	Cloud Deployment Model Lab	L	T	P	C
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Pre-requisites/Exposure	Cloud computing architecture lab				
Co-requisites	--				

Course Objectives

1. Demonstrate different cloud deployment models.
2. Demonstrate Cloud Operating System to deploy elements of cloud.
3. Demonstrate setting up of cloud for enterprise.

Course Outcomes

At the end of this course student should be able to

CO1. Implement cloud service modules using OpenStack and AWS.

CO2. Demonstrate public cloud services to create enterprise tasks.

CO3. Demonstrate various characteristics like replication and elasticity in cloud application deployment.

Catalog Description

While AWS is setting standards in public cloud space, OpenStack is gaining ground in becoming preferred Cloud Operating System for Private Cloud. This course aims to skill students with usage, configuration, and setup of popular cloud platforms, like AWS and OpenStack.

Course Contents

Experiment-1: Learn Hands-on OpenStack Installation

Install OpenStack on single node using Packstack.

Experiment-2: Familiarize with OpenStack dashboard – Horizon

Go through each component of the dashboard and understand the meaning of the sections and components therein.

Experiment-3: Deploy a virtual machine instance [using OpenStack Nova]

Create, Deploy, Test and Destroy a VM instance using OpenStack Nova component via Horizon

Experiment-4: Deploy a Linux VM from an ISO image [OpenStack – Nova, Cinder and Glance]

Create an image in OpenStack Glance, Create a VM with a volume and deploy the image

Experiment-5: Deploy a VM from an image snapshot [OpenStack – Nova, Cinder, and Glance]
Create a VM, take a snapshot of the VM and store the VM image in Glance and create a new VM image in Nova from the created snapshot.

Experiment-6: User and Project Management [OpenStack – Horizon advanced, Keystone]
Explore PM functions in OpenStack and try basic settings

Experiment-7: Common cloud management tasks [OpenStack – Horizon, Keystone]
Work with quotas in a Project – assign, increase, decrease quotas for compute and storage

Experiment-8: Adding a new compute node [OpenStack – Nova advanced]
Add a new compute note in Nova and create VMs on the new node.

Experiment-9: Overview of Nagios
Explore monitoring tool Nagios and check the parameters it can monitor

Experiment-10: Overview of OpenStack CLI [Advanced OpenStack]
Log into Command Line interface of OpenStack and run basic commands to create and manage VMs and Volumes

Experiment-11: Configure Multi-location replication for storage
Use Quicklabs to work with AWS S3 and replicate buckets across geographical locations.

Experiment-12: Deploy enterprise cloud on AWS
Create application, web and DB server in a VPC, deploy simple web application and access from outside AWS.

Textbooks

- IBM Material Cloud Deployment Model Lab

Continuous Evaluation

There will be continuous evaluation for all practical subjects during the semester. The performance of a student in a practical subject will be evaluated as per process given below:

1. Components of evaluation
    a. Viva voce / Quiz (50%) + Performance & Records (50%).