

## Deploying VMware® vSphere: Hands-On - 4 Days

*Course 171 Overview*

- You Will Learn How To**
- Deploy and configure a highly available virtual infrastructure with VMware vSphere
  - Allocate networking and storage resources
  - Create VMware Virtual Machine File System (VMFS) and Network File System (NFS) datastores
  - Leverage vCenter Server 5 for a secure and efficient virtualised IT environment
  - Secure the infrastructure to prevent unauthorised access
  - Pool resources for virtual machines with VMotion and VMware Distributed Resource Scheduler (DRS)
- Course Benefits** Virtualising the infrastructure offers tremendous opportunity to reduce total cost of ownership and improve disaster recovery. However, implementing an optimal configuration requires a thorough knowledge of the technology along with practical experience. This course prepares you to manage a vSphere-based enterprise environment using the vCenter Server 5 and ESXi 5 Server.
- Who Should Attend** System administrators, data center infrastructure architects, systems engineers and operators, as well as those interested in implementing ESXi 5 and/or vCenter Server 5. Experience with system administration of Windows or Linux and networking knowledge are assumed. A basic familiarity with SAN storage is helpful.
- Hands-On Training** Hands-on training exercises provide experience in designing and deploying a VMware vSphere and include:
- Designing and implementing virtual switch plans and policies
  - Installing and configuring ESXi5
  - Configuring ESXi hosts directly through vCenter
  - Creating and cloning virtual machines from the vSphere and Web management interfaces
  - Moving a live VM using VMotion
  - Converting virtual machines to templates
  - Creating and managing resource pools

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## Course 171 Outline

### Enterprise Virtualisation Concepts

- Virtualising physical hardware
- Mapping a physical data centre topology to a virtual one
- Sharing storage resources

### Installing and Configuring ESXi Server

#### First steps

- Meeting minimum system requirements
- Walking through the installation steps
- Working with the Direct Console User Interface (DCUI)

#### Leveraging vCenter Server 5

- vCenter vs. Direct Connection for management
- Recognising and applying additional vCenter management objects

### Configuring Network Resources

#### Defining vSphere network terminology

- Utilising physical network resources
- Establishing ports and port groups

#### Designing virtual switches

- Engineering a virtual switch layout
- Changing switch assignments and properties
- Firewalling with virtual switches
- Combining physical network cards for automatic failover
- Comparing standard vswitches vs. distributed vswitches

#### Establishing policies

- Implementing network policies for security
- Shaping network traffic
- Teaming network cards for performance

### Accessing Shared Storage

#### Creating and managing a datastore

- Configuring VMkernel access to LUNs
- Setting up a Network File System (NFS) datastore
- Ensuring continued access with multipathing
- Comparing ESXi Server datastore options

#### Enabling Fibre Channel storage

- Controlling access to the shared storage
- Making Fibre Channel LUNs available

#### Completing iSCSI setups

- Identifying the components of iSCSI

- Authenticating the ESXi Server with CHAP

#### Initiating VMFS data stores

- Creating a VMFS
- Extending a VMFS

### Managing via VirtualCenter

#### Installing the vCenter components

- vCenter vs. vSphere Client
- Host-based licensing vs. License Server
- vSphere license keys
- Maintaining and adding an ESXi Server to the inventory

#### vCenter and multiple data centres

- Grouping data centres in folders
- Combining hosts into a cluster

### Working with Virtual Machines

#### Creating virtual machines

- Creating a base virtual machine image
- Enabling multiple CPUs with Virtual SMP

#### Customising advanced VM features

- Improving performance with VMware Tools
- Provisioning new VMs with templates and clones

#### Managing VMs

- Moving VMs between ESXi Servers
- Preserving VM states with snapshots

### Securing Access to the Infrastructure

#### Setting up security

- Authoring vCenter permissions
- Establishing permission inheritance
- Assessing permissions at different inventory levels

#### Initiating Web access controls

- Providing end user access to VMs
- Logging into vCenter
- Managing VMs from the Web

### Extending Resource Management

#### Handling resource pools

- Allocating CPU and memory resources
- Defining Shares, Reservations and Limits
- Creating resource pools

#### vSphere enterprise features

- Organising data centre clusters
- Adding hosts to a High Availability (HA) cluster

- Moving a powered-on VM to another machine with VMotion
- Balancing resources with Distributed Resource Scheduler (DRS)
- VMware Consolidated Backup