

VMware Data Center Virtualization: Core Technical Skills

Duration: 4 Days

Course Description:

This VMware Data Center Virtualization: Core Technical Skills course is designed to equip learners with foundational knowledge and skills necessary for the management and operation of a VMware vSphere environment. It provides a thorough understanding of Virtualization concepts, vSphere infrastructure, and the integration of cloud computing technologies. From navigating the vSphere Client and managing the Lifecycle of virtual machines, to configuring networking and storage, the course covers essential components and procedures in a modern virtualized data center. Practical lessons on Resource monitoring, VM management, and understanding vSphere clusters ensure that participants are well-prepared to maintain a resilient and efficient virtual infrastructure. By completing this course, learners will gain valuable insights into the VMware ecosystem, enabling them to contribute effectively to their organizations' virtualization initiatives and advance their careers in the field of IT.

Course Objectives:

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

- Describe virtualization and virtual machines
- Describe vSphere components and the software-defined data center (SDDC)
- Explain the concepts of server, network, and storage virtualization
- Monitor network and datastore configurations in VMware vSphere® Client™
- Deploy, configure, and clone virtual machines
- Migrate, monitor, and manage virtual machines
- Monitor tasks and events in VMware vSphere® Client™
- Recognize how vSphere DRS and VMware vSphere® High Availability improve performance and availability of a vSphere cluster

Target Audience:

The VMware Data Center Virtualization course equips IT professionals with core technical skills for virtualized environments.

Target audience for the VMware Data Center Virtualization: Core Technical Skills course:

- Systems Administrators
- Systems Engineers
- IT Administrators managing virtual environments
- Data Center Engineers
- Infrastructure Architects
- IT Professionals seeking VMware certification
- Network Administrators interested in virtualization
- Cloud Administrators and Engineers
- Technical Support Staff working with vSphere
- IT Consultants and Integrators specializing in VMware technologies
- Operations Team Members responsible for virtual machine management and deployment

Prerequisites:

- Working knowledge of operating systems
- Understanding of basic network, storage, and computer hardware concepts

Course Outlines:

Course Introduction

- Introductions and course logistics
- Course objectives

Virtualization and vSphere Concepts

- Describe how virtual machines (VMs) work
- Recognize the purpose of a hypervisor
- Describe how VMs share resources in a virtualized environment
- Recognize the components of an SDDC
- Describe the relationship between vSphere, the SDDC, and cloud computing
- Recognize the functions of the components in a vSphere environment
- Access and view vSphere graphical user interfaces
- Identify VMware solutions that integrate with vSphere in the SDDC

Navigating the vSphere Client

- View and organize the inventory objects managed by vCenter Server
- Add and assign vSphere licenses
- Change the log level of vCenter Server
- Edit the startup policy of ESXi services
- Describe how vCenter Server roles and permissions work
- Add permissions to virtual machines

Lifecycle of Virtual Machines

- Add and remove VM virtual hardware components
- Identify the purpose of different VM files
- Configure VM settings
- Create and delete virtual machines
- Recognize the benefits of installing VMware Tools™
- Install VMware Tools into a guest operating system
- Upgrade VMware Tools and VM hardware compatibility

vSphere Networking

- Describe virtual networking
- Recognize ways that virtual switches connect VMs and ESXi hosts to the network
- View components and properties of a vSphere standard switch configuration
- View a vSphere distributed switch configuration in vSphere Client
- Recognize when and how to use the settings for the security networking policy
- Recognize when and how to use the settings for the traffic shaping networking policy
- Describe how the NIC teaming and failover policy helps maintain network connectivity
- Perform basic checks to diagnose VM connectivity issues

vSphere Storage

- Describe the function of a datastore
- Recognize types of vSphere datastores
- View datastore information in vSphere Client
- Monitor datastore usage in vSphere Client

Virtual Machine Management

- Recognize the benefits of using VM templates
- Create and update a VM template
- Deploy a VM from an existing template
- Clone a virtual machine
- Recognize how to use guest OS customization specifications
- Deploy VMs from a content library
- Deploy a virtual appliance from an OVF template
- Perform a hot and cold migrations of VMs
- Identify requirements for using VMware vSphere® Storage vMotion®
- Perform a vSphere Storage vMotion migration
- Identify use cases for VM snapshots
- Create and manage snapshots of a virtual machine

Resource Monitoring

- Recognize the purpose of each type of VM resource control
- Configure the resource allocation settings of a VM
- Observe the behavior of virtual machines with different share values
- Manage and acknowledge vSphere alarms
- Use performance charts to monitor VM CPU and memory usage
- Monitor tasks and events in vSphere Client

vSphere Clusters

- View information about the services that a vSphere cluster offers
- Recognize how vSphere HA responds to different types of failures
- Monitor vSphere HA during a host failure
- Describe how vSphere DRS works
- Interpret DRS scores given to VMs
- Recognize how to apply the appropriate vSphere DRS automation and migration threshold levels
- Describe how vSphere Fault Tolerance works
- Recognize how Enhanced vMotion Compatibility works

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