VCFBMS9- VMware Cloud Foundation: Build, Manage, and Secure

Days: *5*

Prerequisites: Working experience and knowledge of VMware vSphere, VMware NSX and vSAN environments.

Audience: System Administrators, Solution Engineers, Consultants, Architects, and Support Personnel.

Description: This five-day course provides you with the knowledge, skills, and abilities to achieve competence in deploying, managing, operating, and securing a private cloud using VMware Cloud Foundation® (VCF). You will learn about VCF architecture, storage and network management, licensing, and certificates. In addition to workload domains, availability, and life cycle management, the course also covers upgrade scenarios.

Course Objectives: Upon completing this course, the learner will be able to meet these overall objectives:

- Plan a deployment for VMware Cloud Foundation
- Understand VMware Cloud Foundation and supporting architecture
- Configure VMware Cloud Foundation for VMware Cloud Connectivity
- Understand the VMware Cloud Foundation subscription licensing model
- Perform Day-Zero tasks
- Perform VMware Cloud Foundation platform onboarding
- Manage user credentials in VMware Cloud Foundation
- Configure NSX networking in VMware Cloud Foundation
- Deploy and manage Workload Domains
- Deploy vSphere with Tanzu on VMware Cloud Foundation
- Understand and implement storage solutions and related policies
- Perform maintenance tasks for the VMware Cloud Foundation platform
- Manage certificates for VMware Cloud Foundation and connected technologies
- Manage the lifecycle for VMware Cloud Foundation
- Engage with VMware Cloud Foundation Technical Support

OUTLINE

1. COURSE INTRODUCTION

- Introduction and course logistics
- Course objectives

2. VCF PRIVATE CLOUD: OVERVIEW AND ARCHITECTURE

- Define VCF and its key features
- Describe the use cases of VCF
- Explain the capabilities of VCF
- Describe the integrated security across all layers in VCF
- Explain the advanced services of VCF
- Explain the architecture of the VCF private cloud
- Recognize the components of the VCF private cloud
- Distinguish between VCF fleet-level components and VCF instance-level components
- Describe the various roles in VCF private cloud

3. VCF PRIVATE CLOUD DEPLOYMENT

- Identify the VCF fleet deployment considerations
- Describe the process for planning and preparing a VCF deployment
- Identify the information required for the Planning and Preparation Workbook
- Explain the high-level steps to deploy VCF private cloud
- Outline the sequence for deploying the VCF private cloud

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- Describe the deployment configuration of VCF instance core components
- Explain the deployment configuration of VCF fleet management components
- Use the VCF Installer deployment wizard to deploy a new VCF fleet
- Use a deployment specification JSON file to deploy a new VCF fleet

4. VCF POST-DEPLOYMENT TASKS

- Navigate the VCF Operations user interface
- Navigate the VMware Cloud Foundation® Automation user interface
- Navigate the vSphere Client user interface
- Explain VCF Operations for networks, VCF Operations for logs, and VCF Identity Broker
- Deploy VCF Operations for networks, VCF Operations for logs, and VCF Identity Broker

5. VCF FLEET MANAGEMENT

- Describe the VCF licensing model
- Assign and manage VCF licenses
- Identify key log files to troubleshoot licensing issues
- Discuss single sign-on in VCF
- Describe the single sign-on architecture in VCF
- Discuss VCF Identity Broker in VCF
- Identify the steps to configure single sign-on in VCF
- List the supported directories and IDPs in VCF
- Configure SSO and enablement for all components in a VCF Instance
- Manage users and user groups in VCF
- Outline the steps to manage passwords

6. VCF WORKLOAD DOMAIN

- Explain VCF domains
- Describe the management of the workload domains
- List design considerations for workload domains
- Describe design prerequisites for a workload domain
- Outline the steps to create a workload domain
- Describe vCenter Groups
- Configure vCenter linked groups
- Import vCenter as a workload domain using VCF Operations

7. VCF NETWORKING

- Describe the role of VMware NSX in VCF
- Describe the default NSX objects that are created during the VCF deployment
- Discuss the Workload domain networking options
- Describe the networking constructs in NSX
- Explain Virtual Private Cloud concepts and constructs
- Differentiate between Centralized and Distributed Network Connectivity
- Configure Distributed Network Connectivity
- Configure Centralized Network Connectivity
- Identify key CLI commands to determine the NSX Edge cluster status and BGP peering
- Create a Virtual Private Cloud
- Create subnets within a virtual private cloud

