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

Duration: 5 days
Audience: Professionnel TI

Who is this training for?

Experienced network system administrators and engineers

Training objectives

- Describe the NSX-T Data Center Virtual Cloud Network and Architecture
- Describe the core components and functions of NSX-T Data Center
- Explain the key benefits and features of NSX-T Data Center
- Deploy and configure the NSX-T Data Center infrastructure
- Configure logical switching and Layer 2 bridging
- Explain the third-party routing architecture and configure gateways
- Configure advanced services such as VPN and load balancing
- Describe NSX-T Data Center Security Model with Micro-Segmentation
- Describe the Distributed Firewall and Firewall Gateway to Protect East-West and North-South Traffic
- Explain the implementation of advanced security through the insertion of partner services
- Integrate VMware Identity Manager with NSX-T Data Center and configure role-based access control
- Retrieve relevant information and perform basic troubleshooting using various tools

Summary

Develop comprehensive NSX-T Data Center expertise to design and manage secure and scalable virtualized network infrastructures. This training allows you to master advanced networking and security features in a multi-cloud context.

Course outline

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Introduction to VMware's vision of Virtual Cloud Networking

- Discuss NSX-T Data Center solutions, use cases, and benefits
- Explain the architecture and components of NSX-T Data Center
- Describe the VMware NSX product line and features
- Explain the functions of the management plans, Control, Data, and Usage

Deploying the NSX-T Data Center Infrastructure

- Describe the NSX Management Cluster
- Deploy VMware NSX Manager nodes on VMware ESXi and KVM hypervisors
- Navigate the NSX Manager user interface
- Describe data plane components such as N-VDS, transport nodes, transport zone, profiles, and more
- Perform transport node preparation and set up data center infrastructure
- Verify the Status and connectivity of transport nodes

Logical switching with NSX-T Data Center

- Introduce the key components and terminology of logical switching
- Describe the types and functions of Layer 2 segments
- Explain tunneling and GENEVE encapsulation
- Configure logical segments and attach hosts using the NSX Manager user interface
- Describe the functions and types of segment profiles
- Create segment profiles and assign them to segments or ports
- Explain the functions of MAC, ARP, and TEP tables used in packet transmission
- Demonstrate unicast packet flow at Layer 2
- Explain ARP suppression and support for BUM traffic

Logical Routing with NSX-T Data Center

- Describe the logical routing function and use cases
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Introduce the two-thirds routing architecture, and associated topologies and components

- Explain the functions of Tier-0 and Tier-1 gateways
- Describe the components of the logical router: Service Router and Distributed Router
- Introduce the architecture and functions of VMware NSX Edge nodes
- Discuss NSX Edge node deployment options
- Configure NSX Edge nodes and create NSX Edge clusters
- Configure Tier-0 and Tier-1 gateways
- Review single-tier and multi-tier packet flow
- Configure Static and dynamic routing
- Enable ECMP at the Tier-0 gateway
- Describe NSX Edge high availability, break detection, and recovery modes

Logical bridges with NSX-T Data Center

- Describe the logical bridging feature
- Discuss logical bridging use cases
- Compare routing and bridging solutions
- Explain the composition of logical bridging
- Create clusters and bridging profiles

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 the load balancing feature, topologies, components, and usage cases
- Configure L4-L7 load balancing
- Discuss IPSec VPN and L2VPN features and use cases
- Configure IPsec and Layer 2 VPNs using the NSX Manager

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NSX-T Data Center Security User Interface

- Introduce NSX-T Data Center Security Approach and Model
- Describe the benefits of micro-segmentation and use cases
- Describe the architecture, components, and functions of the distributed firewall
- Configure the functions and rules of the distributed firewall
- Describe the architecture, components, and functions of the firewall gateway
- Configure the sections and rules of the firewall gateway
- Describe the Network Introspection Insertion service for security east-west and north-south
- Describe endpoint protection and use cases
- Discuss the benefits of partner security solutions and their integration with NSX-T Data Center

User and Role Management

- Describe the features and benefits of VMware Identity Manager for NSX-T Data Center
- Integrate VMware Identity Manager with NSX-T Data Center
- Identify the different types of users, authentication rules, and permissions
- Use role-based access control to restrict user access
- Explain pre-configured roles in VMware Identity Manager and role assignment

Basic NSX-T Data Center troubleshooting

- Introduction to the troubleshooting methodology and process
- Use different methods for retrieving local and remote log files
- Describe troubleshooting tools, such as IPFIX, Traceflow, Packet Capture, SPAN, etc.
- Troubleshoot basic issues related to installation, switching, routing, and firewalls
- Use the command line interface to check the configuration and status of components in NSX-T Data Center

Approach and methodology

Lectures - Demonstrations - Guided and individual exercises

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Prerequisites

Have a good understanding of TCP/IP services and network security, firewall experience and experience with switching and routing or equivalent content

Recommendations

- Review: the basics of networks (Layer 2 / Layer 3) the concepts of network virtualization
- Familiarize yourself with: VMware vSphere (ESXi, vCenter)
- Identify your needs: microsegmentation centralized network management securing virtualized environments

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