-C22.2 No. 60950-1-07

ANSI/UL 60950-1

IEC 60950-1

EN 60950-1 Safety of Information Technology Equipment

EN 60825-1

EN 60825-2

## Power and Grounding

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

## Physical Design and Mounting

19-inch rack mount supporting racks compliant with:

ANSI/EIA -310-D

GR-63-CORE Seismic Zone 4

## Environmental Regulatory Compliance

EU 2011/65/EU RoHS

EU 2012/19/EU WEEE

EC/1907/2006 REACH

## Ordering Information

### Extreme SLX 9540 Switch Hardware

Part Number	Description
BR-SLX-9540-24S-AC-F	SLX 9540-24S Switch AC with front-to-back airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-24S-DC-F	SLX 9540-24S Switch DC with front-to-back airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-24S-AC-R	SLX 9540-24S Switch AC with back-to-front airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-24S-DC-R	SLX 9540-24S Switch DC with back-to-front airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-48S-AC-F	SLX 9540-48S Switch AC with front-to-back airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-48S-DC-F	SLX 9540-48S Switch DC with front-to-back airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-48S-AC-R	SLX 9540-48S Switch AC with back-to-front airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports, and a 4 post rack mount kit.
BR-SLX-9540-48S-DC-R	SLX 9540-48S Switch DC with back-to-front airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports, and a 4 post rack mount kit.

### Extreme SLX 9540 Upgrade Software Licenses

Part Number	Description
BR-SLX-9540-24S-COD-P	Upgrade 24×1 GbE ports to 24×10 GbE/1 GbE ports (for Extreme SLX 9540-24S)
BR-SLX-9540-2C-POD-P	Ports on Demand to enable 2×100 GbE/40 GbE ports (for Extreme SLX 9540-24S)
BR-SLX-9540-ADV-LIC-P	SLX 9540 Advance Feature License for MPLS, BGP-EVPN, OptiScale™ Internet Routing and Integrated Application Hosting



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