VMWare vSphere 6.7 Upgrade
3 Day Course

Overview

This hands-on course explores the new features and enhancements in VMware vCenter Server® 6.7 and VMware ESXi™ 6.7. You'll learn the skills needed to effectively implement and configure VMware vSphere® 6.7.

Course Objectives

At the end of the course, you should meet the following objectives:

- Use VMware vSphere® Client™, VMware Host Client™, and the VMware vCenter® Server Appliance™ shell
- Add users to the lockdown exception users list and test the lockdown mode
- Configure virtual machines to check for and install newer versions of VMware Tools™
- Upgrade virtual machines to the current hardware
- Create a multisite content library for synchronizing virtual machine templates, vApps, ISO images, and scripts across vCenter Server instances
- Configure NFS- and iSCSI-backed virtual volumes to provide a common storage platform, independent of the underlying storage hardware
- Create storage policies and use these policies with virtual machines and virtual volume datastores
- Work with VMware vSphere® Network I/O Control to create and configure a distributed switch
- Use VMware vSphere® vMotion® to migrate virtual machines across vCenter Server instances
- Activate the high availability feature of vCenter Server Appliance
- Back up a vCenter Server Appliance instance by using a file-based backup solution from the vCenter Server Appliance Management Interface
- Troubleshoot VMware vSphere® Auto Deploy™, VMware vSphere® ESXi™ Image Builder CLI, and host profiles
- Use virtual machine encryption to encrypt and decrypt virtual disks
- Use encrypted vSphere vMotion to securely migrate virtual machines
- Migrate from Windows vCenter Server to vCenter Server Appliance
- Troubleshoot VMware vCenter Server® High AvailabilityAudience

Audience

System administrators/architects/engineers, IT managers and help desk staff. In short those who need the skills, knowledge and practical abilities to implement, troubleshoot and manage. This course is recommended for customers who want to deploy vSphere 6.7 into their existing vSphere environment.

Prerequisites

As an upgrade course, and requires existing skills in:

- Install and configure ESX or ESXi and Install vCenter Server
- Create vCenter Server objects, such as data centers and folders
- Create and manage vCenter Server roles and permissions
- Create and modify a standard and distributed
- Connect an ESX/ESXi host to NAS, iSCSI, or Fibre Channel storage
- Create a VMware vSphere® VMFS datastore
- Enable vSphere vMotion on an ESX/ESXi host
- Use a wizard or a template to create a virtual machine
- Modify a virtual machine's hardware
- Migrate a virtual machine with vSphere Storage vMotion
- Configure and manage a VMware vSphere® Distributed Resource Scheduler™ cluster with resource pools
- Configure and manage a VMware vSphere® High Availability cluster

If you cannot complete all of these tasks, then the VMware 6.7 fast Track course would be a more suitable alternative.

Course Contents (5 days)

- New Features in vSphere 6.7
  - Use vSphere Client, VMware Host Client, and the vCenter Server Appliance shell
  - Discuss the new features and enhancements in vSphere 6.7

- Installation and Upgrade
  - Describe new vCenter Server architecture features
  - Choose between a distributed configuration and an embedded configuration, based on your requirements
  - Describe the enhancements to vCenter Server Appliance
  - Describe how to upgrade vCenter Server 5.x and 6.0 to vCenter Server 6.7
  - Optional migration lab, After class hours
  - Describe how to upgrade an ESXi 5.x host to an ESXi 6.7 host
  - Summarize the purpose of content libraries in a vSphere environment
  - Discuss the vSphere requirements for content libraries
  - Create a local content library
  - Subscribe to a published content library
  - Deploy virtual machines from a content library

- Compute Enhancements
  - Discuss the enhancements to vSphere 6.7 scalability and performance
  - Discuss the additional features to support hot-plug and SMART solid-state drives
  - Discuss the improvements to lockdown settings
  - Describe the addition of smart-card authentication
  - Explain the changes that enhance user accountability
  - Discuss how virtual hardware 11 and 13 extend virtual machine resource configurations
  - Describe how using large receive offload reduces CPU-associated costs for network packet processing
  - Discuss how hot-add memory is distributed across NUMA nodes in vSphere 6.x

