

# VMware NSX-T Data Center: Install, Configure, Manage

🕒 5 Days

## Why OneCloud?

OneCloud Consulting is dedicated to provide exceptional technical education and professional services. Our team of experts combine skill, knowledge, and experience in providing quality education on Cloud Transformation, Infrastructure Automation, and Software Development. Our specializations include Cloud Services, Network and Services Automation, Data Center Solution Design, and Deployment Services, and Technical Strategy.

## Course Objectives

By the end of the course, you should be able to meet the following objectives:

- Describe the architecture and main components of NSX-T Data Center
- Explain the features and benefits of NSX-T Data Center
- Deploy the NSX Management cluster and VMware NSX® Edge™ nodes
- Prepare VMware ESXi™ and KVM hosts to participate in NSX-T Data Center 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-T Data Center
- 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

## Target Audience

Experienced security administrators or network administrators.

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## Prerequisites

- Good understanding of TCP/IP services and protocols
- Knowledge and working experience of computer networking, including switching and routing technologies (L2-L3) and L2-L7 firewall
- Knowledge and working experience with VMware vSphere® environments
- Knowledge and working experience with Kubernetes or vSphere with VMware Tanzu™ environments

## Course Content

### Module 1: Course Introduction

- Introductions and course logistics
- Course objectives

### Module 2: VMware Virtual Cloud Network and NSX-T Data Center

- Introduce the VMware Virtual Cloud Network vision
- Discuss NSX-T Data Center solutions, use cases, and benefits
- Explain NSX-T Data Center architecture and components
- Describe the VMware NSX™ product portfolio and features
- Explain the management, control, data, and consumption planes and function

### Module 3: Preparing the NSX-T Data Center 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/VDS, transport nodes, transport zones, profiles, and more
- Perform transport node preparation and establish the data center infrastructure
- Verify transport node status and connectivity

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## Course Content (Cont.)

### Module 4: NSX-T Data Center 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

### Module 5: NSX-T Data Center 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

### Module 5: NSX-T Data Center Logical Routing (Cont.)

- 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 the single-tier and multitier packet flow
- Configure static routing and dynamic routing, including BGP and OSPF
- Enable ECMP on Tier-0 Gateway
- Describe NSX Edge HA, failure detection, and failback modes
- Configure VRF Lite

### Module 6: NSX-T Data Center 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

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## Course Content (Cont.)

### Module 7: NSX-T Data Center 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

### Module 8: NSX-T Data Center Advanced Threat Prevention

- Explain NSX IDS/IPS and its use cases
- Configure NSX IDS/IPS
- Deploy the 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 NSX Intelligence

### Module 8: NSX-T Data Center Advanced Threat Prevention (Cont.)

- Identify the components and architecture of VMware NSX® Network Detection and Response™
- Use NSX Network Detection and Response to analyze network traffic events.

### Module 9: NSX-T Data Center Services

- Describe NSX-T Data Center 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 Manager UI

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## Course Content (Cont.)

### Module 10: NSX-T Data Center User and Role Management

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

### Module 11: NSX-T Data Center Federation

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