

Course Name: VMware vSphere: Install, Configure, Manage [V6.5]

Duration: 5 Days

Overview:

This five-day course features intensive hands-on training that focuses on installing, configuring, and managing VMware vSphere® 6.5, which includes VMware ESXi™ 6.5 and VMware vCenter Server® 6.5. This course prepares you to administer a vSphere infrastructure for an organization of any size. It is the foundation for most other VMware technologies in the software-defined data center.

Note: This course is based on beta software.

Product Alignment

- ESXi 6.5
- vCenter Server 6.5

Objectives:

By the end of the course, you should be able to meet the following objectives:

- Describe the software-defined data center
- Explain the vSphere components and their function in the infrastructure
- Deploy an ESXi host
- Deploy VMware vCenter® Server Appliance™
- Use a local content library as an ISO store and deploy a virtual machine
- Describe vCenter Server architecture
- Use vCenter Server to manage an ESXi host
- Configure and manage vSphere infrastructure with VMware vSphere® Client™ and VMware vSphere® Web Client
- Describe virtual networks with vSphere standard switches
- Configure standard switch policies
- Use vCenter Server to manage various types of host storage: VMware vSphere® VMFS, NFS, virtual SAN, Fiber Channel, and VMware Virtual SAN™
- Manage virtual machines, templates, clones, and snapshots
- Create, clone, and export a vApp
- Describe and use the content library
- Migrate virtual machines with VMware vSphere® vMotion®
- Use VMware vSphere® Storage vMotion® to migrate virtual machine storage
- Monitor resource usage and manage resource pools
- Use esxtop to identify and solve performance issues
- Discuss the VMware vSphere® High Availability cluster architecture
- Configure vSphere HA
- Manage vSphere HA and VMware vSphere® Fault Tolerance
- Use VMware vSphere® Replication™ and VMware vSphere® Data Protection™ to replicate virtual machines and perform data recovery
- Use VMware vSphere® Distributed Resource Scheduler™ clusters to improve host scalability

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- Use VMware vSphere® Update Manager™ to apply patches and perform basic troubleshooting of ESXi hosts, virtual machines, and vCenter Server operations

Certifications

This course prepares you for the following certification:

- [VMware Certified Professional 6 – Data Center Virtualization \(VCP6-DCV\)](#)

Intended Audience:

- System administrators
- System engineer

Prerequisites: This course requires the following prerequisites:

- System administration experience on Microsoft Windows or Linux operating systems

- Course Outline:**
- 1. Course Introduction**
 - Introductions and course logistics
 - Course objectives
 - Describe the content of this course
 - Gain a complete picture of the VMware certification system
 - Familiarize yourself with the benefits of the VMware Education Learning Zone
 - Identify additional resources
 - 2. Introduction to vSphere and the Software-Defined Data Center**
 - Describe the topology of a physical data center
 - Explain the vSphere virtual infrastructure
 - Define the files and components of virtual machines
 - Describe the benefits of using virtual machines
 - Explain the similarities and differences between physical architectures and virtual architectures
 - Define the purpose of ESXi
 - Define the purpose of vCenter Server
 - Explain the software-defined data center
 - Describe private, public, and hybrid clouds
 - 3. Creating Virtual Machines**
 - Introduce virtual machines, virtual machine hardware, and virtual machine files
 - Identify the files that make up a virtual machine
 - Discuss the latest virtual machine hardware and its features
 - Describe virtual machine CPU, memory, disk, and network resource usage

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- Explain the importance of VMware Tools™
- Discuss PCI pass-through, Direct I/O, remote direct memory access, and NVMe
- Deploy and configure virtual machines and templates
- Identify the virtual machine disk format

4. vCenter Server

- Introduce the vCenter Server architecture
- Deploy and configure vCenter Server Appliance
- Use vSphere Web Client
- Backup and restore vCenter Server
- Examine vCenter Server permissions and roles
- Explain the vSphere HA architectures and features
- Examine the new vSphere authentication proxy
- Manage vCenter Server inventory objects and licenses
- Access and navigate the new vSphere clients

5. Configuring and Managing Virtual Networks

- Describe, create, and manage standard switches
- Configure virtual switch security and load-balancing policies
- Contrast and compare vSphere distributed switches and standard switches
- Describe the virtual switch connection types
- Describe the new TCP/IP stack architecture
- Use VLANs with standard switches

6. Configuring and Managing Virtual Storage

- Introduce storage protocols and storage device types
- Discuss ESXi hosts using iSCSI, NFS, and Fibre Channel storage
- Create and manage VMFS and NFS data stores
- Describe the new features of VMFS 6.5
- Introduce Virtual SAN
- Describe guest file encryption

7. Virtual Machine Management

- Use templates and cloning to deploy new virtual machines
- Modify and manage virtual machines
- Clone a virtual machine
- Upgrade virtual machine hardware to version 12
- Remove virtual machines from the vCenter Server inventory and data store
- Customize a new virtual machine using customization specification files
- Perform vSphere vMotion and vSphere Storage vMotion migrations

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- Create and manage virtual machine snapshots
- Create, clone, and export vApps
- Introduce the types of content libraries and how to deploy and use them

8. Resource Management and Monitoring

- Introduce virtual CPU and memory concepts
- Explain virtual memory reclamation techniques
- Describe virtual machine over commitment and resource competition
- Configure and manage resource pools
- Describe methods for optimizing CPU and memory usage
- Use various tools to monitor resource usage
- Create and use alarms to report certain conditions or events
- Describe and deploy resource pools
- Set reservations, limits, and shares
- Describe expandable reservations
- Schedule changes to resource settings
- Create, clone, and export vApps
- Use vCenter Server performance charts and esxtop to analyze vSphere performance

9. vSphere HA and vSphere Fault Tolerance

- Explain the vSphere HA architecture
- Configure and manage a vSphere HA cluster
- Use vSphere HA advanced parameters
- Define cluster wide restart ordering capabilities
- Enforce infrastructural or intra-app dependencies during failover
- Describe vSphere HA heartbeat networks and data store heartbeats
- Introduce vSphere Fault Tolerance
- Enable vSphere Fault Tolerance on virtual machines
- Support vSphere Fault Tolerance interoperability with Virtual SAN
- Examine enhanced consolidation of vSphere Fault Tolerance virtual machines
- Introduce vSphere Replication
- Use vSphere Data Protection to back up and restore data

10. Host Scalability

- Describe the functions and benefits of a vSphere DRS cluster
- Configure and manage a vSphere DRS cluster
- Work with affinity and anti-affinity rules
- Describe the new capabilities for what-if analysis and proactive vSphere DRS
- Highlight the evolution of vSphere DRS using predictive data from VMware vRealize® Operations Manager™

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- Perform preemptive actions to prepare for CPU or memory changes
- Describe the vCenter Server embedded vSphere Update Manager, VMware vSphere® ESXi™ Image Builder CLI, and VMware vSphere® Auto Deploy capabilities
- Use vSphere HA and vSphere DRS together for business continuity

11. vSphere Update Manager and Host Maintenance

- Describe the new vSphere Update Manager architecture, components, and capabilities
- Use vSphere Update Manager to manage ESXi, virtual machine and vApp patching
- Install vSphere Update Manager and the vSphere Update Manager plug-in
- Create patch baselines
- Use host profiles to manage host configuration compliance
- Scan and remediate hosts