



## **Module 1: Storage Administration**

### Managing VMFS Volumes

- LUN Identification
- Partitioning Disks
- VMFS Volume Operations
- Reading VMFS Volume Metadata
- Extending VMFS Volume

### Datastore Security, Replication, and HBA Configuration

- Securing Virtual Machine Access to Storage
- Supported Storage Types
- Distributed Lock Handling by VMFS-3
- Handling VMFS Replication
- VMFS LUN Replication
- Using LVM.EnableResignature
- View HBA Driver Configuration
- Modifying Adapter Properties

### Common Storage-Related Events

- VMkernel Messages
- Sample Rescan Event vmkernel Log Entries
- Failover to Standby HBA
- Failover to Standby Storage Processor

### Storage VMotion

- Introduction to Storage VMotion
- Storage VMotion - Performance
- Storage VMotion - Initial Implementation
- How Storage VMotion Works
- Requirements and Limitations

## **Module 2: Network Administration**

### Create and Configure Virtual Switches

- Physical and Virtual Switch Comparison
- Virtual Switches and Spanning Tree Protocol
- Virtual Switch VLANs
- Cisco Discovery Protocol
- Locate Physical NICs
- Modify Physical NIC Attributes
- Enable/Disable TSO Support
- Enabling Cisco Discovery Protocol

### Virtual Network Security

- Using Network Segmentation
- Security Considerations for VLANs
- Virtual Switch Protection and VLANs
- Securing Virtual Switch Ports
- Notifying Switches

### Create and Configure VMkernel Ports

- Configure VMkernel Ports
- Handling VMkernel Traffic
- VMkernel Networking
- VMkernel Routing

### Managing Failover and Failure Detection

- Add an Uplink to a Port Group
- Define Failover Order
- Viewing Active/Standby NICs
- Display vSwitch Configuration
- Best Practices for NIC Teaming
- Troubleshooting NIC Teaming

### Service Console Networking

- Host-Name Resolution
- Configure Service Console Port Group
- Advanced Service Console NIC Configurations



# VMware Infrastructure 3 Deploy, Secure, and Analyze

## Course Outline

### Module 2 (continued)

Service Console Firewall Management

- Required TCP and UDP Ports

Configuring the Software iSCSI Initiator

- iSCSI Overview
- Set Up Networking for iSCSI Software Initiator
- Configure the Firewall for iSCSI
- View General Properties of iSCSI Software Adapter
- Configure iSCSI Targets
- iSCSI Software Initiator Troubleshooting

### Module 3: DRS Configuration and Performance Monitoring

Building and Monitoring DRS Clusters

- Guidelines for CPU Resources
- Guidelines for Memory Resources
- Guidelines for Resource Allocation
- Adding a Host to the DRS Cluster
- Removing a Host from the Cluster
- Monitor Cluster Usage
- Monitoring the DRS Cluster
- DRS Cluster Memory Resources
- Guidelines for DRS Clusters

Using Performance Monitoring Tools

- Tools for Performance Analysis
- Advanced per-VM CPU Statistics
- Monitoring Memory Utilization
- Viewing Memory Using the VI Client
- Monitoring Disk Utilization
- I/O Virtualization
- Analyzing Disk Performance
- Top Indications of Storage I/O Bottleneck
- Monitoring Network Utilization
- Common Network Issues
- Troubleshooting a VM's Network Throughput

### Module 4: Business Continuity and Data Protection

Microsoft Cluster Services

- Clustering Options
- Implementing Cluster in a Box
- Implementing a Cluster Across Boxes
- Implementing Standby Host Clustering
- Shared Storage Summary

Configuring VMware HA

- VMware HA Overview
- Cluster Configuration and Communication Details
- Viewing Your HA Cluster
- Customize VMware HA Cluster Behavior
- Customize VM Behavior
- Effect of DRS Affinity Rules
- VMware HA Best Practices

Describe How VCB Works

- VMware Consolidated Backup
- VCB Components
- Virtual Machine Snapshots
- How a Snapshot Is Created
- File-Level Backup
- Full Virtual Machine Backup
- VCB and Storage Dependencies
- VCB Log Files

Using VCB Command-Line Utilities

- Using VCB Command-Line Utilities
- Identify a Virtual Machine's Backup or Snapshot
- Perform a Full Virtual Machine Backup
- Back Up Individual Virtual Disks
- Restore from VCB Backups
- Image-Level Restoration
- File-Level Restoration
- Restoration Using VMware Converter



Learning Solutions

# VMware Infrastructure 3 Deploy, Secure, and Analyze

## Module 5: Operational Maintenance

Install and Configure VMware Update Manager

- VMware Update Manager Overview
- Installing VMware Update Manager
- VMware Update Manager Database
- Configuring VMware Update Manager Settings
- Scheduling Patch Metadata Downloads
- Installing the Guest Agent
- Baseline Management
- Report on a Noncompliant Virtual Machine
- Responding to Guest Remediation Failure
- Scanning ESX Hosts
- DRS-Enabled Remediation
- Troubleshooting Update Manager

## Module 6: Modify Logging Behavior

Configure Logging for vpxd and vpxa

- Windows Environment Variables
- VirtualCenter Installation Logs
- The VirtualCenter Server Configuration File
- VirtualCenter Server vpxd Logs
- Log Options for vpxd and vpxa
- Collecting Log Files
- Virtual Machine Logging

Consolidating Service Console Log Files

- How to Configure /etc/syslog.conf
- ESX-Specific syslog.conf Entries
- Using the logger Command
- Time Synchronization

## Module 6 (continued)

Rotating Service Console Log Files

- Configure Log File Rotation
- Third-Party Logs

## Module 7: Service Console Security

Configure SSH

- Direct ESX Server Login Authentication Process
  - Controlling Remote Service Console Access
  - Preventing Remote Root Access
  - Controlling User Access
  - Enable an Illegal Access Warning
  - Tracking User Access
- Employ TCP Wrappers
- Controlling Host Access
  - Defining Host Rules

## Module 8: Rapid Provisioning of ESX Servers

Scripted ESX Server Installations

- Overview of Scripted Installation
- Create an Installation Script
- Installation Script Content
- Common Deployment Scenarios