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VMS-ICM v5.5 - VMware vSphere: Install, Configure, Manage Training Program

Course Outline

Chapter 01 - Course Introduction and Methodology
Learn IT! Do IT! Know IT!
Certified Virtualization Expert (CVE) Certification
VMTraining's Physical Setup
VMTraining's Setup Student to Datacenter
VMTraining's Network IP Setup
Chapter 01 Review
Chapter 02 - Virtualization Overview
Why Virtualize?
Why Virtualize? - Cost Savings
VMware ROI TCO Calculator v2.0
Why Virtualize? - Simplified Management!
What is Virtual Infrastructure?
What is a Virtual Machine (VM)?
Type 1 and Type 2 Hypervisors
Cloud Computing
VMware vCloud
VMware Virtualization Products
VMware Go
VMware Server 2.0
VMware Infrastructure 3 (VI3)
vSphere 4 Features
vSphere 4.1 - Features Added
vSphere 4.1 Update 1 (2011/02/10) - New Features
vSphere 5 Host Features
vSphere 5 Network Features
vSphere 5 Storage Features
vSphere 5 vCenter Features
vSphere 5 VM HW Ver. 8
vSphere 5 Misc Features
VMware vCenter Server
VMware vCenter Orchestrator
VMware View 4.6 (Virtual Desktop Infrastructure)
VMware Workstation 8
VMware ACE 2.7
VMware Fusion 4.0.1
VMware Player 3.1.4
Windows/Microsoft Virtual PC 2007
Microsoft Virtual Server 2005 R2 SP1
Windows Server Virtualization Hyper-V R2 SP1 (Windows Server 2008 R2)

System Center Virtual Machine Manager 2008 R2 SP1
SCVMM 2008 R2
XenServer Enterprise v5.6 SP2
XenDesktop & Essentials for XenServer
Virtualization Platforms
Chapter 02 Review
Chapter 03 - Planning and Installing ESX/ESXi
Topic 1: Planning the ESXi Deployment
Physical Hardware Requirements
vSphere Hypervisor 5 (VMware ESXi)
VMware ESXi 5
Booting ESXi from a SAN LUN (Fibre Channel or iSCSI)
Booting ESXi from a SAN LUN
Linux, Windows & ESX/ESXi
Topic 2: vSphere 5 Deployment Guidelines
Overview of Deployment Planning
ESXi Compatibility Guides
Determining ESX/ESXi Physical Host Size
VMware Capacity Planner
Storage: Capacity and Performance
Memory Overcommitment
Topic 3: vSphere Hypervisor (ESXi) Installation
vSphere Hypervisor 5 Installable
Demo: Installation of ESXi 5
Local Configuration of ESXi 5 using DCUI
Demo - Install ESXi 5
UDA 2.0 Script ESXi/ESX Installation
Demo - ESXi Host Install
vSphere 5 ESXi Image Builder CLI
vSphere 5 Auto Deploy for ESXi Installation
vSphere 5 Auto Deploy Process
vSphere 5 Auto Deploy Architecture
Topic 4: Configuring Hostname Resolution and NTP
Hostname Resolution in ESXi
Configuring DNS Settings
Time Synchronization
Demo - ESXi NTP Information
Topic 5: Troubleshooting ESXi
esx.conf Settings
ESXi/ESX Server Health Check
ESXi Host Boot Process

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Deploying Across Datacenters
Demo - Template Provisioning
Topic 3: Virtual Appliances
Virtual Appliances
Import Virtual Appliances
Export VM to OVF Format
Topic 4: VMware Converter (P2V – V2V)
VMware Converter 5
VMware Converter Sources
VMware vCenter Converter 5
Pre Conversion Tasks
Hot Cloning - 4 Step Process
Post Conversion Steps
VMware vCenter Converter 5 Standalone
Troubleshooting VMware Converter
Topic 5: Manage VMs
Hot and Cold VM Migrations
Hot Add Memory and CPUs
VM Properties - Hardware Tab
VM Properties - Options Tab
Demo - New VM Features in vSphere 5
Resize a Virtual Disk
Extend VMDK
Extend Partitions Using gparted
Renaming a Virtual Machine
vmware-cmd.pl (vCLI)
Kill a VM with esxcli
Topic 6: Virtual Machine Startup/Shutdown
Startup/Shutdown of VMs
Enabling VM Startup/Shutdown
VM Startup/Shutdown Override
Demo - VM Startup/Shutdown
Topic 7: Virtual Machine Snapshots
Virtual Machine Snapshots
Files Used by Snapshots
Taking Snapshots
Snapshot Manager
Reverting to a Snapshot
Deleting Snapshots
Demo - Snapshots
Topic 8: vSphere Web Client
vSphere Web Client
vSphere Web Client - Requirements
Log in to Web Access
Demo - v5 Web Client
Topic 9: Virtual Machine Troubleshooting & Best Practices
Troubleshooting VM Problems
Differences Between VMs and Physical Servers (Best
Practices)
Chapter 08 Review
Chapter 09 - Security and Permissions
Topic 1: Controlling User Access and Passwords
Types of Users
vCenter/ESXi/ESX Host Security Model
Permissions
Roles
Privileges Explained
ESXi Host Permissions
vCenter Permissions
Multiple Group Permissions: No Conflicts - Groups Only
Multiple Group Permissions: No Conflicts - Users and Groups
Multiple Group Permissions: Conflicting Permissions
Multiple Group Permissions: User Overrides and Unions
Multiple User Permissions: Explicit vs. Inherited
Multiple User Permissions: Explicit vs. Inherited #2
Demo - vSphere Client Permissions

