Practical :- 1

Aim: Introduction to cloud vendors : Amazon, Microsoft, IBM.

Cloud service providers (CSP) are organizations that offer network services, infrastructure, or business applications in the cloud.

There are several different forms of services that can be used in the cloud by CSP's, including software, often referred to as Software as a Service (SaaS); a computing platform for developing or hosting applications, known as Platform as a Service (PaaS); or an entire networking or computing infrastructure as a Service (IaaS).

1. Amazon :

Amazon Elastic Compute Cloud (Amazon EC2) is a web service that provide secure, resizable compute capacity in the cloud. It is designed to make web scale cloud computing easier for developers. Amazon EC2's simple web service interface allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment.

Reliable, scalable, infrastructure on demand:

- Increase or decrease capacity within minutes, not hours or days.
- SLA commitment of 99.99% availability for each Amazon EC2 region. Each region consists of atleast 3 availability zones.

Secure compute for your applications:

- With the AWS Nitro System Virtualization resources are offloaded to dedicated hardware and software minimizing the attack surface.
- Lockdown security model prohibits administrative access eliminating possibility of human error and tampering.

2. Microsoft:

Microsoft Azure, commonly referred to as Azure, is a cloud computing service created by Microsoft for building, testing, deploying, and managing applications and services through Microsoft-managed data centres. It provides software as a Service (SaaS), platform as a Service (PaaS) and infrastructure as a Service (IaaS) and supports many different programming languages, tools and frameworks, including both Microsoft-specific and third-party software and systems.

Services provided by Azure :

a) Computer Services
b) Identify
c) Mobile Services
d) Storage Services
e) Data management messaging
f) Media Services
g) Developer
h) Management

3. IBM :

IBM cloud computing is a set of cloud computing services for business offered by the information technology company IBM. IBM cloud includes infrastructure as a Service (IaaS), software as a Service (SaaS) and platform as a Service (PaaS) offered through public, private and hybrid cloud delivery models, in addition to the components that make up those clouds.

IBM offers three hardware platforms for cloud computing. These platforms offer built-in support for virtualization. IBM offers IBM websphere application infrastructure that supports programming models and open standards for virtualization.

The management layer of the IBM cloud framework includes IBM Tivoli middleware. Management tools provide capabilities to regulate

images with automated provisioning and de-provisioning, monitor operations and meter usage while tracking costs and allocating billing.

IBM also offers planning and consultation throughout the deployment process. IBM offers five cloud provision models :-

- Private cloud, owned and operated by the customer.
- Private cloud, owned by the customer, but operated by IBM (or another provider).
- Private cloud, owned and operated by IBM (or another provider).
- Virtual provider private cloud services (based on multi-tenanted support for individual enterprises).
- Public cloud services (based on the provision of functions to individuals.

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Aim: Setting up virtualization using Virtual box/VMware Hypervisor.

1. Run VirtualBox and create a new virtual machine. Name it ESXi, select Linux as its type and other Linux (64-bit) as the version.
2. The virtual machine will need atleast 4GB of memory.
3. Create a new virtual hard disk; select VDI as its file type and fixed size as its storage type.
4. Right click on it and select settings (Ctrl + S) from the menu.
5. Select System → Processor and assign two CPUs.
6. Select the Network tab and configure Adapter 1. Select Host-only adapter and one of the vboxnet networks, most likely vboxnet 0. Expand the advanced section and select Intel PRO/1000 MT server (82545 EM) as the adapter Type and Allow all for the promiscous Mode.
7. Finally, mount the VSphere Hypervisor ISO in the

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storage tab. Select the empty optical drive and choose the Virtual optical Disk file by clicking on the CD icon on the right.

8. Click OK to exit the Settings window and return to the Virtual Box main window. Start the VM. the installer will start and after a few seconds, you will be presented with a screen having a grey and yellow background.