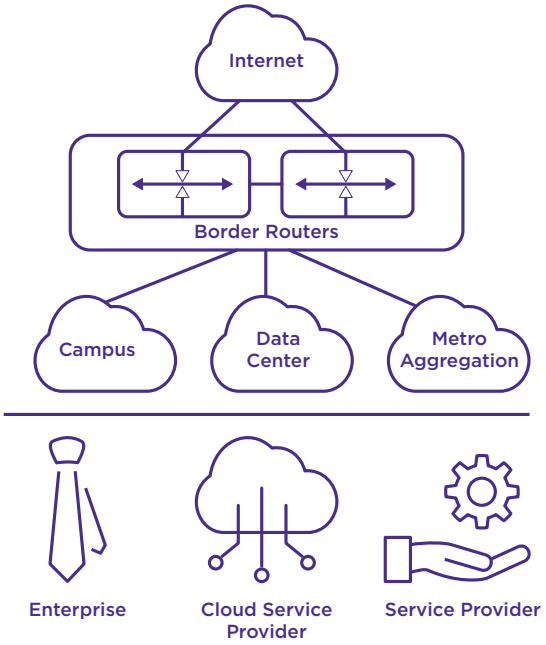
Highlights

- Extreme Networks delivers Border Routing options to fit your business needs
- Ultra deep buffers ensure optimal performance to handle traffic in virtually any network
- Pay as you grow with ports on demand and capacity on demand capabilities
- Strong network security with BGP FlowSpec and advanced ACLs for CPU and data plane protection
- Extreme Integrated Application Hosting (IAH) enables troubleshooting and monitoring with on-box Guest VM

SLX-OS Features

- BGP4, BGP4+ and MP-BGP
- BGP-PIC
- Advanced MPLS
- OSPF and OSPFv3
- ISIS IPv4 and IPv6
- VRRP and VRRPv3
- PIM-SM, PIM-SSM
- LAG (port-channels)
- STP, RSTP, MSTP
- BGP/EVPN (VXLAN)
- Layer 2 VPN/PWE3
- Layer 3 VPN
- RESTConf/NetConf
- REST API's
- Guest VM
- Service and Monitoring (syslog, SNMP, sFlow)



Extreme Border Routing

Increasingly organizations are expanding from on-premises, private, and hybrid cloud to full multi-cloud architectures to address agility, scale, security, reliability, and cost requirements as digital transformation reshapes their business environment. To succeed in the digital era, organizations need network platforms with the adaptability to address these rapidly evolving demands and enable them to simplify and scale operations while driving out cost. Such platforms deliver innovative software optimized with programmable hardware to analyze and automate network operations, thereby reducing OpEx, and provide flexible deployment options with forwarding performance and scale to dramatically reduce CapEx.

Adaptable Internet Scale Platforms

Extreme Networks offers a choice for selecting the right routing solution to meet your business needs. The options include the SLX 9740 (1U and 2U unit), SLX 9640 and SLX 9540, which are fixed form factor 1U platforms. These platforms arepowered by Broadcom silicon and run SLX-OS.

There are several considerations when choosing the right border routing platform to ensure it delivers the features and functions needed today along with being future proofed to take on the growth in scale, bandwidth and capabilities down the road. The evaluation criteria include route scale (Table 1), Border Router features, port type and density as well as management, automation and visibility functions.

Features/Functions	SLX 9540	SLX 9640	SLX 9740
IPv4 Route Scale	1M	5M	3.5M
IPv6 Route Scale	220K	2.5M	3.5M
Internet Routing Tables	Single	Multiple	Multiple
uRPF with Full Tables	No	Yes	Yes

Table 1: Route scale details per platform

SLX 9740

The SLX 9740 are high density, fixed form factor router with either 80 x 100 GbE and 40 x 100 GbE ports to deliver the scale and performance needed to address the explosive growth in network bandwidth, devices and services. This platform provides carrier-class advanced features that leverage proven Extreme Networks routing, MPLS, Carrier Ethernet, and VXLAN overlay technology, deployed in the most demanding service providers, internet exchange points (IXPs) and large enterprise data centers. With more traffic moving across these routers, there is added demand for capacity, the ability to absorb speed mismatches and handle microbursts without compromising performance. The SLX 9740 has up to 16GB of deep packet buffers. Large Enterprise and co-location data center consolidate on multiple layers with the SLX 9740 and can sit as an edge or border router above the data center network. MPLS or layer 3 protocols link the data center gear to another data center or the outside world. Multi-Chassis Trunking (MCT) provides dynamic flow-based load balancing to multiple networks nodes. Get more information on the Extreme SLX 9740.

