

# VMware vSphere v6: Optimize and Scale (45 PSO Credits)

## Course Code

SSV048

## Duration

5 Days

## Format

Class Room

## 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.

## 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

## Content

Module 1: Course Introduction

Introductions and course logistics

Course objectives

Additional resources

## Who Should Attend

Experienced system administrators, Systems engineers and System integrators.

## 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.

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## Module 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

## Module 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

## Module 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

## Module 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

## Module 6: Network Optimization

Explain the performance features of network adapters

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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 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

Module 8: Storage Optimization

Diagnose storage access problems

Configure VMware vSphere® Flash Read Cache™

Monitor key storage performance metrics

Troubleshoot common storage performance problems

Module 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

Module 10: Memory Optimization

Explain ballooning, memory compression, and host swapping techniques for memory reclamation when memory is overcommitted

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Monitor key memory performance metrics

Troubleshoot common memory performance problems

Module 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

Module 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