DATA SHEET

Brocade SLX 9540 Switch

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
- Provides carrier-class forwarding, including full IPv4/v6 switching, MPLS, VPLS, VLL, and BGP-EVPN VXLAN overlay capabilities on a single platform
- Enables customizable, real-time monitoring via the Brocade SLX Insight Architecture for improved troubleshooting with reduced MTTR, optimized use of off-device Big Data analytics and monitoring platforms, and intelligent automation
- Incorporates turnkey and customizable cross-domain workflow automation for the entire network lifecycle through Brocade Workflow Composer and network automation suites

Next-Generation Fixed Switch 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 Brocade® SLX® 9540 Switch 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 Brocade SLX-OS, provides carrier-class advanced features that leverage proven Brocade 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 Brocade SLX 9540 helps address the increasing agility and analytics needs of digital organizations with innovative network automation and visibility, capabilities enabled through Brocade

Workflow Composer™ with turnkey automation suites and the Brocade SLX Insight Architecture.

Deployment Versatility with Ultra-Deep Buffers and MPLS

The Brocade 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 Brocade SLX-OS and a versatile feature set including IPv4, IPv6, MPLS/VPLS, and OpenFlow forwarding—combines with Carrier Ethernet 2.0 and OAM capabilities to provide deployment flexibility. This enables the Brocade 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 Brocade 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.

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

Modular, Virtualized Operating System

The Brocade SLX 9540 runs Brocade SLX-OS, a fully virtualized Linux-based operating system that delivers process-level resiliency and fault isolation. Brocade SLX-OS supports advanced routing, MPLS, and Carrier Ethernet 2.0 features. It is highly programmable with support for REST and NETCONF, enabling full network lifecycle automation with Brocade Workflow Composer and turnkey automation suites. In addition, Brocade SLX-OS is based on Ubuntu Linux, which offers all the advantages of open source and access to commonly used Linux tools.

Brocade 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 Brocade 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 Brocade 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.

Brocade SLX 9540 Architecture

The Brocade SLX 9540 architecture is designed to support connectivity needs today and well into the future as bandwidth and application workload requirements change. Brocade offers an array of Brocade 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 Brocade 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, BGP-EVPN, and OpenFlow—to support diverse use cases*

Embedded Network Visibility

The Brocade SLX 9540 includes the Brocade SLX Insight Architecture delivered through Brocade SLX-OS and Brocade 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 Brocade SLX Insight

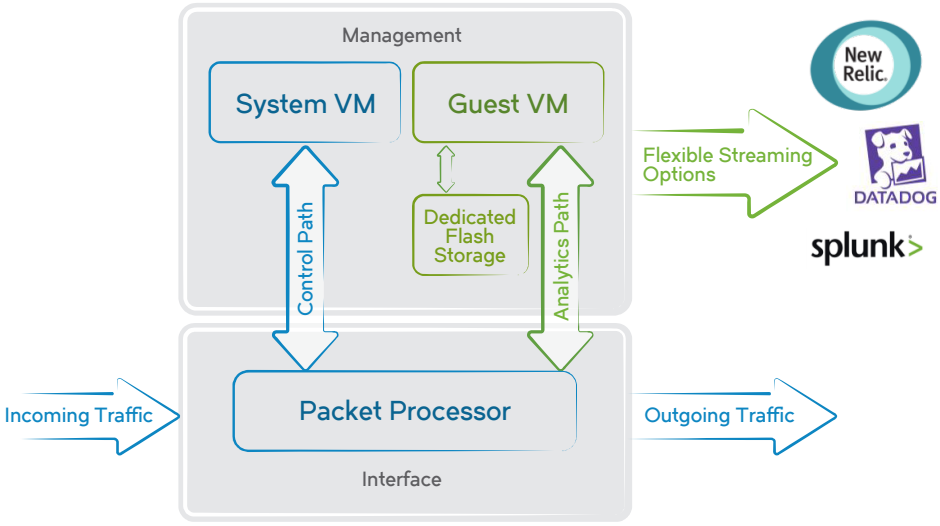

Figure 1: The Brocade SLX Insight Architecture, inherent in Brocade SLX switches and routers, delivers pervasive visibility for greater insight into network traffic.

Architecture 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 Brocade SLX Insight Architecture 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.

