

# VMware vSphere: Install, Configure, Manage v5.5 - VICM

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## Course Details

### Course Outline

#### 1. Course Introduction

- Introductions and course logistics
- Course objectives

#### 2. Virtualized Data Center

- Introduce components of the virtualized data center
- Describe where vSphere fits into the cloud architecture
- Install and use vSphere Client

#### 3. Creating Virtual Machines

- Introduce virtual machines, virtual machine hardware, and virtual machine files
- Deploy a single virtual machine

#### 4. VMware vCenter Server

- Introduce the vCenter Server architecture
- Introduce VMware® vCenter Single Sign-On
- Install and use vSphere Web Client
- Introduce VMware® vCenter Server Appliance
- Configure and manage vCenter Server Appliance
- Manage vCenter Server inventory objects and licenses

#### 5. Configuring and Managing Virtual Networks

- Describe, create, and manage a standard virtual switch
- Describe and modify standard virtual switch properties
- Configure virtual switch load-balancing algorithms

#### 6. Configuring and Managing Virtual Storage

- Introduce storage protocols and device names
- Configure ESXi with iSCSI, NFS, and Fibre Channel storage
- Create and manage vSphere datastores
- Deploy and manage VMware vSphere® Storage Appliance

## 7. Virtual Machine Management

- Use templates and cloning to deploy virtual machines
- Modify and manage virtual machines
- Create and manage virtual machine snapshots
- Perform VMware vSphere® vMotion® and VMware vSphere® Storage vMotion® migrations
- Create a VMware vSphere® vApp

## 8. Access and Authentication Control

- Control user access through roles and permissions
- Configure and manage the ESXi firewall
- Configure ESXi lockdown mode
- Integrate ESXi with Active Directory

## 9. Resource Management and Monitoring

- Introduce virtual CPU and memory concepts
- Describe methods for optimizing CPU and memory usage
- Configure and manage resource pools
- Monitor resource usage using vCenter Server performance graphs and alarms

## 10. High Availability and Fault Tolerance

- Introduce the new VMware vSphere® High Availability architecture
- Configure and manage a vSphere HA cluster
- Introduce VMware vSphere® Fault Tolerance
- Describe VMware vSphere® Replication

## 11. Scalability

- Configure and manage a VMware vSphere® Distributed Resource Scheduler (DRS) cluster
- Configure Enhanced vMotion Compatibility
- Use vSphere HA and DRS together

## 12. Patch Management

- Use vSphere Update Manager to manage ESXi patching
- Install vSphere Update Manager and the vSphere Update Manager plug-in
- Create patch baselines
- Scan and remediate hosts

## 13. Installing VMware Components

- Introduce ESXi installation
- Describe boot-from-SAN requirements

- Introduce vCenter Server deployment options
- Describe vCenter Server hardware, software, and database requirements
- Install vCenter Server (Windows-based)

#### **14. Lab 1: Installing VMware vSphere GUIs**

- Access Your Student Desktop System
- Install the vSphere Client

#### **15. Lab 2: Configuring VMware ESXi**

- Connect to an ESXi Host with the vSphere Web Client
- View the Host Hardware Configuration
- Configure the DNS and Routing Information for an ESXi Host
- Configure an ESXi Host as an NTP Client
- Configure an ESXi Host to Use Directory Services

#### **16. Lab 3: Working with Virtual Machines**

- Create a Virtual Machine
- Install a Guest Operating System in a Virtual Machine
- Identify a Virtual Machine's Disk Format and Usage Statistics
- Install VMware Tools on a Virtual Machine Installed with a Windows Operating System
- Prepare the Virtual Machine for Upcoming Labs

#### **17. Lab 4: Configuring VMware vCenter Server Appliance**

- Configure vCenter Server Appliance for First Use
- Install vSphere License Keys
- Create a vCenter Server Inventory Data Center Object
- Add Your ESXi Host to the vCenter Server Inventory

#### **18. Lab 5: Using the VMware vSphere Web Client**

- Install the Client Integration Plug-In
- Navigate the vSphere Web Client
- Pin and Unpin Panes
- Hide the Getting Started Tabs
- Upgrade Virtual Machine Hardware

#### **19. Lab 6: Configuring VMware vCenter Single Sign-On**

- Use the Web Console to Configure vCenter Server Appliance to Use Directory Services
- Use the vSphere Web Client to Add the Domain Admins Group to Administrators

**20. Lab 7: Creating Folders in VMware vCenter Server**

- Create a Host Folder Object
- Create a Virtual Machine Folder

**21. Lab 8: Standard Switches**

- View the Current Standard Switch Configuration
- Create a Standard Switch with a Virtual Machine Port Group
- Attach Your Virtual Machine to a Virtual Switch Port Group

