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**Learning Style: Virtual Classroom**

**Technology: VMware**

**Difficulty: Intermediate**

**Course Duration: 5 Days**

## VMware vSphere: Install, Configure, Manage 7.0



## About this Course:

This five-day course features intensive hands-on training that focuses on installing, configuring, and managing VMware vSphere® 7, which includes VMware ESXi™ 7 and VMware vCenter Server® 7. This course prepares you to administer a vSphere infrastructure for an organization of any size.

## Course Objectives:

- Describe the software-defined data center (SDDC)
- Explain the vSphere components and their function in the infrastructure
- Describe the benefits and capabilities of VMware Skyline  
Install and configure ESXi hosts
- Deploy and configure VMware vCenter® Server Appliance™  
Use VMware vSphere® Client™ to manage the vCenter Server inventory and the vCenter Server configuration
- Manage, monitor, back up, and protect vCenter Server Appliance
- Create virtual networks with vSphere standard switches
- Describe the storage technologies supported by vSphere
- Configure virtual storage using iSCSI and NFS storage
- Create and manage VMware vSphere® VMFS datastores
- Use the vSphere Client to create virtual machines, templates, clones, and snapshots
- Create a content library and deploy virtual machines from templates in the library
- Manage virtual machine resource use
- Migrate virtual machines with VMware vSphere® vMotion® and VMware vSphere® Storage vMotion®
- Create and manage a vSphere cluster that is enabled with VMware vSphere® High Availability and VMware vSphere® Distributed Resource Scheduler™
- Discuss solutions for managing the vSphere life cycle
- Use VMware vSphere® Lifecycle Manager™ to perform upgrades to ESXi hosts and virtual machines

## Audience:

- System administrators
- System engineers

## Prerequisites:

- System administration experience on Microsoft Windows or Linux operating systems

## Course Outline:

### 1 Course Introduction

- ? Introductions and course logistics

## ? Course objectives

### **2 Introduction to vSphere and the Software-Defined Data Center**

- ? Explain basic virtualization concepts
- ? Describe how vSphere fits into the software-defined data center and the cloud infrastructure
- ? Explain how vSphere interacts with CPUs, memory, networks, and storage
- ? Recognize the user interfaces for accessing the vCenter Server system and ESXi hosts
- ? Describe the ESXi host architecture
- ? Navigate the Direct Console User Interface (DCUI) to configure an ESXi host
- ? Recognize ESXi host user account best practices
- ? Install an ESXi host
- ? Use VMware Host Client? to configure ESXi host settings
- ? Describe how to proactively manage your vSphere environment using VMware Skyline

### **3 Virtual Machines**

- ? Create and provision a virtual machine
- ? Explain the importance of VMware Tools?
- ? Install VMware Tools
- ? Identify the files that make up a VM
- ? Recognize the components of a VM
- ? Recognize virtual devices supported by a VM
- ? Describe the benefits and use cases for containers
- ? Identify the parts of a container system

### **4 vCenter Server**

- ? Describe the vCenter Server architecture
- ? Discuss how ESXi hosts communicate with vCenter Server
- ? Deploy and configure vCenter Server Appliance
- ? Use vSphere Client to manage the vCenter Server inventory
- ? Add data center, organizational objects, and hosts to vCenter Server
- ? Use roles and permissions to enable users to access objects in the vCenter Server inventory
- ? Back up vCenter Server Appliance
- ? Monitor vCenter Server tasks, events, and appliance health
- ? Use VMware vCenter Server® High Availability to protect a vCenter Server Appliance

### **5 Configuring and Managing Virtual Networks**

- ? Create and manage standard switches
- ? Describe the virtual switch connection types
- ? Configure virtual switch security, traffic-shaping, and load-balancing policies
- ? Compare vSphere distributed switches and standard switches

### **6 Configuring and Managing Virtual Storage**

- ? Identify storage protocols and storage device types
- ? Discuss ESXi hosts using iSCSI, NFS, and Fibre Channel storage
- ? Create and manage VMFS and NFS datastores

- ? Explain how multipathing works with iSCSI, NFS, and Fibre Channel storage
- ? Recognize the components of a VMware vSAN? configuration

## **7 Virtual Machine Management**

- ? Use templates and cloning to deploy new virtual machines
- ? Modify and manage virtual machines
- ? Create a content library and deploy virtual machines from templates in the library
- ? Use customization specification files to customize a new virtual machine
- ? Perform vSphere vMotion and vSphere Storage vMotion migrations
- ? Describe the Enhanced vMotion Compatibility feature
- ? Create and manage virtual machine snapshots
- ? Examine the features and functions of VMware vSphere® Replication?
- ? Describe the benefits of VMware vSphere® Storage APIs ? Data Protection

## **8 Resource Management and Monitoring**

- ? Discuss CPU and memory concepts in a virtualized environment
- ? Describe what overcommitment of a resource means
- ? Describe methods for optimizing CPU and memory usage
- ? Use various tools to monitor resource use
- ? Create and use alarms to report certain conditions or events

## **9 vSphere Clusters**

- ? Describe the functions of a vSphere DRS cluster
- ? Create a vSphere DRS cluster
- ? Monitor a vSphere cluster configuration
- ? Describe options for making a vSphere environment highly available
- ? Explain the vSphere HA architecture
- ? Configure and manage a vSphere HA cluster
- ? Examine the features and functions of VMware vSphere® Fault Tolerance
- ? Describe the function of the vSphere® Cluster Service

## **10 vSphere Lifecycle Management**

- ? Recognize the importance of vCenter Server Update Planner
- ? Describe how VMware vSphere® Lifecycle Manager? works
- ? Describe how to update ESXi hosts using baselines
- ? Validate ESXi host compliance using a cluster image
- ? Describe how to upgrade VMware Tools and VM hardware
- ? Describe VMware vSphere® Lifecycle Manager? and VMware vSAN? integration

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