



VMware - vSphere

POWERCAMP™

INTRODUCTION

V4.1

The VMware PowerCamp™ provides you the most direct hands-on experience course in the industry. Learn from instructors with real world experience how things are really done through back to back labs. If you are looking to truly walk away with product knowledge, design, enterprise architecture, troubleshooting skills and plenty of hands on, the VMware PowerCamp™ is for you. Learn product knowledge covering VMware vSphere ESX/ESXI 4.1, vCenter Server 4.1, Storage, Virtual Networking, Performance, Security, Virtual Appliances, Remote CLI, Update Manager, VMware Data Recovery, VMotion, Storage VMotion, Host Profiles, set Alarms, Managing VMware Roles, Upgrading, P2V and many other technologies related to the VMware Product line.

MODULE 1 – VIRTUALIZATION ARCHITECTURE

Understand the roles and product positioning of ESX, vCenter, redundant databases, vSphere client, FT, HA, and DRS. Learn how to quickly recover in a disaster when any of these go offline. How does cloud computing relate to these roles?

MODULE 2 - PRODUCT HISTORY AND MAJOR TECHNOLOGIES OF VMWARE

Take a look at where ESX and vCenter started. Compare differences and understand how critical it is to know about comparing product builds and troubleshooting issues in a mixed environment. Learn detailed information about how HA, DRS, FT and Clustering work together.

MODULE 3 - TERMS AND CONCEPTS

Review VMware terminology and major concepts. Define Host, Guest, Encapsulation, Portability, Isolation, Idealized Hardware, Virtualization Layer, Memory Ballooning, Memory Management, and much more. Understand how the concepts relate to VMware. ESX Server 4 hardware requirements

MODULE 4 - INSTALLING AND CONFIGURING ESX/ESXI SERVERS

Install your ESX host. Build a host and understand the options of the build process. Identify the pre-installation and post installations tasks. Understand CPU, Memory, Disk, Storage, and Network limitations. After an install, know how to troubleshoot issues and what log files to find additional information in.



MODULE 5 - BUILDING AND UNDERSTANDING VIRTUAL MACHINE VIRTUAL SWITCHES

Build and configure Virtual Machines. Perform a typical and custom installation. Get to know the files that make up a virtual machine and how to troubleshoot each file when a virtual machine fails to load. Understand how to control resource use of each Virtual Machine, as well as fine tune them.

MODULE 6 - SUPPORTING VIRTUAL APPLIANCES

Build and use Virtual Appliances. Visit VMware's web site and get to know what Virtual Appliances are available. Import a Virtual Appliance, as well as export them. Look at and understand ovf and ova files. Modify files and view the results.

MODULE 7: P2V MIGRATIONS

Get to the roles of Source, Swing and Target servers. Compare 3rd Party P2V options against VMware Converter. Perform a P2V migration. Cover V2V, V2P, and P2P as options.

MODULE 8 - CONFIGURING VIRTUAL SWITCHES – STANDARD, VDS, AND THE NEXUS 1000V SWITCH

Take an in-depth look at the Service Console, Virtual Machine, and VMkernel roles. Configure these connection types and understand the specific traffic each uses. Convert Standard configurations to vDs. Configure Virtual Switches to support VLAN's. Review MAC address space and talk about dynamic verses static Layer 2 use for Virtual Machines. Learn how to support Virtual Switches through the command line with esxcfg commands.

MODULE 9 - ESX/ESXI SERVER SECURITY - SUPPORTING THE ESX/ESXI SERVER FIREWALL VCENTER ENABLES SERVICES

Get to know how to configure the firewall for inbound and outbound traffic. Get to know the defaults, open ports and create firewall rules from the command line for non-standard port use. Edit firewall configuration rules from the command line and see the results in the GUI under the Security Profile.

