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LAB DA 4

CLOUD COMPUTING MODEL TEST

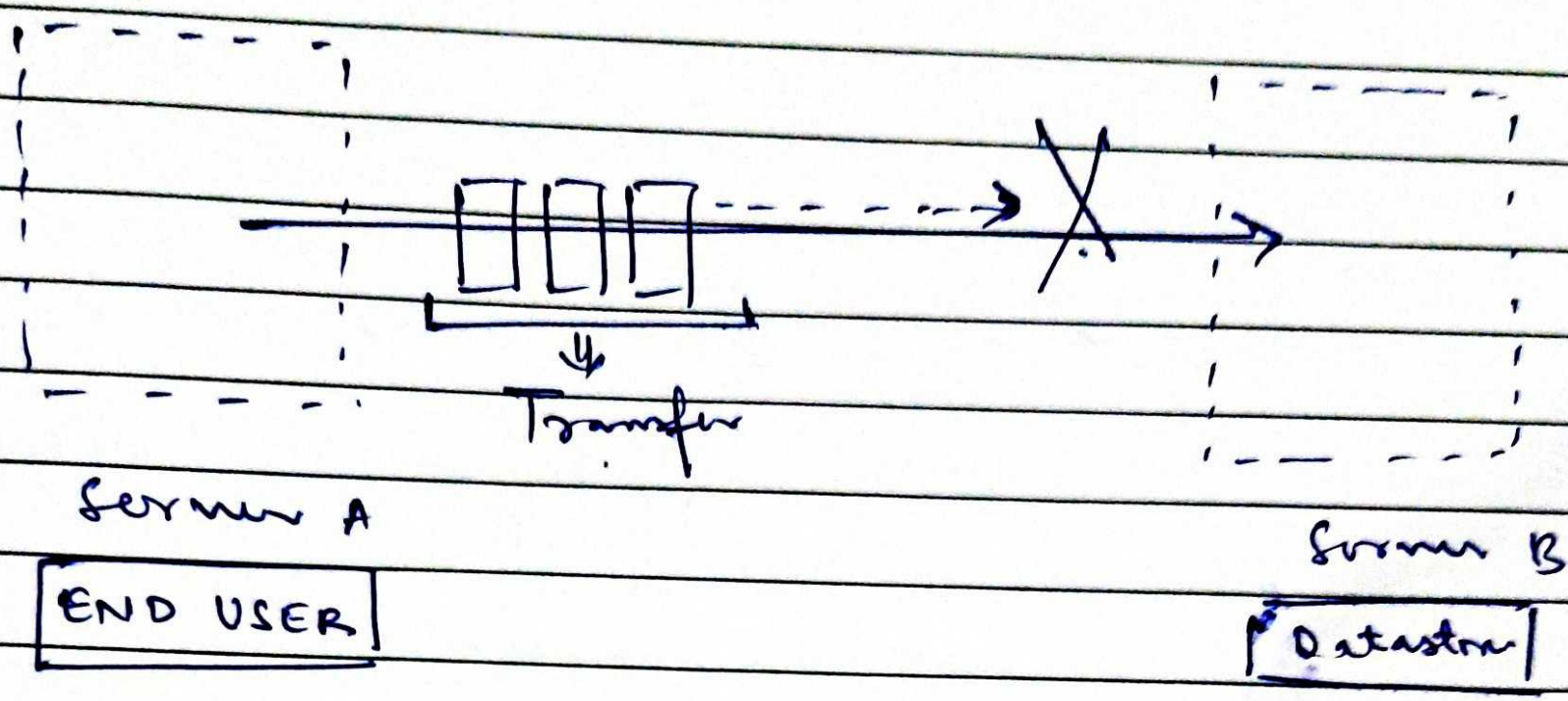
1) With the advent of cloud computing into the 21st century, this technology has to face a lot of obstacles.

a) Resource Management

The cloud industry faces a major issue of lack of resources be it monetary or technological infrastructure. It faces a lack of resource management, lack of resources and expertise, with many businesses hoping to overcome it by hiring new and more experienced employees. These employees will not only help to solve the challenges of the business but will also train the existing employees. Currently, many IT employees work to enhance cloud computing skills. Apart from that, the management of servers, clusters, hypervisors etc. is directly proportion to the quality of employees as well as the technological infrastructures. Monetary spending is very high to get a well established combination of tech and employees hence resource management is still an obstacle.

b) Data Transfer Bottleneck.

