

Highlights

- Enables virtualized workloads to access resources on physical networks
- Provides a highly resilient VXLAN gateway, enabling multiple switches to act as VXLAN gateways
- Simplifies operations through a single point of integration and provisioning with VMware NSX
- Delivers high-performance line-rate VXLAN bridging capability
- Provides a single VTEP configuration and uniform VNI-to-VLAN mapping
- Provides integration with VMware vRealize Operations tools for proactive network monitoring



Extreme Networks IP and VCS Fabric Gateways for VMware NSX

Integrated, High-Performance, Resilient VXLAN Gateway for Software-Defined Data Centers

VMware NSX is a network virtualization platform that orchestrates the provisioning of logical overlay networks over physical networks. VMware NSX-based network virtualization leverages Virtual Extensible Local Area Network (VXLAN) technology to create a logical network, extending Layer 2 domains across underlay networks. VXLAN provides a mechanism for transport of Ethernet frames over Layer 2 or Layer 3 physical underlay networks through encapsulation and decapsulation. In addition, it segregates tenant traffic through logical addressing (VXLAN Virtual Network Identifier, or VNI), providing logical traffic segmentation across the physical infrastructure.

Network virtualization using VXLAN with VMware NSX paves the way for enterprises to rapidly deploy networking and security for any application nondisruptively. VMware NSX also enables high-scale multitenancy for service providers, with support for millions of isolated tenants.

Extreme is transforming networks by delivering cloud-based architectures that deliver new levels of scale, agility, and operational efficiency. These highly automated, software-driven, and programmable data center fabric design solutions support a breadth of network virtualization options and scale for data center environments ranging from tens to thousands of servers. Extreme solutions make it easy for customers to architect, automate, and integrate with current and future datacenter technologies while they transition to a cloud model that addresses their needs on their own time and terms. Extreme® IP fabric and Extreme VCS® fabric gateways for VMware NSX network virtualization enable seamless agility, security, and microsegmentation. Flexible network virtualization options enable seamless workload mobility within and across data centers. and emerging applications.

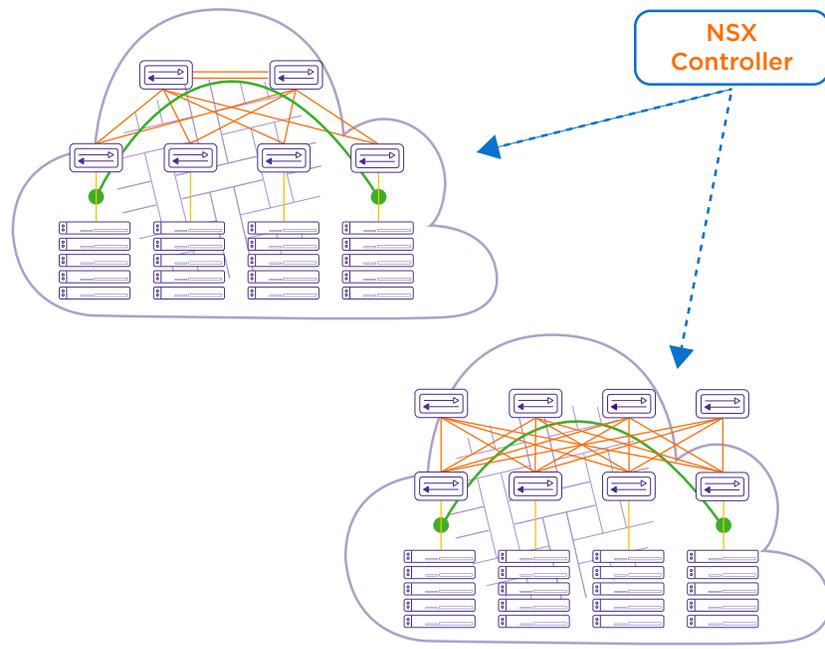


Figure 1: A unified virtual and physical infrastructure.

