

## Course Overview

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

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## Overview

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 VMware vSphere® 6.5 features that build a foundation for a truly scalable infrastructure, and you will discuss when and where these features have the greatest effect. This course will deepen your understanding of vSphere and how its advanced features and controls can benefit your organization.

## Delegates will learn how to

- Configure and manage VMware ESXi™ 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
- Use VMware vSphere® Auto Deploy™ and host profiles to provision ESXi hosts
- Optimize the performance of all vSphere components
- Use VMware vRealize® Log Insight™ to monitor system logs
- Deploy VMware vCenter® Server Appliance™ to be highly available and optimized for performance
- Migrate a Windows vCenter Server system to vCenter Server Appliance 6.5
- Harden the vSphere environment against security threats
- Encrypt virtual machines for additional security

## Course Outline

### Course Introduction

- Introductions and course logistics
- Course objectives
- Identify additional resources for after this course
- Identify other VMware Education offerings
- Describe the user interfaces available in vSphere 6.5

### Network Scalability

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

### Storage Scalability

- Explain VMware vSphere® Storage APIs - Array Integration and VMware vSphere® API for 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 storage queue types and other 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

- Describe the high availability options for vCenter Server and VMware Platform Services Controller™
- Describe and use VMware vCenter Server® High Availability
- Identify the factors that influence vCenter Server performance
- Migrate a Windows vCenter Server 5.5 system to vCenter Server Appliance 6.5

### 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

# Certifications

This course prepares you for the following certification:

VMware Certified Professional 6.5 – Data Center Virtualization VCP65-DCV

## Prerequisites

In order to facilitate your VMware e-courseware provision Nexus will share your name and email address that which we have registered for you on our business systems with VMware. VMware will then send you directly the details of your e-courseware access no less than 48 hours before your course is due to take place. VMware will not use these details for any other purpose than provisioning you with your e-courseware.

Please note that these details are held by VMware outside of the EU. If you have an existing VMware MyLearn account it is imperative that you notify Nexus of the email address you have registered to this account. Should you have any questions or concerns about this please contact your Nexus account manager.

### Technical pre-requisites

This course requires completion of one of the following prerequisites:

- Understanding of concepts presented in the VMware vSphere: Install, Configure, Manage [V6.5] course
- Equivalent knowledge and administration experience with ESXi and vCenter Server

Experience with working at the command prompt is highly recommended.

# Intended Audience

Experienced system administrators, system engineers, system integrators.

## Special Notices

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