

# VMware vSphere: Optimize and Scale

## Delivery Methods

- Instructor-led
- Live-online

## Course Duration

- Five (5) days of instructor-led classroom training
- 60% lecture, 40% hands-on lab

## Target Audience

Experienced system administrators and system integrators

## Course Suitability

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Administrator | <input type="checkbox"/> Expert              |
| <input checked="" type="checkbox"/> Engineer      | <input checked="" type="checkbox"/> Advanced |
| <input type="checkbox"/> Architect                | <input type="checkbox"/> Professional        |
|   | <input type="checkbox"/> Fundamentals        |

## Prerequisites

Completion of one of the following courses:

- VMware vSphere: Install, Configure, Manage [V5]
- VMware vSphere: What's New [V5]
- VMware vSphere: Fast Track [V5]

Or equivalent knowledge and administration experience with ESXi and vCenter Server

Experience working at the command prompt is highly recommended.

## Pricing

Contact your VMware® representative or a VMware Authorized Training Center for pricing information.

## More Information

Courses are conveniently scheduled around the world. Go to <http://www.vmware.com/education> to find the class that is right for you.

Onsite training is also available for customers who prefer to bring a VMware Certified Instructor to their own facilities. For additional information about onsite classes, including facility requirements, go to <http://www.vmware.com/education>.

## Course Overview

This training course, for experienced VMware vSphere® personnel, teaches advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. The course is based on VMware vSphere® ESXi™ 5.0 and VMware® vCenter Server™ 5.0.

This course prepares the student for the VMware Certified Advanced Professional – Datacenter Administration [V5] certification (VCAP5-DCA). Completion of this course also satisfies the prerequisite for taking the VMware Certified Professional 5 exam.

## Course Objectives

By the end of the course, you should be able to do the following:

- Configure and manage ESXi networking and storage for a large and sophisticated enterprise.
- Manage changes to the vSphere environment.
- Optimize the performance of all vSphere components.
- Troubleshoot operational faults and identify their root causes.
- Use VMware vSphere® ESXi™ Shell and VMware vSphere® Management Assistant (vMA) to manage vSphere.
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts.

*Note:* About one-third of the VMware vSphere: What's New [V5] course content is repeated in this course. The scalability topics in VMware vSphere: Fast Track [V5] are repeated in this course.

## Course Modules

### 1 Course Introduction

- Introductions and course logistics
- Course objectives

### 2 VMware Management Resources

- Configure vMA
- Understand the esxcli and vicfg commands
- Configure ESXi technical support mode and SSH access
- Understand important ESXi and vCenter Server log files

### 3 Performance in a Virtualized Environment

- Understand the vSphere performance troubleshooting methodology
- Understand software and hardware virtualization techniques and their effects on performance
- Use vSphere performance monitoring tools

### 4 Network Scalability

- Create, configure, and manage vSphere distributed switches
- Migrate virtual machines from standard switches to distributed switches
- Understand distributed switch features such as PVLANs, VMware vSphere® Network I/O Control, port mirroring, and NetFlow

### 5 Network Optimization

- Understand performance features of network adapters
- Understand performance features of vSphere networking
- Monitor key network performance metrics
- Use vMA to manage virtual network configuration
- Troubleshoot common network performance problems

### 6 Storage Scalability

- Configure storage multipathing
- Understand vSphere storage APIs for array integration and storage awareness
- Explain profile-driven storage
- Add a storage policy to a virtual machine storage profile
- Describe VMware vSphere® Storage DRS™ operation
- Configure Storage DRS and VMware vSphere® Storage I/O Control

### 7 Storage Optimization

- Diagnose storage access problems
- Understand how storage protocols, VMware vSphere® VMFS configuration, load balancing, and queuing affect performance
- Monitor key storage performance metrics
- Use vMA to manage virtual storage
- Troubleshoot common storage performance problems

### 8 CPU Optimization

- Understand CPU scheduler and other features that affect CPU performance
- Monitor key CPU performance metrics
- Troubleshoot common CPU performance problems

### 9 Memory Optimization

- Understand memory reclamation techniques and overcommitment
- Monitor key memory performance metrics
- Troubleshoot common memory performance problems

### 10 Virtual Machine and Cluster Optimization

- Understand performance guidelines for virtual machines, resource allocation settings, VMware vSphere® Distributed Resource Scheduler™ clusters, resource pools, and VMware vSphere® High Availability admission control policies
- Troubleshoot virtual machine power-on failures
- Troubleshoot vSphere cluster problems

### 11 Host and Management Scalability

- Understand how vCenter Linked Mode manages multiple vCenter Server inventories
- Explain VMware vSphere® Distributed Power Management™
- Use Host Profiles to manage ESXi configuration compliance
- Use VMware vSphere® PowerCLI™ to perform vSphere administrative tasks
- Use Image Builder to create an ESXi installation image
- Use vSphere Auto Deploy to provision ESXi hosts



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