1RU 40 x 100 GbE ports, 2 RU 80 x 100 GbE ports

SLX 9640

The Extreme SLX 9640 is the industry's most powerful compact deep buffer Internet border router, providing a cost-efficient solution that is purpose-built for the most demanding service provider and enterprise data centers and MAN/WAN applications —today and well into the future. This flexible deep buffer platform provides carrier-class advanced features that leverage proven Extreme routing for IPv4, IPv6, advanced MPLS/VPLS, Carrier Ethernet, and VXLAN overlay technology currently deployed in the most demanding service provider, data center, and enterprise networks. Get more information on the Extreme SLX 9640.

24 ports of dual mode 10 GbE/1 GbE
12 ports of dual mode 100 GbE/40 GbE

SLX 9540

The Extreme 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. The flexible architecture is designed for optimal operations, supporting diverse deployment options — such as border routing, data center edge, WAN edge, IXP, and colocation data center deployments — that require deep buffering for lossless forwarding. Features include routing for IPv4, IPv6 advanced MPLS/VPLS, Carrier Ethernet and VXLAN network virtualization overlays. Get more information on the Extreme SLX 9540.

48 ports of dual mode 10 GbE/1 GbE
6 ports of dual mode 100 GbE/40 GbE

Modular Operating System

SLX-OS powers the hardware platforms with a fully virtualized Linux-based operating system delivering process-level resiliency and fault isolation. The software has advanced routing features and is highly programmable with support for REST, NETCONF and on-board Python.

Pay as You Grow Flexibility

The border routing platforms offer SLX 9540 and SLX 9640 a unique procurement model with ports on demand and capacity on demand licensing. The SLX can be purchased in a variety of available active port speeds and combinations, thus making it more cost effective overpaying for all ports on the physical hardware. If additional port capacity is required in the future, simply apply a license to enable the ports on the fly. See table 2 for more details.

Platform	Available Configurations	Capacity on Demand Licenses	Ports on Demand Licenses
SLX 9540	48x 10G + 6 x 100G/40G	N/A	N/A
	24 x 10G + 24 x 1G	24 ports 1G to 10G	2 port 100G/40G
SLX 9640	24 x 10G + 12 x 100G/40G	N/A	N/A
	24 x 10G + 4 x 100G/40G	N/A	4 port 100G/40G

Table 2: Capacity and ports on demand licenses

Ultra Deep Buffers

The pltaforms offer deep buffering and are purpose-built for the most demanding service provider and enterprise networks. The border router is typically positioned at the service provider edge. With more traffic moving across these routers, there is added demand for capacity, the ability to absorb speed mis-matches and handle microbursts without compromising performance. Having the right hardware with the right amount of buffering along with intelligent algorithms to effectively use the buffers is critical to ensuring the optimal performance.

