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VMware NSX-V + NSX-T

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VMware NSX-V + NSX-T Combo Course

Course Overview:

This course focuses on configuring and troubleshooting a VMware NSX® deployment. This course presents NSX as a part of the software-defined data Centre. You will learn how to use logical switching in NSX to virtualize your switching environment and how to use gateway services, firewall configurations, and security services to help secure and optimize your NSX environment. In addition, you will be presented with various types of technical problems that you will learn how to identify and solve through a systematic process. You will also be introduced to several operational, management, and troubleshooting tools.

NSX-T provides comprehensive training on how to install, configure, and manage a VMware NSX-T™ Data Centre environment. This course covers key NSX-T Data Centre features and functionality offered in the NSX-T Data Centre 3.0 release, including the overall infrastructure, logical switching, logical routing, networking and security services, micro-segmentation and firewalls, and more.

Course Outline:

1. Course Introduction

- Introductions and course logistics
- Course objectives
- Identify additional resources

2. Introduction to vSphere Networking

- Describe vSphere networking components
- Describe vSphere standard switches
- Describe vSphere distributed switches

3. Introduction to NSX

- Describe the benefits of NSX
- Identify NSX key use cases

4. NSX Architecture

- Describe the NSX architecture
- Describe the cloud management, management, control, and data planes of NSX
- Identify the component interactions
- Describe the NSX Controller cluster and its functions
- Explain the NSX Controller workload distribution

5. NSX Infrastructure Preparation

- Explain the steps required for an NSX installation
- Describe what is involved in planning an NSX deployment
- Describe the NSX Controller cluster and deployment
- Describe NSX Controller cluster high availability and load distribution
- Explain how to deploy and configure the NSX Controller cluster
- Explain the workflow involved in host preparation

6. NSX Logical Switch Networks

- Explain transport zones, VXLANs, and VXLAN tunnel endpoints (VTEPs)
- Describe the procedure of preparing the infrastructure for virtual networking
- Describe the configuration of vSphere distributed switches for VXLAN
- Identify the components involved in NSX logical switching
- Define VLANs for VXLAN

7. NSX Logical Routing

- Explain the east-west and north-south routing concepts
- Define the NSX distributed logical router
- Explain the logical router, interfaces, and interface addresses
- Describe the management plane and control plane interaction
- Describe logical router deployment models and two-tier routing for east-west traffic
- Explain the common topologies of an NSX Edge services gateway

8. Advanced NSX Logical Routing

- Describe how routers connect remote networks
- Explain route redistribution methods
- Describe less-than-or-equal (LE) and greater-than-or-equal (GE) configurations
- Describe routing event notification enhancements

- Configure equal-cost multipath (ECMP) routing
- Describe high availability for NSX Edge service gateways

9. NSX L2 Bridging

- Explain L2 bridging use cases
- Describe software and hardware L2 bridging between VXLAN and VLANs
- Discuss L2 bridging packet flows

10. NSX Edge Services

- Describe the NSX Edge services
- Explain how network address translation (NAT) works
- Describe source NAT and destination NAT
- Explain NAT64
- Explain the function of load balancing
- Explain the one-armed and inline load-balancing architectures
- Explain the DHCP and DNS services of NSX Edge

11. NSX Edge VPN Services

- Describe the NSX Edge VPN services
- Describe the VPN use cases
- Configure an L2 VPN on an NSX Edge device
- Configure an NSX Edge device for IPsec VPN services
- Explain NSX Edge SSL VPN-Plus services
- Configure NSX Edge SSL VPN-Plus server settings

12. NSX Security Services

- Describe the policy enforcement of the distributed firewall
- Describe virtualization context-awareness
- Explain custom network and security containers
- Describe the architecture of an NSX Edge firewall
- Explain DHCP snooping
- Explain ARP snooping

13. NSX Advanced Security Services

- Describe NSX SpoofGuard
- Identify how tags enable dynamic security service chains
- Explain Service Composer groups, policies, tags

- Describe the Identity Firewall architecture
- Explain Application Rule Manager
- Explain how to create a monitoring session

14. NSX Introspection Services

- Describe the types of introspection services
- Describe the installation and configuration of Guest Introspection and Network Introspection
- Summarize Guest Introspection and Network Introspection alarms, events, and audit messages

15. Cross-vCentre NSX

- Describe cross-vCentre NSX features and use cases
- Identify NSX Manager roles and NSX Controller cluster placement
- Deploy universal logical networks
- Explain the design considerations for cross-vCentre NSX

16. Troubleshooting Methodology

- Develop a structured troubleshooting approach
- Differentiate between symptoms and root causes
- Identify and isolate problems residing in various areas
- Apply an appropriate methodology and procedure to troubleshooting

17. NSX Troubleshooting and Operational Tools

- Discuss NSX operational requirements
- Use the native NSX tools (such as the central CLI, the NSX dashboard, and Application Rule Manager) to solve various types of problems
- Use vRealize Network Insight to identify and analyze problems
- Use vRealize Log Insight Content Pack for NSX in troubleshooting and operations

18. Troubleshooting and Operating NSX Infrastructure

- Explain the NSX infrastructure and component communications
- Troubleshoot NSX Manager and the management plane
- Troubleshoot NSX Controller and the control plane
- Troubleshoot problems in host preparation

