CSE427:VIRTUALIZATION AND CLOUD COMPUTING LABORATORY

Course Outcomes: Through this course students should be able to

CO1 :: Analyze key technologies and capabilities required for setting up IT virtualization and cloud computing infrastructure

CO2 :: Examine the ultimate goal of assessing, measuring and planning for the deployment of cloud-based IT resources

CO3 :: Illustrate the knowledge of cloud computing technology architectures based on Softwareas- a-Service (SaaS), Platform-as-a-Service (PaaS) and Infrastructure-as-a-Service (IaaS) delivery models.

CO4 :: Describe the applications of tools used in Cloud environment.

CO5 :: Assess the real life use of Storage and Network facilities in virtualized infrastructure.

CO6 :: Recognize the difference in the working of various virtualization tools.

List of Practicals / Experiments:

Understanding virtualization

- Virtualization and Cloud Computing
- Virtualizing servers
- Virtualizing desktops
- Virtualizing applications
- BIOS setting of Physical machine for virtualization technology

Understanding hypervisors

- Exploring the hypervisors
- Understanding type 1 hypervisor
- Understanding type 2 hypervisor
- Resource allocation
- Vmware ESX

Understanding virtual machines

- Examining CPU’s in a virtual machine
- Examining memory in a virtual machine
- Examining network resources in a virtual machine
- Examining storage in a virtual machine
- Understanding how a virtual machine works
- Understanding virtual machine clones
- Understanding templates
- Understanding snapshots
- Understanding OVF

Creating a virtual machine

- VM configuration
- Full and Linked Clone in VMware Workstation
- Exploring VMware Workstation
- Installation of VMware Workstation

Installing a guest OS

- Installing windows on a virtual machine
- Loading windows into a virtual machine
- Installing vmware tools

- Understanding configuration options
- Optimizing a new virtual machine
- Installing linux on a virtual machine

Management With vCenter Server

- vCenter 6 Overview
- Creating a Virtual Machine in HOL
- Cloning VMs and using Templates
- Tagging and Search to find objects quickly
- Monitoring events and creating alarms
- Migrating VMs with VMware vMotion
- vSphere Monitoring and Performance

Introduction to vSphere Network and Security

- Adding and Configuring vSphere Standard Switch
- Adding and Configuring vSphere Distributed Switch
- User Access and Authentication Roles
- Understanding Single Sign On

Introduction to vSphere Storage

- vSphere Storage Overview
- Creating and configuring vSphere Datastores

Capacity and Cost Management (vRealize Operations)

- Optimize capacity with what-if scenarios and costs
- View Costs in vRealize Operations

Monitoring Applications and Services

- Configure Service Discovery configuration
- Service Monitoring
- Service Discovery
- Application Monitoring

Automation Central and Preparing for Cloud/Hybrid Data center

- Creating a job from VM
- Recurring Jobs
- What-if analysis to VMware Cloud on AWS Service

Container technology

- installation
- Working with containers
- Configuring containers
- Building web server

References:

1. CLOUD COMPUTING BIBLE by BARRIE SOSINSKY, WILEY
2. CLOUD COMPUTING BIBLE by BARRIE SOSINSKY, WILEY