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## VMware vSphere: Install, Configure, Manage

**Duration: 5 Days**    **Course Code: VSICM**    **Version: 6.5**

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### 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.

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### Target Audience:

Students interested in learning to install, configure, and manage VMware vSphere® 6.5, including VMware ESXi™ 6.5 and VMware vCenter Server® 6.5.: System administrators System engineer

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### 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 Host 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, iSCSI, and RDM
  - Examine the features and functions of Fibre Channel and VMware vSAN™
  - Manage virtual machines, templates, clones, and snapshots
  - Create, clone, and deploy 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
  - Use VMware vSphere® Update Manager™ to apply patches and perform basic troubleshooting of ESXi hosts, virtual machines, and vCenter Server operations
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### Prerequisites:

This course requires the following prerequisites:

- System administration experience on Microsoft Windows or Linux operating systems

### Testing and Certification

This course prepares you for the following certification:

VMware Certified Professional 6.5 – Data Center Virtualization (VCP6.5-DCV)

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## Content:

### 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
- 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
- Back up 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 datastores
- Describe the new features of VMFS 6.5
- Introduce vSAN
- 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 datastore
- Customize a new virtual machine using customization specification files
- Perform vSphere vMotion and vSphere Storage vMotion migrations
- 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 overcommitment 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

### 9. vSphere HA, vSphere Fault Tolerance, and Protecting Data

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

### 10. vSphere DRS

- 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™
- 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

- 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

- 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
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### Further Information:

For More information, or to book your course, please call us on 0800/84.009

[info@globalknowledge.be](mailto:info@globalknowledge.be)

[www.globalknowledge.be](http://www.globalknowledge.be)