**22. Lab 9: Accessing iSCSI Storage**

- Add a VMkernel Port Group to a Standard Switch
- Configure the iSCSI Software Adapter

**23. Lab 10: Accessing NFS Storage**

- Configure Access to NFS Datastores
- View NFS Storage Information

**24. Lab 11: Managing VMware vSphere VMFS**

- Review the Shared Storage Configuration
- Change the Name of a VMFS Datastore
- Create a VMFS Datastore
- Expand a VMFS Datastore to Consume Unused Space on a LUN
- Remove a VMFS Datastore
- Extend a VMFS Datastore

**25. Lab 12: Using Templates and Clones**

- Copy Sysprep Files to the vCenter Server Instance
- Create a Template
- Create Customization Specifications
- Deploy a Virtual Machine from a Template
- Clone a Virtual Machine that is Powered On

**26. Lab 13: Modifying a Virtual Machine**

- Increase the Size of a VMDK File
- Adjust Memory Allocation on a Virtual Machine
- Rename a Virtual Machine in the vCenter Server Inventory
- Add a Raw LUN to a Virtual Machine
- Expand a Thin-Provisioned Virtual Disk

**27. Lab 14: Migrating Virtual Machines**

- Migrate Virtual Machine Files with vSphere Storage vMotion
- Create a Virtual Switch and a VMkernel Port Group for vSphere vMotion Migration
- Verify that Your ESXi Host Meets vSphere vMotion Requirements
- Verify that Your Virtual Machines Meet vSphere vMotion Requirements
- Perform a vSphere vMotion Migration of a Virtual Machine on a Shared Datastore
- Perform a vSphere vMotion Migration to a Local Datastore

**28. Lab 15: Managing Virtual Machines**

- Unregister a Virtual Machine in the vCenter Server Inventory
- Register a Virtual Machine in the vCenter Server Inventory
- Unregister and Delete Virtual Machines from Disk
- Take Snapshots of a Virtual Machine
- Revert to a Snapshot
- Delete an Individual Snapshot
- Use the Delete All Function in Snapshot Manager

**29. Lab 16: Managing VMware vSphere vApps**

- Create a vApp
- Power on a vApp
- Remove a vApp

**30. Lab 17: User Permissions**

- Create a Custom Role in vCenter Server
- Assign Permissions on vCenter Server Inventory Objects
- Verify Permission Usability

**31. Lab 18: Resource Pools**

- Create CPU Contention
- Create a Resource Pool Named Fin-Test
- Create a Resource Pool Named Fin-Prod
- Verify Resource Pool Functionality

**32. Lab 19: Monitoring Virtual Machine Performance**

- Create CPU Activity
- Use vSphere Web Client to Monitor CPU Utilization
- Undo Changes Made to the Virtual Machines

**33. Lab 20: Using Alarms**

- Create a Virtual Machine Alarm that Monitors for a Condition
- Create a Virtual Machine Alarm that Monitors for an Event
- Trigger Virtual Machine Alarms and Acknowledge the Alarms
- Disable Virtual Machine Alarms

**34. Lab 21: Using VMware vSphere High Availability**

- Create a Cluster Enabled for vSphere HA
- Add Your ESXi Host to a Cluster
- Test vSphere HA Functionality
- Determine the vSphere HA Cluster Resource Usage
- Manage vSphere HA Slot Size
- Configure a vSphere HA Cluster with Strict Admission Control

**35. Lab 22: Configuring VMware vSphere Fault Tolerance**

- Prepare the Virtual Machine
- Enable the vSphere FT Logging
- Activate the vSphere FT Protection
- Test the vSphere FT Configuration
- Disable the vSphere FT Protection

**36. Lab 23: VMware vSphere Distributed Resource Scheduler**

- Create Load Imbalance
- Create a DRS Cluster
- Verify Proper DRS Cluster Functionality
- Create, Test, and Disable a VM-VM Affinity Rule
- Create, Test, and Disable an Anti-Affinity Rule
- Create, Test, and Disable a Virtual Machines to Hosts Affinity Rule

**37. Lab 24: VMware vSphere Update Manager**

- Install vSphere Update Manager
- Install the Update Manager Client Plug-in
- Modify Cluster Settings
- Configure vSphere Update Manager
- Create a Patch Baseline
- Attach a Baseline and Scan for Updates
- Stage the Patches onto the ESXi Hosts
- Remediate the ESXi Hosts