

# VMware vSphere: Optimize and Scale [V6.5]

## Description

This five-day course will teach you advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. Through a mix of lecture and hands-on labs, you will configure and optimize the vSphere features that build a foundation for a truly scalable infrastructure, and you will discuss when and where these features have the greatest effect. Anyone who is ready to take their understanding of vSphere to a deeper level and learn how to use advanced features and controls will greatly benefit from this course.

### Delegates will learn how to

- Configure and manage ESXi networking and storage for a large and sophisticated enterprise
- Manage changes to the vSphere environment
- Optimize the performance of all vSphere components
- Harden the vSphere environment against security threats
- Use VMware vSphere® Client™, VMware vSphere® Web Client, and VMware vSphere® ESXi™ Shell to manage vSphere
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts
- Use VMware vRealize® Log Insight™ to monitor system logs
- Deploy VMware vCenter® Server Appliance™ to be highly available and optimized for performance

# Outline

## Course Introduction

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

## Network Scalability

- Configure and manage vSphere distributed switches
- Explain distributed switch features such as port mirroring, LACP, QoS tagging, and NetFlow

## Storage Scalability

- Explain vSphere storage APIs for array integration and storage awareness
- Configure and assign virtual machine storage policies
- Configure VMware vSphere Storage DRS and VMware vSphere Storage I/O Control
- Create and use virtual volumes in vSphere

## Host and Management Scalability

- Explain the uses of VMware vCenter® Converter™
- Define and use content libraries
- Describe and use host profiles
- Describe and use VMware vSphere® ESXi™ Image Builder CLI and vSphere Auto Deploy

## CPU Optimization

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

## 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

### **Storage Optimization**

- Describe factors that affect storage performance
- Use esxtop to monitor key storage performance metrics

### **Network Optimization**

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

### **Analyzing vSphere**

- Explain how Proactive DRS enhances virtual machine availability
- Use vRealize Log Insight to identify and troubleshoot issues

### **vCenter Server Availability and Performance**

- Explain the native high availability feature of vCenter Server and VMware Platform Services Controller
- Configure vCenter Server and Platform Services Controller high availability
- Understand what factors influence vCenter Server performance

### **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

## **Prerequisites**

VMware vSphere 6.5: Install, Configure, Manage