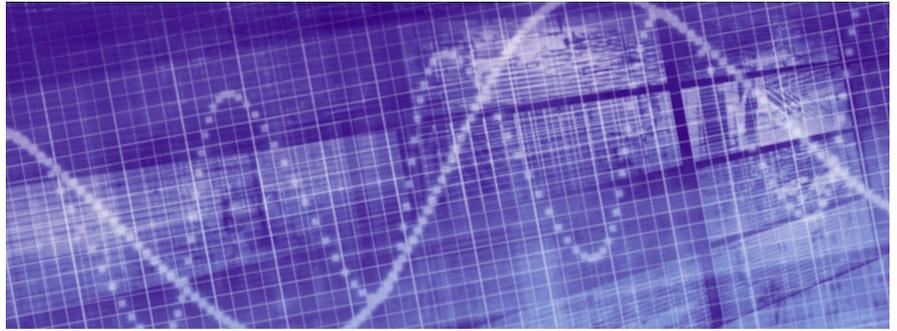# Extreme
Customer-Driven Networking

Highlights

- Improve business agility and accelerate innovation with server-based, cross-domain automation

- Automate infrastructure provisioning, validation, troubleshooting, and remediation workflows

- Improve operations with pervasive traffic visibility for real-time network analytics, monitoring, and troubleshooting

- Minimize forklift upgrades with programmable ASICs that enable adoption of new protocols and technologies through a software upgrade

- Scale the data center cost-effectively with high-performance, flexible platforms at the leaf, spine, super-spine, and WAN edge

Extreme Networks SLX Agile Data Center Portfolio

SLX switching and routing platforms deliver the data center visibility, automation, and agility that organizations need for today's digital era.

Agile Data Center Networking Demands Pervasive Visibility and Automation

Business leaders recognize that they must digitize to accelerate innovation and maintain competitive advantage, or risk being displaced by more nimble competitors. The fast innovation needed to drive this transformation can only happen with an agile IT foundation, and with seamless automation and network visibility connecting all IT domains and functions.

Agility at All Layers of the Data Center Stack

SLX® switching and routing platforms provide unparalleled network visibility with the SLX Insight Architecture and SLX Visibility Services. These embedded capabilities allow organizations to achieve pervasive insight throughout the network to quickly identify problems, accelerate mean-time-to-remediation, and improve overall service levels. And with the embedded fabric automation in SLX platforms you can set up plug and play fabrics in just seconds. Simple, fast setup with consistent implementations.

When combined with the Workflow Composer™ cross-domain automation platform, the embedded visibility enables organizations to act on network intelligence with the agility that modern data centers demand. And with Extreme Management Center users gain centralized management, automation, analytics, visibility and control from the wireless edge to the datacenter.

The SLX family includes a breadth of platforms, each purpose-built for its place in the network, ranging from the leaf and spine to the super-spine and WAN edge. These comprehensive solutions with automation, visibility, analytics and platforms optimized for the digital era— deliver agility at all layers of the data center network stack across your entire network and even domains, such as applications, compute, and storage. (see Figure 1)

SLX Portfolio Breadth

The breadth of the SLX routing and switching portfolio (Figure 2) make them suitable for many places in the network and data center designs, spanning leaf, spine, super-spine, core, border and data center interconnect (DCI). The 10G SLX 9030 and native 25 GbE SLX 9140 are ideal for leaf deployments, while the high-density 100 GbE SLX 9240 is well suited to serve at the spine level.
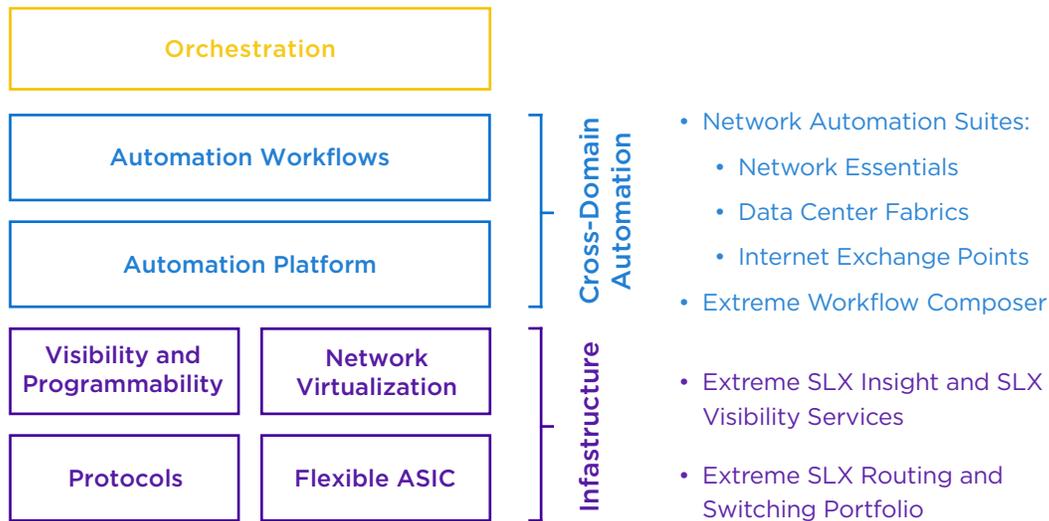
Orchestration