- Storage Enhancements
  - Describe the new features of VMFS6
  - Describe the migration procedure from VMFS5 to VMFS6
  - Discuss the benefits of using NFS v4.1 with vSphere
  - Identify the differences between NFS v3 and NFS v4.1
  - Describe the implications of using NFS v4.1
  - Describe the VMware vSAN™ enhancements in the following areas: Scalability, Performance, Availability, Space efficiency, Operational, Usability
  - Describe the benefits of using virtual volumes
  - Describe per-virtual machine, policy-based policy management
  - Describe how VMDK data operations are offloaded to storage arrays through the use of VMware vSphere® API for Storage Awareness™
  - Describe the interoperability enhancements to VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control
  - Describe the enhancements to vSphere Storage DRS and Storage I/O Control that improve adherence to configured maximums and reservations

- Security Enhancements
  - Plan for secure boot support for ESXi hosts
  - Use encryption in your vSphere environment
  - Encrypt virtual machines
  - Explain how to back up encrypted virtual machines
  - Encrypt core dumps
  - Enable encrypted vSphere vMotion
  - Deploy enhanced vCenter Server events and alarms, and vSphere logging

- Network Enhancements
  - Use Network I/O Control
  - Upgrade Network I/O Control to version 3
  - Enable network resource management on VMware vSphere® Distributed Switch™
  - Configure bandwidth allocation for system and virtual machine traffic based on shares and reservation
  - Discuss IPv6 support in vSphere 6.0
  - Explain how the gateway per vmknic feature works and how it is configured
  - Explain the new ERSPAN headers supported in vSphere 6.7 and how they are configured
  - Describe the areas where performance improvements were made in vSphere 6.7

- Management Enhancements
  - List the core security modules that are part of VMware Platform Services Controller™
  - List the VMware certificate management components
  - Describe certificate use changes in vSphere 6.0
  - List the certificate management components that are part of Platform Services Controller
  - Describe the primary services provided by the VMware Certificate Authority component
  - Describe the primary services provided by the VMware Endpoint Certificate Store component
  - Define VMware CA certificate replacement options
  - Describe ESXi certificate replacement options
  - Discuss certificate-based guest authentication

- Availability Enhancements
  - Describe how vCenter Server High Availability works
  - Describe how Platform Services Controller high availability works
  - Configure vCenter Server High Availability and Platform Services Controller high availability
  - Describe the TCP/IP stack for vSphere vMotion that was introduced in vSphere 6.0
  - Explain the changes that make vSphere vMotion migrations across high-latency networks possible
  - Discuss the requirements for migrating a virtual machine across vCenter Server instances
  - Explain how VMware vSphere® Fault Tolerance in vSphere 6.0 supports virtual machines with multiple virtual CPUs
  - Describe how vSphere Fault Tolerance maintains the secondary virtual machine in a ready state
  - Explain the mechanism by which the primary virtual machine is determined
  - Discuss the improvements made in handling all paths down (APD) and permanent device lost (PDL) conditions
  - Describe the increased scalability of vSphere HA
  - Explain the additional compatibility supported by vSphere HA

- o Explain the enhancement of vSphere HA admission control in vSphere 6.7
- o Describe the improvement of vSphere HA orchestrated restarts
- o Discuss how Proactive HA helps reduce VM downtime
- o Describe when to use these advanced vSphere DRS options in vSphere 6.7:
- o Describe VM distribution
- o Discuss memory metrics for load balancing
- o Describe CPU over commitment
- o Reduce the need for vSphere HA with Proactive HA
- o Increase VM and workload uptime with Predictive DRS

- Troubleshooting
  - o Verify that your VMs comply with VMware specifications
  - o Search log files to isolate problems with virtual volumes
  - o Review performance charts and search log files to resolve problems with vSphere DRS
  - o Discuss common misconfigurations of NFS