

# **VMware vSphere: Optimize and Scale plus Troubleshooting Fast**

## **Track [V6.7]**

- 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
  - 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