Automation Workflows

Automation Platform

Cross-Domain Automation

Visibility and Programmability

Network Virtualization

Protocols

Flexible ASIC

Infastructure

- Network Automation Suites:
  - Network Essentials
  - Data Center Fabrics
  - Internet Exchange Points
- Extreme Workflow Composer

- Extreme SLX Insight and SLX Visibility Services

- Extreme SLX Routing and Switching Portfolio

Figure 1: The SLX portfolio ensures agility at all layers of the data center stack.

Capacity

Extreme SLX 9850-8

Extreme SLX 9850-4

Extreme SLX 9640

Extreme SLX 9240

Extreme SLX 9030

Extreme SLX 9140

Extreme SLX 9540
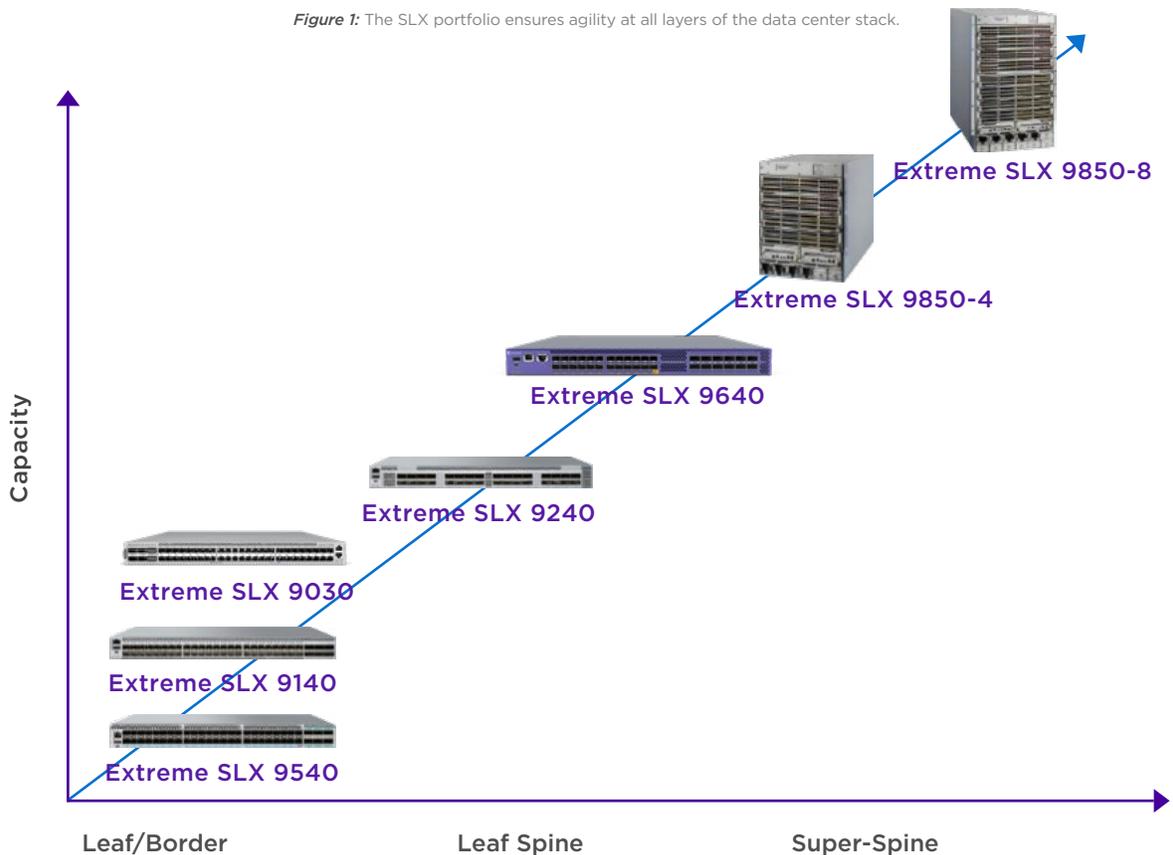
Leaf/Border

Leaf Spine

Super-Spine

Figure 2: The SLX switching and routing portfolio.

