
VMware vSphere: Optimize and Scale [v7.0]

Overview

This five-day course teaches you advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Through a mix of lecture and hands-on labs, you configure and optimize the VMware vSphere® 7 features that build a foundation for a truly scalable infrastructure, and you discuss when and where these features have the greatest effect. Attend this course to deepen your understanding of vSphere and learn how its advanced features and controls can benefit your organization. As an exclusive benefit, those who participate in this course will receive additional premium recorded lecture material on vSphere security.

Prerequisite Comments

You must complete one of the following prerequisites:

Understanding of concepts presented in the VMware vSphere: Install, Configure, Manage [V7] course

Equivalent knowledge and administration experience with ESXi and vCenter Server

Experience with working at the command line is highly recommended.

Target Audience

Experienced system administrators, system engineers, and system integrators

Course Objectives

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

Configure and manage vSphere networking and storage for a large and sophisticated enterprise

Use VMware vSphere® Client™ to manage certificates

Use Identity Federation to configure VMware vCenter Server® to use external identity sources

Use VMware vSphere® Trust Authority™ to secure the infrastructure for encrypted VMs

Use host profiles to manage VMware ESXi™ host compliance

Create and manage a content library for deploying virtual machines

Manage VM resource usage with resource pools

Monitor and analyze key performance indicators for compute, storage, and networking resources for ESXi hosts

Optimize the performance in the vSphere environment, including vCenter Server

Course Outline

1 - Course Introduction

Introductions and course logistics

Course objectives

2 - Network Scalability

Configure and manage vSphere distributed switches
Describe how VMware vSphere® Network I/O Control enhances performance
Explain distributed switch features such as port mirroring and NetFlow

3 - Storage Scalability

Explain why VMware vSphere® VMFS is a high-performance, scalable file system
Explain VMware vSphere® Storage APIs - Array Integration, VMware vSphere® API for Storage Awareness™, and vSphere APIs for I/O filtering
Configure and assign virtual machine storage policies
Create VMware vSAN™ storage policies
Recognize components of the VMware vSphere® Virtual Volumes™ architecture
Configure VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control

4 - Host and Management Scalability

Use the vSphere Client to manage vSphere certificates
Describe identity federation and recognize its use cases
Configure identity federation to allow vCenter Server to use external identity provider
Describe the benefits and use cases of vSphere Trust Authority
Configure vSphere Trust Authority
Use host profiles to manage ESXi configuration compliance
Create a local content library and subscribe to a published content library
Deploy VMs from a content library
Create and manage resource pools in a cluster
Describe how scalable shares work

5 - CPU Optimization

Explain the CPU scheduler operation and other features that affect CPU performance
Explain NUMA and vNUMA support
Use esxtop to monitor key CPU performance metrics

6 - Memory Optimization

Explain ballooning, memory compression, transparent page sharing, and host-swapping techniques for memory reclamation when memory is overcommitted
Use esxtop to monitor key memory performance metrics

7 - Storage Optimization

Describe storage queue types and other factors that affect storage performance
Discuss vSphere support for NVMe and iSER technologies
Use esxtop to monitor key storage performance metrics

8 - Network Optimization

Explain performance features of network adapters
Explain the performance features of vSphere networking
Use esxtop to monitor key network performance metrics

9 - vCenter Server Performance Optimization

Describe the factors that influence vCenter Server performance
Use VMware vCenter® Server Appliance™ tools to monitor resource use Supplemental Content

10 - Appendix A: vSphere Auto Deploy

Explain the purpose of VMware vSphere® ESXi™ Image Builder CLI
Explain the purpose of VMware vSphere® Auto Deploy™
Describe how an autodeployed ESXi host boots
Configure a vSphere Auto Deploy environment

11 - Appendix B: vSphere Security

Configure ESXi Host Access and Authentication
Recognize strategies for securing vSphere components, such as vCenter Server, ESXi hosts, and virtual machines
Describe vSphere support for security standards and protocols
Describe virtual machine security features
Describe the components of a VM encryption architecture
Create, manage, and migrate encrypted VMs
Encrypt core dumps
List VM encryption events and alarms

Related Courses, Certifications, Exams

- VMware vSphere: Install, Configure, Manage [v7.0]