Virtualization implementers found that key bottleneck to virtual machine density is data transfer. The transferring of files, objects, data, data stores and even databases hold an immense value in cloud computing architectures as they behave differently. Pushing data into the wrong one can cripple the cloud storage. Data transfer speeds have to take into account the time it takes to acquire the device, configure and load it, prepare it to return, and allow the cloud vendor to copy the data off on the back-end. This brings down the actual transfer rate. Therefore cloud faces the obstacle of data transfer bottleneck in communication contents when the flow of data is impaired or entirely stopped.



Data transfer can be hindered. which causes an unwanted error condition in the cloud architecture resulting in the failure of the application.

Therefore, we have to face these obstacles in cloud computing.

2) Advantages of cloud technologies in social networking applications are :-

(i) Flexibility.
A cloud based service can melt the demand because the vast capacity of the service's remote servers.

(ii) Disaster Management
Cloud based services eradicate a company's need to implement a data recovery plan. The cloud service provider manage the recovery of data and thus helps the social networking industry.

(iii) Automatic Software Updates
Server maintaince would be dealt by the ~~automatic software updates~~ the cloud provider hence updates to the servers | backends are now outsourced.

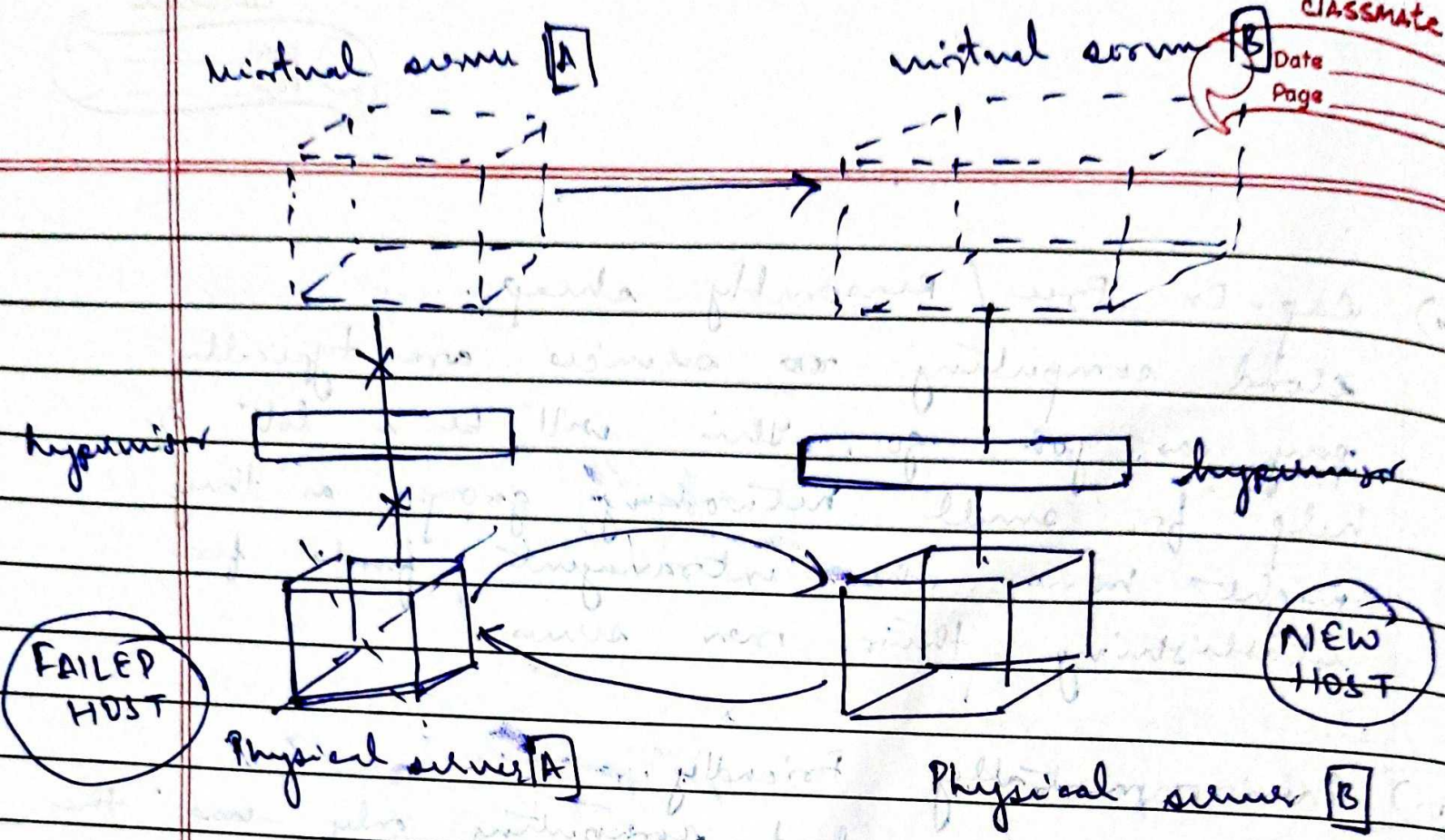
(iv) Security.
The security features employed by the cloud service provider will extend to the social networking end user also. Hence a safety feature is already implied by cloud

