Mildain Solutions

VMware vSphere: Optimize and Scale plus Troubleshooting Fast Track [V6.7]

Summary:

- Formats: **Classroom**, **Live Online**, **Onsite**
- Length: 5 Days

Overview:

This five-day accelerated, hands-on training course is a blend of the VMware vSphere®: Optimize and Scale and VMware vSphere: Troubleshooting Workshop courses. This Fast Track course includes the best of each of these advanced courses to equip experienced VMware administrators with the knowledge to effectively optimize and troubleshoot vSphere at an expert level.

Product Alignment

• ESXi 6.7
• vCenter Server 6.7

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
• Manage changes to the vSphere environment
• Optimize the performance of all vSphere components
• Use VMware vSphere® ESXi™ Shell and VMware vSphere® Command-Line Interface to manage vSphere
• Harden the vSphere environment against security threats
• Use VMware vSphere® Client™, the command-line interface, and log files to diagnose and correct problems in vSphere
• Troubleshoot networking, storage, VMware vCenter Server®, VMware ESXi™ host, vSphere cluster, VMware vSphere® vMotion®, and virtual machine problems

Intended Audience:

Experienced system administrators, system engineers, and system integrators

Prerequisites:

This course requires the completion of one of the following prerequisites:
• Understanding of 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 prompt is highly recommended.

Outline:

1 Course Introduction
• Introductions and course logistics
• Course objectives

2 Introduction to Troubleshooting
• Identify the effects of a system problem
• Define the scope of troubleshooting
• Use a structured approach
• Understand the principles of troubleshooting
• Follow a logical troubleshooting procedure
• Examine examples of troubleshooting

3 Troubleshooting Tools
• Use command-line tools to identify and troubleshoot problems

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- Use vSphere CLI
- Find and interpret important log files
- Use VMware vRealize® Log Insight™ for log aggregation, efficient log search, and problem analysis

4 Network Optimization
- Explain the performance features of network adapters
- Explain the performance features of vSphere networking
- Use esxtop to monitor key network performance metrics

5 Networking Troubleshooting
- Identify the symptoms of network-related problems
- Analyze and resolve standard switch and distributed switch problems
- Analyze virtual machine connectivity problems and fix them
- Examine common management network connectivity problems and restore configurations
- Identify and prevent potential problems

6 Storage Optimization
- Describe storage queue types and other factors that affect storage performance
- Use esxtop to monitor key storage performance metrics

7 Storage Troubleshooting
- Troubleshoot storage (iSCSI, NFS, VMware vSphere® VMFS, VMware vSAN™, and VMware vSphere®
  Virtual Volumes™) connectivity problems
- Analyze storage-related logs
- Analyze hardware malfunction and software misconfiguration scenarios
- Identify multipathing-related problems, including permanent device loss (PDL) and all paths down (APD)
- Analyze possible causes, recover from the faulty conditions, and restore storage visibility

8 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

9 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

10 vCenter Server Performance Optimization
- Describe the factors that influence vCenter Server performance
- Use VMware vCenter® Server Appliance™ tools to monitor resource usage

11 vSphere Cluster Troubleshooting
- Identify and recover from problems related to VMware vSphere® High Availability
- Analyze and troubleshoot various types of vSphere vMotion problems related to virtual machine migrations.

- Discuss and recover from VMware vSphere® Distributed Resource Scheduler™ problems to achieve proper function and balanced resource use
- Examine vSphere cluster failure scenarios and possible solutions

12 Virtual Machine Troubleshooting

• Analyze and resolve common virtual machine snapshot problems
• Identify possible causes and resolve virtual machine power-on problems
• Troubleshoot virtual machine connection state problems
• Resolve problems seen during VMware Tools™ installations
• Examine failure scenarios and provide solutions

13 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 VMware vSphere® vMotion®
migrations

14 vCenter Server and ESXi Troubleshooting

• Understand the vCenter Server and VMware Platform Services Controller™ architecture in vSphere 6.x
• Identify and resolve authentication problems
• Troubleshoot VMware Certificate Authority and certificate problems
• Analyze and fix problems with vCenter Server services
• Analyze and fix vCenter Server database problems
• Identify VMware vCenter Server® High Availability problems
• Examine ESXi host and vCenter Server failure scenarios and resolve the problems