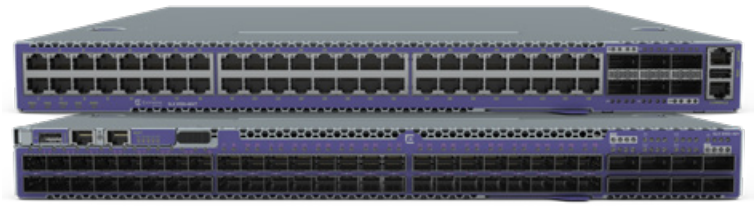
Highlights

- Delivers agility at all layers of the data center stack
- Two models – 48x25/10/1G + 8x100/40G (fiber) and 48x10/1G 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
- Full featured SLX operating system with advanced features supporting switching, Data Center Fabrics, BGP-EVPN and VXLAN
- Utilizes the SLX Insight Architecture and SLX Visibility Services for flexible, real-time monitoring of virtualized, dynamic workloads to streamline troubleshooting
- Provides payload timestamping to more accurately set and measure performance SLAs
- All models offer a choice of AC/DC power supplies and F/R fans
- Extreme Fabric Automation leverages the onboard Extreme Insight Architecture's Guest VM and enables plug-n-play fabrics for day 0 infrastructure provisioning and day 1 configuration of all tenant services across the entire fabric at no additional cost



BUILT ON BROADCOM

ExtremeSwitching™ SLX 9150

SLX 9150 switches are purpose-built high density 1/10/25/40/100GbE fixed form factor switches designed for the needs of Enterprise data centers and service providers. They deliver scalable L2 and L3 resources with advanced features for network monitoring and network virtualization offering scalable and deterministic network performance while simplifying deployment and reducing cost.

SLX 9150 switches enable organizations to design open networks that accommodate a variety of applications and east-west traffic patterns. With its high-density, scale-out architecture and leading power efficiency and airflow choices, the SLX 9150 delivers a cost-effective solution that optimizes power, cooling, and data center space. With a rich set of Layer 2 and Layer 3 features and advanced visibility and automation capabilities, the SLX 9150 is built to address dynamic growth in highly virtualized environments, distributed applications, and digital transformation.

The SLX 9150 is a fixed 1/10/25/40/100GbE top-of-rack leaf switch with 32MB of packet buffer and an overall throughput of 2 Tbps in and out nonblocking switching capacity. It offers forty-eight 1/10/25 GbE SFP28 ports and 8 100/40 GbE QSFP28 ports.SFP and QSFP ports offer a choice of speeds — including 100, 40, 25, 10, or 1 GbE — along with a wide choice of transceivers and cables. Ports can be mixed, offering flexible design options to cost- effectively support demanding data center and service provider environments.

Extreme Elements™

ExtremeSwitching™ SLX 9150

Hu Human | Sr Switches Data Center

Built to Suit Your Business Needs

Extreme Elements are the building blocks that allow you to tailor your network to your specific business environment, goals, and objectives. They enable the creation of an Autonomous Network that delivers the positive experiences and business outcomes most important to your organization.

Combining architecture, automation, and artificial intelligence, Extreme Elements enable you to ensure that your uses get what they need — when and where they need it. Providing these superior user experiences is as simple as mixing and matching the right elements.

Learn more at extremenetworks.com/elements.

Application Telemetry

Application Telemetry is a unique feature of ExtremeAnalytics that enables the ExtremeSwitching infrastructure to participate in the forwarding and analysis of network application flows. By combining packet flow information from the SLX 9150 along with the deep packet inspection abilities of ExtremeAnalytics, actionable insights into network and application performance can be provided. This all without the need for expensive sensors or collectors.

Modular, Virtualized Operation System

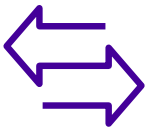
The SLX 9150 runs Extreme SLX-OS, a fully virtualized Linux-based operating system that delivers process-level resiliency and fault isolation. SLX-OS supports advanced switching features and is highly programmable with support for REST API with the YANG data model, Python, and NETCONF. It is based on Ubuntu Linux, which offers all the advantages of open source and access to commonly used Linux tools.

