# **VMware NSX-T Data Center: Design**



### **Course Description**

This five-day course provides comprehensive training on considerations and practices to design a VMware NSX-T™ Data Center environment as part of a software-defined data center strategy. This course prepares the student with the skills to lead the design of NSX-T Data Center offered in the NSX-T Data Center 3.0 release, including design principles, processes, and frameworks. The student gains a deeper understanding of NSX-T Data Center architecture and how it can be leveraged to create solutions to address the customer's business needs.

### **Course Duration:**

5 days

### **Prerequisites:**

Before taking this course, you should have completed the following course:

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

You should also have the understanding or knowledge of these technologies:

- Good understanding of TCP/IP services and protocols
- Knowledge and working experience of computer networking, including:
  - Switching and routing technologies (L2-L3)
  - Network and application delivery services (L4-L7)
  - Knowledge and working experience with VMware vSphere environments and KVMbased environments

The VMware Certified Professional – Network Virtualization (2020) certification is recommended.

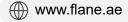
## **Objectives:**

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

- Understand and apply a design framework
- Apply a design process for gathering requirements, constraints, assumptions, and risks
- Analyze existing physical networking and security components, processes, and operations
- Design a VMware vSphere® virtual data center to support NSX-T Data Center requirements
- Design a physical network to support network virtualization in a software-defined data center
- Design logical network services
- Design logical security services
- Design a data center rack solution to support scalability and high availability
- Analyze alternative design choices for risk mitigation
- Understand the design and support for NSX-T Data Center infrastructure in a multi data center infrastructure

#### Course Outline:

- 1. Course Introduction
  - Introductions and course logistics
  - Course objectives
- 2. Basic Design Concepts
  - Describe the principles of design





- Describe the design process and frameworks
- Explain VMware Validated Design and its importance
- 3. NSX-T Data Center Architecture and Components
  - Explain the NSX-T Data Center and Virtual Cloud Network
  - Describe the NSX-T Data Center architecture and use cases
  - List the NSX-T Management cluster design considerations
- 4. NSX-T Data Center Design Considerations
  - Explain physical infrastructure design considerations
  - Explain virtual infrastructure design considerations
  - List the collapsed management and VMware NSX® Edge™ resources design considerations
  - Explain dedicated management and NSX Edge resources design
- 5. Logical Switching Design
  - Explain the VMware NSX-T™ logical switching design concepts
  - Describe the traffic flooding concepts
- 6. NSX-T Data Center Edge Design
  - List NSX Edge VM design considerations
  - Explain NSX Edge BareMetal design considerations
  - Describe NSX Edge cluster design
  - Explain Bridge design considerations
- 7. Logical Routing Design
  - Explain logical router components
  - Describe multitier routing
  - Explain IPv6 addressing and routing design concepts
  - Multi-compute workload domain design considerations
- 8. NSX-T Data Center Advanced Routing Design
  - Explain High Availability and Router Placement
  - L3 Multicast design considerations
  - Describe VRF Lite and EVPN
- 9. NSX-T Data Center Network Design
  - Explain the functionality and considerations of using NAT, Proxy ARP, DHCP, and metadata proxy
  - Describe the load balancer design considerations
  - Explain the VPN design considerations
- 10. NSX-T Data Center Security Design
  - Explain the Distributed Firewall design concepts
  - Explain the Identity Firewall design concepts
  - Explain the Gateway Firewall design concepts
  - Describe the security policy methodology
- 11. NSX-T Data Center Federation Design
  - Explain the Federation functionality
  - Explain the design concepts for Federation components
  - Describe the design involved for Federation networking
  - Review Federation design considerations



#### 12. NSX-T Data Center and Containers

- Understand the integration between NSX-T Data Center and vSphere with VMware Tanzu™
- Describe how NSX-T Data Center provides networking, load balancing, and security in vSphere for VMware Tanzu
- Describe VMware Tanzu™ Kubernetes Grid™ Service
- Understand Tanzu Kubernetes Grid™ cluster networking and load balancing capabilities

### Who Should Attend

Network and security architects and consultants who design the enterprise and data center networks and NSX environments