

## VMware NSX: Design

**Durée: 5 Jours**    **Réf de cours: VMNSXD**    **Version: 4.x**    **Méthodes d'apprentissage: Virtual Learning**

### Résumé:

This five-day course provides comprehensive training on considerations and practices to design a VMware NSX® environment as part of a software-defined data center strategy. This course prepares the student with the skills to lead the design of an NSX environment, including design principles, processes, and frameworks. The student gains a deeper understanding of the NSX architecture and how it can be used to create solutions to address the customer's business needs.

Product Alignment  
- VMware NSX 4.1.0

### Public visé:

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

### Objectifs pédagogiques:

- By the end of the course, you should be able to meet the following objectives:
- Describe and apply a design framework
- Apply a design process for gathering requirements, constraints, assumptions, and risks
- Design a VMware vSphere® virtual data center to support NSX requirements
- Create a VMware NSX® Manager™ cluster design
- Create a VMware NSX® Edge™ cluster design to support traffic and service requirements in NSX
- Design logical switching and routing
- Recognize NSX security best practices
- Design logical network services
- Design a physical network to support network virtualization in a software-defined data center
- Create a design to support the NSX infrastructure across multiple sites
- Describe the factors that drive performance in NSX

### Pré-requis:

Before taking this course, you must complete the following course:

- VMware NSX: Install, Configure, Manage [V4.0] You should also have understanding or knowledge of these technologies:
  - Good understanding of TCP/IP services and protocols
  - Knowledge and working experience of computer networking and security, including:
  - Switching and routing technologies (L2 and L3)
  - Network and application delivery services (L4 through L7)
  - Firewalling (L4 through L7)
  - vSphere environments
- The VMware Certified Professional – Network Virtualization certification is recommended.

## Contenu:

### 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

### 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

used to interconnect data centers

- Explain the design considerations for integrating VMware NSX® Advanced Load Balancer™ with NSX

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## Autres moyens pédagogiques et de suivi:

- Compétence du formateur : Les experts qui animent la formation sont des spécialistes des matières abordées et ont au minimum cinq ans d'expérience d'animation. Nos équipes ont validé à la fois leurs connaissances techniques (certifications le cas échéant) ainsi que leur compétence pédagogique.
- Suivi d'exécution : Une feuille d'émargement par demi-journée de présence est signée par tous les participants et le formateur.
- En fin de formation, le participant est invité à s'auto-évaluer sur l'atteinte des objectifs énoncés, et à répondre à un questionnaire de satisfaction qui sera ensuite étudié par nos équipes pédagogiques en vue de maintenir et d'améliorer la qualité de nos prestations.

### Délais d'inscription :

- Vous pouvez vous inscrire sur l'une de nos sessions planifiées en inter-entreprises jusqu'à 5 jours ouvrés avant le début de la formation sous réserve de disponibilité de places et de labs le cas échéant.
- Votre place sera confirmée à la réception d'un devis ou "booking form" signé. Vous recevrez ensuite la convocation et les modalités d'accès en présentiel ou distanciel.
- Attention, si cette formation est éligible au Compte Personnel de Formation, vous devrez respecter un délai minimum et non négociable fixé à 11 jours ouvrés avant le début de la session pour vous inscrire via [moncompteformation.gouv.fr](http://moncompteformation.gouv.fr).

### Accueil des bénéficiaires :

- En cas de handicap : plus d'info sur [globalknowledge.fr/handicap](http://globalknowledge.fr/handicap)
- Le Règlement intérieur est disponible sur [globalknowledge.fr/reglement](http://globalknowledge.fr/reglement)