MODULE 10 - ESX/ESXI STORAGE ARCHITECTURE – LOCAL, SAN, NAS AND ISCSI STORAGE

Cover differences on using Local, SAN, NAS and ISCSI storage. Understand how and where each would be used. Know how each is affected in a Disaster and how to recover. Show how to configure each storage solution using the vSphere Client.



MODULE 11 - CONNECTING TO AN ISCSI SAN

Configure support for iSCSI. Install an iSCSI target in class then configure ESX/ESXi to connect to the target. Cover how to support both hardware and software iSCSI. Install a VMkernel Virtual switch and enable the switch for iSCSI. Enable the iSCSI initiator for dynamic or Static Discovery.

MODULE 12 - 3RD PARTY TOOLS TO SUPPORT THE VIRTUAL INFRASTRUCTURE

VMware has many areas where 3rd Party tools will enable IT to more effectually support a virtual infrastructure. Learn how to better support this infrastructure with tools from Veeam, Vizioncore (Quest), and even how to use your smart phone or PDA to build, configure, or troubleshoot Virtual Machines. Show how Veeam Reporter and VFOlight can greatly assist in documenting and troubleshooting the virtual infrastructure.

MODULE 13 - VCENTER - CONFIGURING AND SUPPORTING VCENTER

Learn what features are enabled with vCenter and how to use them. Talk about running vCenter on a physical server and compare that with running vCenter on a Virtual Machine. Know and understand what databases are supported and how to connect to each, as well as setting up redundant databases.

MODULE 14 - VCENTER – REQUIREMENTS AND INSTALLATION

Cover the minimum requirements of vCenter. Perform an installation of vCenter and discuss setup options. Know what databases might be a better fit for your enterprise than others.

MODULE 15 - VCENTER – EDITIONS (STANDARD, ADVANCED, ENTERPRISE, ENTERPRISE PLUS) AND LICENSING

Compare each edition of ESX/ESXi and vCenter. Know the limits imposed and what features each edition has to offer. Learn how VMware licenses work and how to install an associates license with ESX, ESXi and vCenter.

MODULE 16 - VCENTER – SECURITY ROLES

Discuss the object hierarchy within the vSphere Client and how VMware permissions work. Look at the default Security Roles and understand how roles are related to Permissions and Privileges. Configure Custom Roles and associate the roles to different objects with the vSphere Client.

MODULE 17 - VCENTER – VIRTUAL MACHINE TEMPLATES

Define a template and how templates are used to speed up the process of building Virtual Machines. Learn how templates differ from Virtual Machines and to customize the template for different deployments through Customization Specification.



MODULE 18 - VCENTER – VIRTUAL MACHINE CLONING

Make copies of your Virtual Machine using the vSphere Client. Perform a clone with the VMware Cloning Wizard. Learn how to clone from the command line using vmkfstools.

MODULE 19 - VCENTER – VCENTER – VIRTUAL MACHINE SNAP SHOTS

Perform Virtual Machine Snap Shots of Virtual Machines while they are running. Get to know how Snap Shots work and what files are involved with Snap Shots. Know about some of the storage issues with Snap Shots and how to better manage them.

MODULE 20 - VCENTER – MANAGING HOST AND VIRTUAL MACHINE PERFORMANCE

Discuss the Objects and counters used to monitor both Hosts and Virtual Machines. Learn how to create custom charts and graphs to better understand how Hosts and Virtual Machines are performing. Know what to look for when Host and Virtual Machines are under performing.

MODULE 21 - VCENTER – UPDATE MANAGER

Install and configure Update Manager. Get to know where patches come from and how to schedule patch download, configure support for a firewall, and take snap-shots of Virtual Machines before remediation. Understand the default baselines available and create your own. Learn the difference between fixed and dynamic baselines and when to use each. Attach, Scan and Remediate a baseline to your host. Learn how to verify patches have been installed and troubleshoot a failed patch.

MODULE 22 - VCENTER – VMOTION

Cover the requirements for VMotion. Know the 3 stages of VMotion. VMotion a Virtual Machine and verify that a client communicates with the Virtual Machine during the process. Use VMotion Topo Maps as a tool for performing and troubleshooting VMotion.

