

VMware vSphere + vCloud

Build Private / Public / Hybrid Cloud

With the evolution of VMware Virtualization Technology and its implementation in Data Centers, the approach to manage IT infrastructure is not the same as it used 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. You also learn how to build a Private / Public / Hybrid Cloud. The course will provide hands-on experience on Virtual Data Center Infrastructure Administration and building a cloud. The training will be given by Senior System / Network Engineers with several years of field experience in Virtualization.

Course Outline

- Components of Virtual Data Center Infrastructure
- Install, Configure and Manage vSphere
- 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 VMs using VDP
- Veeam Backup, Acronis backup
- vSphere Replication
- Host Profiles
- Storage DRS
- Troubleshooting vSphere using CLI
- Understanding Cloud Computing
- Types of Cloud
- Understanding vCloud Director Architecture
- Deploying vCloud Director
- Creating a Private / Public Cloud Using vCloud Director
- Creating Hybrid Cloud with vCloud Connector



**VMware
vSphere
+vCloud**

Course Curriculum

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 VMs
- 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

VSAN

- VMware vSphere VSAN
- VSAN Benefits, Features

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

Veeam Backup

- Install configure Veeam
- Backup / Restore VM's

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)

Upgradation of Server

- Requirements for migration
- Upgradation 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 VMs
- Troubleshooting ESXi Hosts, Networking, Storage

Understanding Cloud Computing

- What is Cloud Computing
- Virtualization & Cloud Computing

Types of Cloud

- **Services Models**
 - IAAS
 - PAAS
 - SAAS
- **Delivery Models**
 - Private Cloud
 - Public Cloud
 - Hybrid Cloud

Understanding vCloud Director & Its Components

- vCloud Director Architecture
- vCloud Director Components
- Understanding Prerequisites

Installing vCloud Director

- Deploying vCloud Director

vCloud Connector for Hybrid Cloud

- Installing & Configuring vCloud Connector Appliance
- Managing a Hybrid Cloud using vCloud Connector

Understanding How vCloud Director Works

- vSphere Resources
- Cloud Resources
- Provider Virtual Data Centers
- Organization Virtual Data Centers
- vCloud Director Networking
- Organizations
- Users & Groups
- Catalog
- vApp

Creating Private / Public Cloud using vCloud Director

- Adding vSphere Resource
- Adding Cloud Resources
- Creating & Managing Organizations
- Working with Catalogs
- Creating External Networks
- Creating Organization Networks
- Login to Cloud as a user