

## VMware NSX-T Data Center: Install, Configure, Manage [V3.2] - EDU-NSXTICM3-OE

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### Course Summary

#### Description

This five-day, fast-paced course provides comprehensive training on how to install, configure, and manage a VMware NSX-T™ Data Center environment. This course covers key NSX-T Data Center features and functionality offered in the NSX-T Data Center 3.2 release, including the overall infrastructure, logical switching, logical routing, networking and security services, micro-segmentation and firewalls, and more.

Access to a software-defined data center environment is provided through hands-on labs to reinforce the skills and concepts presented in the course.

#### Objectives

At the end of this course, students will be able to:

- Describe VMware Virtual Cloud Network and the NSX-T Data Center architecture
- Describe the NSX-T Data Center components and main functions
- Explain the NSX-T Data Center key features and benefits
- Deploy and configure NSX-T Data Center infrastructure
- Configure layer 2 logical switching and bridging
- Explain the tiered routing architecture and configure gateways
- Configure advanced services such as VPN and load balancing
- Describe the NSX-T Data Center security model with micro-segmentation
- Configure Distributed Firewall and Gateway Firewall to protect east-west and north-south traffic
- Explain advanced security enforcement with URL analysis, IDS, and partner service insertion
- Integrate VMware Identity Manager™ or LDAP with NSX-T Data Center and configure role-based access control
- Describe NSX-T Data Center Federation use-cases and architecture for switching, routing, and security.

#### Topics

- Course Introduction
- VMware Virtual Cloud Network and NSX-T Data Center
- Deployment Preparing the NSX-T Data Center Infrastructure
- NSX-T Data Center Logical Switching
- NSX-T Data Center Logical Routing
- NSX-T Data Center Bridging
- NSX-T Data Center Security
- NSX-T Data Center Services
- NSX-T Data Center Monitoring
- NSX-T Data Center User and Role Management
- NSX-T Data Center Federation

#### Audience

Experienced system administrators or network administrators

#### Prerequisites

- Good understanding of TCP/IP services and network security and working experience with firewalls
- Working experience with enterprise switching and routing
- VMware Data Center Virtualization Fundamentals
- VMware Introduction to Network Virtualization with NSX
- VMware Network Virtualization Fundamentals

#### Duration

Five days

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### Course Outline

#### I. Course Introduction

- A. Introductions and course logistics
- B. Course objectives

#### II. VMware Virtual Cloud Network and NSX-T Data Center

- A. Introduce VMware's Virtual Cloud Network vision
- B. Discuss NSX-T Data Center solutions, use cases, and benefits
- C. Explain NSX-T Data Center architecture and components
- D. Describe VMware NSX® product portfolio and features
- E. Explain the management, control, data, and consumption planes and function

#### III. Deployment Preparing the NSX-T Data Center Infrastructure

- A. Describe NSX Management Cluster
- B. Deploy VMware NSX® Manager™ nodes on VMware ESXi and KVM hypervisors
- C. Navigate through the NSX Manager UI
- D. Explain data-plane components such as N-VDS, transport nodes, transport zones, profiles, and more
- E. Perform transport node preparation and establish the data center infrastructure
- F. Verify transport node status and connectivity

#### IV. NSX-T Data Center Logical Switching

- A. Introduce key components and terminology in logical switching
- B. Describe the function and types of L2 segments
- C. Explain tunneling and the GENEVE encapsulation
- D. Configure logical segments and attach hosts using NSX Manager UI
- E. Describe the function and types of segment profiles
- F. Create segment profiles and apply them to segments and ports
- G. Explain the function of MAC, ARP, and TEP tables used in packet forwarding
- H. Demonstrate L2 unicast packet flow
- I. Explain ARP suppression and BUM traffic handling

#### V. NSX-T Data Center Logical Routing

- A. Describe the logical routing function and use cases
- B. Introduce the two-tier routing architecture, topologies, and components
- C. Explain the Tier-0 and Tier-1 Gateway functions
- D. Describe the logical router components: Service Router and Distributed Router
- E. Discuss the architecture and function of VMware NSX® Edge™ nodes
- F. Discuss deployment options of NSX Edge nodes
- G. Configure NSX Edge nodes and create NSX Edge clusters
- H. Configure Tier-0 and Tier-1 Gateways
- I. Examine the single-tier and multitier packet flow
- J. Configure static routing and dynamic routing
- K. Enable ECMP on Tier-0 Gateway
- L. Describe NSX Edge HA, failure detection, and failback modes

#### VI. NSX-T Data Center Bridging

- A. Describe the function of logical bridging
- B. Discuss the logical bridging use cases
- C. Compare routing and bridging solutions
- D. Explain the components of logical bridging
- E. Create bridge clusters and bridge profiles

#### VII. NSX-T Data Center Security

- A. Introduce the NSX-T Data Center security approach and model
- B. Describe the micro-segmentation benefits and use cases
- C. Describe the Distributed Firewall architecture, components, and function
- D. Configure Distributed Firewall sections and rules
- E. Describe the Gateway Firewall architecture, components, and function
- F. Configure Gateway Firewall sections and rules
- G. Describe URL analysis and distributed intrusion system importance and use-cases.
- H. Describe the service insertion functionality for east-west and north-south security
- I. Discuss the integration and benefits of partner security solutions with NSX-T Data Center

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### Course Outline (cont'd)

#### *VIII. NSX-T Data Center Services*

- A. Describe NSX-T Data Center services
- B. Explain and configure Network Address Translation (NAT) and NAT 64
- C. Explain and configure DNS and DHCP services
- D. Describe the load-balancing function, topologies, components, and use cases
- E. Configure L4-L7 load balancing
- F. Discuss the IPsec VPN and L2 VPN function and use cases
- G. Configure IPsec VPN and L2 VPN using NSX Manager UI

#### *IX. NSX-T Data Center Monitoring*

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

#### *X. NSX-T Data Center User and Role Management*

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

#### *XI. NSX-T Data Center Federation*

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