

Mid Semester Assignment (Spring - 2020)
Cloud Computing

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Bs(SE-8)(A)

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Question No. 1:

A: Explain essential characteristics of cloud computing.

Answer (Q1)(A): The following are characteristics of cloud computing :

- **Always Availability of Resources:**

There are many of the physical and virtual resources available which can modify as per the customer's demand. And the customer doesn't have the knowledge that where the data is stored and even they don't have the control over it.

- **On-Demand Self-Service :**

It is one of the important and valuable features of cloud computing as the user can continuously monitor the server uptime, capabilities, and allotted network storage. With this feature, the user can also monitor the computing capabilities.

- **Great maintenance :**

All The servers are maintain easily ,most of the time the cloud computing come up with update that can make it more batter. the updates are very compatible with the devices and because of the updates the devices are more faster than old ones.

- **Access World wide:**

The user can upload and download anything form cloud he just need the devise and the internet connection to access the cloud from everywhere around the globe.

- **Security :**

the cloud computing is very very secure ,when user save data to the cloud thay provide a top class of security incase if the one server damage and the data loss the cloud can provide the new server with the recent data backup.

- **Pay per Usage:**

In cloud computing the user only pay for the space he's utilizing ,there is no hidden charges from the server and virtual servers are cheaper than the real one, its one time investment only to buy a host.

a. Explain in detail the key properties of cloud computing.

Answer (Q1)(B): The following are key properties of cloud computing :

1. **Rapid electricity :**

the cloud computing never off because of electricity its always on because the servers never stops

2. **dynamically scalable:**

The user need to pay for what he's using only there is no heddan charges that the user need to pay for, its like how much money we need for our elicatricity grad just like that we pay for our needs only. so anybody can now obtain as many or as few computing resources from the cloud as they require at any particular point in time.

3. **device Independency:**

the user can use any kind of device to access to cloud he can switch between many devices and access to the cloud through that just need a device with internet connection. it really does not matter if the computer being used is a traditional desktop or laptop PC, or a tablet, smart phone or smart TV. Such device independency is also a killer feature of cloud computing because it means that users can move between computing devices -- such as their work PC, home PC, laptop and tablet -- without having to worry that they will always have access to the latest versions of their files.

4. **task centric:**

cloud computing is task centric because the usage model is based entirely around what users want to achieve, rather than any particular software, hardware or network infrastructure. Users do not have to purchase or install anything before using a cloud computing resource. Nor do they have to maintain or pay for anything during periods in which no resources are being used.

Question No. 2:

(10)

a. Explain in detail different service models of cloud computing.

Answer (Q2)(a): The following are three models of cloud computing ;

- **Infrastructure as a services(IaaS):**

A vendor provides clients pay-as-you-go access to storage, networking, servers and other computing resources in the cloud. The user just pay for what he needs and the services was provides according to his needs. IaaS is hovering around 12% (up from 6%).

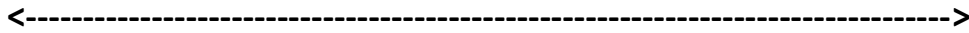
- **Platform As A Services(PaaS):**

A service provider offers access to a cloud-based environment in which users can build and deliver applications. The provider supplies underlying infrastructure. the cloud provide an a friendly interface with the help of which user can interact with cloud upload or download information all around the globe. PaaS is currently the most popular model, hovering around 32% and Expacted to grow in 2020.

- **Software as a Services(SaaS):**

A service provider delivers software and applications through the internet. Users subscribe to the software and access

it via the web or vendor APIs. SaaS accounts for approximately 24% of all enterprise workloads (up from 14% in 2016).



b. Explain in detail different deployment models of cloud computing.

Answer(Q2)(B):

The following are Four deployment models of cloud computing

- **Public Cloud:**

Just like a name it can introduce itself. public clouds are available to the general public, and data are created and stored on third-party servers. The public cloud deployment model is the first choice for businesses that operate within the industries with low privacy concerns. When it comes to popular public cloud deployment models, examples are Amazon Elastic Compute Cloud (Amazon EC2).

> **Public cloud Reduce Time** in developing, testing, and launching new products

> **Public cloud cost effectiveness** – there is no need to invest in expensive infrastructures

- **Private cloud:**

this deployment model can operated exclusively for a single organization whether it is physically located at the company's on-site data center, or is managed and hosted by a third-party provider. In a private cloud, resources are not shared with other organizations, It Is **More possibilities** for customization of the cloud environment . Private cloud have **Higher security** and privacy as resources are not shared with others

- **Hybrid cloud:**

as their name suggests, it is a combination of private and public cloud deployment models that are bound together to provide the benefits of both infrastructures to the company.with the help of hybrid cloud organizations are capable of moving data and applications between private and public clouds depending on their purposes. its is Cost-effectiveness as public clouds provide scalability, you only pay for the extra capacity if you need it.

- **Community Cloud:** A community deployment model largely resembles a private one; the only difference is the set of users.

While a private type implies that only one company owns the server, in the case of a community one, several organizations with similar backgrounds share the infrastructure and related resources.

Question No. 3:

(10)

a. Explain in detail roles and boundaries in cloud.

Answer(Q3)(a): the following are roles and boundaries in cloud;

(1): Cloud Provider: Organisation provides cloud-based IT resources Responsible for making cloud services available to cloud consumers, as per agrees upon SLA guarantees.

(2):Cloud Consumer: Organisation that has a formal contract or arrangement with a cloud provider to use IT resources made available by the cloud provider User Cloud service consumer to access a cloud providers.

(3)Cloud service Owener: Person or Organization that legally owns a cloud service Can be the cloud consumer or provider

(4)Cloud Resource admanistrator: person or organization responsible for administering a cloud-based IT resource (including cloud services) Can be the cloud consumer or provider or third party organization.

(5)Organization boundary : Physical perimeter that surround a set of IT resources that are owned and governed by an organization.

(6)Trust Boundry: Logical perimeter that typically spans beyond physical boundaries to represent the extent to which IT resources are trusted

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b. Explain in detail cloud risk and challenges.

Answer(Q3)(B):

The following are risk and challenges of cloud computing to face:

1. Data Security and Privacy

Data security and protection is one of the leading concerns in cloud computing. The cloud service is hosted by cloud service provider, which transfer user's security and privacy control to the cloud vendor. It is important for the service provider to know how important the security is for the and user. Hence, the major concern for the service provider is to realize the data security and privacy of the end user.

2. Cyber Attacks

The cloud-based service provider has to deal with another fear which is somewhat related to cyber-attack. The data stored online is always possessed with the risk of cayber-attack and that is true when it

comes to cloud storage. The size of the data stored in the cloud is vulnerable to cyber-attacks leading to the risk of losing data.

3. Service Quality

Service quality is also one of the biggest factors considered by enterprises and for this reason, they don't shift their business application to the cloud. They fear that the cloud service providers do not provide any guarantee to ensure product applications security keeps the organizations away from having it

4. Performance and Bandwidth Cost

Enterprises can cut down on the cost and save money on acquiring systems, management, database management systems, and maintenance.

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