

### Objectives

At the end of the course, you should gain an understanding of the functionality in vSphere 5 and be able to do the following:

- Install and configure ESXi
  - Install and configure vCenter Server components
  - Configure and manage ESXi networking and storage using vCenter Server
  - Deploy, manage, and migrate virtual machines
  - Manage user access to the VMware infrastructure
  - Use vCenter Server to monitor resource usage
  - Use vCenter Server to increase scalability
  - Use VMware vCenter™ Update Manager to apply ESXi patches
  - Use vCenter Server to manage higher availability and data protection
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### Intended Audience

- System administrators
  - Systems engineers
  - Operators responsible for ESXi and vCenter Server
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### Prerequisites

- System administration experience on Microsoft Windows or Linux operating systems
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### Outline

#### Course Introduction

- Introductions and course logistics.
  - Course objectives.
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## **Introduction to VMware Virtualization**

- Introduce virtualization, virtual machines, 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.
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## **Create Virtual Machines**

- Introduce virtual machines, virtual machine hardware, and virtual machine files.
  - Deploy a single virtual machine.
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## **VMware vCenter Server**

- Introduce vCenter Server architecture.
  - Introduce vCenter Server appliance.
  - Configure and manage vCenter Server appliance.
  - Manage vCenter Server inventory objects and licenses.
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## **Configure and Manage Virtual Networks**

- Describe, create, and manage a standard virtual switch.
  - Describe and modify standard virtual switch properties.
  - Configure virtual switch load-balancing algorithms.
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## **Configure and Manage Virtual Storage**

- Introduce storage protocols and device names.
  - Configure ESXi with iSCSI, NFS, and Fibre Channel storage.
  - Create and manage vSphere datastores.
  - Deploy and manage the VMware vSphere 速 Storage Appliance.
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## Virtual Machine Management

- Deploy virtual machines using templates and cloning.
  - Modify and manage virtual machines.
  - Create and manage virtual machine snapshots.
  - Perform VMware vSphere vMotion and StoragevMotion migrations.
  - Create a vSphere vApp.
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## Data Protection

- Discuss a strategy for backing up ESXi hosts and vCenter Server.
  - Introduce the VMware Data Recovery appliance.
  - Discuss solutions for backing up virtual machines efficiently.
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## Access and Authentication Control

- Control user access through roles and permissions.
  - Configure and manage the ESXi firewall.
  - Configure ESXi lockdown mode.
  - Integrate ESXi with Active Directory.
  - Introduce VMware vShield Zones.
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## Resource Management and Monitoring

- Introduce virtual CPU and memory concepts.
  - Describe methods for optimizing CPU and memory usage.
  - Configure and manage resource pools.
  - Monitor resource usage using vCenter Server performance graphs and alarms.
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## Scalability

- Configure and manage a VMware Distributed Resource Scheduler (DRS) cluster.
  - Configure Enhanced vMotion Compatibility.
  - Use vSphere HA and DRS together.
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## Patch Management

- Manage ESXi patching using vCenter Update Manager.
  - Install Update Manager and Update Manager plug-in.
  - Create patch baselines.
  - Scan and remediate hosts.
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### Below are the Extra topics covered in our course:-

- Describe, create, and manage a Distributed virtual switch
- Describe and modify Distributed virtual switch properties
- Configure virtual switch load-balancing algorithms
- Migration of Standard virtual switch to Distributed switch.
- Troubleshooting of VM, ESXi Host and VCenter Server.
- Concepts of VCenter Server Heartbeat.
- 100 % Practical's