SOLUTION BRIEF

Arista Networks & VMware NSX-MH Integration

INSIDE

BEST IN CLASS NETWORK VIRTUALIZATION UNDERLAY

Arista is an established leader in data center network architectures designed for consistent performance, deterministic latency, and easy troubleshooting regardless of workload and deployment sizes. Arista data center class 10/40/100GbE networking portfolio with Arista EOS software and end-to-end VXLAN capability of EOS provides wide variety of choice to customers in building their underlay infrastructure with support for hardware-based L2 gateways.

OPEN AND PROGRAMMABLE OPERATING SYSTEM

At the Core of this integrated solution is the Arista Extensible Operating System (EOS) providing the industry's most advanced network operating platform. EOS combines modern-day software architecture, open standards, an unmodified Linux kernel and a stateful publish/ subscribe in-memory database model to provide a real-time programmatic, resilient foundation for cloud networking

HIGHEST AVAILABILITY

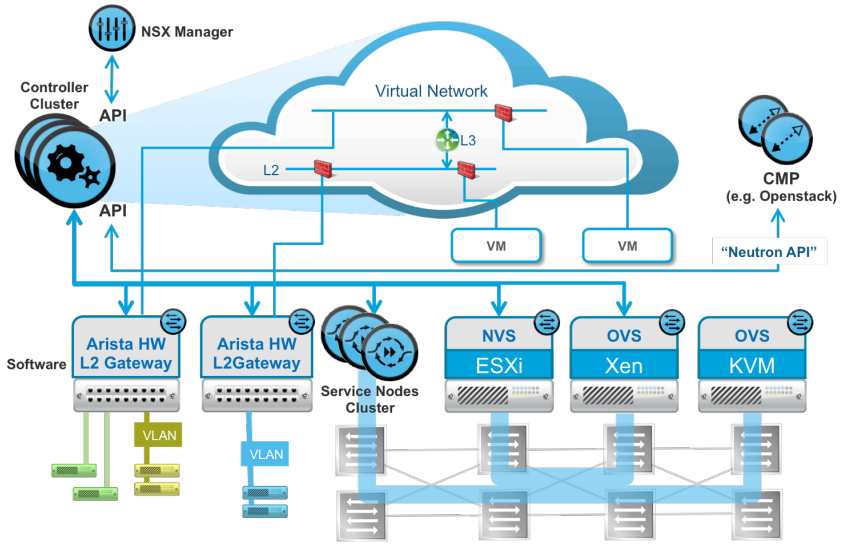
Arista supports both MLAG and VXLAN on its switch product line, enabling redundancy of hardware L2 Gateways for NSX. MLAG with VXLAN on Arista switches provide non-blocking active-active forwarding and redundancy with hitless failover in an event of switch failure.

IMPROVED VISIBILITY

Arista VM Tracer gives visibility into the virtualized infrastructure and the physical network for troubleshooting and dynamic provisioning. Arista VM Tracer with VXLAN Extensions supports gives virtual machine visibility for tunneled networks.

Arista and VMware are delivering the industry's first scalable best-of-breed solution for network virtualization in the Software Defined Data Center. VMware Software Defined Data Center (SDDC) vision leverages core data center virtualization technologies to transform data center economics and business agility through automation and non-disruptive deployment. VMware NSX provides the networking virtualization pillar of this vision; Arista provides a best-in-class network underlay.

Physical and Virtual networks are bridged using the L2 Gateway functionality of each platform. With Arista and VMware NSX-MH, cloud providers, enterprises and web 2.0 customers will be able to drastically speed delivery of new business services, mitigate operational complexity, and reduce overall costs. All of this is available now from a fully automated and programmatic SDDC solution that bridges the virtual and physical infrastructure.



ARISTA EOS WITH VMWARE NSX-MH INTEGRATION

Network virtualization gateways create an on-ramp for existing physical infrastructure components to tie into the virtualized NSX overlay network. VMware NSX-MH platforms operate efficiently using a "network hypervisor" layer, distributed across all hosts in a virtualized application space. However, in many cases, not all resources will be virtualized in the SDDC. This may be due to specific performance or latency-sensitive demands of applications, like databases or layer-4 to

layer-7 services like load balancers or firewalls. In addition, during migration to the SDDC, many existing storage and compute resources may need to be incorporated into the virtualized infrastructure. This physical and virtual resource integration is easily accomplished with network virtualization gateways, which provide VXLAN Tunnel Endpoint (VTEP) termination at a VLAN or physical port boundary.

Arista EOS-based switches working with VMware NSX-MH support scalable layer-2 VTEP gateway services based on hardware-based forwarding without introducing bottlenecks or adding latency. Increasing bandwidth demands driven by increasing 10/40/100Gbps connectivity will drive demand for scalable gateways that provide terabits-per-second of aggregate bandwidth across many network segments. This is achievable today by using Arista' edge switching platforms with NSX-MH integration. Arista and VMware have integrated EOS and NSX control models using a standards-based protocol interface (OVSDB) to allow both software and hardware-based gateways to operate in concert. This integration allows seamless connectivity for virtual and physical workloads providing increased efficiency and agility to any SDDC.

With Arista EOS and VMware NSX integration, Arista switches offer hardware VTEP gateway capabilities that work with the NSX-MH to provide end-to-end centrally provisioned network virtualization without dependency on enabling IP multicast in the network transport and without the requirement for proprietary fabrics or controllers. This integration provides a dynamic, seamless, scalable and programmable solution for all NSX connectivity. In addition, Arista now supports MLAG with VXLAN for redundancy, which allows customers to deploy fully redundant hardware-based gateways at virtually any scale. MLAG with VXLAN on Arista switches provides non-blocking active-active forwarding and redundancy with hitless failover in an event of a switch failure.

In operation, Arista EOS software registers with an NSX-MH controller using the OVSDB protocol to synchronize topology information for MAC to VXLAN endpoints and VXLAN ID bindings with NSX-MH. The Arista NSX integration service programs the Arista switches (or a pairs of Arista switches with MLAG) as NSX layer-2 VTEP hardware gateways. VTEP hardware gateway integration allows for nearly instantaneous synchronization of physical and virtual VTEPs during any network change or workload modification event. The same mechanism enables provisioning of distributed QoS and security policies at the physical and virtual overlay edge.

SOLUTION BENEFITS

VMware NSX-MH and Arista EOS integration offer the following benefits for network virtualization:

- Virtual and physical workloads can be connected on a common logical network segment on demand, regardless of hypervisor, IP subnet topology or physical location
- Holistic views of the virtual and physical topology increase efficiency and reduce complexity of operations
- Network virtualization with NSX does not require IP multicast for learning or forwarding broadcast, unknown unicast or multicast packets
- A single point of management and control (NSX API and NSX Manager) can be used for configuring logical networks across hypervisors and physical network switches

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