

VMware vSphere: Fast Track v5.5 - VVFT

Course Details

Course Outline

1. Course Introduction

- Introductions and course logistics
- Course objectives

2. Software-Defined Data Center

- Introduce virtualization and vSphere components
- Explain the concepts of server, network, and storage virtualization
- Describe where vSphere fits into the cloud architecture
- Install and use vSphere user interfaces
- Describe the ESXi architecture and configure various ESXi settings

3. Creating Virtual Machines

- Introduce virtual machines, virtual machine hardware, and virtual machine files
- Deploy a single virtual machine

4. VMware vCenter Server

- Introduce vCenter Server architecture
- Introduce vCenter Server Appliance
- Install and configure vCenter Server Appliance
- Using the VMware vSphere® Web Client
- Configuring VMware® vCenter? Single Sign-On?
- Manage vCenter Server inventory objects and licenses

5. Configuring and Managing Virtual Networks

- Describe, create, and manage a standard switch
- Describe and modify standard switch properties
- Describe the NIC teaming of a standard switch port group

6. Configuring and Managing Virtual Storage

- Introduce storage protocols and device names
- Configure ESXi with iSCSI, NFS, and Fibre Channel storage

- Create and manage VMware vSphere® VMFS datastores
- Introduce VMware® Virtual SAN? datastores

7. Virtual Machine Management

- Use templates and cloning to deploy virtual machines
- Modify and manage virtual machines
- Create and manage virtual machine snapshots
- Perform VMware vSphere® vMotion® and VMware vSphere® Storage vMotion® migrations
- Create a VMware vSphere® vApp?

8. Access and Authentication Control

- Control user access through roles and permissions
- Discuss ESXi host access and authentication
- Integrate ESXi with Active Directory

9. Resource Management and Monitoring

- Introduce virtual CPU and memory concepts
- Describe methods for optimizing CPU and memory usage
- Configure and manage resource pools
- Use vCenter Server performance graphs and alarms to monitor resource usage

10. High Availability and Fault Tolerance

- Explain the vSphere HA architecture
- Configure and manage a vSphere HA cluster
- Set vSphere HA advanced parameters
- Enable vSphere FT on a virtual machine
- Describe VMware vSphere® Replication

11. Network Scalability

- Create, configure, and manage vSphere distributed switches, network connections, and port groups
- Discuss distributed switch features, such as private VLANs, discovery protocols, VMware vSphere® Network I/O Control, NetFlow, and port mirroring

12. Host Scalability

- Use host profiles to manage ESXi configuration compliance
- Configure and manage a VMware vSphere® Distributed Resource Scheduler? cluster
- Configure Enhanced vMotion Compatibility
- Use vSphere HA and vSphere DRS together

13. Labs

a. 1. Installing VMware vSphere GUIs

- Access Your Student Desktop System
- Install the vSphere Client

b. 2. Configuring VMware ESXi

- Connect to an ESXi Host with the vSphere Client
- View the Host Hardware Configuration
- Configure the DNS and Routing Information for an ESXi Host
- Configure an ESXi Host as an NTP Client
- Configure an ESXi Host to Use Directory Services

c. 3. Working with Virtual Machines

- Create a Virtual Machine
- Install a Guest Operating System in a Virtual Machine
- Identify a Virtual Machine Disk Format and Usage Statistics
- Install Tools on a Virtual Machine Installed with a Windows Operating System

d. 4. Configuring VMware vCenter Server Appliance

- Configure vCenter Server Appliance for First Use
- Install vSphere License Keys
- Create a vCenter Server Inventory Data Center Object
- Add Your ESXi Host to the vCenter Server Inventory

e. 5. Using the VMware vSphere Web Client

- Install the Client Integration Plug-In
- Navigate the vSphere Web Client
- Pin and Unpin Panes
- Hide the Getting Started Tabs
- Upgrade Virtual Machine Hardware

f. 6. Configuring VMware vCenter Single Sign-On

- Use the Web Console to Configure vCenter Server Appliance to Use Directory Services
- Use the vSphere Web Client to Add the Domain Admins Group to Administrators

g. 7. Creating Folders in VMware vCenter Server

- Create a Host Folder Object
- Create Two Virtual Machine Folders

h. 8. Standard Switches

- View the Current Standard Switch Configuration
- Create a Standard Switch with a Virtual Machine Port Group
- Attach a Virtual Machine to a Virtual Machine Port Group

i. 9. Accessing iSCSI Storage

- Add a VMkernel Port Group to a Standard Switch
- Configure the iSCSI Software Adapter

j. 10. Accessing NFS Storage

- Configure Access to NFS Datastores
- View NFS Storage Information

k. 11. Managing VMware vSphere VMFS

- Change the Name of a VMFS Datastore
- Review the Shared Storage Configuration
- Create a VMFS Datastore
- Expand a VMFS Datastore to Consume Unused Space on a LUN
- Remove a VMFS Datastore
- Extend a VMFS Datastore

l. 12. Using Templates and Clones

- Copy Sysprep Files to vCenter Server Appliance
- Create a Virtual Machine Template
- Create Customization Specifications
- Deploy a Virtual Machine from a Template
- Clone a Virtual Machine That Is Powered On

m.13. Modifying a Virtual Machine

- Increase the Size of a VMDK File
- Adjust Memory Allocation on a Virtual Machine
- Rename a Virtual Machine in the vCenter Server Inventory
- Add a Raw LUN to a Virtual Machine
- Expand a Thin-Provisioned Virtual Disk

n. 14. Migrating Virtual Machines

- Migrate Virtual Machine Files with vSphere Storage vMotion
- Create a Virtual Switch and a VMkernel Port Group for vSphere vMotion Migration
- Verify That Your ESXi Host Meets vSphere vMotion Requirements
- Verify That Your Virtual Machines Meet vSphere vMotion Requirements