As seen in Figure 1, the key components of the Brocade SLX Insight Architecture include:

- **Flexible packet filtering:** The Brocade SLX Insight Architecture 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:** The Brocade SLX Insight Architecture provides an open KVM environment that runs third-party applications and customized monitoring, troubleshooting, and analytics tools. Enabled by Brocade SLX-OS, this preconfigured guest VM is on each Brocade SLX 9540 Switch. It hosts third-party network operations and analytics applications on every device, extending visibility to the entire network.
- **Dedicated analytics path:** The Brocade SLX Insight Architecture provides an innovative internal analytics path between the packet processor for the Brocade SLX 9540 interfaces and the architecture's open KVM environment running on the dedicated cores of the Intel CPU. This enables applications running in the open KVM environment to extract forwarding data without disrupting the normal operation of the Brocade SLX 9540.
- **Flexible streaming:** The Brocade SLX Insight Architecture provides flexible streaming options, enabling captured data to be delivered to analytics applications off the platform.[1]
- **Dedicated analytics storage:** The Brocade SLX 9540 provides 128 GB of on-device storage dedicated to the Brocade SLX Insight Architecture for applications running in the open KVM environment. This enables real-time data capture for fast and easy access.

Improved Business Agility with Workflow Automation

With DevOps-style automation, the Brocade SLX 9540 and Brocade Workflow Composer help organizations improve business agility and accelerate innovation by automating the entire network lifecycle—from provisioning, validation, and troubleshooting to the remediation of network services. At the same time, these solutions align workflow automation to IT operations and modern DevOps tool chains.

EMBEDDED NETWORK VISIBILITY

Keep network traffic and operations running smoothly with pervasive, real-time network analytics, monitoring, and troubleshooting.

Brocade SLX Insight Architecture

The Brocade SLX Insight Architecture delivers dynamic flow identification, intelligent pre-processing, and flexible data streaming capabilities on each router to support key network operations use cases without disrupting network traffic. Use cases include:

- *Real-time monitoring*
- *Overlay and underlay visibility*
- *Intelligent automation*

[1] Streaming protocols are not currently supported in Brocade SLX-OS.

By automating and orchestrating across domains within the services delivery chain, Brocade Workflow Composer connects functional domains—such as the network, compute, storage, and applications—to minimize the number of transitions between functions. This streamlines the delivery of services and infrastructure changes so that they are fast, reliable, and repeatable (see Figure 2). In addition, turnkey automation suites enable organizations to easily deploy Brocade Workflow Composer with Brocade SLX switches and routers using a modular, customizable approach, helping to jumpstart the automation journey.

DEVOPS-STYLE AUTOMATION

Improve business agility and accelerate innovation with cross-domain network automation.

Brocade SLX 9540 and Brocade Workflow Composer

The Brocade SLX 9540 with Brocade Workflow Composer enables automation of the entire network lifecycle with event-driven automation, including:

- *Automation for provisioning, validation, troubleshooting, and remediation of network services*
- *End-to-end IT workflow automation through cross-domain integration*
- *Customizable and do-it-yourself workflow automation options in multivendor network environments*
- *DevOps methodologies, open source technologies, and a thriving technical community*
- *Industry-standard REST/NETCONF-based APIs with Yang models, OpenFlow, scripting languages, and streaming APIs*
- *Turnkey automation with Brocade Workflow Composer Automation Suites for network essentials, IP fabric and IXP workflows, and Brocade SLX switches and routers*

Brocade Global Services

Brocade Global Services has the expertise to help organizations build scalable, efficient cloud infrastructures. Leveraging 20 years of expertise in storage, networking, and virtualization, Brocade Global Services delivers world-class professional services, technical support, and education services, enabling organizations to maximize their Brocade investments, accelerate new technology deployments, and optimize the performance of networking infrastructures.

Acquisition Options That Match Balance Sheet Objectives

Successful network deployments drive business forward, providing technical and financial agility. Brocade offers the broadest financing models, from traditional leasing to Brocade Network Subscription. Network-as-a-Service allows operators to subscribe to network assets today then upgrade on demand, scale up or down, or return them with 60-day notification. Brocade Network Subscription plans can be structured to meet IASC guidelines for OpEx or CapEx treatment to align with financial goals. Learn more at www.nonetworkcapex.com.

Maximizing Investments

To help optimize technology investments, Brocade and its partners offer complete solutions that include professional services, technical support, and education. For more information, contact a Brocade sales partner or visit www.brocade.com.

