VMware VSphere: Install, Configure & Manage V6.5

Duration: **5 Days**

Overview:

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

Target Audience:

This course is intended for system administrators and system engineers

Pre-requisites:

Before attending this course, students must have:

- System administration experience on Microsoft Windows or Linux operating systems
- Understanding of concepts presented in the VMware Data Center Virtualisation Fundamentals course for VCA-DCV certification

Module 1: Course Introduction

- Introductions and course logistics
- Course objectives
- Describe the content of this course
- Gain a complete picture of the VMware certification system
- Familiarise yourself with the benefits of the VMware Education Learning Zone
- Identify additional resources

Module 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

Module 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

Module 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

Module 5: Configuring and Managing Virtual Networks

- Describe, create, and manage standard switches
- Configure virtual switch security and load-balanced 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

Module 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

Course Completion:

At course completion, students will be able to do the following:

- Describe the software-defined data center
- Deploy and ESXi host and create virtual machines
- Describe vCenter Server Architecture
- Deploy a vCenter Server instance or VMware vCenter Server™ Appliance™
- Use vCenter Server to manage an ESXi host
- Configure and manage vSphere infrastructure with VMware vSphere® Client™ and VMware vSphere® web client
- Configure virtual networks with vSphere standard switches
- Use vCenter Server to manage various types of host storage: VMware vSphere® VMFS, NFS, virtual SAN, and Virtual Volumes
- Manage virtual machines, templates, clones, and snapshots
- Create 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 resources usage and manage resource pools
- Use VMware vRealize™ Operations Manager™ to identify and solve issues through analytics and alerts
- Manage VMware vSphere® High availability and VMware vSphere® Fault Tolerance
- User 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 vSphere distributed switches to improve network scalability
- Use VMware vSphere® Update Manager™ to apply patches and perform basic troubleshooting of ESXi hosts, virtual machines, and vCenter Server operations

Module 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
- Customise a new virtual machine using customisation 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

Module 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 optimising 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 resources settings
- Create, clone, and export vApps
- Use vCenter Server performance charts and esxtop to analyse vSphere performance

Module 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 netwokrs 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 backup and restore data

Module 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 of what-if analysis and proactive vSphere DRS
- Highlight the evolution of vSphere DRS using predictive data from VMware vRealize® Operations Manager™
- Perform pre-emptive 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

Module 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