

## 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 KVM-based 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