OFFICIAL COURSE OUTLINE

www.mile2.com

Certified Secure Virtual Machine Specialist

KEY DATA

Key Data

Course Name: CSVMS

Version: 1.0

Language: English

Formats available:

1. Instructor-led (Lecture & lab)
2. Live Virtual Training

Prerequisites

All attendees must have basic knowledge of VMware ESX server and the Linux operating system

Course Length

5 Days

Student Materials:

- Student Workbook
- Student Reference Manual
- Software/Tools, 2xDVDs

Certification Exam:

CSVMS

Benefits of this course

This course will benefit attendees wishing to learn the principles of virtual networking, auditing, monitoring, and securing VMware ESX Server; furthermore attendees will benefit from practicing these principles with lessons designed to be as real world as possible.

Class Overview

The CSVMS course seeks to establish the fundamental principles of VMware ESX Server virtual networking and the fundamental practices of VMware ESX Server Security. It provides hands-on training in the creation of virtual networks and in the art of securing a VMware ESX Server. It serves as a medium for learning common techniques to increase auditing and monitoring of virtual environments for security, other problem determination, and the possible use with forensics.

UPON COMPLETION

Upon completion of this course, participants would have gained a strong in-depth knowledge of Virtualization Networking and Security. Students will also be prepared for the certification exam for the Certified Secure Virtual Machine Specialist.

Course Summary

- Five (5) 8 hour days of instruction
- In-person access to the top virtualization experts in the industry
- Each student is provided their own dedicated server to practice on.
- several labs to polish your skills and gain perspective on how to build and maintain virtual environments.
- Install, configure, deploy, secure, analyze, consolidate and design virtual networks from A-Z
- Learn to apply third party solutions to simplify processes and make the job easier.
- Post mentoring from the best virtualization instructors in the industry.
- Create more value for yourself by becoming a Certified Secure Virtual Machine Specialist

Upon completion of CSVMS training, students will learn:

- About all of the features of VMware Infrastructure
- Foundational terms and concepts concerning virtualization
- How to install, configure and support ESX server 3.5 and VirtualCenter 2.5
- How to configure Virtual Machines, templates, and clones
- How to configure Virtual Networking and how to support VMotion
- P2V , V2V, V2P, and P2P Methods and Techniques
- Server Consolidation Procedures and reasoning
- Tools to support a virtual infrastructure - VMware, Platespin, Vizioncore, Veeam and more
- Vmotion, Update Manager, Power Management, Guided Consolidation, Clustering –DRS/HA,etc.
- Best Practices within a Virtual Enterprise
- How to perform backups in the ESX Environment - Service Console and Virtual Machines - VCB
- How to use the Command Line Interface for supporting ESX Servers - ESX commands
- How to install, configure, and troubleshooting ESX Licensing server

Who Should Attend

System Administrators, Engineers, and Operators responsible for setup, support, and troubleshooting of ESX Server and/or VirtualCenter.

Module 1- Introduction to Virtualization

* What is Virtualization?
* Virtualization Statistics
* Uses for Server Virtualization
* What is the VMKernel?
* Virtualization Products Available
* VMware ESX Server vs. VMware Server
* VMware ESXi vs. VMware ESX
* VMware ESXi Server vs. Windows 2007 Server Hyper-V
* What is the Future of Virtualization?
* Windows OS Licensing and Virtualization
* VMware ESX Virtual Machine Specifications
* What is the VMTN?
* Other Virtualization Resources
* How Can I Test and Demo ESX at Work or Home?
* How is VMware ESX Server Supported and Licensed?

Module 2: Planning and Installing VMware ESX Server

* Steps to select the right hardware for virtualization
* ESX Server Installation Requirements, Recommendations, and Maximums
* What should or shouldn't be virtualized?
* How do I consolidate servers? And, importance of SAN storage
* Licensing options for ESX Server – host based vs server based
* Partitioning options for ESX Server

* How to install VMware ESX Server

Lab 1: Installing VMware ESX Server 3.5

* Installation Requirements of VMware ESX Server 3.5
* Installing VMware ESX Server 3.5

Lab 1a: Installing VMware ESXi Server

* ESXi Installation Requirements & Installation Notes
* ESXi Console Tips and Tricks
* ESXi Installation – Step by Step

Module 3: VMware ESX 3.5 & ESXi 3.5 Inside VMware Workstation 6.5

* Why would you want to run VMware ESX Server inside Workstation?
* PC Requirements & Customizing the VMX file
* Demonstration of how it works

Module 4: Navigating and configuring VMware ESX Server

* VMware ESX Management options
* Service Console - SSH & telnet
* Web – HTTP & HTTPS
* VI Client
* Installing the Virtual Infrastructure (VI) Client
* Using the VI Client
* Navigation
* Remote Control of Virtual Servers
* Hot Keys

Module 5: Installing & Using VMware Virtual Center (VC)

* Once installed, what does VC look like?
* Introduction to VMware Virtual Center
* Product Description
* Use Cases
* Features
* Architecture
* VC Minimums / Requirements
* VC Maximums
* Installing Virtual Center
* Navigating VC

Module 6: Creating & Modifying Virtual Guest Machines

* What does a running Virtual Guest machine look like?
* Virtual Guest - Machine Specifications
* Changing BIOS settings
* How to create ISO Images of CD & DVD Installation media
* How to create a new virtual machine & install a guest OS
* Adding or removing virtual hardware
* What is an "appliance"?
* Downloading Virtual Machines from the VMTN Virtual Appliance Marketplace
* What and where are VMX configuration files?
* Importing VMs to ESX and Exporting VMs

