

VMware ESX Server 3.5 – Install & Configure

- **Course Length:** 4 Days

Course Overview

Our VMware ESX Server 3.5 - Install & Configure course explores installation, configuration, and management of the VMware Infrastructure. Upon completion of this course, the student will have acquired an understanding of the functionality in VMware Infrastructure. This course addresses topics such as Installing ESX Server, Networking components, Managing Storage, and Virtual Machines.

Audience

Our VMware ESX Server 3.5 - Install & Configure course was developed for IT professionals seeking to gain an understanding of the VMware Infrastructure.

Course Outline

Course Introduction

7m

Course Introduction

Module 01 - Virtual Infrastructure Overview

57m

Virtual Infrastructure Overview

Introducing Virtual Machines (VMs)

VMware Products and Use Cases

VMware ESX Server: A Closer Look

Virtual SMP

VMware VirtualCenter: A Closer Look

Individual Desktop Hosting with ESX Server and VirtualCenter

VMware Virtual Desktop Infrastructure (VDI)

VMware Converter

Workstation

VMware Virtualization Layer

VMware Player

VMware Server

Module 01 - Review

Module 02 - ESX Server Installation

1h 18m

ESX Server Installation

ESX Server Core Components

Pre-Installation Considerations

Installation

Demo - VMware Installation

Demo - Virtual Infrastructure Client Install

Module 02 - Review

Module 03 - Networking Components

1h 3m

Networking Components

Introduction

Scenario

Understanding Virtual Switches

Virtual Network Cards and MAC Addresses

Traffic Shaping and Bandwidth

Virtual Switches and Firewalls

NIC Teaming and "Failover"

Defining Connections

Nomenclature Considerations

Network Policies

NIC Teaming and Load Distribution

Demo - NW Connections

Demo - Connection Properties

Module 03 - Review

Module 04 - Managing Storage

46m

Managing Storage

World Wide Names (WWNs)

Logical Unit Numbers (LUNs)

VMKernel Disk Partition Addressing Scheme

Disk Arrays

PCI Devices

Supported LUNs

iSCSI (Internet Small Computer Storage Interface)

Booting the ESX Server from iSCSI Storage

The Initiator

iSCSI Node

iSCSI Qualified Name (IQN) Naming Convention

iSCSI Discovery

Challenge-Handshake Authentication Protocol (CHAP)

Best Practices: Isolated IP Network

Software Initiator: Cisco Implementation Port and Daemon Interaction

Hardware Initiator

Removing the Virtual Switch Display in the VI Client Inventory List

Opening Outgoing Port 3260

Configuring the iSCSI Adapter

Setting a CHAP Login Name and Password

Rescanning for iSCSI Target LUNs

The VMware File System (VMFS)

Accessing VMFS Volumes
Creating a VMFS Datastore
Extending a VMFS Volume
Failover Policies
Active/Passive Configurations
No Support for Heterogeneous Multipathing
Fibre Channel and iSCSI HBAs in the Same ESX Server?
Network-Attached Storage (NAS)
Shared Storage Capabilities on NFS Volumes
Accessing the NFS Server and Using NFS Volumes to Store VM Disks
Confining the ESX Server with a VMkernel Port Defined on a Virtual Switch
ETC/Exports
Demo - Storage
Module 04 - Review

Module 05 - Virtual Center

1h 20m

Virtual Center
VirtualCenter Architecture
VirtualCenter Environment
Recommended Virtual Center Installation Order
VirtualCenter Database: A closer Look
License Server: A Closer Look
Management Server: A Closer Look
Using the VI Client to Access the VirtualCenter Server
Your VirtualCenter Inventory: A Hierarchy of Objects

VI Client and the Web Client
The vpxa and hostd Services
Recommendations
The Datacenter: A closer Look
If Your VirtualCenter Fails...
High Availability Strategies
Demo - VirtualCenter Server Install
Demo - VirtualCenter Server Usage
Demo - License and Putty
Module 05 - Review

Module 06 - Virtual Machines (VMs)

2h 16m

Virtual Machines (VMs)
VM Configuration
Optimizing Your VM Memory Size
Virtual SMP
Creating VCPU V Ms

Virtual Disks
Snapshots
Independent Modes
Virtual Hardware
Installing the VM's OS
ISO Image Storage Locations
Working with VMware Tools
Working with Templates
Enabling Guest as Customization
Performing a Cold Migration
Adding Additional Virtual Hardware
Demo - Customize VM
Demo - Create VM
Demo - Configuring and Using VM
Demo - VM Files and Snapshots
Demo - NFSVM Creation
Demo - NFS Setup and Usage
Demo - Migrate VM to NFS
Demo - Templates
Module 06 - Review

Module 07 - Management of System Resources

45m

Management of System Resources
Virtual Infrastructure Security Model - Main Components
Comparing VirtualCenter Server and ESX Server
A Closer Look at Components
Virtual Center Server and ESX Server Security Models - A Closer Look
Using Web Access
Demo - VirtualCenter Server Storage
Module 07 - Review

Module 08 - Controlling Access to Resources

1h 5m

Controlling Access to Resources
CPU Resource Allocation Settings
Memory Allocation Settings
Shares - A Closer Look
Understanding Resource Pools
Expandable Reservations - A Closer Look

Understanding VMotion and Migration
Inventory Maps
Resource Pools Revisited
Load Balancing
Defining Your Automation Level
Defining Your Migration Threshold Level

Creating Affinity and Anti-Affinity Rules
Customizing the Automation Levels of Individual VMs
Best Practices and Recommendations
Cluster and Resource Pool Administrator Roles
Should I Enable Expandable Reservation?
Valid, Overcommitted & Invalid Clusters
Determining Resource Pools for Added Hosts (with Resource Pools)
Removing a Host From a Cluster
Demo - VMotion
Demo - VMotion Explained
Module 08 - Review

Module 09 - Monitoring the Virtual Environment

50m

Monitoring the Virtual Environment
Introduction
Virtual Processors (VCPUs)
What if a CPU Fails?
The Service Console Does NOT Migrate
Hyperthreading
Page Sharing
Balloon Drivers
Vmkernel Swap Files
Configuring Your Server Systems
Controlling a VM's Access to CPU and Memory
CPU "Ready Time"
Disk Performance Problems
Alarms
Demo - Alarms
Module 09 - Review

Module 10 - Maintaining High Availability

48m

Maintaining High Availability
Data Backup Strategies
Application Data and System Image Backups
Storing Data in Separate Physical Disks
Backups
Restoration
VMware HA Clustering
Demo - High Availability
Module 10 - Review

Module 11 - Troubleshooting Techniques

39m

Troubleshooting Techniques Overview
Introduction
Performing Diagnostics with the VI Client

VM Monitor (VMM) Panic
Troubleshooting Basics
Troubleshooting Techniques

Demo - Troubleshooting
Module 11 - Review
Course Closure

Total Duration: 11h 55m