(v) Cap-Ex Free / Reasonably cheap.
cloud computing services are typically pay as you go. This will be a lot of help for small networking groups as they might have the investment funds for establishing their own servers.

(vi) Environmentally Friendly.
Business using cloud computing only use the server space they need, which decreases the carbon footprint.

The advanced cloud architecture of
HYPEVISOR CLUSTERING ARCHITECTURE
will be suitable for social networking sites.

The hypervisor clustering architecture establishes a high availability cluster of hypervisors across multiple physical servers. If a given hypervisor or its underlying physical server become unavailable, the hosted virtual servers can be moved to another physical server or hypervisor to maintain runtime operations.



Physical server A becomes unavailable and causes hypervisor to fail. However the architecture is such that the entire operation shifts to Physical server B which has its hypervisor functional hence no loss occurs.

Therefore this kind of architecture is best suited for social networking models.

3) A cloud SLA (service level agreement) is an agreement between a cloud service provider and a customer that ensures him a minimum level of security such that a particular minimum bar of service is maintained. It guarantees levels of

- → reliability
- → availability
- → responsiveness

⇒ to systems and applications.

→ It specifies who governs when there is an interruption in the service

→ It describes penalties if service levels are not met.

A cloud infrastructure can span geographies, networks and systems that are both physical and virtual. While the exact metrics of a cloud SLA can vary by provider, the areas covered are uniform :-

(i) volume & quality of work (precission & accuracy)
(ii) speed
(iii) responsiveness
(iv) efficiency.

Since a Software Level Agreement is a necessary document for any cloud computing provider, there are a few cons associated to the SLA which can hinder the cloud computing industry.

The SLA aims to establish a mutual understanding of the services, prioritized areas, responsibilities, guarantees and warranties provided by the service provider. Some people can use this to cheat the system and take an unfair advantage. Hence, its safe to say that cloud computing face a few challenges with respect to S.L.A.

(i) An SLA can create an UNREALISTIC EXPECTATION.
Creating a standardized timeline and guarantees of service can cause a serious level of unfeasible demand from customers. SLA can be used to attract customers and cheating them in turn, therefore it creates the air of false promise which hampers the cloud industry.

(ii) An SLA can be overly RIGID.
Specifing timelines, guaranteeing service and providing a certain response time. are a good way to get to check the service provider however the rigidness of the document can lead to the collapse of the service provider as well as the customers. Hence, certain areas of the SLA need to be improved to create a semi RIGID doc. for sustaining the B to C relation.

(iii) Formulating an SLA requires additional time and expense.
The nature of the document is such that a lot of resources are used to create and implement this document.

(iv) SLA's have unintended consequences.
The nature of the documents is such that customers and the business owners can make claims that will be taken up in the court and destroy a business/customer. This causes the fear of getting sued and hampers the cloud industry.

(v) Its difficult to monitor. One needs to regularly check and update an SLA.