MODULE 23 - VCENTER – STORAGE VMOTION

Cover the requirements for Storage VMotion. Storage VMotion a Virtual Machine and verify that a client communicates with the Virtual Machine during the process.

MODULE 24 - VCENTER- TOPO MAPS

Know what objects you can view in Topo maps and how to customize them. Learn how to use Topo maps to troubleshoot the virtual infrastructure. Reconfigure objects within the maps and view changes.



MODULE 25 - VCENTER – DRS CLUSTER CONFIGURATION

Install a DRS cluster. Define how DRS works. Review Manual, Partially Automated, and Fully Automated levels. Know the difference between the 5 different DRS priorities. Learn how to set different automation levels per Virtual Machine. Create DRS rules to better control network traffic and support service faults.

MODULE 26 - VCENTER – HA CLUSTER CONFIGURATION

Install an HA Cluster. Define how HA works. Cover Admission Control and know which policy to best use. Cover advanced options for HA. Know the different restart priorities and how to place Virtual Machines in them.

MODULE 27 - VCENTER – LINKED CLONES

Install and configure Linked Clones. Learn when you use link clones and how to use VMware Security Roles to control access to individual objects within the vSphere Client.

MODULE 28 - VCENTER - VMWARE VAPPS

Create vApps within the vSphere client. Learn how to control CPU, Memory, IP Allocation, and start order of multiple Virtual Machines through vApps.

MODULE 29 - VCENTER – HOST PROFILES

Configure a host with common settings. Use Host Profiles to import these settings. Once imported, use these settings to configure multiple hosts, while saving time configuring multiple individual ESX hosts.

MODULE 30 - VCENTER – FT (FAULT TOLERANCE)

Learn requirements for FT. Discuss how Primary and Secondary Virtual Machines are related. Know the steps that occur when a Secondary Virtual Machine becomes a Primary and how a new Secondary is created. Setup FT and force a fault.

MODULE 31 - VMWARE DATA RECOVERY

VMware Data Recovery is replacing VCB. Setup and install the VMware Data Recovery Appliance. Learn how the architecture of VDR works. Perform a Data Recovery on a Virtual Machine.

MODULE 32 - UPGRADE FROM ESX 2.X OR ESX\ESXi 3.X TO 4.X

Cover the 3 Phases of upgrading. Learn how to upgrade from ESX 2.x or ESX/ESXi 3.X to 4.X. Cover upgrading vCenter, ESX/ESXi and Virtual Machine upgrades. Cover upgrading VMware Tools and Virtual Machine Hardware.



MODULE 33 - VMWARE CLI APPLIANCE AND TOOLS

Support your Virtual Machines using the VMware CLI Appliance. Use the command line from your desktop to run viclient or esxcfg commands. Install the VMware CLI appliance and become familiar with its use.

MODULE 34 - SUPPORTING ESX FROM THE COMMAND LINE

Run esxcfg, vmkfstools, and vmware-cmd. Know how to start, stop, take snap-shots and many more options of your Virtual Machines from the command line using vmware-cmd. Create vmdk's and manage Virtual Machine disks using vmkfstools. Cover over 20 different command using esxcfg commands.

MODULE 35 - ESX/ESXI CRITICAL FILES

Get to know the critical configuration files on your ESX/ESXi servers. Configure them from the command line and understand where they are located.

MODULE 36 - LOG FILE ANALYSIS

Cover log file locations for Virtual Machines, ESX/ESXi servers, VCenter and know what to look for.

MODULE 37 - BEST PRACTICES

Cover how to configure a Virtual Switch to Physical switches, load balance CPU, Memory, and Disk, ESX/ESXi server sizing, Security, using ISO's and FLP files, Review Services on VM's and ESX/ESXi servers, Licensing, Sluggish Windows, Virtual Machine Startup and Shutdown order, and much more.