

Moving Cloud

Moving Applications to Cloud

- Cloud migration is the process of moving data, applications or other business elements to a cloud computing environment.
- There are various types of Migration.
One common model is the transfer of data & applications from a local on premises data center to public cloud
- Moving data & applications from one cloud platform or provider to other a model known as cloud-to-cloud migration
- A third type of migration is reverse cloud migration, cloud repatriation or cloud exit where the data or the applications are moved off of the cloud & back to the local data center.

Benefits of Cloud Migration

① Scalability :

Maintaining upscale as per requirements. This saves money for unsaved data.

it gives opportunities to increase or decrease resources in line according to business needs. It reduces the workload and so we can concentrate on the main business requirements.

② Cost-effective

Reduces cost is another important benefit that makes cloud migration a popular strategy. It is analyzed by Rackspace that 88% of companies save money when running services in the cloud. Having a local server has ongoing maintenance & support costs that added to the annual budget. Apart from this we do not need to pay for onsite staff to manage your systems. We do not require purchasing expensive system & equipments.

③ Remote collaboration

- The cloud environment allows organization to access remotely. Services & documents & database can be access from anywhere by using collaboration & communication tools s/w & apps. This enables the

workers to collaborate remotely with much effectiveness. Sending files back & forth is inefficient & time consuming. Fortunately we have cloud computing that reduced the time & labour involved in file sharing.

④ Better work-life balance

- It has given a better work-life balance that enabled the workers to choose to work from home & comfortable hours of working. Many services are independent of platform & OS that can be worked in any devices like mobile, tablet, laptop, etc.

⑤ Integration

Integration with other systems in a seamless and cost effective way is possible in cloud environment.

⑥ Better storage

Many cloud providers offer high security data storage at a minimum cost. It is easy to expand & shrink the storage based on your

Requirement in Cloud computing.

⑦ Disaster Recovery

- It is easy to recover the data using cloud based backup & recovery solution

⑧ Automation of tasks

Automatic updates & API's are easy in cloud environment. It enables the automation of repetitive task.

⑨ Flexibility

It is easy to scale up or scale down the capacity whenever required. We can install or remove any app's easily in these environment.

⑩ Mobility

We can access the application on any device.

Security

(11)

Security issues like hacking, data theft, unauthorized access, intrusions & identity theft are kept locked away in cloud computing environments.

Faster Setup

(12)

It is easy & fast to set up data and applⁿ in the cloud. Migration to public cloud a matter of few hours. It is possible to setup remotely with an internet connectn.

Less Maintenance

(13)

No maintenance is required. Since the cloud provider looks after the H/w, s/w & n/w in cloud.

Agility

(14)

Quicker decision making is possible with cloud services. It frees up time & reduces the efforts that spent on the infrastructure of the system.

⑯ zero risk failure

Every cloud service provider gives 99% uptime so there is no risk of failure.

+ Reasons for migration

- Traffic spikes handling
- Inability to scale server resources
- Sudden demand for operations
- High cost involved
- inefficient process
- The requirement for data storage
- Geographical distribution challenges
- Accessing application-related methods
- Disaster Recovery
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Cloud Service Attributes :-

- Reliability
- Availability
- Scalability
- Security
- Quality of Service (QoS)
- Service level Agreements (SLA)
- Support

Cloud Bursting

What is cloud bursting :-

In cloud computing, cloud bursting is a configuration which is set up between a private cloud and a public cloud to deal with peaks in IT demand.