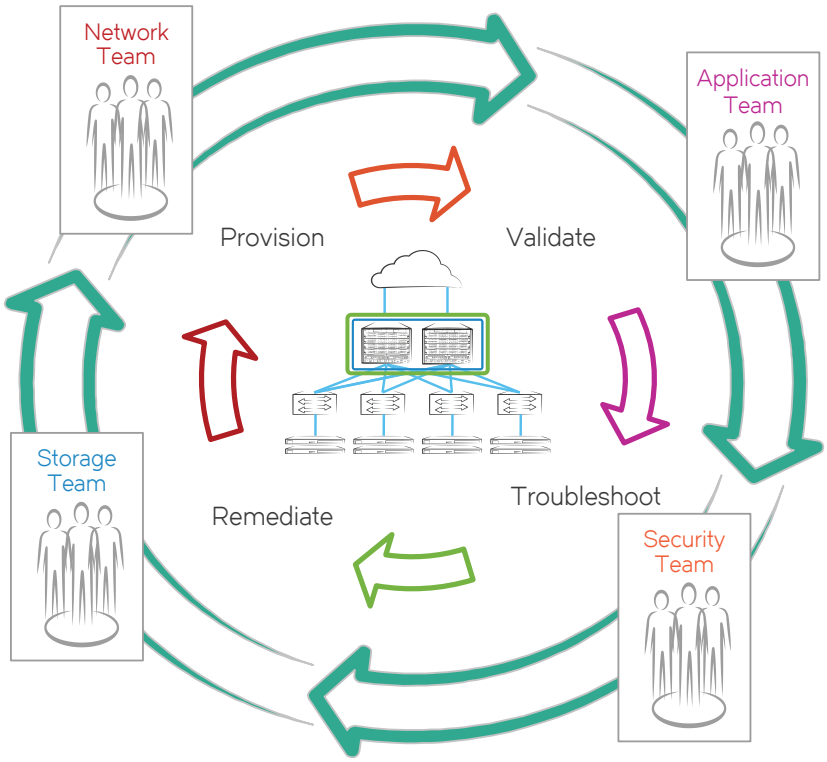

Figure 2: Brocade Workflow Composer Automation Suites with Brocade SLX switches and routers enable software-driven network lifecycle and cross-domain workflow automation.

Brocade SLX 9540 Switch Features

Item	Brocade SLX 9540
Front view	
Rear view with fan modules	
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)	720 Mpps
Airflow	Front to back or back to front (orderable option)
Fan module slots	5 (4+1 redundancy)
Maximum AC power supply rating	650 W
Power supply module slots	2 (1+1 redundancy)
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	17.51 in./44.47 cm
Weight chassis only	19.84 lb/9.00 kg

Brocade SLX 9540 Orderable Configurations—Specifications

Item	Configurations	
	Brocade SLX 9540-24S	Brocade SLX 9540-48S
Front view		
Rear view		
100 GbE/40 GbE ports enabled per switch	N/A[2]	6
10 GbE/1 GbE combo ports enabled per switch	24[2]	48
1 GbE ports enabled per switch	24[2]	N/A
Port type	10 GbE 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
MAC address scale	640,000	640,000
VLAN scale	4,096	4,096
Route scale (in hardware)	256,000 (IPv4), 64,000 (IPv6)	256,000 (IPv4), 64,000 (IPv6)
Jumbo frame (maximum size)	9,216 bytes	9,216 bytes
QoS priority queues (per port)	8	8
MPLS	With Brocade SLX-OS advanced feature license	With Brocade SLX-OS advanced feature license
Carrier Ethernet 2.0	With Brocade SLX-OS advanced feature license	With Brocade SLX-OS advanced feature license
NSX	With Brocade SLX-OS advanced feature license	With Brocade SLX-OS advanced feature license

[2] Software upgrade licenses are available for the Brocade 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 Brocade SLX 9540-24S equivalent to the Brocade SLX 9540-48S.