* Transferring files to your server with SCP

Module 6: Installing and Configuring VMware Tools

* About VMware Tools
* Why you should use VMware Tools
* Installing & Configuring VMware Tools in Linux
* Installing & Configuring VMware Tools in Windows
* Configuring VMware Tools

Module 7: VMware ESX Disk Storage

* Storage Terminology
* How does a Datastore help you?
* VMware ESX Storage Options
* What is a VMFS Virtual Disk?
* Advantages of Virtual Disks
* Understanding local disk storage
* Understanding Fibre Channel (FC) SAN Storage
* Understanding iSCSI SAN Storage
* Understanding NAS NFS Storage
* Local vs. iSCSI vs. FC compared
* Guest OS disk adapter types
* What are Snapshots and how do you use them?
* VMware virtual disk types & access modes
* Pre-allocated/fixed vs. dynamic
* Independent, persistent, & Nonpersistent mode
* Using VMware's Virtual disk manager utility - vmkfstools
* Aligning your VMware ESX partitions
* Expanding your Guest OS Virtual Disk
* Configuring your ESX Server Clock, Timezone, and NTP Time Synchronization
* Configuring ESX Server to work with OpenFiler iSCSI SAN Server

Module 8: Administering VMware ESX Server Security

* Concepts of ESX Security Design
* Best Practices of ESX Security
* How does security work with ESX Server?
* Adding, Modifying, and removing ESX users and groups
* Defining and applying roles & permissions
* Default ESX Security Management Roles
* Ports used by VMware ESX & Virtual Center
* Enabling SSH CLI Access to ESX
* Securing the command line interface
* Securing Guest Virtual machines

Module 9: VMware ESX - Tasks, Events, Alarms, and Maps

* Configure SNMP and SMTP Email for your Virtual Center Server
* Understanding Tasks & Events in Virtual Center & ESX
* Configuring Alarms for Virtual DataCenters and Virtual Guests
* Exploring Maps of your Virtual Infrastructure

Module 10: VMware ESX Server Virtual Networking

* Virtual Networking Overview
* Virtual Networking Terms - vmnic, vswitch, vswif, & port group
* Virtual Network Diagrams Explained
* Virtual Networking Must Knows
* Virtual Networking Configuration Scenarios
* Private/Host-only
* Single NIC - most common
* Redundant & Load Balanced
* DMZ with router / firewall
* Using VLANs with ESX
* Configuring Virtual Switches
* Adapter teaming, fault tolerance, and load balancing
* Service Console Command line Networking Tools

Module 11: Using Templates, Cloning, and Migrating with VMware

* What are templates and how do you use them?
* What is VM cloning? Why would you clone a VM?
* Migrating a VM from one ESX server to another
* Migrating from one Virtualization platform to another (V2V)
* Migrating from a physical machine to a virtual machine (P2V)
* VMware Converter

Module 12: Troubleshooting and Patching VMware ESX Server

* Common VMware ESX Issues & their resolutions
* Things to check when troubleshooting ESX
* Resources for ESX Troubleshooting assistance
* VMware Support script
* Updating & Patching VMware ESX Server

Module 13: VMware Update Manager

* What is Update Manager?
* How Can Update Manager Help You?
* What Can Update Manager Update for You? How Does Update Manager Work?
* How to Install VMware Update Manager
* Components of VMware Update Manager
* Verifying Install of the Update Manager Service
* Installing the Update Manager Plug-In
* Configuring and Using Update Manager

Module 14: Upgrading VMware ESX & Virtual Center

* Upgrading VMware ESX from Version 3.0.x to 3.5
* Upgrading Virtual Center from Version 1.x to 2.5
* Upgrading VMware VI Client from 1.x to 2.5

Module 15: Performance virtualization with ESX

* Select The Right Hardware
* Performance Optimization Recommendations
* Optimizing Memory

* Optimizing the CPU
* How VMware ESX Server Hosts Reclaim Memory
* Review of VMware ESX Performance Monitoring Tools
* VMotion Overview
* ESX Resource Pools
* ESX Clusters Overview

Module 16: Configuring VMotion, Resource Pools, DRS, & VMHA with VMware ESX

* Configuring VMotion
* Configuring Resource Pools
* Configuring Distributed Resource Scheduler (DRS) Clusters
* Configuring VMware High Availability (HA) Clusters

Module 17: Storage VMotion (SVMotion)

* What is Storage VMotion (SVMotion)?
* Storage VMotion - How It Works?
* How Can Storage VMotion (SVMotion) Help You?
* What is Required to Use Storage VMotion?
* How to Use SVMotion at the Command Line Using RCLI?
* Installing the SVMotion Plug-In
* Moving Live VM Storage Using SVMotion

Module 18: Backing up Virtual Machines / VMware Consolidated Backup (VCB)

* Backup & Disaster Recovery for Virtual Machines
* Backing up the VM within the Guest OS (file level)
* Backing up the VM within the Host OS (image level)
* VMware Consolidated Backup
* What is VCB?
* How does VCB work?
* VCB Requirements
* What is the process of using VCB?
* Installing VCB
* Using VCB CLI Commands
* Creating VCB Backup Scripts