VMware NSX

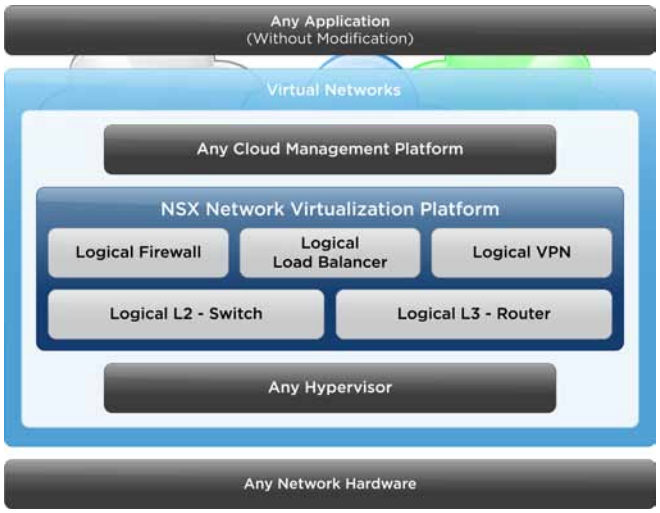
The Platform for Network Virtualization

AT A GLANCE

VMware NSX™ is the leading network virtualization platform that delivers the operational model of a virtual machine for the network. Similar to virtual machines for compute, virtual networks are programmatically provisioned and managed independent of underlying hardware. NSX reproduces the entire network model in software, enabling any network topology—from simple to complex multi-tier networks—to be created and provisioned in seconds. It enables a library of logical networking elements and services, such as logical switches, routers, firewalls, load balancers, VPN, and workload security. Users can create isolated virtual networks through custom combinations of these capabilities.

KEY BENEFITS

- Network provisioning time reduced from days to seconds.
- Achieve operational efficiency through automation
- Place and move workloads independent of physical topology
- Deploy on any hypervisor and consume through any cloud management platform
- Integrate third-party network and security solutions through standard APIs
- Non-disruptive deployment over existing physical networks or next generation topologies



Datacenter Networking Challenges

Current network and security solutions are rigid, complex and often vendor-specific. This creates a costly barrier to realizing the full agility of the software-defined data center.

In the current operational model, network provisioning is slow and workload placement and mobility is limited by physical topology and manual provisioning. Limitations of physical networking and security tie an increasingly dynamic virtual world back to inflexible, dedicated hardware, creating artificial barriers to optimizing network architecture and capacity utilization.

Manual provisioning and fragmented management interfaces reduce efficiency and limit the ability of enterprises to rapidly deploy, move, scale and protect applications and data to meet business demands.

VMware NSX

VMware NSX solves these data center challenges by delivering a completely new operational model for networking. This model breaks through current physical network barriers and allows data center operators to achieve orders of magnitude better agility and economics.

VMware NSX exposes a complete suite of simplified logical networking elements and services including logical switches, routers, firewalls, load balancers, VPN, QoS, monitoring, and security. These services are provisioned in virtual networks through any cloud management platform leveraging the NSX APIs and can be arranged in any topology with isolation and multi-tenancy. Virtual networks are deployed non-disruptively over any existing network and on any hypervisor.

Key Features of NSX

- **Logical Switching –** Reproduce the complete L2 and L3 switching functionality in a virtual environment, decoupled from underlying hardware
- **NSX Gateway –** L2 gateway for seamless connection to physical workloads and legacy VLANs
- **Logical Routing –** Routing between logical switches, providing dynamic routing within different virtual networks.
- **Logical Firewall –** Distributed firewall, kernel enabled line rate performance, virtualization and identity aware, with activity monitoring
- **Logical Load Balancer –** Full featured load balancer with SSL termination.
- **Logical VPN –** Site-to-Site & Remote Access VPN in software
- **NSX API –** RESTful API for integration into any cloud management platform

NSX Use Cases

NSX is the ideal solution for data centers with more than 500 virtual machines. NSX delivers immediate benefits for innovative multi-tenant cloud service providers, large enterprise private and R&D clouds and multi-hypervisor cloud environments. Typical use cases:

Data Center Automation

- Speed up network provisioning
- Simplify service insertion – virtual and physical
- Streamline DMZ changes

Self-Service Enterprise IT

- Rapid application deployment with automated network and service provisioning for private clouds & test/dev environments
- Isolated Dev, test and production environments on the same physical infrastructure

Multi-tenant clouds

- Automate network provisioning for tenants with customization and complete isolation
- Maximize hardware sharing across tenants

How Does It Work

Like server virtualization for compute, the NSX network virtualization approach allows data center operators to treat their physical network as a pool of transport capacity that can be consumed and repurposed on demand. Like a virtual machine is a software container which presents logical CPU, memory and storage to an application, a virtual network is a software container that presents logical network components to connected workloads—logical switches, routers, firewalls, load balancers, VPNs and more.

Virtual networks are programmatically created, provisioned and managed, utilizing the underlying physical network as a simple packet forwarding backplane. Network services are programmatically distributed to each virtual machine, independent of the underlying network hardware or topology, so workloads can be dynamically added or moved and all of the network and security services attached to the virtual machine move with it, anywhere in the data center.

Completely decoupled from physical network hardware

Network virtualization works as an overlay above any physical network hardware and works with any server hypervisor platform. The only requirement from a physical network is that it provide IP transport. There is no dependence on the underlying hardware or hypervisor. NSX Gateway allows legacy VLANs and physical hosts to be mapped into virtual networks.

Reproduce the physical network model in software.

NSX reproduces the entire networking environment, L2, L3, L4-L7 network services, in software within each virtual network. NSX offers a distributed logical architecture for L2-7 services including, logical switch, router, firewall, load balancer and VPN. These logical network services are provisioned programmatically when virtual machines are deployed and move with virtual machines. Existing applications operate un-modified and see no difference between a virtual network and a physical network connection.

Automation

NSX exposes a RESTful API, allowing cloud management platforms to automate the delivery of network services. Network provisioning, which used to take days or weeks, now takes seconds. Because network services are now delivered to applications by the virtual network, no manual reconfiguration of physical network devices is necessary.

NSX Service Composer offers a way to automate the consumption of services and their mapping to virtual machines using logical policy. Customers can assign policies to groups of virtual machines and as more virtual machines are added to the group, the policy is automatically applied to the virtual machine. Customers can build advanced workflows automating security, compliance and network provisioning including load balancing and firewall rules.

Extensibility

NSX offers a platform to insert other vendor services. Integrated software and hardware partner products can range from network gateway services, application delivery services, and network security platforms to security services.

How to Buy

NSX is a complete multi-hypervisor, multi-cloud management network virtualization platform. The NSX platform delivers the base Layer 2 and Layer 3 network virtualization with add-on software modules for specific Layer 4-7 network services, such as firewall, load balancer and VPN.

NSX can be deployed in a VMware vSphere® environment where it is completely integrated with the vSphere, VMware vCloud Director® and VMware vCloud® Automation Center™. NSX can also be deployed in a multi-hypervisor environment, such as Xen Server, KVM or VMware ESXi™ with a choice of cloud management solution such as vCloud Automation Center, OpenStack and CloudStack.

Find Out More

For more information visit www.vmware.com/go/nsx

For information on all VMware products or to purchase, call 877-4-VMWARE (outside North America, +1-650-427-5000), visit http://www. vmware.com/products, or search online for an authorized reseller.

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