Brocade SLX 9540 Switch 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) • 8023.ba 100 Gigabit Ethernet • 802.1ab Link Layer Discovery Protocol • 802.1x Port-Based Network Access Control • 802.3ah Ethernet in the First Mile Link OAM[3] • ITU-T G.8013/Y.1731 OAM mechanisms for Ethernet[4]

RFC Compliance

General Protocols	• RFC 768 UDP • RFC 791 IP • RFC 792 ICMP • RFC 793 TCP • RFC 826 ARP • RFC 854 TELNET • RFC 894 IP over Ethernet • RFC 903 RARP • RFC 906 TFTP Bootstrap • RFC 950 Subnet • RFC 951 BootP • RFC 1027 Proxy ARP • RFC 1042 Standard for The Transmission of IP • RFC 1166 Internet Numbers • RFC 1122 Host Extensions for IP Multicasting • RFC 1191 Path MTU Discovery • RFC 1340 Assigned Numbers • RFC 1519 CIDR • RFC 1542 BootP Extensions • RFC 1591 DNS (client)	• RFC 1812 Requirements for IPv4 Routers • RFC 1858 Security Considerations for IP Fragment Filtering • RFC 2131 BootP/DHCP Helper • RFC 2578 Structure of Management Information • Version 2 • RFC 2784 Generic Routing Encapsulation • RFC 3021 Using 31-Bit Prefixes on IPv4 Point-to-Point Links • RFC 3768 VRRP • RFC 4001 Textual Conventions for Internet Network Addresses • RFC 4459 MTU and Fragmentation • RFC 4950 ICMP Extensions for MPLS • RFC 5880 Bidirectional Forwarding Detection[4] • RFC 5881 Bidirectional Forwarding Detection for IPv4 and IPv6 (Single Hop)[4] • RFC 5882 Generic Application of Bidirectional Forwarding Detection[4] • RFC 5883 Bidirectional Forwarding Detection for Multihop Paths[4]
BGP4	• RFC 1745 OSPF Interactions • RFC 1772 Application of BGP in the Internet • RFC 1997 Communities and Attributes • RFC 2385 BGP Session Protection via TCP MD5 • RFC 2439 Route Flap Dampening • RFC 2918 Route Refresh Capability • RFC 3392 Capability Advertisement • RFC 3682 Generalized TT L Security Mechanism for eBGP Session Protection • RFC 4271 BGPv4 • RFC 4364 BGP/MPLS IP Virtual Private Networks • RFC 4456 Route Reflection	• RFC 4486 Sub Codes for BGP Cease Notification Message • RFC 4724 Graceful Restart Mechanism for BGP • RFC 4893 BGP Support for Four-octet AS Number Space • RFC 5065 BGP4 Confederations • RFC 5291 Outbound Route Filtering Capability for BGP-4 • RFC 5396 Textual Representation of Autonomous System (AS) Numbers • RFC 5668 4-Octect AS specific BGP Extended Community

