

# VMware vSphere 5.1

## Practical Implementation in Real Data Center Environment

**W**ith the evolution of VMware Virtualization Technology and Implementation in Data Centers, the approach to manage the IT infrastructure is not the same as it use to be in physical environments. This course will cover all the aspects required to design, configure and manage a Virtual Data Center environment using VMware vSphere Virtualization Technology. The course will provide hands-on Virtual Data Center Infrastructure administration, as no Data Center/Cloud is complete without virtualization today. The training will be given by Senior System/Network Engineers with several years of field experience in Virtualization.

### Course Contents

- Introduction to VMware Virtualization
- Components of Virtual Data Center Infrastructure
- Install, Configure and Manage vSphere 5.1
- vCenter Server, vSphere Client, Web Client
- Configure and Manage Virtual Networking
- Configure and Manage Storage
- Create and Manage Virtual Machines
- Configure and Manage VMware Clusters
- Install, Configure and Manage Update Manager
- Backup of VM's using VDP
- Troubleshooting vSphere using CLI

VMware  
vSphere 5.1

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## Introduction to Virtualization

- Understanding virtualization
- Diff types of virtualization
- Virtualization products
- Understanding components of VMware vSphere
- Introduction to VMware ESX/ESXi Server

## Understanding Datacenter Infrastructure

- Understanding Datacenter Environment
- Virtualization in present & future Datacenters
- Understanding the Role of VMware Administrator

## Installation of ESXi Server

- Planning ESX/ESXi Server
- Understanding requirements
- Understanding vSphere Client
- Configuring ESXi

## Virtual Machines Concepts

- Understanding virtual machines
- Understanding Diff VM files
- Virtual Machine Hardware

## Virtual Machine Creation and Management

- Create a Virtual Machine
- Deploying guest operating system into VM
- Understanding VMware tools
- Deploying VMware tools
- Cloning of VM'S
- Creating Templates
- Deploying VM'S from templates
- Modifying Virtual Machine Settings
- Creating an RDM
- Virtual Machine Snapshots
- Creating a vApp
- Removing a Virtual Machine
- Deploying Virtual Appliance
- Deploying OVF Templates
- Configuring VM'S to auto start & auto shutdown

## Configuring and Managing Storage

- Storage Concepts
- Storage Overview
- DAS,FC SAN, iSCSI, FCoE, NAS
- Types of Datastore, VMFS, NFS

## Configuring Storage

- Configuring iSCSI Storage
- Configuring NAS/NFS Storage
- FC SAN Storage, FCoE
- Multipathing With iSCSI, NAS, FC SAN

## VMFS Datastores

- Creating a VMFS datastore
- Increase the Size of VMFS datastore
- Deleting/Unmounting a VMFS datastore

## VSA

- VMware vSphere Storage Appliance
- VSA Benefits, Features, Architecture
- Installing and Managing VSA, VSA Manager

## Configuring and Managing Virtual Networks

- vNetwork Standard Switches
- Understanding vSwitch & port group
- Configuring virtual Switch & port groups
- Understanding VM kernel Adaptor

## Configuring Standard Virtual Switch Policies

- Understanding Security policies
- Configuring Traffic shaping policies
- NIC Teaming Policy

## Install & configure vCenter Sever

- Understanding Architecture of vCenter Server
- ESXi and vCenter Communication
- vCenter Server Components
- vCenter Single Sign On
- Installing vCenter Server
- Configure and manage vCenter Server Appliance
- Managing vCenter Server Inventory
- Navigating vSphere Client
- Adding ESXi Hosts to vCenter Server
- vCenter Server License, Views, Events, System logs

## VM Migration

- Understanding types of migration
- Importance of VMware vSphere vMotion
- vMotion Requirements
- Perform vMotion migration
- Perform Storage vMotion migration
- Perform Enhanced vMotion migration

## VMware Clusters High Availability

- vSphere High Availability
- Configuring vSphere HA
- vSphere HA architecture
- Adding ESXi Host to a Cluster
- Test vSphere HA Functionality

## Fault Tolerance

- Understanding Fault Tolerance
- Configuring Fault Tolerance
- Testing Fault Tolerance

## Host Scalability (DRS Cluster)

- Understanding VMware vSphere DRS Cluster
- Benefits of Enhanced vMotion Compatibility (EVC)
- DRS Cluster Settings
- Adding a Host to DRS Cluster
- Test DRS Cluster functionality

## Patch Management

- Describe VMware vSphere Update Manager
- Installing update manager
- Configuring update manager
- Remediate ESXi Hosts

## Data Protection

- Traditional Backup and Virtual Infrastructure Backup
- vSphere Data Protection Components, Architecture
- Deploying and Configuring VDP
- Virtual Machine Backup and Restore

## Access and Authentication Control

- Configuring ESXi Host Access and Authentication
- ESXi Firewall, Enabling & Disabling Lockdown Mode
- Integrating ESXi with AD
- Configuring Roles and Permissions
- Create a custom role in vCenter server
- Assign permissions on vCenter
- Verify permission

## Resource Management and Monitoring

- Virtual CPU and Memory Concepts
- VM Memory Over commitment
- Virtual SMP, CPU Load balancing
- CPU, Memory and Disk resources
- Establish Shares, Limits and Reservations
- Understanding Resource Pools
- Configuring Resource Pools
- VM Resource Usage
- Resource Monitoring Tools
- vCenter Performance Charts
- Interpreting Data from the Tools

## Scheduled Task, Events & Alarms

- Understand Task ,Events & Alarms
- Configuring SMTP
- Configuring Alarms

## vSphere Web Client

- Understanding Web Client
- Administering vSphere using web client

## VMware vShield Endpoint

- Understanding vShield Endpoint
- Deploying security virtual appliance
- Securing VM'S using vShield from Virus & Malwares

## Advanced Topics: Distributed Switch

- Understanding Distributed Switch Architecture
- Configuring Distributed Switch
- Understanding VLAN Trunks
- Configure private VLAN Trunks & Private VLAN'S

## VMware vCenter Standalone Converter

- Converting physical to virtual machine (p2v)
- Converting virtual to virtual (v2v)

## UP-gradation of Server

- Requirements for migration
- Up gradation to ESXi 5.x from ESXi 4.x

## Managing vSphere Using command line interface

- Tools vCLI, vMA, SSH Client
- Managing ESXi
- Managing VM's

## Understanding ESXi Server Architecture

- Understanding ESXi operating system
- Understanding Virtualization kernel

## Troubleshooting Virtual Infrastructure

- Various Real Time Troubleshooting Scenarios
- Troubleshooting VM's
- Troubleshooting ESXi Hosts, Networking, Storage