19. Troubleshooting and Operating NSX Logical Switches

- Explain VXLAN and logical switching components
- Verify the VXLAN and logical switch configuration and status
- Identify and troubleshoot common L2 configuration errors
- Use the GUI, the CLI, packet capture, traceflow, and other tools to troubleshoot logical switching problems

20. Troubleshooting and Operating NSX Logical Routers

- Describe the NSX logical routing architecture
- Explain routing components, functions, and communications
- Verify logical router configuration settings
- Use packet capture on routers and perform packet walk
- Use the GUI, the CLI, traceflow, and other tools to troubleshoot various logical routing problems

21. Troubleshooting and Operating NSX Edge Services

- Verify edge services (such as DHCP and DNS) configuration settings and operational status
- Troubleshoot various types of VPN services (SSL VPN-Plus, L2 VPN, and IPsec VPN)
- Verify the configuration and status of logical load balancers
- Troubleshoot common load-balancing and high availability scenarios

22. Troubleshooting and Operating NSX Security Services

- Discuss the NSX distributed firewall architecture, components, communication channels, and features
- Use the CLI and other tools to troubleshoot the configuration and operations of the NSX distributed firewall and the NSX Edge firewall
- Explain and troubleshoot the Service Composer components and architecture
- Troubleshoot common problems related to Identity Firewall
- Verify Guest Introspection deployment configuration and functions, and troubleshoot common problems

VMware NSX-T Data Centre: Install, Configure, Manage [V3.0]

Course Outline:

1. **Course Introduction**
   - Introductions and course logistics
   - Course objectives

2. **VMware Virtual Cloud Network and NSX-T Data Centre**
   - Introduce VMware's Virtual Cloud Network vision
   - Discuss NSX-T Data Centre solutions, use cases, and benefits
   - Explain NSX-T Data Centre architecture and components
   - Describe VMware NSX® product portfolio and features
   - Explain the management, control, data, and consumption planes and function

3. **Deployment Preparing the NSX-T Data Centre Infrastructure**
   - Describe NSX Management Cluster
   - Deploy VMware NSX® Manager™ nodes on VMware ESXi and KVM hypervisors
   - Navigate through the NSX Manager UI
   - Explain data-plane components such as N-VDS, transport nodes, transport zones, profiles, and more
   - Perform transport node preparation and establish the data Centre infrastructure
   - Verify transport node status and connectivity

4. **NSX-T Data Centre 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 Manager 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

5. **NSX-T Data Centre 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 VMware 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 the single-tier and multitier packet flow
- Configure static routing and dynamic routing
- Enable ECMP on Tier-0 Gateway
- Describe NSX Edge HA, failure detection, and failback modes

6. **NSX-T Data Centre 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

7. **NSX-T Data Centre Security**
   - Introduce the NSX-T Data Centre security approach and model
   - Describe the micro-segmentation benefits and use cases
   - Describe the Distributed Firewall architecture, components, and function
   - Configure Distributed Firewall sections and rules
   - Describe the Gateway Firewall architecture, components, and function
   - Configure Gateway Firewall sections and rules
   - Describe URL analysis and distributed intrusion system importance and use-cases.
   - Describe the service insertion functionality for east-west and north-south security
   - Discuss the integration and benefits of partner security solutions with NSX-T Data Centre

8. **NSX-T Data Centre Services**
   - Describe NSX-T Data Centre services
   - Explain and configure Network Address Translation (NAT) and NAT 64
   - Explain and configure DNS and DHCP services

- Describe the load-balancing function, topologies, components, and use cases
- Configure L4-L7 load balancing
- Discuss the IPSec VPN and L2 VPN function and use cases
- Configure IPSec VPN and L2 VPN using NSX Manager UI

9. NSX-T Data Centre Monitoring

- Explain the importance and functionality of VMware NSX® Intelligence™
- Navigate through the NSX Topology UI and identify the various key elements in the UI
- Discuss the importance and use-cases of alarms and events

10. NSX-T Data Centre User and Role Management

- Describe the function and benefits of VMware Identity Manager in NSX-T Data Centre
- Integrate VMware Identity Manager with NSX-T Data Centre
- Integrate LDAP with NSX-T Data Centre
- Identify the various types of users, authentication policies, and permissions
- Use role-based access control to restrict user access
- Explain the built-in roles in VMware Identity Manager and role assignment to users

11. NSX-T Data Centre Federation

- Introduce the NSX-T Data Centre Federation key concepts, terminology, and use-cases.
- Explain the onboarding process of NSX-T Data Centre Federation
- Describe the NSX-T Data Centre Federation switching and routing functions.
- Describe the NSX-T Data Centre Federation security concepts and routing functions

Prerequisites:

- Understanding of enterprise switching and routing
- VMware Data Centre Virtualization Fundamentals
- Knowledge of TCP/IP services

- Experience with firewalls and firewall rule sets

Who Should Attend:

- Experienced system administrators or network administrators

Number of Hours: 40hrs

Certification: VCP / VCA / VCP-NV 2020

Key Features:

- One to One Training
- Online Training
- Fastrack & Normal Track
- Resume Modification
- Mock Interviews
- Video Tutorials
- Materials
- Real Time Projects
- Virtual Live Experience
- Preparing for Certification