3 Supported with Brocade SLX-OS 17r.1.00 and later software.

4 Supported with Brocade SLX-OS 17r.1.01 and later software.

Brocade SLX 9540 Switch Specifications *(continued)*

OSPF	• RFC 1745 OSPF Interactions • RFC 1765 OSPF Database Overflow • RFC 2154 OSPF with Digital Signature (Password, MD-5) • RFC 2328 OSPF v2 • RFC 3101 OSPF NSSA	• RFC 3137 OSPF Stub Router Advertisement • RFC 3630 TE Extensions to OSPF v2 • RFC 3623 Graceful OSPF Restart • RFC 4222 Prioritized Treatment of Specific OSPF • Version 2 • RFC 5250 OSPF Opaque LSA Option
IS-IS	• RFC 1195 Routing in TCP/IP and Dual Environments • RFC 1142 OSI IS-IS Intra-domain Routing Protocol • RFC 3277 IS-IS Blackhole Avoidance • RFC 5120 IS-IS Multi-Topology Support • RFC 5301 Dynamic Host Name Exchange • RFC 5302 Domain-wide Prefix Distribution	• RFC 5303 Three-Way Handshake for IS-IS Point-to-Point • RFC 5304 IS-IS Cryptographic Authentication (MD-5) • RFC 5306 Restart Signaling for IS-IS (helper mode) • RFC 5309 Point-to-point operation over LAN in link state routing protocols
IPv4 Multicast	• RFC 1112 IGMP v1 • RFC 2236 IGMP v2 • RFC 3376 IGMP v3 • RFC 4601 PIM-SM	• RFC 4607 PIM-SSM • RFC 4610 Anycast RP using PIM • RFC 5059 BSR for PIM
QoS	• RFC 2474 DiffServ Definition • RFC 2475 An Architecture for Differentiated Services • RFC 2597 Assured Forwarding PHB Group	• RFC 2697 Single Rate Three-Color Marker • RFC 2698 A Two-Rate Three-Color Marker • RFC 3246 An Expedited Forwarding PHB
IPv6 Core	• RFC 1887 IPv6 unicast address allocation architecture • RFC 1981 IPv6 Path MTU Discovery • RFC 2375 IPv6 Multicast Address Assignments • RFC 2450 Proposed TLA and NLA Assignment Rules • RFC 2460 IPv6 Specification • RFC 2462 IPv6 Stateless Address—Auto-Configuration • RFC 2464 Transmission of IPv6 over Ethernet Networks • RFC 2471 IPv6 Testing Address allocation • RFC 2711 IPv6 Router Alert Option • RFC 3587 IPv6 Global Unicast—Address Format	• RFC 4193 Unique Local IPv6 Unicast Addresses • RFC 4291 IPv6 Addressing Architecture • RFC 4301 IP Security Architecture • RFC 4303 Encapsulation Security Payload • RFC 4305 ESP and AH cryptography • RFC 4443 ICMPv6 • RFC 4552 Auth for OSPFv3 using AH /ESP • RFC 4835 Cryptographic Alg. Req. for ESP • RFC 4816 Neighbor Discovery for IP version 6 (IPv6)
IPv6 Routing	• RFC 2740 OSPFv3 for IPv6 • RFC 2545 Use of BGP-MP for IPv6 • RFC 5308 Routing IPv6 with IS-IS	• RFC 6106 Support for IPv6 Router Advertisements with DNS Attributes • RFC 6164 Using 127-Bit IPv6 Prefixes on Inter-Router Links
MPLS	• RFC 2205 RSVP v1 Functional Specification • RFC 2209 RSVP v1 Message Processing Rules • RFC 2702 TE over MPLS • RFC 2961 RSVP Refresh Overhead Reduction Extensions • RFC 3031 MPLS Architecture • RFC 3032 MPLS Label Stack Encoding • RFC 3037 LDP Applicability • RFC 3097 RSVP Cryptographic Authentication • RFC 3209 RSVP-TE • RFC 3270 MPLS Support of Differentiated Services • RFC 3478 LDP Graceful Restart • RFC 3815 Definition of Managed Objects for the MPLS, LDP • RFC 4090 Fast Reroute Extensions to RSVP-TE for LSP Tunnels • RFC 4364 BGP/MPLS IP Virtual Private Networks • RFC 4379 OAM	• RFC 4448 Encapsulation methods for transport of Ethernet over MPLS networks • RFC 4461 Signaling Requirements for Point-to-Multipoint Traffic-Engineered MPLS Label Switched Path (LSR) • RFC 4875 Extensions to RSVP-TE for P2MP TE LSPs • RFC 4461 Signaling Requirements for Point-to-Multipoint Traffic-Engineered MPLS Label Switched Path (LSR) • RFC 4875 Extensions to RSVP-TE for P2MP TE LSPs • RFC 5036 LDP Specification • RFC 5305 ISIS-TE • RFC 5443 LDP IG P Synchronization • RFC 5561 LDP Capabilities • RFC 5712 MPLS Traffic Engineering Soft Preemption • RFC 5918 LDP "Typed Wildcard" FEC • RFC 5919 Signaling LDP Label Advertisement Completion

Brocade SLX 9540 Switch Specifications *(continued)*

Layer 2 VPN and PWE3	• RFC 3343 TT L Processing in MPLS networks • RFC 3985 Pseudowire Emulation Edge to Edge (PWE3) Architecture • RFC 4364 BGP/MPLS IP Virtual Private Networks[4] • RFC 4447 Pseudowire Setup and Maintenance using LDP[4] • RFC 4448 Encapsulation Methods for Transport of Ethernet over MPLS Networks • RFC 4664 Framework for Layer 2 Virtual Private Networks • RFC 4665 Service Requirements for Layer 2 Provider-Provisioned Virtual Private Networks	• RFC 4762 VPLS using LDP Signaling • RFC 5542 Definitions of Textual Conventions for Pseudowire (PW) Management • RFC 5601 Pseudowire (PW) Management Information Base • RFC 6870 PW Preferential Forwarding Status Bit[3] • RFC 7432 BGP MPLS-Based Ethernet VPN - Partial[4] • draft-sd-l2vpn-evpn-overlay-03 (A Network Virtualization Overlay Solution using EVPN) Partial[4] • draft-ietf-bess-evpn-overlay-04 (A Network Virtualization Overlay Solution using EVPN with VXLAN encapsulation) Partial[4]

