VMware vSphere: What's New [V5.5 to V6.5]

Course Details

Course Outline

1. **Course Introduction**
    - Introductions and course logistics
    - Course objectives

2. **New Features in vSphere 6.5**
    - Use vSphere Client, VMware Host Client, and the vCenter Server Appliance shell
    - Discuss the new features and enhancements in vSphere 6.5

3. **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 6.5
    - Describe how to upgrade an ESXi 5.x host to an ESXi 6.5 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

4. **Compute Enhancements**
    - Discuss the enhancements to vSphere 6.5 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

5. 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

6. 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

7. **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 6.5 and how they are configured
    - Describe the areas where performance improvements were made in vSphere 6.5

8. **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

9. **Availability Enhancements**
    - Describe how vCenter Serve 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
- Explain the enhancement of vSphere HA admission control in vSphere 6.5
- Describe the improvement of vSphere HA orchestrated restarts
- Discuss how Proactive HA helps reduce VM downtime
- Describe when to use these advanced vSphere DRS options in vSphere 6.5:
- Describe VM distribution
- Discuss memory metrics for load balancing
- Describe CPU over commitment
- Reduce the need for vSphere HA with Proactive HA
- Increase VM and workload uptime with Predictive DRS