

Cloud Computing

Sessional Assignment

<u>Name: Mobeen Liaqat</u>	<u>ID: 13278</u>
<u>Program: BSSE</u>	<u>Module: 8th A</u>

Q1: Explain in detail Service Oriented Architecture (SOA) in cloud computing.

Ans: Service Oriented Architecture (SOA) is a way of designing your IT infrastructure where you focus primarily on the service that is required and not really, the server's themselves. Therefore, when we talk about the client server architecture we are talking about something like an exchange server providing email services or routing a remote access server providing VPN servers. One of the issues as an administrator is not only you responsible for the configurations and the connections in order to connect to those services but also you are responsible for dealing with the operating system, patches and antiviruses. So when you are looking as an administrating your infrastructure in a cloud computing company not only you have to deal with these services that are actually needed by your users but you have to take care about all of the underlying components that actually provide those services.

So when we start looking at the service oriented architecture it is a different way of looking at your architecture basically the idea being if the server is providing the service simply becomes a black box to us we are no longer worried about the operating system updates, the antiviruses or any of those thing that are required to maintain the server. All we have to take care of the connection between the client application or the users and the services and they are trying to get to and so why this becomes very important in the modern world when we start looking at the cloud computing infrastructure and we start looking at all these services which are available from cloud computing providers.

Q2: Explain in detail prominent security threats to the cloud computing.

Ans: The most common and prominent security threats to the cloud computing are as follows.

- The integrity of the data is very important the most important issue is Data Breach it is an incident in which an individual unauthorized person steals sensitive / personal data.
- The Data lock in is also a thread to the cloud computing company it is usually referred to as vendor lock-in and it is a situation in which a customer using a service cannot easily transition to a competitor's product or service.
- The Data removal it is a residual representation of data loss.
- Data recovery might become difficult in case of server breakdown or failure.
- Data locality is the implementation of the concept that the data should be stored near to where it is being processed but it makes things quite complex for simple applications.

Q3: Explain in detail Cloud Infrastructure Mechanisms.

Ans: The Cloud Infrastructure Mechanism is the foundational building blocks of the cloud environment that establish primary artifacts to form the basics of cloud fundamental cloud technology architecture. There is some of the cloud infrastructure mechanism, which is as follows.

- The Logical Network Perimeter is defined as the isolation of a network environment from the rest of a communication network. The logical network perimeter establishes a virtual network boundary that can encompass and isolate a group of related cloud based IT resources that may be physically distributed.
- A Virtual Server is a form of virtualization software that emulates a physical server. Virtual servers are used by cloud providers to share the same physical server with multiple cloud consumers by providing cloud consumers with individual virtual server instances.
- The Cloud Storage Device Mechanism represents storage devices that are designed specifically for cloud based provisioning. Instances of these devices can be virtualized, similarly to how physical servers can spawn virtual server images. Cloud storage devices are commonly able to provide fixed increment capacity allocation in support of the pay per use mechanism.
- The Cloud Usage Monitor Mechanism is a lightweight and autonomous software program responsible for collecting and processing IT resource usage data.

- The Resource Replication is defined as the creation of multiple instances of the same IT resource, replication is typically performed when an IT resource's availability and performance need to be enhanced. Virtualization technology is used to implement the resource replication mechanism to replace cloud based IT resources.
- The Ready Made Environment Mechanism is a defining component of the PaaS cloud delivery model that represents a pre-defined, cloud-based platform comprised of a set of already installed IT resources ready to be used and customized by a cloud consumer.