

# VMware vSphere Foundation: Build, Manage, and Operate [V9.0]

**Duration: 5 Days**

## Course Description:

This course provides you with the knowledge, skills, and abilities to achieve competence in deploying, configuring, and managing VMware vSphere® Foundation. You learn about the architecture of vSphere Foundation, compute, storage, networks, and licensing.

This course prepares you to administer a VMware vSphere Foundation, which includes VCF Operations 9.0, vCenter 9.0, and ESX 9.0.

## Target Audience:

This course is ideal for system administrators, solution engineers, consultants, architects, and support personnel.

## Prerequisites:

Before attending this course, you should have:

- Working experience and knowledge of VMware vSphere, VMware NSX, and vSAN environments

## Course Objectives:

After completing this course, you should be able to:

- Define the key features, use cases and, capabilities of vSphere Foundation
- Navigating the VCF Operations user interface
- Describe the licensing options and manage licenses for vSphere Foundation.
- Describe the installation and configuration of ESX
- Create virtual networks using vSphere standard switches and distributed switches
- Create and configure datastores using storage technologies supported by vSphere
- Use the vSphere Client to create virtual machines, templates, clones, and snapshots
- Create content libraries for managing templates and deploying virtual machines
- Manage virtual machine resource allocation
- Migrate virtual machines with VMware vSphere vMotion and VMware vSphere Storage vMotion
- Create and configure a vSphere cluster that is enabled with VMware vSphere High Availability and VMware vSphere Distributed Resource Scheduler
- Analyzing the placement of VM objects and components in the vSAN Cluster

- Creating custom views and policies in VCF operations
- Describe vSphere Kubernetes and vSphere Supervisor Service
- Deploy and configure vSphere Foundation
- Deploy additional vSphere Foundation components such as VCF Operations Collector, VCF Operations for Logs, and VCF Operations for Orchestrator
- Manage the life cycle of VCF Operations and vSphere components

## Course Outlines:

### Module 1: Course Introduction

- Introduction and course logistics
- Course objectives

### Module 2: VMware vSphere Foundation Overview and Architecture

- Define the vSphere Foundation key features
- Explain vSphere Foundation use cases
- Explain the architecture of vSphere Foundation
- Explore the components of vSphere Foundation
- Introduction to VCF Operations
- List the steps to navigate the VCF Operations UI and vSphere UI

### Module 3: License Management

- Describe the process for managing and assigning licenses
- Enable VCF Operations integration for vCenter
- Explain license usage by product

### Module 4: vSphere Foundation Compute

- Explain basic virtualization concepts
- Describe how vSphere fits in the software-defined data center
- Describe vSphere architecture and use cases
- Recognize the user interfaces for accessing vSphere
- Install and configure ESX host
- Create and organize vCenter inventory objects

### Module 5: vSphere Foundation Networking

- Create and configure standard switch
- Create and configure distributed switch
- Differentiate between standard and distributed switches
- Explain how to set networking policies

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## COURSE OUTLINE

### Module 6: vSphere Foundation Storage

- Recognize vSphere storage technologies
- Identify the types of vSphere datastores
- Describe Fibre Channel components and addressing
- Describe iSCSI components and addressing
- Configure iSCSI storage on ESX
- Create and manage VMFS datastores.
- Configure and manage NFS datastores.

### Module 7: Deploying Virtual Machines

- Create and provision VMs
- Explain the importance of VMware tools
- Manage a virtual machine from the vSphere Client
- Manage virtual machine resources
- List the steps to deploy virtual machines
- Clone VMs and create customization specifications for guest operating systems
- Create local, published, and subscribed content libraries

### Module 8: Virtual Machine Management

- Migrate VMs using vSphere vMotion and Storage vMotion
- Perform snapshots operations
- Specify CPU and memory shares, reservations, and limits

### Module 9: Deploying and Configuring vSphere Clusters

- Create a vSphere cluster enabled for vSphere DRS and vSphere High Availability (HA)
- Explain how vSphere DRS determines VM placement on hosts in the cluster
- Recognize use cases for vSphere DRS settings
- Describe how vSphere HA responds to various types of failures
- Identify options for configuring network redundancy in a vSphere HA cluster
- Recognize vSphere HA design considerations
- Recognize the use cases for various vSphere HA settings
- Configure a vSphere HA cluster

### Module 10: vSAN Management

- Identify the features of vSAN
- Understand the key differences between vSAN OSA and vSAN ESA
- Explain the role of the performance leg and the capacity leg in vSAN ESA
- Examine vSAN ESA Object health states
- Compare how RAID-0/1/5/6 space consumption
- Identify vSAN component states

### Module 11: vSphere Kubernetes Service Overview

- Describe vSphere Supervisor Architecture and use cases
- Explain vSphere Supervisor Deployment Options
- Install vSphere Supervisor
- Explain Supervisor Storage vSphere Zones, Networking, and Storage
- Configuring and managing a supervisor
- Configuring vSphere Namespaces for Hosting VKS Clusters
- Managing vSphere Kubernetes Service Clusters

### Module 12: VCF Operations Metrics

- Outline the role of metrics in VCF Operations
- Create and configure views in VCF Operations
- Create and configure reports in VCF Operations
- Create and configure dashboards in VCF Operations
- Configure widget interactions
- Describe the purpose of using alerts
- Identify the components of an alert definition
- Create static symptom definitions
- Create static symptom definitions

### Module 13: vSphere Foundation Deployment

- Prepare the infrastructure for VMware vSphere Foundation
- Identify the information required for the Planning and Preparation Workbook
- Explain the high-level steps to deploy vSphere Foundation
- Describe the procedure for downloading the software using online and offline modes
- Describe the vSphere Foundation workflow using the VCF Installer UI and JSON spec file
- Deploy and enable VCF Operations collector, VCF Operations for Logs, and VCF Operations Orchestrator
- Deploy vCenter Server Appliance

### Module 14: Managing the vSphere Foundation Lifecycle

- Describe features of the vCenter Update Planner
- Run vCenter upgrade prechecks and interoperability reports
- Recognize features of VMware vSphere Lifecycle Manager
- Validate and update ESX hosts using vSphere Lifecycle Manager
- Use vSphere Lifecycle Manager to upgrade VMware Tools and VM hardware

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