

# VMware vSphere: Optimize and Scale

## Delivery Methods

- Instructor-led training
- Live-online
- [Onsite training](#)

## Course Duration

- Five days of instructor-led training
- 60% lecture, 40% hands-on lab

## Target Audience

- Experienced system administrators
- Systems engineers
- 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 checked="" type="checkbox"/> Professional |
|   | <input type="checkbox"/> Fundamentals            |

## Prerequisites

Completion of one of the following courses:

- VMware vSphere: Install, Configure, Manage [5.5 or 6]
- VMware vSphere: Fast Track

Or equivalent knowledge and administration experience with ESXi and vCenter Server

Experience working at the command prompt is highly recommended.

## Certifications

For more information, go to [VMware Certification](#).

## Pricing

Contact your VMware representative or 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.



## Course Overview

VMware vSphere: Optimize and Scale is designed for experienced VMware vSphere® users. It teaches advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Through a mix of lecture and hands-on labs, you will configure and optimize the vSphere features that build a foundation for a truly scalable infrastructure and discuss when and where these features have the greatest effect. Anyone who is ready to take their understanding of vSphere to a deeper level and learn how to use advanced features and controls will greatly benefit from this course.

The course is based on VMware ESXi™ 6 and VMware vCenter Server™ 6.

**Note:** This course is based on beta software.

## Course Objectives

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

- 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
- Harden the vSphere environment against security threats
- 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 Modules

<p><b>1 Course Introduction</b></p> <ul style="list-style-type: none"> <li>• Introductions and course logistics</li> <li>• Course objectives</li> <li>• Additional resources</li> </ul>	<p><b>7 Storage Scalability</b></p> <ul style="list-style-type: none"> <li>• Explain vSphere storage APIs for array integration and storage awareness</li> <li>• Configure and assign virtual machine storage policies</li> <li>• Configure VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control</li> <li>• Create and use virtual volumes in vSphere</li> </ul>
<p><b>2 VMware Management Resources</b></p> <ul style="list-style-type: none"> <li>• Understand the purpose of VMware vSphere® Command-Line Interface commands</li> <li>• Discuss options for running vSphere CLI commands</li> <li>• Deploy and configure vSphere Management Assistant</li> <li>• Use vmware-cmd for virtual machine operations</li> </ul>	<p><b>8 Storage Optimization</b></p> <ul style="list-style-type: none"> <li>• Diagnose storage access problems</li> <li>• Configure VMware vSphere® Flash Read Cache™</li> <li>• Monitor key storage performance metrics</li> <li>• Troubleshoot common storage performance problems</li> </ul>
<p><b>3 vSphere Security</b></p> <ul style="list-style-type: none"> <li>• Describe the features and benefits of the Platform Services Controller</li> <li>• Configure ESXi host access and authorization</li> <li>• Secure ESXi, vCenter Server, and virtual machines</li> </ul>	<p><b>9 CPU Performance</b></p> <ul style="list-style-type: none"> <li>• Explain the CPU scheduler operation, NUMA support, and other features that affect CPU performance</li> <li>• Monitor key CPU performance metrics</li> <li>• Troubleshoot common CPU performance problems</li> </ul>
<p><b>4 Performance in a Virtualized Environment</b></p> <ul style="list-style-type: none"> <li>• Review the vSphere performance troubleshooting methodology</li> <li>• Explain software and hardware virtualization techniques and their effects on performance</li> <li>• Use vSphere performance monitoring tools</li> </ul>	<p><b>10 Memory Performance</b></p> <ul style="list-style-type: none"> <li>• Explain ballooning, memory compression, and host swapping techniques for memory reclamation when memory is overcommitted</li> <li>• Monitor key memory performance metrics</li> <li>• Troubleshoot common memory performance problems</li> </ul>
<p><b>5 Network Scalability</b></p> <ul style="list-style-type: none"> <li>• Create, configure, and manage vSphere distributed switches</li> <li>• Migrate virtual machines from standard switches to distributed switches</li> <li>• Explain distributed switch features such as port mirroring, LACP, QoS tagging, and NetFlow</li> </ul>	<p><b>11 Virtual Machine and Cluster Optimization</b></p> <ul style="list-style-type: none"> <li>• Describe guidelines for optimizing virtual machine configuration</li> <li>• Discuss how vGPU usage affects virtual machine performance</li> <li>• Discuss guidelines for using resource allocation settings</li> <li>• Discuss guidelines for using resource pools</li> <li>• Discuss guidelines for using vSphere DRS clusters</li> <li>• Troubleshoot common vSphere cluster problems</li> </ul>
<p><b>6 Network Performance Troubleshooting</b></p> <ul style="list-style-type: none"> <li>• Explain the performance features of network adapters</li> <li>• Explain the performance features of vSphere networking</li> <li>• Monitor key network performance metrics</li> <li>• Use vSphere Management Assistant to manage virtual network configurations</li> <li>• Troubleshoot common network performance problems</li> </ul>	<p><b>12 Host and Management Scalability</b></p> <ul style="list-style-type: none"> <li>• Describe and use host profiles</li> <li>• Define and use content libraries</li> <li>• Upgrade ESXi and vCenter Server instances</li> <li>• Use VMware vSphere® PowerCLI™</li> <li>• Use Virtual Machine Converter</li> <li>• Use VMware vSphere® ESXi™ Image Builder CLI and vSphere Auto Deploy</li> </ul>



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