Embedded Network Visibility

Extreme's Insight Architecture leverages an innovative combination of SLX Series operating software and hardware features to provide pervasive visibility 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 SLX system for real time visibility.

Plug-n-Play Data Center Fabrics with Extreme Fabric Automation

Extreme Fabric Automation simplifies and accelerates the deployment of the data center IP Fabric. The on-box application runs as a service on the Guest VM within the SLX 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. Extreme Fabric Automation is also the point of integration for VMware vCenter, Microsoft Hyper V and OpenStack.



High-Availability and Reliability

The SLX 9150 delivers the high performance and reliability required by modern enterprises and service provider data centers. It is designed for high availability from both a software and hardware perspective, such as a clear separation between the control plane and data plane and redundant power supplies and fan modules.

Management

The SLX 9150 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. For centralized management, the Extreme Management Center (XMC) delivers a comprehensive unified management capability. XMC provides a consolidated view of users, devices and applications for wired and wireless networks – from data center to edge.

SLX 9150 Switch Specifications

Model	SLX 9150-48Y	SLX 9150-48XT
Ports	48 1/10/25GbE SFP28 ports • 8 40/100GbE QSFP28 ports • 1x Serial console port RJ-45 • 1x 10/100/1000BASE-T out -of-band management port • USB Type A storage port	48 1/10GbE 10GBaseT ports • 6 40/100GbE QSFP28 ports • 1x Serial console port RJ-45 • 1x 10/100/1000BASE-T out -of-band management port • USB Type A storage port
Power Supplies	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	17.3in W / 20.9in D / 1.7in H (44.0cm / 53.2cm / 4.3cm)	17.3in W / 20.9in D / 1.7in H (44.0cm / 53.2cm / 4.3cm)
Performance	• Line rate 4Tbps Switching Capacity (2Tbps ingress, 2Tbps egress) • Average Latency: 800 ns • Forwarding rate: 1000 Mpps	• Line rate 2.16 Tbps Switching Capacity (1.08Tbps ingress, 1.08Tbps egress) • Average 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	0° - 45°C operation 5% to 95% relative humidity, non-condensing 0 - 3000 meters' altitude Shock (half sine): 98 m/ s2 (10 G), 11ms, 9 shocks Random vibration: 3 to 500 Hz at 1.5 G rms	0° - 45°C operation 5% to 95% relative humidity, non-condensing 0 - 3000 meters' altitude Shock (half sine): 98 m/ s2 (10 G), 11ms, 9 shocks Random vibration: 3 to 500 Hz at 1.5 G rms

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)
SLX 9150-48Y AC	553 BTU/ hr	167W	1600 BTU/ hr	469W
SLX 9150-48Y DC	553 BTU/ hr	167W	1600 BTU/ hr	469W
SLX 9150-48XT AC	642 BTU/ hr	194W	1225 BTU/ hr	359W
SLX 9150-48XT DC	642 BTU/ hr	194W	1225 BTU/ 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 -127 VAC / 20 0 -240 VAC	-40 to -75 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° - 50°C operation

SLX 9150 Software Specifications

Connector options	• 10/1 GbE SFP+ • 25 GbE SFP28 • 40 GbE QSFP+ • 100 GbE QSFP28 • Out-of-band Ethernet management: 10/100/1000 Mbps RJ-45 • Console management: RJ45 serial port and USB type-C port with serial communication device class support • Storage: USB port, standard-A plug • Sound Pressure
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

IEEE Compliance

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)

RFC Compliance

General Protocols

RFC 768 User Datagram Protocol (UDP)

RFC 783 TFTP Protocol (revision 2)

RFC 791 Internet Protocol (IP)

RFC 792 Internet Control Message Protocol (ICMP)

RFC 793 Transmission Control Protocol (TCP)

RFC 826 ARP

RFC 854 Telnet Protocol Specification

RFC 894 A Standard for the Transmission of IP Datagram over Ethernet Networks

RFC 959 FTP

RFC 1027 Using ARP to Implement Transparent Subnet Gateways (Proxy ARP)

RFC 1112 IGMP v1

RFC 1157 Simple Network Management Protocol (SNMP) SNMP v1 and v2c

RFC 1305 Network Time Protocol (NTP) Version 3

RFC 1492 TACACS+

RFC 1519 Classless Inter-Domain Routing (CIDR)

