

**VMware NSX: Install, Configure, Manage**

**Course Number:** VM-106
**Duration:** 5 days

**Overview**

This VMware NSX training teaches attendees how to install, configure, and manage a VMware NSX® environment. Participants learn how to leverage the key features and functionality offered in NSX, including infrastructure, logical switching, logical routing, networking and security services, firewalls, advanced threat prevention, and more.

**Prerequisites**

* Good understanding of TCP/IP services and protocols
* Knowledge and working experience in computer networking, including switching and routing technologies (L2 through L3) and L2 through L7 firewall
* Knowledge and working experience with VMware vSphere® environments
* Knowledge and working experience with Kubernetes or VMware vSphere® with VMware Tanzu® environments
* Solid understanding of concepts presented in the following courses: VMware Virtual Cloud Network Core Technical Skills, VMware Data Center Virtualization: Core Technical Skills, and Kubernetes Fundamentals

**Materials**

All attendees receive the official VMware courseware for this course.

**Software Needed on Each Student PC**

A modern web browser and an Internet connection free of restrictive firewalls, so that the student can connect by SSH and Remote Desktop (RDP) into the virtual environment for the training.

**Objectives**

* Describe the architecture and main components of NSX
* Explain the features and benefits of NSX
* Deploy the NSX Management cluster and VMware NSX Edge™ nodes
* Prepare VMware ESXi™ hosts to participate in NSX networking
* Create and configure segments for layer 2 forwarding
* Create and configure Tier-0 and Tier-1 gateways for logical routing
* Use distributed and gateway firewall policies to filter east-west and north-south traffic in NSX
* Configure Advanced Threat Prevention features
* Configure network services on NSX Edge nodes
* Use VMware Identity Manager™ and LDAP to manage users and access
* Explain the use cases, importance, and architecture of Federation

**Outline**

* Introduction
* VMware Virtual Cloud Network and VMware NSX
	+ Introduce the VMware Virtual Cloud Network vision
	+ Describe the NSX product portfolio
	+ Discuss NSX features, use cases, and benefits
	+ Explain NSX architecture and components
	+ Explain the management, control, data, and consumption planes and their functions
* Preparing the NSX Infrastructure
	+ Deploy VMware NSX® ManagerTM nodes on ESXi hypervisors
	+ Navigate through the NSX UI
	+ Explain data plane components such as N-VDS/VDS, transport nodes, transport zones, profiles, and more
	+ Perform transport node preparation and configure the data plane infrastructure
	+ Verify transport node status and connectivity
	+ Explain DPU-based acceleration in NSX
	+ Install NSX using DPUs
* NSX Logical Switching
	+ Introduce key components and terminology in logical switching
	+ Describe the function and types of L2 segments
	+ Explain tunneling and the Geneve encapsulation
	+ Configure logical segments and attach hosts using NSX UI
	+ Describe the function and types of segment profiles
	+ Create segment profiles and apply them to segments and ports
	+ Explain the function of MAC, ARP, and TEP tables used in packet forwarding
	+ Demonstrate L2 unicast packet flow
	+ Explain ARP suppression and BUM traffic handling
* NSX Logical Routing
	+ Describe the logical routing function and use cases
	+ Introduce the two-tier routing architecture, topologies, and components
	+ Explain the Tier-0 and Tier-1 gateway functions
	+ Describe the logical router components: Service Router and Distributed Router
	+ Discuss the architecture and function of NSX Edge nodes
	+ Discuss deployment options of NSX Edge nodes
	+ Configure NSX Edge nodes and create NSX Edge clusters
	+ Configure Tier-0 and Tier-1 gateways
	+ Examine single-tier and multitier packet flows
	+ Configure static routing and dynamic routing, including BGP and OSPF
	+ Enable ECMP on a Tier-0 gateway
	+ Describe NSX Edge HA, failure detection, and failback modes
	+ Configure VRF Lite
* NSX Bridging
	+ Describe the function of logical bridging
	+ Discuss the logical bridging use cases
	+ Compare routing and bridging solutions
	+ Explain the components of logical bridging
	+ Create bridge clusters and bridge profiles
* NSX Firewalls
	+ Describe NSX segmentation
	+ Identify the steps to enforce Zero-Trust with NSX segmentation
	+ Describe the Distributed Firewall architecture, components, and function
	+ Configure Distributed Firewall sections and rules
	+ Configure the Distributed Firewall on VDS
	+ Describe the Gateway Firewall architecture, components, and function
	+ Configure Gateway Firewall sections and rules
* NSX Advanced Threat Prevention
	+ Explain NSX IDS/IPS and its use cases
	+ Configure NSX IDS/IPS
	+ Deploy NSX Application Platform
	+ Identify the components and architecture of NSX Malware Prevention
	+ Configure NSX Malware Prevention for east-west and north-south traffic
	+ Describe the use cases and architecture of VMware NSX® Intelligence™
	+ Identify the components and architecture of VMware NSX® Network Detection and Response™
	+ Use NSX Network Detection and Response to analyze network traffic events
* NSX Services
	+ Explain and configure Network Address Translation (NAT)
	+ Explain and configure DNS and DHCP services
	+ Describe VMware NSX® Advanced Load Balancer™ architecture, components, topologies, and use cases.
	+ Configure NSX Advanced Load Balancer
	+ Discuss the IPSec VPN and L2 VPN function and use cases
	+ Configure IPSec VPN and L2 VPN using the NSX UI
* NSX User and Role Management
	+ Describe the function and benefits of VMware Identity Manager™ in NSX
	+ Integrate VMware Identity Manager with NSX
	+ Integrate LDAP with NSX
	+ Identify the various types of users, authentication policies, and permissions
	+ Use role-based access control to restrict user access
	+ Explain object-based access control in NSX
* NSX Federation
	+ Introduce the NSX Federation key concepts, terminology, and use cases
	+ Explain the onboarding process of NSX Federation
	+ Describe the NSX Federation switching and routing functions
	+ Describe the NSX Federation security concepts
* Conclusion