VMware NSX: Install, Configure, Manage [V4.0]

Course Duration: 40 Hours (5 Days)

Overview

The VMware NSX: Install, Configure, manage [V4.0] course is a comprehensive program designed for network and security professionals to learn how to install, configure, and manage VMware NSX environments. This training covers the core components of the NSX platform, including the architecture, Logical switching, Logical routing, Bridging, and Firewalls, as well as advanced features such as Threat prevention, services, and user and role management. It also delves into NSX Federation for multi-site networking and security. Through the course, learners will gain an understanding of the VMware Virtual Cloud Network vision and how NSX fits into the product portfolio, offering benefits such as Micro-segmentation, Automation, and the ability to create and manage Virtual networks. Participants will acquire hands-on experience in deploying and managing NSX infrastructure, configuring logical switches and routers, understanding the Geneve encapsulation, and implementing security measures like the Distributed Firewall and Gateway Firewall. Advanced modules cover Threat prevention with IDS/IPS, NSX Advanced Load Balancer, and NSX Malware Prevention, as well as NSX Federation capabilities, ensuring students are equipped to tackle real-world networking challenges in VMware-based data centres.

Audience Profile

The VMware NSX: Install, Configure, manage [V4.0] course is ideal for IT professionals involved in network and security virtualization. Target audience for the VMware NSX course includes:

- Network Engineers and Architects
- System Administrators with a focus on network infrastructure
- Security Engineers and Architects
- IT Professionals working with virtualized networking solutions
- Data Centre Operations staff
- Cloud Infrastructure Engineers
- Network Security Specialists
- Network Operations and Compliance staff
- VMware Administrators and Consultants
- Technical Support and Operations Personnel
- Professionals seeking VMware NSX certification

Course Syllabus

Course Introduction

- Introductions and course logistics
- Course objectives

VMware Virtual Cloud Network and VMware NSX

- Introducing 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 plans 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
- Introducing 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