Description:

This fast-paced, high energy, hands-on course provides not only the foundation needed for a top performing software-defined data center, it also provides the latest in virtualization and cloud technologies which gives the engineer or administrator the knowledge and skills needed to design and manage the datacenter for tomorrow's needs.

This course will cover everything from design, installation, configuration, best practices, performance monitoring, and just about everything in between!

Annual Salary Potential $76,000 AVG/year

Key Course Information

Live Class Duration: 4 Days
CEUs: 32
Language: English
Class Formats Available:

    Instructor Led

    Self-Study

    Live Virtual Training

Suggested Prerequisites:
- Mile 2 C)HT and C)OST or equivalent knowledge

OR

- 24 months experience with Microsoft or Linux servers

Modules/Lessons

Module 1 - Software Defined Datacenter
Module 2 - Installing and Managing ESXi
Module 3 - Installing and Managing vCenter
Module 4 - Configuring and Managing a vSwitch
Module 5 - Configuring and Managing Storage
Module 6 - Configuring and Managing Virtual Machines
Module 7 - Configuring and Managing Distributed Switches
Module 8 - vSphere Management
Module 9 - Backup and Disaster Recovery Implementation and Management
Module 10 – 12: See Detailed Outline below

Hands-On Labs

Lab 1 – Installing the Hypervisor
Lab 2 – ESXi Management
Lab 3 – Managing ESXi with vSphere
Lab 4 – SSH Access
Lab 5 – Syslog Settings
Lab 6 – Controlling User Access
Lab 7 – Active Directory Integration
Lab 8 – Managing ESXi Firewall
Lab 9 – Attach ESXi to host via vSphere
Lab 10 – Getting around the vShpere Web Client
Lab 11 – Setting NTP on ESXi Host
Lab 12 – Setup vCenter Appliance
Lab 13 – Create Virtual Switches
Lab 14– 39: See Detailed Outline Below

Upon Completion

Upon completion, students will have learned the pros, cons, best practices, and skills of virtualization. They will be able to design, secure, deploy, and manage virtual machines and be prepared to take the C)VE Exam.

Who Should Attend

- Vitualization and Cloud Administrators and Engineers
- Systems Administrators
- Cloud Security Engineers
- Systems Engineers

Accreditations

Exam Information

The Certified Virtualization Engineer exam is taken online through Mile2's Learning Management System and is accessible on you Mile2.com account. The exam will take approximately 2 hours and consist of 100 multiple choice questions.

A minimum grade of 70% is required for certification.

Re-Certification Requirements

All Mile2 certifications will be awarded a 3-year expiration date.

There are two requirements to maintain Mile2 certification:

1) Pass the most current version of the exam for your respective existing certification
2) Earn and submit 20 CEUs per year in your Mile2 account.

Course FAQ's

Question: Do I have to purchase a course to buy a certification exam?

Answer: No

Question: Do all Mile2 courses map to a role-based career path?

Answer: Yes. You can find the career path and other courses associated with it at www.mile2.com.

Question: Are all courses available as self-study courses?

Answer: Yes. There is however 1 exception. The Red Team vs Blue Team course is only available as a live class.

Question: Are Mile2 courses transferable/shareable?

Answer: No. The course materials, videos, and exams are not meant to be shared or transferred.

Course and Certification Learning Options

LIVE CLASS

ULTIMATE COMBO

EXAM COMBO
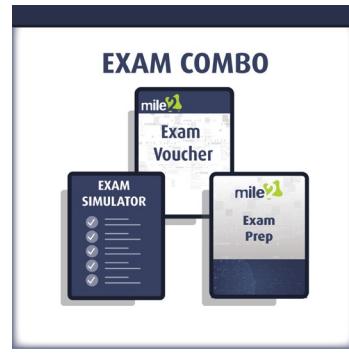
Detailed Outline:

Chapter 1 – Software Defined Datacenter

1. Overview of Virtualization
2. Overview of Public and Private Cloud
3. How it all fits together
   a. Designing the Datacenter for today and tomorrow
   b. Key technologies for a virtual and private cloud datacenter

