KOENIG
step forward

VMware NSX: Design [V4.x]

1. Course Introduction

- Introduction and course logistics
- Course objectives

2 NSX Design Concepts

- Identify design terms
- Describe framework and project methodology
- Describe the role of VMware Cloud Foundation™ in NSX design
- Identify customers' requirements, assumptions, constraints, and risks
- Explain the conceptual design
- Explain the logical design
- Explain the physical design

3 NSX Architecture and Components

- Recognize the main elements in the NSX architecture
- Describe the NSX management cluster and the management plane
- Identify the functions and components of management, control, and data planes
- Describe the NSX Manager sizing options
- Recognize the justification and implication of NSX Manager cluster design decisions
- Identify the NSX management cluster design options

4 NSX Edge Design

- Explain the leading practices for edge design
- Describe the NSX Edge VM reference designs

- **Describe the bare-metal NSX Edge reference designs**
- **Explain the leading practices for edge cluster design**
- **Explain the effect of stateful services placement**
- **Explain the growth patterns for edge clusters**
- **Identify design considerations when using L2 bridging services**

5 NSX Logical Switching Design

- **Describe concepts and terminology in logical switching**
- **Identify segment and transport zone design considerations**
- **Identify virtual switch design considerations**
- **Identify uplink profile and transport node profile design considerations**
- **Identify Geneve tunneling design considerations**
- **Identify BUM replication mode design considerations**

6 NSX Logical Routing Design

- **Explain the function and features of logical routing**
- **Describe the NSX single-tier and multitier routing architectures**
- **Identify guidelines when selecting a routing topology**
- **Describe the BGP and OSPF routing protocol configuration options**
- **Explain gateway high availability modes of operation and failure detection mechanisms**
- **Identify how multitier architectures provide control over stateful service location**
- **Identify EVPN requirements and design considerations**
- **Identify VRF Lite requirements and considerations**
- **Identify the typical NSX scalable architectures**

7 NSX Security Design

- Identify different security features available in NSX
- Describe the advantages of an NSX Distributed Firewall
- Describe the use of NSX Gateway Firewall as a perimeter firewall and as an intertenant firewall
- Determine a security policy methodology
- Recognize the NSX security best practices

8 NSX Network Services

- Identify the stateful services available in different edge cluster high availability modes
- Describe failover detection mechanisms
- Compare NSX NAT solutions
- Explain how to select DHCP and DNS services
- Compare policy-based and route-based IPSec VPN
- Describe an L2 VPN topology that can be used to interconnect data centers
- Explain the design considerations for integrating VMware NSX® Advanced Load Balancer™ with NSX

9 Physical Infrastructure Design

- Identify the components of a switch fabric design
- Assess Layer 2 and Layer 3 switch fabric design implications
- Review guidelines when designing top-of-rack switches
- Review options for connecting transport hosts to the switch fabric
- Describe typical designs for VMware ESXi™ compute hypervisors with two pNICs
- Describe typical designs for ESXi compute hypervisors with four or more pNICs
- Differentiate dedicated and collapsed cluster approaches to SDDC design

10 NSX Multilocation Design

- **Explain scale considerations in an NSX multisite design**
- **Describe the main components of the NSX Federation architecture**
- **Describe the stretched networking capability in Federation**
- **Describe stretched security use cases in Federation**
- **Compare the Federation disaster recovery designs**

11 NSX Optimization and DPU-Based Acceleration

- **Describe Geneve Offload**
- **Describe the benefits of Receive Side Scaling and Geneve Rx Filters**
- **Explain the benefits of SSL Offload**
- **Describe the effect of Multi-TEP, MTU size, and NIC speed on throughput**
- **Explain the available enhanced datapath modes and use cases**
- **List the key performance factors for compute nodes and NSX Edge nodes**
- **Describe DPU-Based Acceleration**
- **Define the NSX features supported by DPUs**
- **Describe the hardware and networking configurations supported with DPUs**