



VMware vSphere: Optimize and Scale

Duration: 5 Days

Language: English

Course Delivery: Classroom

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.

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

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

1. Experience working at the command prompt is highly recommended.

Course Outline:

Course Introduction

- Introductions and course logistics
 - Course objectives
 - Additional resources
2. vSphere Security
 - 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
 3. VMware Management Resources
 - 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

4. 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
5. Network Scalability
 - 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
6. 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
7. 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
 - Create and use virtual volumes in vSphere
8. Storage Optimization
 - Diagnose storage access problems
 - Configure VMware vSphere® Flash Read Cache™
 - Monitor key storage performance metrics
 - Troubleshoot common storage performance problems
9. 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
10. 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
11. Virtual Machine and Cluster Optimization
 - 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
12. Host and Management Scalability



- 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