VMware vSphere: Optimize and Scale

Duration: 5 days

COURSE DESCRIPTION

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® 6.7 features that build a foundation for a truly scalable infrastructure, and you discuss when and where these features have the greatest effect. This course deepens your understanding of vSphere and how its advanced features and controls can benefit your organization.

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™, VMware vSphere® Web Client, and VMware vSphere® ESXi™ Shell to manage vSphere
- Create a content library for deploying virtual machines
- Use VMware vSphere® Auto Deploy™ and host profiles to provision VMware ESXi™ hosts and manage ESXi host compliance
- Monitor and analyze key performance indicators for compute, storage, and networking resources for ESXi hosts
- Optimize the performance of ESXi and VMware vCenter Server®
- Harden the vSphere environment against security threats
- Encrypt virtual machines for additional security

COURSE OUTLINE

1. **Course Introduction**
   - Introductions and course logistics
   - Course objectives
   - Identify additional resources for after this course
   - Identify other VMware Education offerings

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, LACP, QoS tagging, and NetFlow

3. **Storage Scalability**
   - Explain why VMware vSphere® VMFS is a highperformance, 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 vSAN storage policies
   - Configure VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control

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4. **Host and Management Scalability**
   - Define and use content libraries
   - Describe and use host profiles
   - Describe and use VMware vSphere® ESXi™ Image Builder CLI and vSphere Auto Deploy

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, 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
   - Use esxtop to monitor key storage performance metrics

8. **Network Optimization**
   - Explain the 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 usage

10. **vSphere Security**
    - Configure ESXi host access and authorization
    - Secure ESXi, vCenter Server, and virtual machines
    - Use VMware Certificate Authority to configure vSphere certificate management
    - Configure vSphere to encrypt virtual machines, core dumps and VM

PREREQUISITES

You must meet one of the following prerequisites:

- Understand the concepts presented in the VMware vSphere: Install, Configure, Manage [V6.7] course
- Equivalent knowledge and administration experience with ESXi and vCenter Server Experience with working at the command line is highly recommended.

WHO SHOULD ATTEND

- Experienced system administrators, system engineers, and system integrators

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