The versatile SLX 9540 and SLX 9640 deliver advanced routing and MPLS features in border leaf and WAN edge deployments. The highly scalable SLX 9850 router supports multiple use cases, spanning spine to super-spine, border leaf, core, WAN edge, or data center interconnect. The respective data sheets for these platforms provide more detail.

SLX 9030 and 9030T Leaf Switches

The SLX 9030 is a flexible 1/10/25/40/100GbE top-of-rack leaf switch with 48 1/10GbE SFP+ server-facing ports and 4 10/40/100GbE QSFP28 ports, in a 1U fixed form factor. The SLX 9030-48T offers 48 100 Meg, 1/10GbE 10GBASE-T server-facing ports and 4 10/40/100GbE QSFP28 ports. 25GbE is supported on both though break-outs. For more information, see the SLX 9030 Data Sheet.

SLX 9140 Leaf and 9240 Spine Switches

The SLX 9140 leaf switch provides native 48 25GbE server-facing ports and 6 100GbE ports in a 1U fixed form factor. It also features flexible 1/10/25/40/100GbE configuration options. The SLX 9240 spine switch delivers high-density 32 100GbE ports in a 1U fixed form factor. Both the SLX 9140 and 9240 Switches feature the first programmable ASIC in their class, enabling rapid delivery of new capabilities through software. This eliminates expensive forklift upgrades when new technologies and protocols are introduced into the environment. For more information, see the SLX 9140 Data Sheet and the SLX 9240 Data Sheet.

SLX 9540 Edge Switch

The SLX 9540 Switch delivers carrier-class features in a cost-effective 1U fixed form factor optimized for data center interconnect, WAN edge, and Internet exchange point deployments. It offers 48 10GbE ports and 6 100GbE ports. For more information, see the SLX 9540 Data Sheet.

SLX 9640 Fixed Router

The SLX 9640 is designed for diverse deployment options—such as Internet border, collapsed border routing, data center interconnect, and network packet broker aggregation deployments, all in a 1U fixed form factor. With its carrier-class Ethernet features, SLX 9640 offers flexible port configurations with 24 ports of dual mode 1/10GbE and 12 ports of dual mode 40/100GbE. In addition, each 100GbE port can support 4 ports of 25GbE via breakout, while each 40GbE port can support 4 ports of 10GbE via breakout. For more information, see the SLX 9640 Data Sheet.

SLX 9850 Core Router

With 230-terabit extensibility, real-time network visibility, and DevOps-style automation, the SLX 9850 Router handily addresses the massive and growing scale, analytics, and agility needs of the digital business world. An open, flexible platform gives service providers and enterprises the power to deliver high-performance services on demand. The SLX 9850 is available in two different models – 4 interface-slot and 8 interface-slot systems. For more information, see the SLX 9850 Data Sheet.

Flexible Network Virtualization Options

Data center fabrics based on SLX support flexible network virtualization—including controller-based architectures such as VMware NSX and standards-based, controller-less architectures leveraging Border Gateway Protocol-Ethernet Virtual Private Network (BGP-EVPN)—to enable workload agility, security, and segmentation within and across data centers. Overlay performance is optimized with the SLX platform's ASIC-based VXLAN tunnel encapsulation to ensure speed without compromise. Paired with the scale and rich visibility capabilities of the SLX family, virtual and physical data center networks can operate seamlessly.

Pervasive Network Visibility and Programmable Interfaces

By embedding network visibility, organizations can improve network operations and reduce operational costs through pervasive, granular, real-time network monitoring and troubleshooting with dynamic flow identification, intelligent preprocessing, and flexible data streaming. The SLX Insight Architecture and SLX Visibility Services provide an innovative approach to network monitoring and troubleshooting that makes it faster, easier, and more cost-effective to get the comprehensive, real-time visibility needed for network operations and automation.

SLX Insight Architecture

Organizations can improve operational efficiency and troubleshooting with the SLX Insight Architecture. Rich filtering capabilities ensure that just the traffic required for visibility processing is captured. An open guest VM environment provides the capability to run third-party monitoring and analytics applications directly on the switch or router, coupled with a dedicated, internal analytics path and high-performance data streaming options for easy integration with numerous network analytics tools.

SLX Visibility Services

Visibility into highly distributed multitier applications is made possible with SLX Visibility Services and its support for rich classification and workload matching with network-wide scale. Physical and virtual network traffic data collected from multiple network layers delivers overlay and workload visibility across the network. Rule-based actions can be automatically applied to incoming network traffic, and context-rich data can be delivered to the SLX Insight Architecture, Workflow Composer, or third-party analytics and monitoring applications.