Management and Visibility

- Integrated industry-standard Command Line Interface (CLI)
- RFC 854 Telnet
- RFC 2068 HTTP
- RFC 2818 HTTPS
- RFC 3176 sFlow v5
- sFlow extension to VXLAN
- RFC 4253 Secure Shell (SSH)
- Secure Copy (SCP v2)
- SFTP
- RFC 4741 NETCONF (Partial)
- OpenFlow 1.3
- Chrome
- Curl
- Tcpdump
- Wireshark
- SNMP v1, v2c, v3
- RFC 2819 RMON Groups 1, 2, 3, 9
- IEEE8021-PAE-MIB
- IEEE802 LLDP MIB
- IEEE8023-LAG-MIB
- RFC 1213 MIB-II
- RFC 1354 IP Forwarding MIB
- RFC 1493 Bridge MIB
- RFC 1850 OSPF v2 MIB
- RFC 2665 Ethernet Interface MIB
- RFC 2674 Dot1q MIB
- RFC 2863 Interfaces Group MIB
- RFC 3635 Ethernet-like MIB
- RFC 3811 MPLS TC STD MIB
- RFC 3812 MPLS TE STD MIB
- RFC 3813 MPLS LSR MIB
- RFC 3826 SNMP-USM-AES MIB
- RFC 4087 IP Tunnel MIB
- RFC 4133 Entity MIB (version 3)
- RFC 4273 BGP-4 MIB
- RFC 4293 IP MIB
- RFC 4444 ISIS MIB
- RFC 7257 VPLS MIB
- RFC 7331 BFD MIB

Element Security

- AAA
- Username/Password (Challenge and Response)
- Bi-level Access Mode (Standard and EXEC Level)
- Role-Based Access Control (RBAC)
- RFC 2865 RADIUS
- RFC 2866 RADIUS Accounting
- TACACS/TACACS+
- RFC 5905 NTP Version 4
- NTPdate
- RFC 5961 TCP Security
- RFC 4253 Secure Shell (SSH)
- Secure Copy (SCP v2) SFTP
- HTTPS
- RFC 4346 TLS 1.1
- RFC 5246 TLS 1.2
- Protection against Denial of Service (DoS) attacks such as TCP SYN or Smurf Attacks

Environmental

- 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

[3] Supported with Brocade SLX-OS 17r.1.00 and later software.

[4] Supported with Brocade SLX-OS 17r.1.01 and later software.

Brocade SLX 9540 Switch Specifications *(continued)*

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

Brocade SLX 9540 Ordering Information

Part Number	Description
Brocade SLX 9540 Switch Hardware	
BR-SLX-9540-24S-AC-F	Brocade SLX 9540-24S Switch AC with front-to-back airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports.
BR-SLX-9540-24S-DC-F	Brocade SLX 9540-24S Switch DC with front-to-back airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports.
BR-SLX-9540-24S-AC-R	Brocade SLX 9540-24S Switch AC with back-to-front airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports.
BR-SLX-9540-24S-DC-R	Brocade SLX 9540-24S Switch DC with back-to-front airflow. Supports 24×10 GbE/1 GbE + 24×1 GbE ports.
BR-SLX-9540-48S-AC-F	Brocade SLX 9540-48S Switch AC with front-to-back airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports.
BR-SLX-9540-48S-DC-F	Brocade SLX 9540-48S Switch DC with front-to-back airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports.
BR-SLX-9540-48S-AC-R	Brocade SLX 9540-48S Switch AC with back-to-front airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports.
BR-SLX-9540-48S-DC-R	Brocade SLX 9540-48S Switch DC with back-to-front airflow. Supports 48×10 GbE/1 GbE + 6×100 GbE/40 GbE ports.
Brocade SLX 9540 Upgrade Software Licenses	
BR-SLX-9540-24S-COD-P	Upgrade 24×1 GbE ports to 24×10 GbE/1 GbE ports (for Brocade SLX 9540-24S)
BR-SLX-9540-2C-POD-P	Ports on Demand to enable 2×100 GbE/40 GbE ports (for Brocade SLX 9540-24S)
BR-SLX-9540-ADV-LIC-P	Advanced Feature License for MPLS, BGP-EVPN, CE2.0, NSX (for Brocade SLX 9540-24S and 9540-48S)

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