- Perform a vSphere vMotion Migration of a Virtual Machine on a Shared Datastore
- Perform a Cross-Host vSphere Storage vMotion Migration to a Local Datastore

o. 15. Managing Virtual Machines

- Unregister a Virtual Machine in the vCenter Server Inventory
- Register a Virtual Machine in the vCenter Server Inventory
- Unregister and Delete Virtual Machines from Disk
- Take Snapshots of a Virtual Machine
- Revert to a Snapshot
- Delete an Individual Snapshot
- Use the Delete All Function in Snapshot Manager

p. 16. Managing VMware vSphere vApps

- Create a vApp
- Power on a vApp
- Remove a vApp

q. 17. User Permissions

- Create a Custom Role in vCenter Server
- Assign Permissions on vCenter Server Inventory Objects
- Verify Permission Usability

r. 18. Resource Pools

- Create CPU Contention
- Create a Resource Pool Named Fin-Test
- Create a Resource Pool Named Fin-Prod
- Verify Resource Pool Functionality

s. 19. Monitoring Virtual Machine Performance

- Create CPU Activity
- 2. Use the vSphere Web Client to Monitor CPU Utilization
- 3. Undo Changes to the Virtual Machines

t. 20. Using Alarms

- Create a Virtual Machine Alarm That Monitors for a Condition
- Create a Virtual Machine Alarm That Monitors for an Event
- Trigger Virtual Machine Alarms and Acknowledge the Alarms
- Disable Virtual Machine Alarms

u. 21. Using VMware vSphere High Availability

- Create a Cluster Enabled for vSphere HA
- Add Your ESXi Host to a Cluster
- Test vSphere HA Functionality
- Determine the vSphere HA Cluster Resource Usage
- Manage vSphere HA Slot Size
- Configure a vSphere HA Cluster with Strict Admission Control

v. 22. Configuring VMware vSphere Fault Tolerance

- Prepare the Virtual Machine
- Enable the vSphere FT Logging
- Activate the vSphere FT Protection
- Test the vSphere FT Configuration
- Disable and Turn Off vSphere FT Protection

w. 23. VMware vSphere Distributed Switches

- Power On a Virtual Machine and Test Network Connectivity
- Create a Distributed Switch
- Examine the Distributed Switch Configuration
- Migrate the Virtual Machines to a Distributed Switch Port Group
- Verify Network Connectivity
- Complete the Network Migration

x. 24. Port Mirroring

- Back Up the Distributed Switch Configuration
- Prepare to Capture Mirrored Network Traffic
- Configure Port Mirroring on the Distributed Switch
- Capture Traffic Using Port Mirroring
- Restore the Distributed Switch Configuration

y. 25. VMware vSphere Distributed Resource Scheduler

- Create a Load Imbalance
- Create a vSphere DRS Cluster
- Verify Proper vSphere DRS Cluster Functionality
- Create, Test, and Disable a VM-VM Affinity Rule
- Create, Test, and Disable an Anti-Affinity Rule
- Create, Test, and Disable a Virtual Machines to Hosts Affinity Rule

z. 26. Host Profiles

- Create a Host Profile

- Attach Student B's ESXi Host to the Host Profile
- Run an Initial Compliance Check
- Perform an Initial Remediation
- Introduce a Configuration Drift
- Run a Compliance Check and Remediate the Configuration Drift
- Introduce a Second Configuration Drift
- Run a Compliance Check and Try to Remediate the Host
- Verify the Remediation and Detach the Host Profile

aa. 27. Policy-Based Storage

- Label Datastores for Use by Policy-Driven Storage
- Use vSphere Storage vMotion to Migrate a Virtual Machine to the Gold Datastore
- Configure Storage Tags
- Assign Storage Tags
- Create Virtual Machine Storage Policies
- Assign Storage Policies to Virtual Machines

ab. 28. Managing Datastore Clusters

- Create a Datastore Cluster with vSphere Storage DRS Enabled
- Use Datastore Maintenance Mode to Evacuate a Datastore
- Run vSphere Storage DRS and Apply Migration Recommendations

ac. 29. VMware vSphere Update Manager

- Install vSphere Update Manager
- Install the Update Manager Client Plug-In
- Modify Cluster Settings
- Configure vSphere Update Manager
- Create a Patch Baseline
- Attach a Baseline and Scan for Updates
- Stage the Patches onto the ESXi Hosts
- Remediate the ESXi Hosts

ad. 30. Using VMware vSphere Management Assistant

- Enable SSH and vSphere ESXi Shell Services
- Log In to the vSphere Management Assistant Appliance
- Add the vCenter Server System and the ESXi Host as Target Servers
- Use ESXCLI Commands to Query ESXi Host Properties

- Use vmware-cmd Commands to Manage a Virtual Machine

ae. 31. Using VMware vSphere Auto Deploy on VMware vCenter Server Appliance

- Update a Host Profile to Enforce Stateless Caching
- Create a Container for Autodeployed Hosts
- Start the vSphere Auto Deploy Service
- Open vSphere PowerCLI and Connect to the vCenter Server System
- Create a Custom Image Profile
- Create Deployment Rules
- Configure DHCP
- Start the TFTP Service on the vCenter Server Appliance
- Review Autodeployment Preparation Steps
- Prepare to Monitor ESXi Bootup During the Autodeploy Process
- Reboot the ESXi Host and Monitor the Bootup Process
- Use Host Profile Remediation to Customize the Autodeployed Host
- Reboot the Host and Verify Stateless Caching