

VI3 to vSphere 4.0 Upgrade and New Technology Ultimate Bootcamp

- **Course Length:** 2 Days

Course Overview

This instructor-led course covers everything the student needs to know to upgrade from VMware 3.x to VMware's new vSphere 4.0 product. Students will perform the actual upgrade using hands-on-labs in our state of the art data center, then once that objective is achieved they will be exposed to all the new features of the product, including third party solutions and lessons learned in the field.

Prerequisites/Audience

Students should have 1-3 years experience as a VMware administrator using VMware VI3, be familiar with virtual technologies and have sat in a VMware Authorized training program, or taken VI3.5 Ultimate Bootcamp, or equivalent within the last year. Students MUST know the VI3 product line to attempt this class.

Certification Exam

This course helps to prepare the student for the Certified Virtualization Expert® 4.0 Exam.

Course Outline

Course Introduction

2 min

Course Introduction

Chapter 1 - Course Introduction and Methodology

41m

Topic: Course Methodology

Certified Virtualization Expert (CVE) Certification

Demo - Certification Info and Exam Purchase Process

VMTraining's Physical Setup

Demo - Access the Student FTP Site

Demo - RDP Connection for Lab

Demo - Conventions Used in the Lab Manual

Demo - DRAC 4 for Lab

Demo - DRAC 5 for Lab

VMTraining's Setup - Student to Datacenter

Chapter 01 Review

Chapter 2 - vSphere 4 Overview

45m

Topic: vSphere 4 New Technology Overview

vSphere 4

New Features - Continued

VMware vCenter Server Heartbeat

vCenter Server Heartbeat

VMware vCenter Chargeback

VMware Data Recovery

VMware Converter 4.01

VMware vCenter Converter 4.01 versions comparison

VMware Converter Standalone

VMware vCenter Orchestrator

VMware vCenter CapacityIQ

Topic: Licensing

vCenter Server and ESX Server Licensing Model

Manage vSphere Licenses

VI3 License Types and Pricing (per 2 Sockets)

vSphere Essentials for Small Business

vSphere 4 License Types and Pricing (per 1 Socket)

Topic: vSphere Requirements

Physical Hardware Requirements for ESX

Service Console (SC or COS)

Default and Suggested Partition Scheme

vCenter Server 4 Minimum Requirements

Order of Installation

vCenter Server Database Overview

vCenter Database Sizing

Demo - vCenter Database Sizing

vCenter Server 4 Database Sizing

Chapter 02 Review

Chapter 3 - Upgrade or Migrate to vSphere 4

17m

Topic: Upgrades and Migrations

Upgrade Methodology

Upgrade VirtualCenter to a new version

ESX Migration to new hardware 3.x to any version

ESX 4.x Migration to new hardware ESX Enterprise Plus Environment

ESX Upgrade using Update Manager

ESX Upgrade Using vSphere Host Update Utility

Overview of Scripted Installation / Upgrade

ESX Post Upgrade Considerations

Upgrade the Virtual Machines

Use the vSphere Client to Upgrade the VMware Tools

Use vSphere Client to Upgrade Virtual Machine Hardware

Use Update Manager to Upgrade Virtual Machines

Chapter 03 Review

Chapter 4 - Managing vSphere 4.0

12m

Topic: Host Profiles

Host Profiles Overview

Create Host Profile

Edit Host Profile

Attach Host Profile

Check Compliance with Host Profile

Apply Host Profile

Export a Host Profile

Topic: Linked Mode Group of vCenter Servers

Linked vCenter Servers Overview

Linked Mode Group Prerequisites

Create a Linked Mode Group

Manage Multiple vCenters

Chapter 04 Review

Chapter 5 - Configuring Networking

35m

Topic: Networking Overview

Networking Terms

vSphere 4 Virtual Switch Types

Virtual Switch and Connection Type Identification

Standard Switch Overview

Topic: vNetwork Distributed Virtual Switches

Distributed vSwitch Overview

Creating a Distributed Virtual Switch

Edit dvSwitch Settings

Edit dvSwitch Policy Settings

Edit dvSwitch Port Group Settings

Add Host or Add NIC

Cisco Nexus 1000v Virtual Switch

Nexus 1000v Architecture

Migrate Virtual Machine Networking

Chapter 05 Review

Chapter 6 - Configuring Storage

1h 20m

Topic: Storage Concepts

Storage Terms

SAN vs. NAS in vSphere

SAN Storage Overview

Multipathing

Path and Device Naming

Pluggable Storage Architecture - PSA

Native Multipathing Plugin (NMP)

