

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.

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



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