



# VMware vSphere: Optimize and Scale [V5.5]

## H6D02S

### 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® ESXi™ 5.5 and VMware® vCenter Server™ 5.5. 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. This course is 60% lecture and 40% hands-on lab.

<b>Price</b>	USD \$4,500
<b>Links to local schedules, pricing and registration</b>	<a href="#">US/Canada</a> <a href="#">Mexico/Latin America</a> <a href="#">Brazil</a>
<b>Course title</b>	VMware vSphere: Optimize and Scale [V5.5]
<b>HP course #</b>	H6D02S
<b>Category</b>	VMware
<b>Duration</b>	5 days

### Audience

- Experienced system administrators
- Systems engineers
- System integrators

### Prerequisites

Completion of one of the following courses:

- VMware vSphere v5.5: Install, Configure, Manage [[H6D01S](#)]
- Equivalent knowledge and administration experience with ESXi and vCenter Server

Experience working at the command prompt is highly recommended.

### 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 to manage vSphere
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts

## Course outline

### Module 1: Course Introduction

- Introductions and course logistics
- Course objectives

### Module 2: VMware Management Resources

- Deploy and configure vSphere Management Assistant
- Configure ESXi technical support mode and SSH access
- Use the esxcli, vicfg, and vmware-cmd commands
- Review ESXi and vCenter Server log files

### Module 3: Performance in a Virtualized Environment

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

### Module 4: Network Scalability

- Create, configure, and manage vSphere distributed switches
- Migrate virtual machines from standard switches to distributed switches
- Explain distributed switch features such as private VLANs, VMware vSphere® Network I/O Control, port mirroring, LACP, QoS tagging, and NetFlow

### Module 5: Network Optimization

- Explain the performance features of network adapters
- Explain the performance features of vSphere networking
- Monitor key network performance metrics
- Use vSphere Management Assistant to manage virtual network configurations
- Troubleshoot common network performance problems

### Module 6: Storage Scalability

- Explain vSphere storage APIs for array integration and storage awareness
- Configure and assign virtual machine storage policies
- Configure VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control

### Module 7: Storage Optimization

- Diagnose storage access problems
- Explain how storage protocols, VMware vSphere® VMFS configuration, load balancing, and queuing affect performance
- Configure vSphere® Flash Read Cache™
- Monitor key storage performance metrics
- Use vSphere Management Assistant to manage virtual storage
- Troubleshoot common storage performance problems

**Module 8: CPU Optimization**

- Explain the CPU scheduler operation, NUMA support, and other features that affect CPU performance
- Monitor key CPU performance metrics
- Troubleshoot common CPU performance problems

**Module 9: Memory Optimization**

- Explain ballooning, memory compression, and host swapping techniques for memory reclamation when memory is overcommitted
- Monitor key memory performance metrics
- Troubleshoot common memory performance problems

**Module 10: Virtual Machine and Cluster Optimization**

- Describe 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

**Module 11: Host and Management Scalability**

- 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

**Learn more at**

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