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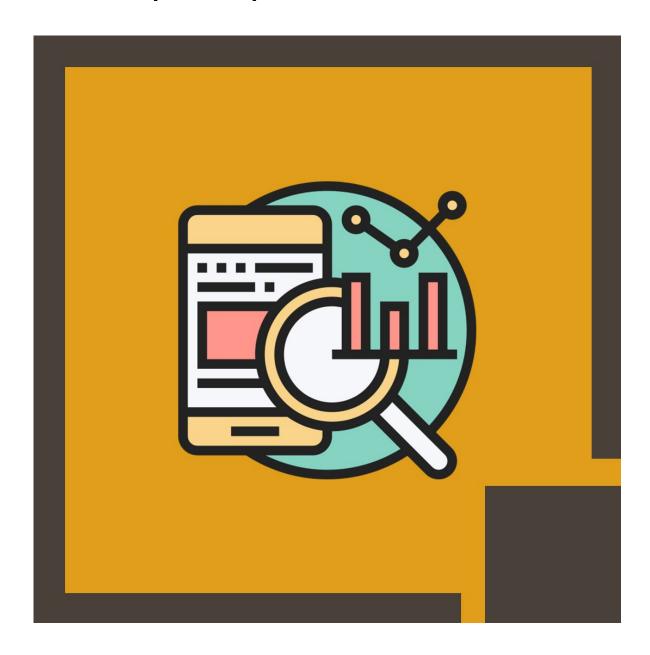
Learning Style: Virtual Classroom

Technology: VMware

Difficulty: Intermediate

Course Duration: 5 Days

VMware vSphere: Optimize and Scale 7.0

About this Course:

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.

The average salary for Vmware Administrator is **$79,168** per year.

Course 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

Audience:

- Experienced system administrators, system engineers, and system integrators

Prerequisites:

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.

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

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

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