Chapter 2 – Installing and Managing ESXi

1. Planning for the Installation
   a. Installation Options
   b. Auto Deploy
2. Installing ESXi (Hands On Lab (HOL))
   a. Using the DCUI (HOL)
   b. ESXi Configuration Settings (HOL)
      i. Hostname Resolution (HOL)
      ii. NTP (HOL)
      iii. IP Address (HOL)
      iv. Syslog (HOL)
3. Accessing ESXi
   a. vSphere Client (HOL)
      i. !! THE NEW ONE !!
      ii. Configuration Settings
   b. Management User Interface (MUI) (HOL)
   c. SSH Access (HOL)
4. Managing ESXi
   a. esxcli and its many uses
   b. Controlling User Access (HOL)
   c. Active Directory Integration (HOL)
   d. Managing the Firewall (HOL)
   e. Troubleshooting

Chapter 3 – Installing and Managing vCenter

1. vSphere/vCloud Licensing
2. vCenter Requirements
   a. Minimum Specifications
   b. Database Requirements
3. vCenter Architecture
4. Planning vCenter Installation (HOL)
   a. Embedded Platform Services Controller
   b. External Platform Services Controller

5. vCenter Single Sign-On (HOL)
6. vSphere Web Client (HOL)
7. Certificate Authority (HOL)
   a. Certificate Store
8. vCenter Overview of Capabilities (HOL)
   a. Inventories
      i. Inventory Lists
      ii. Hosts and Clusters
      iii. VMs and Templates
         1. VM Templates in Folders
      iv. Storage
      v. Networking
      vi. Hybrid Cloud
      vii. vCenter Orchestrator
   b. Monitoring
      i. Task Console
      ii. Event Console
      iii. vCenter Operations Manager
      iv. Host Profiles
      v. VM Storage Policies
      vi. Customization Specification Manager
      vii. VM Placement Policies
   c. Administration
      i. Roles
      ii. System Configuration
      iii. Licensing
   d. Policies and Profiles
   e. Virtual Datacenters
   f. Content Libraries
9. Managing vCenter related to general tasks (HOL)
10. Troubleshooting vCenter Server and Database
11. vCenter Appliance (HOL)
    a. Migrating to the vCenter Appliance
    b. Requirement
    c. New Features

Chapter 4 – Configuring and Managing a vSwitch

1. Virtual Switch Types, Connections and Identification
2. Physical NIC configuration
3. vSwitch Features (HOL)
   a. Port Types (HOL)

b. Cisco Discovery Protocol
c. VLAN's (HOL)
d. Security Settings (HOL)
e. Traffic Shaping
f. NIC Teaming (HOL)
g. Load Balancing Best Practices
4. Physical Switch Configuration
5. Using the CLI to create and manage vSwitches (HOL)

Chapter 5 – Configuring and Managing Storage

1. Storage Overview
   a. iSCSI, Fiber Channel and NAS
2. vStorage API's
3. Storage Multipathing (HOL)
4. Storage Configuration
   a. iSCSI, FC and NAS (HOL)
5. Monitoring Storage (HOL)
6. Storage CLI Commands (HOL)
7. Troubleshooting Software iSCSI
8. Virtual Machine File System (HOL)
9. vVols
10. Raw Device Mapping (HOL)
11. Solid State Disks
12. Storage Views (HOL)

Chapter 6 – Configuring and Managing Virtual Machines

1. Overview of VM Hardware
   a. VMware® Tools (HOL)
2. Creating a VM (HOL)
3. Clones (HOL)
4. Templates (HOL)
5. Virtual Appliances (HOL)
6. VMware® Converter (HOL)
7. Managing the VM (HOL)
8. Snapshots (HOL)
9. Troubleshooting the VM