RFC 1584 Multicast Extensions to OSPF

RFC 1765 OSPF Database Overflow

RFC 1812 Requirements for IP Version 4 Routers

RFC 1997 BGP Communities Attribute

RFC 1908 Coexistence between Version 1 and Version 2 of the Internet-standard Network Management Framework

RFC 2068 HTTP Server

RFC 2131 Dynamic Host Configuration Protocol (DHCP)

RFC 2154 OSPF with Digital Signatures (Password, MD-5)

RFC 2236 IGMP v2

RFC 2267 Network Ingress Filtering Option — Partial Support

RFC 2328 OSPF v2

RFC 2370 OSPF Opaque Link-State Advertisement (LSA)

RFC 2375 IPv6 Multicast Address Assignments

RFC 2385 Protection of BGP Sessions with the TCP MD5 Signature Option

RFC 2439 BGP Route Flap Damping

RFC 2460 Internet Protocol, Version 6 (v6) Specification (on management interface)

RFC 2462 IPv6 Stateless Address Auto-Configuration

RFC 2464 Transmission of IPv6 Packets over Ethernet Networks (on management interface)

RFC 2474 Definition of the Differentiated Services Field in the IPv4 and IPv6 Headers

RFC 2571 An Architecture for Describing SNMP Management Frameworks

RFC 2545 Use of BGP-MP Extensions for IPv6

RFC 2578 Structure of Management Information Version 2

RFC 2579 Textual Conventions for SMIv2

RFC 2580 Conformance Statements for SMIv2

RFC 2710 Multicast Listener Discovery (MLD) for IPv6 (future)

RFC 2711 IPv6 Router Alert Option

RFC 2740 OSPFv3 for IPv6

RFC 2865 Remote Authentication Dial-In User Service (RADIUS)

RFC 3101 The OSPF Not-So-Stubby Area (NSSA) Option

RFC 3137 OSPF Stub Router Advertisement

RFC 3176 sFlow

RFC 3392 Capabilities Advertisement with BGPv4

RFC 3410 Introduction and Applicability Statements for Internet Standard Management Framework

RFC 3411 An Architecture for Describing SNMP Frameworks

RFC 3412 Message Processing and Dispatching for the SNMP

RFC 3413 Simple Network Management Protocol (SNMP) Applications

RFC 3414 User-based Security Model

RFC 3415 View-based Access Control Model

RFC 3416 Version 2 of SNMP Protocol Operations

RFC 3417 Transport Mappings

RFC 3418 Management Information Base (MIB) for the SNMP

RFC 3584 Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network

RFC 3587 IPv6 Global Unicast Address Format RFC 4291 IPv6 Addressing Architecture

RFC 3623 Graceful OSPF Restart — IETF Tools

RFC 3768 VRRP

RFC 3826 The Advanced Encryption Standard (AES) Cipher Algorithm in the SNMP User-based Security Model

RFC 4271 BGPv4

RFC 4443 ICMPv6 (replaces 2463)

RFC 4456 BGP Route Reflection

RFC 4510 Lightweight Directory Access Protocol (LDAP): Technical Specification Road Map

RFC 4724 Graceful Restart Mechanism for BGP

RFC4750 OSPFv2.MIB

RFC4760 MP-BGP

RFC 4861 IPv6 Neighbor Discovery

RFC 4893 BGP Support for Four-Octet AS Number Space

RFC 5082 Generalized TTL Security Mechanism (GTSM)

RFC 5880 Bidirectional Forwarding Detection (BFD)

RFC 5881 Bidirectional Forwarding Detection (BFD) for IPv4 and IPv6 (Single Hop)

RFC 5882 Generic Application of Bidirectional Forwarding Detection (BFD)
RFC 5883 Bidirectional Forwarding Detection (BFD) for Multihop Paths

RFC 5942 IPv6 Neighbor Discovery

RFC 7348 Virtual eXtensible Local Area Network (VxLAN)

