



Learn cloud computing

Part 1 - Introduction to Cloud Computing

- What is the cloud?
- History of Cloud Computing
- How Cloud Computing Works
- Advantages & Disadvantages
- Applications for Businesses
- Introducing Cloud Service Providers
- Cloud Computing Terminology
 - o Infrastructure-as-a-Service (IaaS)
 - o Software-as-a-Service (SaaS)
 - o Platform-as-a-Service (PaaS)
 - o Database-as-a-Service (DaaS)
- Cloud Delivery models
 - o Public Cloud
 - o Private Cloud
 - o Hybrid Cloud
 - o Federated Cloud
 - o Community Cloud

Part 2 – Virtualization

- Virtualization Basics
- Objectives
- Types and benefits of Virtualization
- Virtualization for Desktops and Enterprise
 - o VMware
 - o Xen
 - o KVM
 - o Creating a Virtual Machine with VMWare Workstation **and** VMWare ESX or ESXi – Live Demonstration

Part 4- Implementing a Private Cloud - [Either Eucalyptus or OpenNebula]

- o **Eucalyptus [Ubuntu Enterprise Cloud and Eucalyptus 3.1]**
 - o Single server Private Cloud implementation
 - o Dual server Private Cloud implementation
 - o Creating Virtual Machines
 - o Steps to Create a custom Virtual Machine
 - o Implementing a Dashboard
 - o Web interface with Elasticfox/Hybridfox

Part 4a. Security in Private Cloud:

- o Security issues in Private Cloud

- o Securing the Access : Creating a RSA Public/Private Key for VMs
- o Creating a software firewall
- o Configuring firewall rules
- o Isolating a VM using firewall rules

o **OpenNebula:**

- o Implementing a Private Cloud with Open Nebula [World's only most flexible cloud]
- o Single server implementation
- o Dual server implementation
- o Creating Linux VMs
- o Creating Windows XP/2008 server Vms
- o Implementing a Dashboard with Sunstone

- o Implementing a Private Cloud with Open Stack
- o Dual server implementation
- o Creating Linux VMs
- o Creating Windows Vms

Part 5 – Public cloud : [IaaS]Amazon Web Services – Live Demonstration

- AWS Overview

- Amazon EC2

- o Overview of EC2 Dashboard.
- o Creating a Linux Instance
- o Creating a Windows Instance

- **Images [AMI]**

- o Creating a Private AMI [Amazon Machine Image]

- **Elastic Block Storage [EBS]**

- o Storage for Virtual Machines -Elastic Block Storage
- o Types of Volumes [Harddisk for VMs]
- o Creating a Volume
- o Attaching Volume to a Virtual Machine /Hot plugging
- o Partitioning a Volume
- o Formatting a Volume
- o Detaching a Volume from Virtual Machine

- **Snapshots**

- o Creating and Deleting Snapshots
- o Creating Volumes from Snapshots
- o Creating AMIs/Images from Snapshots
- o Copying Snapshots

-**Network Interfaces**

- o Creating and assigning Network interfaces

Part 5a. Software As a Service :

- o Implementing a Webserver in a Amazon Linux/Windows Instance
- o Configure the firewall to access a Webserver

Part 5b. Security in Public Cloud:

- Security issues in Public Cloud
- Securing the Access : Creating a RSA Public/Private Key for VMs
- Creating a software firewall
- Configuring firewall rules
- Isolating a VM using firewall rules
- Securing the access with an Elastic IPs

-Load Balancers

- Creating and using Load Balancers

- Cloudwatch

- Overview of Monitoring and Setting Alarms

Part 5c. Mini Project – Configuring Amazon Instance as a Content Manager.

Part 6 – [Storage As A Service]- Cloud Storage – Live Demonstration

- Amazon S3

- Creating Buckets
- Creating Folders
- Uploading Objects
- Making Objects Public
- Creating Buckets
- Securing Bucket/Object access
- Configuring a Bucket as Static Web Page
- Controlling Life Cycle of Buckets
- Accessing Amazon Buckets from Windows/Linux desktops

Additional Topics to select:

Part 7 – [DataBase As A Service]- Amazon RDS

[At an extra charge]

- Amazon RDS

- Creating a MySQL DB instance
- DB Instance Classes
- Single and Multiple Zone Deployment of Databases
- Automating the Backup
- Configuring Maintenance/Backup Period
- Creating Backup/Snapshot of DB Instance
- Configuring Firewall rules to restrict access to DB instance
- Overview of Parameter and Option Groups
- Creating Tables in DB instance
- Loading external data to DB table
- Overview of Parameter and Option Groups
- Creating a READ-ONLY DB instance
- Restoring DB from a Snapshot

Part 8 – Hybrid cloud [With OpenNebula]

[At extra Charge]

- Implementing a Hybrid cloud with OpenNebula and Amazon EC2
- Creating Virtual machines on Amazon using Private cloud interface
- Managing Amazon VMs using Private cloud interface.