



VMware Cloud Foundation Automation: Advanced Design & Deploy [V9.1]

Course Overview

This five-day advanced course provides you with the knowledge, skills, and abilities to design, deploy, and operate VMware Cloud Foundation Automation in enterprise and service provider environments. You will learn about VCF Automation architecture, deployment models, tenancy models, organization and project design, and vSphere Supervisor deployment. The course also covers advanced networking with VPCs, NAT, IPSec VPNs, firewalls, and Avi Load Balancer integration, along with identity and access management design.

In the advanced services section, you will explore Kubernetes and VKS cluster deployment, container services, storage management for modern apps, and advanced vSphere Namespaces configurations. The course also covers advanced blueprints, VCF Operations Orchestrator workflows, VCF Automation extensibility, Day 2 operations, multi-tenant replication and disaster recovery, and VCF Automation troubleshooting techniques.

Course Objectives

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

- Define VCF Automation architecture, deployment models, and network design options.
- Determine VCF Automation load balancing design and tenancy deployment models.
- Design multi-tenancy architecture and organization consumption patterns for complex tenant requirements.
- Define projects, namespaces, and namespace classes to meet organizational and operational requirements.
- Configure VM classes, storage classes, and content libraries based on customer requirements.
- Design and deploy vSphere Supervisor with VCF Automation during Workload Domain creation.
- Design VPC architecture for provider, organization, and system networking in VCF Automation.
- Configure Network Address Translation, IPSec VPNs, and Avi Load Balancer integration.
- Implement distributed and gateway firewalls with security profiles and workload grouping.
- Design VCF Automation authentication models and role-based access control across all scopes.
- Configure advanced blueprints with expressions, CloudInit, and namespace capture.
- Create VCF Operations Orchestrator workflows and apply VCF Automation extensibility with subscriptions.
- Design disaster recovery architecture, manage Day 2 operations, and troubleshoot VCF Automation.

Target Audience

- Solution Architects, Cloud Administrators, VI Administrators, System Administrators, Consultants and Support Personnel

Prerequisites

This course has the following prerequisites:

- VMware Cloud Foundation: Solution Architecture & Design.
- VMware Cloud Foundation: Build, Manage & Secure.
- VMware Cloud Foundation: Automate and Operate.

Course Modules

Module 1: Course Introduction

- Describe the key concepts and scope of the advanced VCF Automation course.

Module 2: VCF Automation Architecture & Design

- Define VCF Automation architecture, deployment models, and network design options.
- Determine VCF Automation load balancing design and tenancy deployment models.
- Design vSphere Supervisor Zone Model and VCF Operations Orchestrator deployments.
- Configure chargeback, billing, and content libraries in VCF Automation.

Module 3: Organization Design

- Describe VCF Automation All Apps Organization multi-tenancy model and consumption patterns.
- Compare Provider Admin and Organization Admin roles across supervisors, regions, and zones.
- Design multi-tenancy architecture to support complex tenant requirements.
- Explain bimodal consumption design and multi-tenancy consumption decision matrix.

Module 4: Project Design

- Explain the purpose of projects, namespaces, and namespace classes.
- Identify customer requirements through discovery questions.
- Define projects for an organization to meet operational requirements.

Module 5: Storage Class and VM Class Design

- Explain the purpose of VM classes and storage classes.
- Identify customer requirements through discovery questions.
- Define VM classes and storage classes for a region.

Module 6: vSphere Supervisor with VCF Automation Architecture and Deployment

- Describe vSphere Supervisor overview, architecture, and namespace features.
- Determine vSphere Supervisor deployment types, requirements, and components.
- Design vSphere Supervisor deployment during Workload Domain creation.
- Configure day-n vSphere Supervisor deployment with NSX VPC networking.

Module 7: Advanced Networking in VCF Automation

- Design VPC architecture for provider, organization, and system networking.
- Configure Network Address Translation, IPSec VPNs, and Avi Load Balancer integration.
- Implement distributed and gateway firewalls with security profiles and workload grouping.
- Deploy vSphere Supervisor with Avi Load Balancer, AKO, and NSX container plugin.

Module 8: VCF Automation Identity and Access Management Design

- Define VCF Automation authentication models and identity provider configurations.
- Describe provider and organization persona capabilities and admin boundaries.
- Design role-based access control with provider, global, organization, and project roles.
- Create custom roles and apply least-privilege design across every scope.

Module 9: Advanced IaaS Services in VCF Automation

- Explain Kubernetes architecture, workflow, and VKS cluster deployment.
- Deploy VKS clusters using Catalog and IAAS with YAML manifest configuration.
- Manage VKS clusters at scale with consistent policies, backups, and standard packages.
- Configure container services, vSphere Pods, and persistent volume attachments.
- Manage services framework including Secret Store, Encryption Management, and VCF CLI.

Module 10: Storage Management for Modern Apps

- Explain storage policies and vSphere Supervisor integration with vSphere storage.
- Describe CNS-CNI features and persistent storage with vSphere Zones.
- Configure volume management service for VKS clusters and persistent volumes.

Module 11: Advanced vSphere Namespaces Configurations

- Explain VCF Automation namespace self-service and enabling workflow.
- Configure resource bindings and self-service VPCs.
- Create and update namespaces as project and organization admins.

Module 12: Advanced VCF Automation Blueprints

- Configure advanced blueprints with expressions, conditional deployment, and YAML syntax.
- Implement CloudInit and networking configuration in VCF Automation blueprints.
- Use namespace capture feature with supported resources and customization options.

Module 13: Advanced VCF Operations Orchestrator

- Explain VCF Operations Orchestrator features, usage, and installation.
- Integrate VCF Operations Orchestrator with VCF Automation for All Apps.
- Configure orchestrator policies, plugins, and content versioning.
- Create VCF Automation Orchestrator workflows with actions and assets.

Module 14: VCF Automation Extensibility

- Describe VCF Automation extensibility concepts and capabilities.
- Design and apply VCF Automation extensibility to meet organizational requirements.
- Configure VCF Automation subscriptions for extensibility scenarios.

Module 15: Day 2 Operations

- Define Day 2 Operations for VM and VM group power and snapshot management.
- Configure VM get password and active directory features and use cases.
- Create custom resources and define dynamic types.
- Use actions to dynamically populate values for catalog items.

Module 16: VCF Replication and Disaster Recovery

- Describe multi-tenant replication in VCF Automation.
- Design multi-tenant disaster recovery architecture and protection topologies.
- Explain network connectivity and user personas for protection and recovery.
- Configure provider and organization replication workflows.

Module 17: VCF Automation Troubleshooting

- Identify VCF Automation deployment stages, prerequisites, and clustered setup steps.
- Describe VCF Management Services and Services Runtime architecture.
- Troubleshoot VCF Automation using kubectl commands and key log files.
- Review VCF Automation support log bundle structure for diagnostics.