

Module 1: Introduction

- What Virtual Infrastructure Is
- VMware Infrastructure

Module 2: Virtual Infrastructure

Overview

- Virtualization
- A Virtual Machine
- How Virtualization Works
- Virtualization using a Bare-Metal Hypervisor
- ESX Server Architecture
- Using VMware Infrastructure in a Data Center

Module 3: ESX Server Installation

- ESX Server Physical Setup
- Hardware Prerequisites
- Partitioning an x86 Disk
- After Installation Is Complete
- ESX Server Physical Console After Install
- VMware Infrastructure (VI) Client
- Single-Host Licensing

Module 4: Networking

- Virtual Switches
- Network Connections
- Virtual Switch Property: Ports
- Virtual Switch Property: Network Adapters
- Port Group Property: VLANs
- Virtual Switch and Port Group Policies
- Security Policy
- Traffic-Shaping Policy
- NIC Teaming Policy
- Load-Balancing
- Detecting and Handling Network Failure

Module 5: Storage

- How Fibre Channel is used with ESX Server
- Addressing SAN LUNs in the VMkernel
- Making SAN Storage Available to ESX Server
- How iSCSI is used with ESX Server
- How iSCSI Storage Authenticates the ESX Server
- iSCSI Software and Hardware Initiators
- VMFS
- Multipathing with Fibre Channel
- Multipathing with iSCSI
- Manage Multiple Paths
- How NAS/NFS is used with ESX Server
- Addressing and Access Control with NFS

Module 6: VirtualCenter Installation

- VirtualCenter Components
- VirtualCenter Architecture
- Hardware and Software Prerequisites
- VirtualCenter Database
- VMware License Server (Centralized Licensing)
- VirtualCenter Server Services
- VI Client Overview
- ESX Server and VirtualCenter Communication
- Managing Across Geographies
- Backup Strategy for VirtualCenter Server
- VirtualCenter Inventory: Multiple Data Centers
- VirtualCenter Inventory: Clusters

VMware Infrastructure 3 Install and Configure

Module 7: Virtual Machine Creation and Management

- Files that Make Up a Virtual Machine
- Display a Virtual Machine's Files using the VI Client
- Virtual Machine Virtual Hardware
- Virtual Machine Console
- Install Guest Operating System into a Virtual Machine
- Deploy a Virtual Machine from Template
- Clone a Virtual Machine
- Guest Operating System Customization
- Deploying Across Datacenters
- Virtual Appliances
- VMware Converter Enterprise
- Hot Cloning
- Cold Cloning
- Importing a Server
- Move VM Between ESX Servers: Cold Migration
- Modify Virtual Machine Settings
- Guided Consolidation

Module 8: Virtual Infrastructure Access Control

- Security Model Overview
- Defining Users and Groups
- Privileges and Roles
- Permissions
- VirtualCenter Security Model
- ESX Server Security Model
- Web Access

Module 9: Resource Management

- How Virtual Machines Compete for Resources
- Resource Pool
- Configuring a Pool's Resources
- Move VM Between ESX Servers: VMotion Migration
- How VMotion Works
- Virtual Machine Requirements for VMotion
- Host Requirements for VMotion
- What a DRS Cluster Is
- Create a DRS Cluster
- Best Practices for DRS
- Resource Pools in a DRS Cluster
- Delegated Administration
- Monitor Cluster Usage
- Planned Downtime: Maintenance Mode

Module 10: Resource Monitoring

- Systems for Optimizing VM Resource Use
- Monitoring Virtual Machine Performance
- Performance-Tuning Methodology
- Monitoring VM Resource Use with Performance Graphs
- Tools for Improving VM CPU and Memory Performance
- Monitoring Using Performance-Based Alarms



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Course Outline

Module 11: Data and Availability Protection

- Backup Strategies
- What To Back Up
- General Guidelines for Virtual Machine Backups
- Virtual Machine High Availability
- Clustering Inside VMs for High Availability

Module 12: Planning VI Deployment

- ESX Server 3 Hardware Support
- ESX Server Sizing
- Booting ESX from a Fibre Channel or iSCSI SAN LUN
- VirtualCenter Deployment
- Storage Considerations
- Storage Comparison: Fibre Channel, NAS, iSCSI



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