



VMWARE ESX SERVER 3.5 AND VIRTUALCENTER 2.5

Advanced Course

INTRODUCTION

The Infrastructure 3 suite of products consisting of: ESX Server 3.5, VirtualCenter 2.5 and VMware Consolidated Backup, is both exceptionally powerful and comprehensive. Our advanced course is intended for students with significant production experience in the Infrastructure 3 product suite. It is our intention to take your existing knowledge base and expand upon that.

CLASSROOM SETUP

Each student will have a Windows Server 2003 workstation. Our classroom lab will share a cluster of ESX Servers, a variety of different Storage solutions (SAN, NAS, ISCSI, local, etc..) as needed, a VirtualCenter Server, VCB proxy server, Lab Manager server, Backup Server, VDM Connection Server, access to many already pre-configured VM's (Microsoft, Novell, Red Hat, Ubuntu ...etc). Students will also be given a CD containing many valuable tools for supporting, troubleshooting and administrating a virtual infrastructure. At the end of the course students will have the option to take the CVE (Certified Virtualization Engineer) Exam thus reinforcing concepts learned.

PRE-REQUISITES

- ESX Server familiarity
- VirtualCenter usage
- VirtualCenter Administration
- Excellent familiarity with Windows
- Some familiarity with Linux

COURSE OUTLINE

- 1) Introduction and Course Design
 - a) Pre-requisites
 - b) Classroom Conventions
 - c) Classroom Setup
- 2) Virtual Infrastructure Architecture
 - i) Components
 - ii) Redundancy and rebuilding
- 3) SAN and ISCSI Configuration
 - a) SAN Design and deployment
 - i) SAN Component overview
 - b) ISCSI Configuration



- 4) DRS, HA Advanced Configuration, VMotion, Storage VMotion, DPM
 - a) Cluster Strategy
 - b) HA Advanced Options
 - c) DRS Advanced Options
 - d) VMotion
 - e) Storage VMotion
 - i) Remote CLI
 - f) Distributed Power Manager
- 5) ESX Security Architecture
 - a) Security Features
 - b) The Virtualization Layer
 - c) Service Console Security
 - d) Virtual Networking
 - i) Switch Security
 - ii) VLAN's
 - iii) Virtual Switch Isolation
- 6) Hardening your ESX Server
 - a) The ESX Firewall
 - i) XML Configuration for convenient port access
 - ii) Command-line configurations
- 7) Disaster Recovery
 - a) Strategy and implementation
 - b) DR tools
- 8) Advanced 3rd Party Tools
 - a) VirtualCenter snap-ins
 - i) Storage VMotion
 - ii) ESX Server Console Access
 - iii) Enterprise VSwitch configuration
 - b) VM Disk partitioning utilities for the Virtual Infrastructure
 - c) Diagnostic Tools and Performance Monitoring
 - d) Dongle support
 - e) PDA/Smart Phone tools
- 9) Virtual Desktop Infrastructure
 - a) Principles of VDI
 - b) Install & Configure VMware VDI
- 10) VMware Consolidated Backup (VCB)
 - a) Architecture
 - b) Installation
 - c) Administration
- 11) Log File analysis and Session management
 - a) ESX Server Log files
 - b) VirtualCenter Logs
 - c) VM log files
- 12) Microsoft Clustering
 - a) Install and configure the Microsoft Clustering service
- 13) VMware command line tools



- a) esxcfg commands

 - b) vmkfstools
 - c) vmware-cmd
 - d) top
 - e) esxtop
 - f) creating iso and flp images
- 14) Virtual Appliances
- a) Exporting VM's
 - b) Importing VM's
 - c) OVF Tool
- 15) NTP – Network Time Protocol
- a) Setup and config
- 16) Capacity Planning and Sizing
- a) VMware Capacity Planner
 - b) Power Recon
 - c) HP tools
 - d) VM Bench Mark
- 17) ESX Run Levels and Services
- a) Run level description and overview
 - b) ESX Services
 - i) List of services
 - ii) Troubleshooting
- 18) VM files and critical ESX files
- a) VM Resilient files purpose and roles
 - b) VM non-resilient files purpose and roles
 - c) Critical ESX server files
- 19) VMware Lab Manager
- a) Architecture
 - b) Installation
 - c) Administration
- 20) Upgrading and Patching ESX
- a) command line
 - b) Patch Manager
- 21) Appendix A – ESX Licensing
- 22) Appendix B – Understanding and configuring ESX 3.5i
- 23) Appendix C – Helpful websites