Path Selection Considerations

Viewing Multipathing

Multipathing Commands

PSA Commands

Multipathing Command Examples

Topic: iSCSI Storage (GUI & Command Line)

Internet Small Computers Systems Interface (iSCSI) Overview
iSCSI Terms for ESX / ESXi
ESX / ESXi and iSCSI SAN Environment and Addressing
Hardware vs. Software Initiators
Multipathing with iSCSI
iSCSI Software Initiator Networking
Configuring iSCSI
Configure Software Initiator
Bind VMkernel ports to Storage Adapter
Discovering iSCSI Targets
Enable Jumbo Frames
Configure Software Initiator: CHAP Authentication
Software iSCSI Adapter Enable/Disable/Scan
iSCSI Configuration Options (CLI)
View and Configure iSCSI Adapter (CLI)
iSCSI Software Initiator Troubleshooting
Topic: Fibre Channel Storage
Multipathing with Fibre Channel
Topic: VMFS Datastores (GUI & Command Line)
LUN Identification using
Partition Alignment using fdisk
Demo - Disk Partitioning
VMFS Operations - vmkfstools
Storage Views
Topic: NAS Storage and NFS Datastores (GUI & Command Line)
Network Attached Storage (NAS) and ESX Server
Demo - Windows NFS Server Setup
Chapter 06 Review

Chapter 7 - Virtual Machine Enhancements

29m

Topic: Virtual Machine Enhancements Overview

VM Virtual Hardware
Types of Virtual NICs (vNIC)
Hot Add Memory and CPUs
VM Properties - Hot Plug Virtual Hardware
VM Properties - Options tab
VMDirectPath
vmware-cmd

Topic: New Virtual Disk Enhancements

Thin Provisioning
Virtual Disk
Virtual SCSI Controller Type
Demo - Paravirtualized SCSI Install

Topic: Virtual Appliances

Import Virtual Appliances
Export VM to OVF Format
Chapter 07 Review

Chapter 8 - Disaster Recovery and Backup

41m

Topic: High Availability (HA)

VMware High Availability
VMware HA in Action
Configure HA Cluster
VMware HA: Virtual Machine Options
HA VM Monitoring
Viewing your HA Cluster
Demo - HA in Action

Topic: VM Fault Tolerance

Fault Tolerance Overview
Fault Tolerance Requirements
Configure VMkernel NIC
Turn on Host Certificate Checking
Turn on Fault Tolerance

Topic: VMware Data Recovery

Backup Strategies for VMs
VMware Consolidated Backup (VCB) Features
What is Data Recovery?
Configure Data Recovery
Configure Virtual Appliance
Configure VMs to Backup
Configure Data Recovery Appliance and Setup Backup Job
Restore a Single File from Backup
esXpress v3.6.1
esXpress v3.6.1 - vCenter Plugin
Chapter 08 Review

Chapter 9 - Security Enhancements

15m

Topic: Controlling User Access

Roles
Privileges Explained

Topic: Managing Firewalls

Firewall Configurations
TCP & UDP Ports

Topic: VMsafe and vShield Zones

Vmsafe Overview
VMsafe Partners as of 10/1/09
vShield Zones Overview
vShield VM Wall Features
vShield VM Flow Features

Topic: VMkernel Protection

Web Access on ESX Hosts Disabled
Chapter 09 Review

Chapter 10 - Resource Management

1h

Topic: VMotion and Storage VMotion

Virtual Machine Migration
VM Map View
Storage VMotion Migration

Requirements for Storage VMotion
Remote Command-Line (RCLI)
(RCLI) Non-interactive Mode: SVMotion Examples
Storage VMotion Plug-in for vCenter 2.5
Storage VMotion in vSphere 4
Enhanced VMotion Compatibility (EVC)

Topic: Performance Monitoring

Monitoring the DRS Cluster - DRS Resource Distribution Graph
Distributed Power Management (DPM)
Memory Overhead
Problem: High Memory Utilization
Demo - Memory and CPU Utilization

Topic: Configuring Alarms

vCenter Alarms
Alarm Settings
Default Alarms in vCenter
Configure vCenter Notifications

Topic: ESX and vCenter Logs

Sending Logs to a syslog Server
ESX Log File Locations
Demo - Log Dumps
Chapter 10 Review

Total Duration: 6h 22m