RFC 7432 BGP-EVPN — Network Virtualization Using VXLAN Data Plane

SSH/SCP/SFTP

RFC 4250 Secure Shell (SSH) Protocol Assigned Numbers

RFC 4251 Secure Shell (SSH) Protocol Architecture

RFC 4252 Secure Shell (SSH) Authentication Protocol

RFC 4253 Secure Shell (SSH) Transport Layer Protocol

RFC 4254 Secure Shell (SSH) Connection Protocol

RFC 4344 SSH Transport Layer Encryption Modes

RFC 4419 Diffie-Hellman Group Exchange for the Secure Shell (SSH) Transport Layer Protocol

MIBs

RFC 2674 Bridge MIB

RFC 2819 RMON Groups 1, 2, 3, 9

RFC 2863 The Interfaces Group MIB

RFC 3826 SNMP-USM-AES-MIB

RFC 4022 TCP MIB

RFC 4113 UDP.MIB

RFC 4133 Entity MIB (Version 3); rmon.mib, rmon2.mib, sflow_ v5.mib, bridge. mib, pbridge.mib, qbridge.mib, rstp. mib, lag. mib, lldp.mib, lldp_ext_dot1.mib, lldp_ext_dot3.mib

RFC 4273 BGP-4 MIB

RFC 4292 IP Forwarding MIB

RFC 4293 Management Information Base for the Internet Protocol (IP)

RFC 4750 OSPFv2.MIB

RFC 7331 BFD MIB

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

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

SNMwP v1, 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

Ordering Information

Part Number	Description
SLX 9150-48Y-8C	Extreme SLX 9150-48Y Switch with two empty power supply slots, six empty fan slots, Supports 48x25GE/10GE/1GE + 8x100GE/40GE
SLX 9150-48Y-8C-AC-F	Extreme SLX 9150-48Y Switch AC with Front to Back Airflow, Supports 48x25GE/10GE/1GE + 8x100GE/40GE with dual power supplies, six fans
SLX 9150-48Y-8C-AC-R	Extreme SLX 9150-48Y Switch AC with Back to Front Airflow, Supports 48x25GE/10GE/1GE + 8x100GE/40GE with dual power supplies, six fans
SLX 9150-48XT-6C	Extreme SLX 9150-48XT 10GBaseT Switch with two empty power supply slots, six empty fan slots, Supports 48x10GE/1GE + 6x100GE/40GE
SLX 9150-48XT-6C-AC-F	Extreme SLX 9150-48XT 10GBaseT Switch AC with Front to Back Airflow, Supports 48x10GE/1GE + 6x100GE/40GE with dual power supplies, six fans
SLX 9150-48XT-6C-AC-R	Extreme SLX 9150-48XT 10GBaseT Switch AC with Back to Front Airflow, Supports 48x10GE/1GE + 6x100GE/40GE with dual power supplies, six fans
SLX 9150-ADV-LIC-P	SLX 9150 Advanced Feature License for GuestVM, Analytics Path, BGP-EVPN, EFA
XN-FAN-001-F	Single Fan module, Front to Back Airflow for use in VSP7400, SLX 9150, SLX9250
XN-FAN-001-R	Single Fan module, Back to Front Airflow for use in VSP7400, SLX 9150, SLX9250
XN-ACPWR-750W-F	AC 750W PSU, Front to Back Airflow for use in VSP7400, SLX 9150, SLX9250
XN-ACPWR-750W-R	AC 750W PSU, Back to Front Airflow for use in VSP7400, SLX 9150, SLX9250
XN-DCPWR-750W-F	DC 750W PSU, Front to Back Airflow for use in VSP7400, SLX 9150, SLX9250
XN-DCPWR-750W-R	DC 750W PSU, Back to Front Airflow for use in VSP7400, SLX 9150, SLX9250
XN-FAN-001-F	Front to Back Fan for use in VSP 7400, SLX 9150, SLX 9250
XN-FAN-001-R	Back to Front Fan for use in VSP 7400, SLX 9150, SLX 9250
XN-4P-RKMT298	Spare four post rack mount rail kit supported on VSP 7400, SLX 9150, SLX 9250
XN-4P-RKMT299	Spare two post rack mount rail kit supported on VSP 7400, SLX 9150, SLX9250

Extreme networks

http://www.extremenetworks.com/contact