Name: TANISHQ

ASSIGNMENT FOR DAY 4 (CLOUDNET WORKSHOP)

THEORY

a) As a infrastructure as a service what are the resources that are provided by it?

Ans: Infrastructure as a Service (IaaS) is a cloud computing service model. As is the case with all cloud computing models of business, IaaS provides access to computing resources in a cloud-based environment. In the case of IaaS, the computing resources provided are virtualized hardware, or a computing infrastructure. Such product offerings range from virtual servers to network connections to load balancers.

b) What are the business benefits involved in cloud architecture?

Ans: There are following benefits involved: -

1. **Zero infrastructure investment**: Cloud architecture provide user to build large scale system with full hardware, machines, routers, backup and other components. So, it reduces the startup cost of the business.

2. **Just-in-time Infrastructure**: It is very important to scale the infrastructure as the demand rises. This can be done by taking cloud architecture and developing the application in the cloud with dynamic capacity management.

3. **More efficient resource utilization**: Cloud architecture provides users to use their hardware and resource more efficiently and utilize it in a better way. This can be done only by applications request and relinquish resources only when it is needed (on-demand).

c) What are the characteristics of cloud architecture that separates it from traditional one?

Ans: The cloud architecture is different from the traditional hosting in many ways.

1. In cloud architecture, the server hardware is provided and maintenance to it is done by the service provider.
2. Cloud offers better data security and recovery from any natural disasters and human errors as it backs up data over multiple locations.

3. Cloud architecture is scalable on demand. Users can increase or decrease their resources depending on their business needs with just a few clicks without the need of any physical effort as in traditional hosting.
4. Users can draw the services they require over the internet eliminating the need to purchase any new hardware.

d) Mention what is the difference between elasticity and scalability in cloud computing?

Ans: **Scalability Vs Elasticity**

The purpose of Elasticity is to match the resources allocated with actual amount of resources needed at any given point in time. Scalability handles the changing needs of an application within the confines of the infrastructure via statically adding or removing resources to meet applications demands if needed

e) In cloud architecture what are the different components that are required?

Ans: There are the following components of cloud computing architecture -

1. Client Infrastructure: Client Infrastructure is a Front-end component. It provides GUI (Graphical User Interface) to interact with the cloud.

2. Application: The application may be any software or platform that a client wants to access.

3. Service: A Cloud Services manages that which type of service you access according to the client's requirement.

f) In cloud architecture what are the different phases involved?

Ans: There are four phases that basically gets involved in the cloud architecture:

1. **Launch phase**: it launches the basic services and makes the system ready for communication and for application building

2. **Monitor phase**: it monitors the services that is being launched and then manages them so that on demand the user will be able to get what he wants.

3. **Shutdown phase**: it shut down the services that are not required first and after all the services gets shutdown, and then it closes the system services.

4. **Cleanup phase**: it cleans up the left-out processes and services that is being either broken or didn't get shutdown correctly.

g) How buffer is used to Amazon web services?

Ans: Buffer helps to synchronize different components, which gets requests and processes it in an unsynchronized way. It manages the balance between various

components in order to maintain the speed and provide a faster service. In AWS buffer also ensures efficiency over traffic or load.

h) What is Amazon SQS?

Ans: Amazon Simple Queue Service (SQS) is a fully managed message queuing service that enables you to decouple and scale microservices, distributed systems, and serverless applications. SQS eliminates the complexity and overhead associated with managing and operating message-oriented middleware, and empowers developers to focus on differentiating work.

i) Mention what is Hypervisor in cloud computing and their types?

Ans: Hypervisors are virtual machine monitor (VMM) that enables numerous virtual operating systems to simultaneously run on a computer system. These virtual machines are also referred as guest machines and they all share the hardware of the physical machine-like memory, processor, storage and other related resources. This improves and enhances the utilization of the underlying resources.

In a nutshell, hypervisors are divided into two types:

Type one is the **bare-metal hypervisor** that are deployed directly over the host's system hardware without any underlying operating systems or software. Some examples of the type 1 hypervisors are Microsoft Hyper-V hypervisor, VMware ESXi, Citrix XenServer.

Type two is a **hosted hypervisor** that runs as a software layer within a physical operating system. The hypervisor runs as a separate second layer over the hardware while the operating system runs as a third layer. The hosted hypervisors include Parallels Desktop and VMware Player.

j) The types of AMI provided by AWS are?

Ans: There are 2 types of AMI provided by AWS: -

1) Instance store backed
2) EBS backed