Strong Network Security

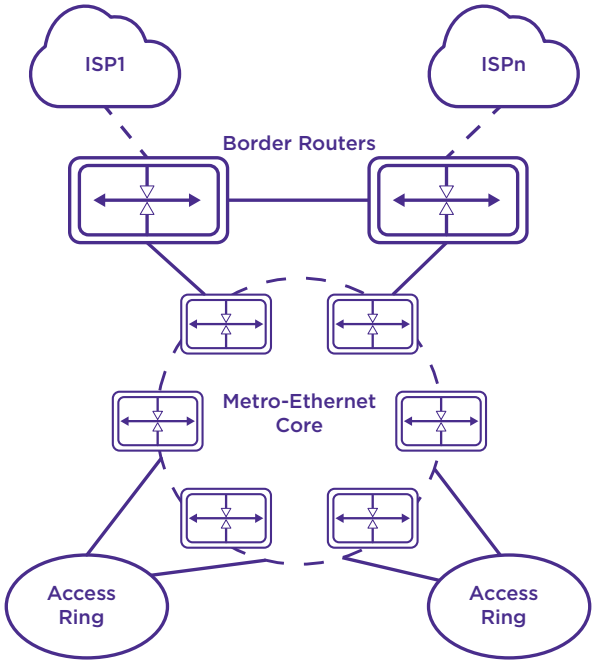
Security is a top concern for every network design. The border routers are directly exposed to raw Internet traffic and therefore can be the first defense against malicious activity directed at your internal networks. Having multiple layers of security enhances protection. By starting at the border routers, you can utilize features such as BGP FlowSpec to mitigate directed denial of service attacks (DDoS) and advanced access control lists (ACLs) for CPU and data plane protection of the routers themselves. These features are critical components to your overall multi-layered security strategy.

Extreme Integrated Application Hosting (IAH)

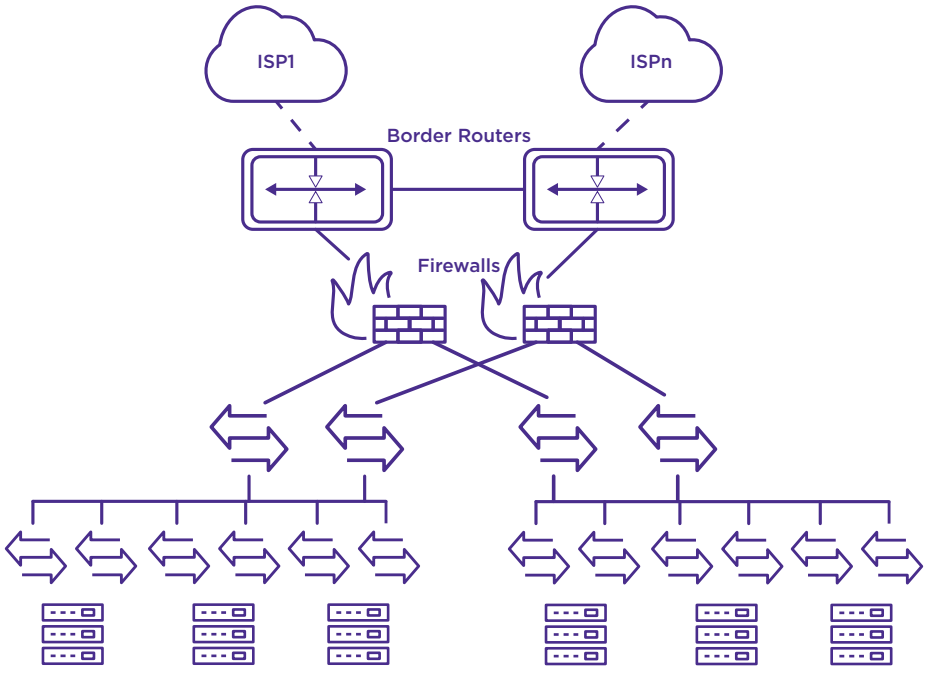
The Extreme Integrated Application Hosting delivers a new approach to network automation, monitoring and troubleshooting with a guest VM and an innovative 10 Gbps internal analytics path between the packet processor for the SLX interfaces and the open KVM environment running on the dedicated cores of the Intel CPU. This highly flexible capability enables required data to be extracted from the network, viewed directly via analytics tools on the Guest VM or stored and optimized on-device for cost-effective delivery off-device to cloud-scale management, operational intelligence, and automation systems for additional analysis, action, or archiving. By embedding network visibility on every border router, the Extreme IAH 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. Extreme IAH is also used for a unique built-in Extreme Fabric Automation (EFA) solution to address provisioning, validation and operations of data center IP fabrics.

Typical Deployment Scenarios

The topologies below show well-accepted architectures for Border Routing.



Service Provider Network



Enterprise Network