Extreme and VMware NSX

The Extreme IP fabric and VCS fabric gateways for VMware NSX leverage virtual and physical architectures for a seamless transition to the cloud. The gateway solutions connect Ethernet Virtual LAN (VLAN)-based physical devices with VXLAN-based virtual infrastructure, providing data center operators with a unified network operations model for traditional, multitier, and emerging applications.

NSX Integration with OVSDB

The IP fabric and VCS fabric gateways for VMware NSX enable administrators to easily establish the communication channel between the fabric and NSX (using the Open vSwitch Database Management Protocol, or OVSDB). After that channel is connected, the administrator can easily manage all logical networking through NSX.

The gateways are configured in NSX as a Layer 2 Virtual Tunnel End Point (VTEP) gateway and are associated with a logical network. Based on the logical networking information configured in NSX, the NSX controller pushes the networking information to the gateway to enable VXLAN bridging, without further configuration on the IP or VCS fabric. Using information like remote VTEP, VNI-to-VLAN mapping, and remote MAC address reachability information, Extreme VDX Switches participate in the logical networking domain. The switches instantiate VTEPs and VXLAN tunnels with remote VTEPs in the network and bridge to the VLANs that connect the physical devices.

High Availability and Resiliency

Extreme VCS Fabric technology allows for active-active connections, with VTEPs enabled on multiple switches. This ensures that any single switch failure does not affect network availability.

Single Point of Integration

Configuration of the Layer 2 VXLAN gateway functionality across multiple VDX switches is as simple as provisioning a single VXLAN gateway from both a network administrator and an NSX point of view, as the VTEP-enabled switches that participate in the VCS cluster present themselves as a single logical entity to NSX.

High-Performance VXLAN Bridging

The IP fabric and VCS fabric gateways for VMware NSX, which are delivered on VDX 6740 and 6940 Switches, are based on ASIC technology and provide line-rate bridging for all ports. The VDX 6740 provides an aggregate VXLAN bridging capability of 640 gigabits per second (Gbps) per VDX switch. The VDX 6940 supports line-rate VXLAN bridging for all 36 40 gigabit Ethernet (GbE) ports. These benefits combine to deliver incremental performance improvements in VCS fabric or IP fabric Virtual Link Aggregation Group (VLAG) that pair with multiple active switches.

Single VTEP and VNI-to-VLAN Mapping for the Fabric

With Extreme Gateway solutions, one VTEP interface integrates with multiple NSX logical switches (each associated with a unique VNI) and provides VXLAN bridging for all the logical networks simultaneously. Using the same VTEP interface, the IP or VCS fabric can simultaneously maintain multiple VNI-to-VLAN mappings.

VNI-to-VLAN mapping does not need to be configured for each physical device that is connected to interfaces on the gateway switches. The same VNI-to-VLAN mapping is applied to all the VDX switches in the IP or VCS fabric, and any interface can be used to connect to physical devices.

Integration with VMware vRealize Operations Insight

Proactive network monitoring helps minimize business disruption by focusing on early indicators. Integration into VMware vRealize Operations Insight helps server administrators understand network issues affecting the performance of their applications and Virtual Machines (VMs), facilitating incontext discussions with network teams.

Extreme vRealize Operations Insight integrations help unite virtual and physical networking to enable software-defined data centers that deliver simplicity, scalability, and efficient resource utilization. The packs, which can be downloaded from [VMware Solutions Exchange](#), deliver diagnostics information from VDX switches to VMware vRealize Operations. Virtualization teams can use these insights in conjunction with information from VMware NSX, to proactively pinpoint problems and increase performance and availability of both underlay and overlay networks

About VMware

VMware is the leader in virtualization and cloud infrastructure solutions that enable businesses to thrive in the Cloud Era. Customers rely on VMware to help them transform the way they build, deliver, and consume IT resources in a manner that is evolutionary and based on their specific needs. With 2012 revenues of \$4.61 billion, VMware has more than 500,000 customers and 55,000 partners. The company is headquartered in Silicon Valley with offices throughout the world.

Learn more at www.vmware.com.