VMware Cloud Foundation: Build, Manage and Secure [V9.1]

Course code: VMW_VCFBMS

This five-day course provides the knowledge and skills to build, manage, and secure a VMware Cloud Foundation (VCF) Private Cloud. You will explore VCF architecture, licensing models, and Private Cloud components at both the fleet and instance levels. The course covers end-to-end fleet deployment using the VCF Installer, post-deployment tasks including VCF Operations component setup, and fleet management through Single Sign-On configuration, VCF Identity Broker, role-based access control, and credential management. You will also deploy and manage workload domains, configure VMware NSX networking with Virtual Private Cloud constructs and Transit Gateway configurations, and manage vSAN storage using policies, fault domains, and VCF Operations monitoring tools.The course also covers VCF certificate management using SDDC Manager with Microsoft CA, OpenSSL CA, and third-party certificate authorities. Students will perform lifecycle management operations including patching and upgrading VCF management and fleet components, and executing backup and restore procedures across the VCF fleet. In the VCF Security section, you will define security, compliance, and resilience in VCF, assess compliance posture using Security Posture Management, monitor security health through the Security Operations Dashboard, and review audit trail events. The course concludes with VCF upgrade paths to version 9.1, covering supported upgrade scenarios from vSphere 8.0 and VCF 5.2 environments.

Who is the course for

System Administrators, Solution Engineers, Consultants, Architects, and Support Personnel

What we teach you

By the end of the course, you should be able to meet the following objectives:

- Describe VMware Cloud Foundation architecture and Private Cloud components at the fleet and instance levels
- Deploy and configure a VCF Private Cloud using the VCF Installer, including networking, storage, and post-deployment tasks
- Manage VCF Fleet operations including SSO, RBAC, identity federation, workload domains, NSX networking, and vSAN storage
- Manage VCF lifecycle using the software depot, patch and upgrade VCF components, and implement backup and restore procedures
- Apply VCF security using Security Posture Management, the Security Operations Dashboard, certificate management, and supported upgrade paths to VCF 9.1

Required skills

This course has the following prerequisites:

- Implement Learning Path Stage-1 Training
- Introduction to VCF
- VMware Cloud Foundation: Compute Fundamentals
- VMware Cloud Foundation: Storage Fundamentals
- VMware Cloud Foundation: Network Fundamentals
- Working experience and knowledge of VMware vSphere®, VMware NSX®, and vSAN environments

Course outline

Module 1: Course Introduction

- Describe VMware Cloud Foundation components, architecture, and supported private cloud use cases
- Explain the VMware Cloud Foundation licensing model and available license types
- Outline the course curriculum covering deployment, fleet management, networking, storage, lifecycle, and security

Module 2: VCF Private Cloud: Overview and Architecture

- Define VMware Cloud Foundation key features, use cases, and integrated security capabilities across all layers
- Explain the advanced services and operational capabilities of VMware Cloud Foundation
- Describe the VCF Private Cloud architecture including fleet-level and instance-level components
- Identify the various roles and capabilities within a VCF Private Cloud environment

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Module 3: VCF Private Cloud Deployment
- Identify VCF fleet deployment considerations and planning requirements using the Planning and Preparation Workbook
- Outline the sequence for deploying VCF Private Cloud including core component configuration
- Describe the deployment configuration of VCF instance and fleet management components
- Deploy a new VCF fleet using the VCF Installer wizard or a deployment specification JSON file

Module 4: VCF Post-Deployment Tasks
- Explain VCF Operations for Networks, VCF Operations for Logs, and VCF Identity Broker deployment models
- Describe deployment considerations for VCF Operations components including Real-Time Metrics
- Deploy and navigate VCF Operations components and perform post-deployment management tasks

Module 5: VCF Fleet Management
- Describe the VCF licensing model including capacity pooling, primary and add-on licenses, and 9.1 licensing procedures
- Configure VCF Single Sign-On and VCF Identity Broker deployment models for all VCF instance components
- Identify supported directories and identity providers and configure SSO enablement across VCF components
- Manage role-based access control, users, user groups, and credentials in VMware Cloud Foundation
- Outline password management workflows and available API options for automating credential management tasks

Module 6: VCF Workload Domain
- Explain VMware Cloud Foundation workload domains and apply vSphere, network, and storage design considerations
- Describe design prerequisites and create workload domains using VCF Operations
- Configure vCenter linked groups and manage host and cluster additions within workload domains
- Import an existing vCenter as a workload domain using VCF Operations including applicable import limitations

Module 7: VCF Networking
- Identify the core components of the NSX architecture including management, control, and data planes
- Describe NSX overlay networking concepts including Geneve encapsulation, TEP configuration, and Traceflow
- Explain Virtual Private Cloud constructs and configure VPC and VPC subnets in VMware Cloud Foundation
- Configure network connectivity during VCF Fleet deployment including Distributed and Centralized Transit Gateways

Module 8: VCF Storage Management
- Describe VMware Cloud Foundation storage models including principal and supplemental storage options
- Explain vSAN networking and hardware requirements and configure vSAN clusters with appropriate storage policies
- Configure vSAN fault domains and manage vSAN cluster operations in VMware Cloud Foundation
- Analyze vSAN performance and generate storage reports using VCF Operations monitoring tools

Module 9: VCF Certificate Management
- Describe public key infrastructure concepts including certificate signing requests and CA options in SDDC Manager
- Manage certificates in VMware Cloud Foundation using the SDDC Manager certificate management workflow
- Integrate VCF Operations with Microsoft CA and OpenSSL CA for certificate issuance and installation
- Install and manage certificates issued by Microsoft CA, OpenSSL CA, or third-party CAs in VCF Operations

Module 10: VCF Lifecycle Management
- Identify the role of the software depot and configure it in VCF Operations to manage VCF fleet lifecycle
- Manage software depot content, storage, and bundle assignments in VCF Operations
- Upgrade and patch VCF management and fleet management components using lifecycle management workflows
- Configure backup and restore procedures for the VCF fleet using SFTP, SDDC Manager, and fleet management nodes

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- Execute backup and restore operations for fleet-level and VCF management components

Module 11: VCF Security

- Define security, compliance, and resilience principles and describe integrated security features across all VCF layers
- Assess compliance and manage security posture using Security Posture Management in VMware Cloud Foundation
- Monitor security health through the Security Operations Dashboard and analyze events using the Audit Trail
- Orchestrate unified Protection and Recovery workflows using VCF advanced networking and security capabilities

Module 12: VCF Upgrade Paths

- Identify supported upgrade paths to VCF 9.1 including key considerations, prerequisites, and compatibility assessments
- Explain the upgrade process from vSphere 8.0 to VCF 9.1 using the existing vSphere deployment path
- Outline upgrade stages from vSphere 8.0 with multiple Aria components to VMware Cloud Foundation 9.1
- Describe prerequisites and upgrade sequence from VCF 5.2 with Aria components to VMware Cloud Foundation 9.1
- Differentiate between the existing vSphere upgrade path and the vCenter import process for transitioning to VCF 9.1

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