

# vSphere ICM 7 – VMware vSphere: Install, Configure, Manage



**Days:** 5

**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.

**Prerequisites:** This course has the following prerequisites:

- System administration experience on Microsoft Windows or Linux operating systems

**Audience:**

- System administrators
- System engineers

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

- Describe the software-defined data center (SDDC)
- Explain the vSphere components and their function in the infrastructure
- Install and configure VMware 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® Update Manager™ to apply patches and perform upgrades to ESXi hosts and virtual machines

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## OUTLINE:

### COURSE INTRODUCTION

- Introductions and course logistics
- Course objectives

### 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
- Use VMware Host Client™ to access and manage ESXi host

### VIRTUAL MACHINES

- Create and remove a virtual machine
- Provision a virtual machine with virtual devices
- Identify the files that make up a virtual machine
- Explain the importance of VMware Tools™

### VCENTER SERVER

- Describe the vCenter Server architecture
- Discuss how ESXi hosts communicate with vCenter Server
- Deploy and configure vCenter Server Appliance
- Use the 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 vCenter Server High Availability to protect a vCenter Server Appliance

### 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

### 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
- Deploy virtual machines on a VMware vSAN™ datastore

### 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
- Dynamically increase the size of a virtual disk
- Use customization specification files to customize a new virtual machine
- Perform vSphere vMotion and vSphere Storage vMotion migrations
- Create and manage virtual machine snapshots

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- Examine the features and functions of VMware vSphere® Replication™

## 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

## VSPHERE CLUSTER

- 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
- Configure a vSphere cluster using ESXi Cluster Quickstart
- Describe the functions of a vSphere DRS cluster
- Create a vSphere DRS cluster

## VSPHERE LIFECYCLE

- Describe how VMware vSphere® Lifecycle Manager™ works
- Use vSphere Lifecycle Manager to update ESXi hosts in a cluster