8. VCF STORAGE MANAGEMENT

- Define the key components involved in Fibre Channel storage systems
- Describe the process for configuring Fibre Channel storage
- Identify the components of an iSCSI storage system
- Explain how iSCSI addressing works
- Describe the benefits and considerations of using multipathing with iSCSI storage
- List the requirements to use NFS as principal and supplemental storage
- Outline the process of provisioning NFS storage to ESX hosts

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- Describe the steps involved in deploying a vSAN cluster
- Identify and use built-in tools to validate a successful vSAN deployment
- Apply a custom storage policy to an individual virtual machine or virtual disk
- Compare the various tools used to monitor a vSAN cluster
- Explain the types of vSAN reports available in VCF Operations
- Compare different maintenance mode options and their impact on object health
- Summarize the steps to power down a vSAN cluster in a workload domain

9. VCF CERTIFICATE MANAGEMENT

- Describe public key infrastructure
- Explain the purpose of certificate signing requests
- Outline the steps to integrate certificates in VCF
- List the available CA options in SDDC Manager
- Integrate VCF Operations with Microsoft CA and OpenSSL CA
- Manage certificates in VCF

10. VCF LIFE CYCLE MANAGEMENT

- Discuss life cycle management in VCF
- Explain the life cycle management of VCF fleet management
- Describe how to configure software depots
- Describe how to upgrade and patch fleet management components
- Explain the life cycle management of VCF components
- Describe how to upgrade and patch the VCF management components
- Explain the process for backing up and restoring fleet-level management components
- Explain the process for backing up and restoring VCF management components

11. VCF SECURITY

- Define security, compliance and resilience in VCF
- Describe the integrated security features across all layers in VCF
- Explain the advanced networking and security capabilities of VCF
- Outline the steps to monitor User and Infrastructure Security
- Explain how Compliance Benchmark works
- Outline the steps to monitor Configuration Drift

12. VCF UPGRADE PATHS

- Identify the supported upgrade paths to VCF 9.0
- Explain the upgrade key consideration
- Evaluate both existing and future compatibility assessments
- Explain the upgrade sequence to the VCF 9 fleet using the existing vSphere
- Explain the upgrade sequence to the VCF 9 fleet using the existing vSphere and VCF Operations
- Explain the upgrade sequence to the VCF 9 fleet using the existing VCF 5.2 with multiple Aria components

LAB OUTLINE

- Lab 1 Case Study
- Lab 2 Accessing the Lab Environment
- Lab 3 (Simulation) Deploying VMware Cloud Foundation with Quick Installer
- Lab 4 Managing the VCF Environment with the User Interface
- Lab 5 Verifying the VCF Operation Integration with the Management Domain
- Lab 6 Deploying the VCF Operations for Logs Appliance
- Lab 7 (Simulation) Registering and Activating Licenses for VCF
- Lab 8 Configuring VCF Single Sign-On for the Management Domain

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- Lab 9 Assigning Permissions to VCF SSO Users
- Lab 10 Adding Open LDAP as an Identity Source51
- Lab 11 Managing Passwords
- Lab 12 Commissioning Hosts
- Lab 13 Creating Workload Domain
- Lab 14 (Simulation) Creating a Workload Domain with the Supervisor Cluster
- Lab 15 Verifying the Workload Domain Components Integration with VCF Operations
- Lab 16 Configuring VCF Single Sign-On for Workload Domain vCenter and NSX Manager
- Lab 17 Assigning Permissions to VCF SSO Users in the Workload Domain
- Lab 18 Creating vCenter Group
- Lab 19 Assigning a License to the Workload Domain vCenter
- Lab 20 Adding an ESX Host to the Workload Domain
- Lab 21 Creating Virtual Private Cloud (Distributed)
- Lab 22 Deploying an NSX Edge Cluster in a Workload Domain Using the vSphere Client
- Lab 23 Creating Centralized Virtual Private Cloud
- Lab 24 Reviewing the Workload Domain vSAN Cluster Details
- Lab 25 Analyzing the Placement of VM Objects and Components in the vSAN Cluster
- Lab 26 Running vSAN Tests
- Lab 27 Creating and Applying a vSAN Storage Policy
- Lab 28 Implementing Certificates
- Lab 29 Configuring Backup
- Lab 30 (Optional) Using APIs
- Lab 31 (Optional) Using SoS Commands