Topic 2: ESXi/ESX Active Directory (AD) Integration
UNIX Authentication Model
UNIX Authentication Flow
AD-ESX/ESXi 4.1/5 Authentication Services
Assign ESX/ESXi 4.1/5 Permissions Directly to AD Users
Demo - Active Directory Integration
Topic 3: Managing Firewalls
TCP & UDP Ports
Certificates and Data Encryption
ESXi 5.0 Firewall
ESXi Firewall Configuration via vSphere Client
ESXi Host Firewall Commands
Demo - Firewall
Topic 4: SSH Access
Secure Shell (SSH)
Controlling SSH Access
SSH/Console Banner Message
Monitoring ESXi Access
Topic 5: The root Account
root Logon
Using substitute user(su) with root
For More Security Information
Topic 6: VMsafe and vShield
VMsafe Overview
Current VMsafe Partners
vShield Product Family Overview
Chapter 09 Review
Chapter 10 - Server and VM Monitoring
Topic 1: Optimizing Resources
Transparent Memory Page Sharing
Balloon-Driver: vmmemctl
VMkernel Swap - Defined
VM Swap Files
VMkernel Swap vm-name.vswp
Memory Compression
Virtual CPUs (vCPUs)
VMkernel CPU Load Balancing
VMs' CPU & Memory Resource Setting Terms
CPU Resource Settings
Demo - Hardware Status
Memory Resource Settings
Memory Overhead
ESXi 5 Resource Allocation per VM
Resource Shares
Monitoring - Hardware Status
Topic 2: Performance Monitoring
Performance Monitoring
Customize Performance Chart
Troubleshooting Performance
Problem: High CPU Utilization
Problem: High Memory Utilization
Problem: High Disk Utilization
Problem: High Network Utilization
Veeam Monitor
Veeam Monitor Demo
Quest Software vFoglight
Demo - Veeam Monitor
VKERNEL CapacityVIEW
Topic 3: Configuring Alarms
vCenter Alarms
Alarm Settings
Default Alarms in vCenter
Configure vCenter Notifications
Topic 4: ESXi and vCenter Logs
ESXi 5 Log Files from DCUI
Using esxtop

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SRM - Test Recovery Plans
SRM - Automate Failover
Topic 2: High Availability (HA)
VMware High Availability
New vSphere 5 HA Features
vSphere 5 HA in Action
Demo - v5 High Availability
Configure HA Cluster
VMware HA: Virtual Machine Options
Host Isolation
Guidelines for Isolation Response Setting
HA VM Monitoring
HA Datastore Heartbeating
Viewing Your HA Cluster
Troubleshooting VMware HA
Topic 3: VM Fault Tolerance
Fault Tolerance Overview
Fault Tolerance Requirements
Configure VMkernel NIC
Turn on Host Certificate Checking
Turn on Fault Tolerance
Topic 4: Microsoft Clustering

Virtualizing Microsoft Clusters
Microsoft Cluster Services
Microsoft Cluster Services Requirements
Topic 5: Backup Strategies
Backup Strategies for VMs
Topic 6: VMware Data Recovery
Data Recovery 2.0 Overview
Demo - Data Recovery Setup
Data Recovery Installation & Features
Configure Network Settings
Configure VMs to Backup
Configure Data Recovery Appliance and Setup Backup Job
Demo - Data Recovery
Topic 7: Third Party Backups
PHD Virtual Backup and Recovery 5.3 for Vmware
PHD Virtual Backup v5.1 - vCenter Plugin
Quest vRanger 5.2 (formerly Vizioncore)
vRanger Pro - Screenshots
Veeam Backup & Replication v5.0.2 with vPower
Veeam Backup - Screenshot
Chapter 13 Review
Course Closure