VMware Cloud Foundation: Solution Architecture and Design (v9.1)

Durée: 5 Jours **Réf de cours: VMVCFSAD91**

Résumé:

This course teaches the architectural constructs, design patterns and decision-making discipline needed to design a VMware Cloud Foundation solution at enterprise scale.

You will be taken through a logical design sequence: the shape of the fleet, the management plane, the domain and cluster layout for each instance, and how a tenant consumes VCF services and resources. Physical design considerations are examined, along with network, storage, and the recovery design. You will apply design principles to a case study throughout, to reinforce key design decisions and how they can be applied in practice.

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Public visé:

Architects, Solution Engineers, Senior Administrators.

Objectifs pédagogiques:

- **By the end of the course, you should be able to meet the following objectives:**
- Understand and select the right design blueprints and models based on stated requirements.
- Design instance, management domain, workload domains, cluster layouts, and host specifications.
- Design the three management domain recovery tiers, from component restore to fleet disaster recovery.
- Design for both traditional shared storage (NFS and Fiber Channel) and vSAN storage as part of a VCF solution.
- Design the appropriate network architecture given physical network constraints and stated requirements.
- Design a VCF Automation tenancy model, including Supervisor and VKS-related services.
- Understand the design considerations relating to a Private AI Foundation / Services solution.
- Appreciate physical datacenter design considerations that affect a VCF solution design.
- Apply AMPRS design qualities to all aspects of the VMware Cloud Foundation solution design.

Pré-requis:

This course has the following prerequisites:

- Working knowledge of vSphere, vCenter, ESX, vSAN and NSX networking.
- Experience with enterprise datacenter operations and solution design.
- Attendance of VMware Cloud Foundation: Build, Manage, Secure and VMware Cloud Foundation: Automate and Operate courses or equivalent experience.

Test et certification

None

Après cette formation, nous vous conseillons le(s) module(s) suivant(s):

None

Contenu:

1. Introduction

- Explain the value of VCF as an operational cost argument, not a feature list.
- Describe what VCF 9.1 consolidates, and what is still yours to design.
- Differentiate the personas a private cloud serves and the decisions each one drives.
- Describe the five AMPRS qualities and the trade-offs they create.
- Sequence a design decision as requirement, decision, justification and implication.

2. Fleet Designs and Blueprints

- Describe how the Fleet, Instance, Domain, Cluster and Host constructs nest.
- Choose a fleet deployment model and a fleet sizing model from stated requirements.
- Design a fleet from a published blueprint, substituting Design Library models.
- Choose an edge design pattern for a given site count, WAN budget and autonomy requirements.
- Differentiate the three recovery tiers and identify which one answers a failure.

3. Fleet Components

- Size a VCF Operations analytics cluster from an object count and an availability model.
- Choose a License Server model and defend the choice against a named requirement.
- Describe what runs on the VCF Management Services runtime and what stays a separate appliance.
- Differentiate the Simple and High Availability VCFMS models by their failure behavior.
- Design Log Management retention, partitioning and archiving to a stated requirement.
- Place the Identity Broker as a per-Instance service and pick its deployment model.

4. Instance, Domain and Cluster Designs

- Describe the Instance, Domain and Cluster constructs and the related design decisions.
- Design a Management Domain: sizing, storage, networking and the reserves it must hold.
- Place every management component correctly in a first and an additional Instance.
- Choose how many Workload Domains an estate needs and defend each one by what it isolates.
- Choose a cluster model and a vSAN cluster type, then size the host count that follows.
- Explain how a storage policy sets usable capacity and the minimum host count.

5. Consumption

- Identify every path a consumer can take to reach the platform.
- Design a VCF Automation tenancy model from Organizations down to quota.
- Choose between the All Apps and VM Apps Organization models.
- Explain Supervisor activation and associated design decisions.
- Design the substrate a VKS cluster and its related services need.
- Place VCF Operations Orchestrator, Harbor, DSM and Private AI within a solution design.

6. Physical Datacenter Architecture

- Explain the five physical layers comprising a VCF-ready datacenter.
- Size rack power and cooling for mixed VM, container and accelerated AI hosts.
- Design a leaf-spine fabric that meets VCF bandwidth, latency and MTU needs.
- Choose a single-site, multi-site or multi-region fabric based on stated requirements.
- Identify the CPU, memory, NVMe drives and uplinks a ReadyNode must carry.
- Explain how NUMA and the 9.1 Topology Aware Scheduler affect placement.

7. Networking

- Design the VLAN and MTU plan a VCF solution requires, end to end.
- Choose a distributed switch model from the physical adapters you can justify.
- Differentiate centralized and distributed connectivity and size what each need.
- Place a workload on the network and choose where its traffic is inspected.
- Choose between the NSX load balancer, Avi Load Balancer and an incumbent ADC.

8. Storage Design

- Choose a principal and a supplemental storage model based on stated requirements.
- Explain the vSAN ESA architecture and the data services it delivers by default.
- Design storage policies and size raw capacity from the resulting space factor.
- Design the vSAN network, encryption and operational model.
- Integrate Kubernetes persistent storage with vSAN through storage policies.
- Design NFS and Fiber Channel storage where an array estate already exists.

9. Management Domain Backup and Restore

- Design a backup solution that covers every VCF management component.
- Size an SFTP target from backup size, retention and instance count.
- Sequence a full instance restore in the documented dependency order.
- Outline the instance recovery toolkit, its prerequisites and its cmdlets.
- Design fleet disaster recovery across two instances in two regions.
- Explain the recovery point and recovery time each tier can support

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.

Accueil des bénéficiaires :

• En cas de handicap : plus d'info sur globalknowledge.fr/handicap
• Le Règlement intérieur est disponible sur globalknowledge.fr/reglement