Extreme Management Center for Unified Insight, Visibility and Control

High levels of virtualization, containerization and cloud environments, combined with the enormous traffic, limit visibility in the modern data center. To address that dynamic challenge, SLX switches and routers, can be managed by Extreme Management Center (XMC). XMC includes a suite of applications, empowering administrators to deliver a superior quality experience to users through a single consolidated view and a common set of tools to provision, manage and troubleshoot the network. It works across wired and wireless networks, from the edge to the data center and private cloud. It gives you the granular visibility and real-time analytics, to make data-based business decisions.

XMC provides a consolidated view of users, devices and applications for wired and wireless networks – from datacenter to edge. Zero touch provisioning lets one quickly bring new infrastructure online. A granular view of users, devices and applications with an easy to understand dashboard, enables efficient inventory and network topology management. XMC also provides ecosystem integration, includes off the box integrations with major enterprise data center virtual environments such as VMWare, OpenStack and Nutanix to provide VM visibility and enforce security settings. Get more information on Extreme Management Center.

Turnkey and Customizable Lifecycle Automation

SLX routing and switching platforms maximize IT agility by leveraging Workflow Composer, a server-based network automation platform that automates the entire infrastructure lifecycle—from provisioning and validation to troubleshooting and remediation. It also integrates across IT domains for end-to-end event-driven workflow automation. For more information, see the Workflow Composer At-A-Glance.

Designed to run with the Workflow Composer platform, automation suites are ideal for IT organizations that seek to embrace automation yet possess limited automation development skills and resources. Workflow Composer Automation Suites provide turnkey, customizable network automation for out-of-box functionality delivering immediate value to the business while the workflows provide automation for the entire lifecycle: provisioning, validation, troubleshooting, and remediation. With the Automation Suites, organizations can adopt automation at their own pace, deploy services, resolve issues faster and improve their IT agility. For details, read the Extreme Workflow Composer Automation Suites Data Sheet.
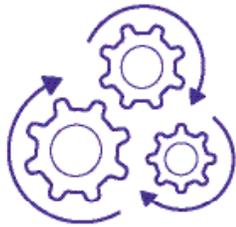
Open Architecture for Orchestration

Solutions work across the orchestration ecosystem to ensure smooth interoperability regardless of an organization's preferred system. Integrations with VMware vRealize, Nutanix Acropolis, and OpenStack Neutron allow information from the physical network to be shared with the orchestration layers. With Workflow Composer, this process is automated in both directions, so that network data can be used to provide a holistic picture of IT performance. Due to the open and flexible architecture of the SLX switching and routing platforms, coupled with Workflow Composer, orchestration actions can be easily executed on both physical and virtual networks.

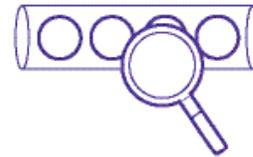# A Foundation of Intelligent Automation, Visibility and Agility for the Digital Era

The SLX data center portfolio (see Figure 2), SLX Visibility Services, and SLX Insight Architecture, along with the Workflow Composer platform, automation suites and Extreme Management Center provide agility at all layers of the data center stack—from programmable hardware through orchestration—and across your networks and domains, such as applications, compute, and storage.

The portfolio enables organizations to leverage various network visibility and analytics technologies and assure intelligent automation that spans the entire network lifecycle. Open at all layers, componentized, next-generation data center technologies can be deployed as an integrated solution or used with popular industry automation or analytics tools, providing organizations with flexibility as they digitally transform.

Pervasive Visibility

Extreme SLX Insight Architecture and Extreme SLX Visibility Services enable network visibility from wire to workload for pervasive real-time monitoring and automated actions. And with XMC, administrators now have a single consolidated view and a common set of tools to provision, manage and troubleshoot the networks from edge to data center and private cloud.

Adaptive Platform Flexibility

Extreme SLX portfolio enables agility at all layers of the data center stack with programmable ASICs, open APIs, and designs that adapt to emerging speeds, standards, and protocols.
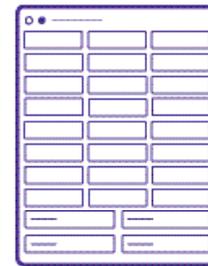
Automation

Embedded fabric automation in SLX platforms enable plug and play fabrics in seconds. And full lifecycle automation can be achieved across your entire infrastructure with Workflow Composer and Automation Suites with cross-domain, event-driven automation.