Chapter 7 – Configuring and Managing Distributed Switches

1. DvSwitch Design Concepts
2. Physical Switch Configuration

3. DvSwitch Features
    a. Standard features (HOL)
        i. Port Types
        ii. Port Groups (HOL)
            1. Port Binding
        iii. Discovery Protocols (HOL)
        iv. VLAN's (HOL)
        v. Security Settings (HOL)
        vi. Traffic Shaping
        vii. NIC Teaming (HOL)
        viii. Load Balancing
    b. Advanced features
        i. Network I/O Control (HOL)
        ii. Port Mirroring
        iii. NetFlow
        iv. LACP Support
        v. Private VLANs (HOL)
        vi. Traffic Filtering and Tagging (HOL)
    c. Uplink Settings
4. Migrating from vSwitch's to a DvSwitch (HOL)
5. Using the CLI to create and manage a DvSwitch

Chapter 8 – vSphere Management

1. vMotion (HOL)
2. Storage vMotion (HOL)
3. vCenter Host Cluster (HOL)
    a. Covers all Cluster Features
4. Distributed Resource Scheduler (HOL)
5. Using vApps (HOL)

Chapter 9 – Backup and Disaster Recovery Implementation and Management

1. High Availability (HOL)
    a. Fault Domain Manager
2. Virtual Machine Fault Tolerance
3. Microsoft Clustering
    a. How it works
    b. Its uses in a vSphere Infrastructure
4. Backup Solutions
    a. vSphere Data Protection (HOL)
    b. Third Party Solutions

5. Disaster Recovery Solutions
   a. vCenter Site Recovery Manager
   b. Third Party Solutions

Chapter 10 – vSphere Upgrading and Patch Management

1. Why do we worry about patching and upgrading?
2. Patching the ESXi host (HOL)
   a. Stand Alone
   b. Using Update Manager (HOL)
3. Patching Virtual Appliances
4. Patching Virtual Machines
5. Planning the Upgrade
6. Performing the Upgrade

Chapter 11 – vSphere Monitoring and Performance (Availability Constraints)

1. Configuring ESXi resources for best performance (HOL)
   a. Understanding the resources such as CPU, Memory and Disk
2. Configuring the VM for best performance (HOL)
3. Monitoring the vSphere and vCloud Infrastructure (HOL)
   a. vCenter Performance Tab (HOL)
   b. esxtop (HOL)
4. Configuring Alarms (HOL)
5. Using Resource Pools properly (HOL)
6. Troubleshooting performance issues
7. vSphere Logs (HOL)

Chapter 12 – vSphere Native Security for Admins

1. ESXi Native Controls
   a. Active Directory Integration (HOL)
   b. Managing the Firewall (HOL)
   c. Logging
   d. Lock Down Mode
   e. Acceptance Level
2. vCenter Native Controls
   a. Encrypted vMotion
3. VM Native Controls
   a. Security out of the Box

Detailed Lab Outline:

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Lab 12 – Setup vCenter Appliance

Lab 13 – Create Virtual Switches

Lab 14 – Create Virtual Switch from the CLI

Lab 15 – Configuring storage via the GUI

Lab 16 – iSCSI Storage Verification using CLI

Lab 17 – configuring the NFS Datastore

Lab 18 – Working with VMFS

Lab 19 – Setting up and Installing a VM

Lab 20 – Working with Virtual Appliance OVF

Lab 21 – Working with Cloning and Templates

Lab 22 – Extending a vmdk

Lab 23 – Rename Virtual Machine Files

Lab 24 – Using Snapshots

Lab 25 – Setup an RDM

Lab 26 – Vmware converter

Lab 27 – Create Virtual Distributed Switch

Lab 28 – Configuring Network I/O Control

Lab 29 – Configuring PVLAN

Lab 30 – Migrating from a vSwitch to a vDSwitch

Lab 31 – Using SvMotion

Lab 32 – Using vMotion to Migrate VMs

Lab 33 – Using Advanced SvMotion

Lab 34 – Create a DRS Cluster

Lab 35 – Monitoring Performances

Lab 36 – Creating Alarms
Lab 37 – High Availability
Lab 38 – Setting up and using vDP
Lab 39 – Update Manager

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