

## VMware vSphere: Install, Configure, Manage [V7] - EDU-VSICM7-OE

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### Course Summary

#### Description

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. This course is the foundation for most of the other VMware technologies in the software-defined data center.

#### Objectives

After taking this course, students will be able to:

- Describe the software-defined data center (SDDC)
- Explain the vSphere components and their function in the infrastructure
- 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

#### Topics

- Course Introduction
- Introduction to vSphere and the Software-Defined Data Center
- Virtual Machines
- vCenter Server
- Configuring and Managing Virtual Networks
- Configuring and Managing Virtual Storage
- Virtual Machine Management
- Resource Management and Monitoring
- vSphere Clusters
- vSphere Lifecycle Management

#### Audience

This course is designed for System administrators and System engineers.

#### Prerequisites

This course has the following prerequisites: System administration experience on Microsoft Windows or Linux operating systems

#### Duration

Five days

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### Course Outline

#### I. Course Introduction

- A. Introductions and course logistics
- B. Course objectives

#### II. Introduction to vSphere and the Software-Defined Data Center

- A. Explain basic virtualization concepts
- B. Describe how vSphere fits into the software-defined data center and the cloud infrastructure
- C. Explain how vSphere interacts with CPUs, memory, networks, and storage
- D. Recognize the user interfaces for accessing the vCenter Server system and ESXi hosts
- E. Describe the ESXi host architecture
- F. Navigate the Direct Console User Interface (DCUI) to configure an ESXi host
- G. Recognize ESXi host user account best practices
- H. Install an ESXi host
- I. Use VMware Host Client™ to configure ESXi host settings

#### III. Virtual Machines

- A. Create and provision a virtual machine
- B. Explain the importance of VMware Tools™
- C. Install VMware Tools
- D. Identify the files that make up a VM
- E. Recognize the components of a VM
- F. Recognize virtual devices supported by a VM
- G. Describe the benefits and use cases for containers
- H. Identify the parts of a container system

#### IV. vCenter Server

- A. Describe the vCenter Server architecture
- B. Discuss how ESXi hosts communicate with vCenter Server
- C. Deploy and configure vCenter Server Appliance
- D. Use vSphere Client to manage the vCenter Server inventory
- E. Add data center, organizational objects, and hosts to vCenter Server
- F. Use roles and permissions to enable users to access objects in the vCenter Server inventory
- G. Back up vCenter Server Appliance

- H. Monitor vCenter Server tasks, events, and appliance health
- I. Use VMware vCenter Server® High Availability to protect a vCenter Server Appliance

#### V. Configuring and Managing Virtual Networks

- A. Create and manage standard switches
- B. Describe the virtual switch connection types
- C. Configure virtual switch security, traffic-shaping, and load-balancing policies
- D. Compare vSphere distributed switches and standard switches

#### VI. Configuring and Managing Virtual Storage

- A. Identify storage protocols and storage device types
- B. Discuss ESXi hosts using iSCSI, NFS, and Fibre Channel storage
- C. Create and manage VMFS and NFS datastores
- D. Explain how multipathing works with iSCSI, NFS, and Fibre Channel storage
- E. Recognize the components of a VMware vSAN™ configuration

#### VII. Virtual Machine Management

- A. Use templates and cloning to deploy new virtual machines
- B. Modify and manage virtual machines
- C. Create a content library and deploy virtual machines from templates in the library
- D. Use customization specification files to customize a new virtual machine
- E. Perform vSphere vMotion and vSphere Storage vMotion migrations
- F. Describe the Enhanced vMotion Compatibility feature
- G. Create and manage virtual machine snapshots
- H. Examine the features and functions of VMware vSphere® Replication™
- I. Describe the benefits of VMware vSphere® Storage APIs – Data Protection

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#### *VIII. Resource Management and Monitoring*

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

#### *IX. vSphere Clusters*

- A. Describe the functions of a vSphere DRS cluster
- B. Create a vSphere DRS cluster
- C. Monitor a vSphere cluster configuration
- D. Describe options for making a vSphere environment highly available
- E. Explain the vSphere HA architecture
- F. Configure and manage a vSphere HA cluster
- G. Examine the features and functions of VMware vSphere® Fault Tolerance

#### *X. vSphere Lifecycle Management*

- A. Recognize the importance of vCenter Server Update Planner
- B. Describe how VMware vSphere® Lifecycle Manager™ works
- C. Describe how to update ESXi hosts using baselines
- D. Validate ESXi host compliance using a cluster image
- E. Describe how to upgrade VMware Tools and VM hardware