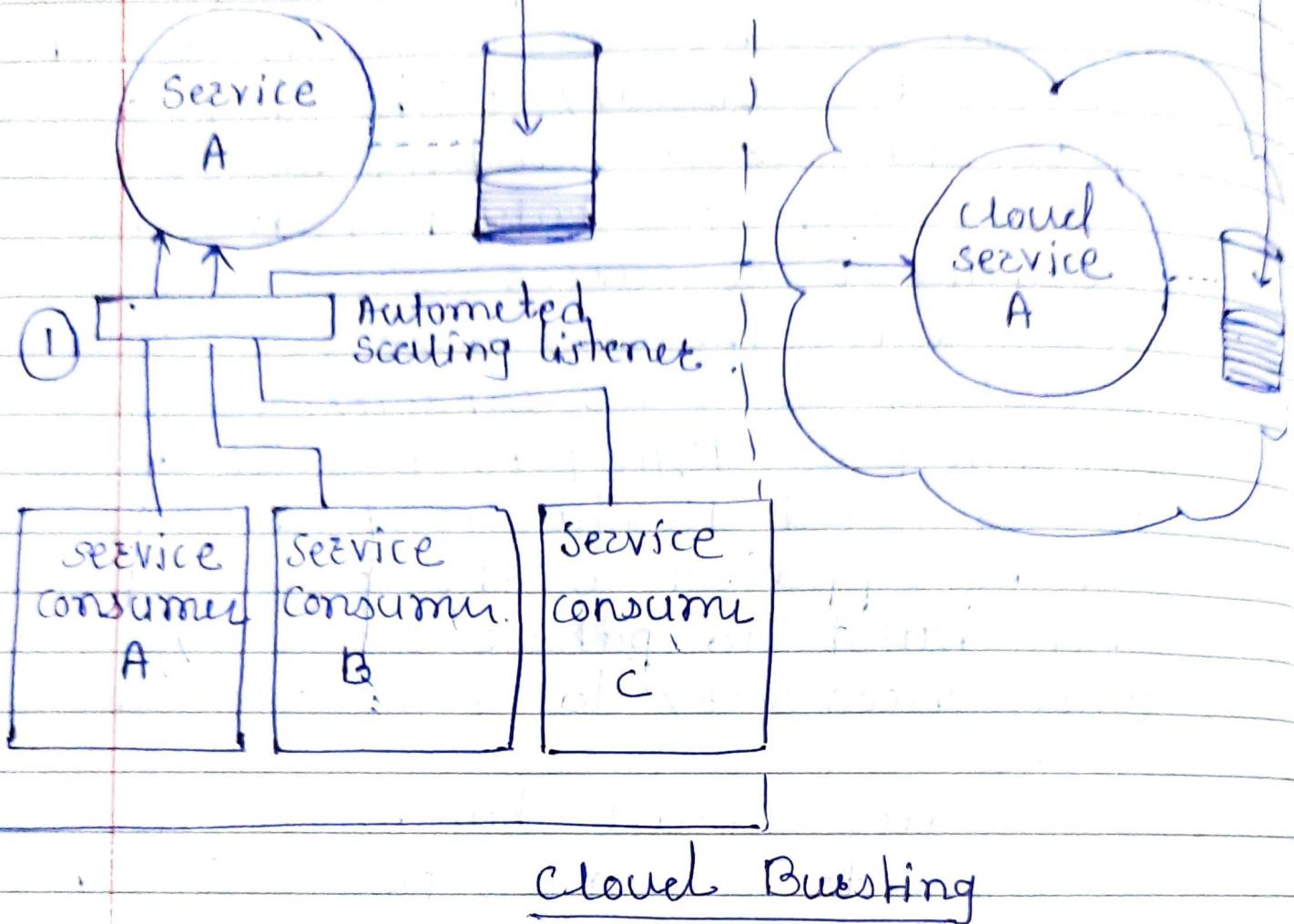
If an organization is using a private cloud reaches 100 percent of its resources capacity, the overflow

traffic is directed to a public cloud so there is no interruption of services.

In addition to flexibility & self-service functionality, the key advantage to cloud bursting is economic saving. You only pay for the additional resources when there is demand for those resources. When there is spending on extra capacity you are not using or trying to predict demand peaks and fluctuations. An application can be applied to the private cloud, then burst to public cloud only when necessary to meet peak demand.

Plus cloud bursting can also be used to minimize processing burdens by moving basic applications to the public cloud to free up local resources for business critical applications.

When using cloud bursting, you should consider security & compliance requirements, latency, load balancing and platform compatibility.

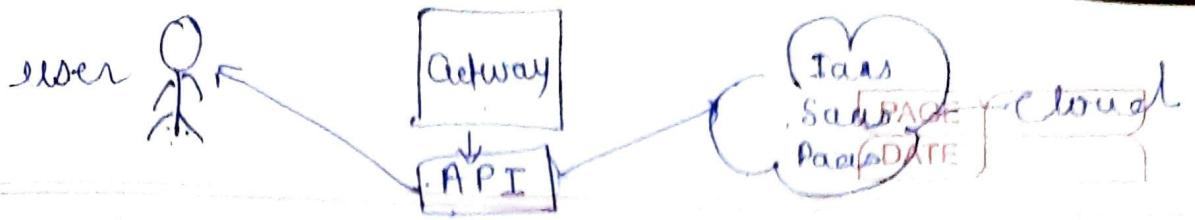


Cloud Bursting

Cloud APIs :-

What is cloud APIs

- A cloud API is a type of application programming interface that facilitates development of services as well as applications for provisioning cloud platforms, H/w & S/w. It act as a



Service gateway to enable indirect & direct cloud s/w & infrastructure services to cloud user.

Cross platform & cloud provider APIs help cloud users gain ability to access cloud resources not only from their principal cloud provider but from others as well. Since organizations are able to access workloads to cloud resources from other cloud platforms & providers. These APIs enables saving of development efforts & time.

Infrastructure: APIs are used in workload management & N/w configurations.

Software as Service: APIs are application level APIs & designed to enable connectivity & interaction with a suite of applications.

These APIs are extensively used in ERP, ex. CRM appln. for creating cloud appln extension for specific environment.

In order to provide back-end architecture, Platform as a service APIs are used.

Maintainability & readability :- it focus on modifications about error correction.

Performance & efficiency :- performance is about the response time of the SW.

Scalability :- scalable system responds user's actions in acceptable amount of time.

Availability & Robustness :- a robust SW should be available even if there is failure state.

Usability & Accessibility :- user interface is visible part of the SW to the user. so it must be easy to use.

Platform Compatibility :- a quality SW should run on as much various platform as it can.

Security :- security is important factor to specify the quality of SW. you should implement a security policy & apply it correctly on the SW & do not leave any entrance gap.

QoS in cloud computing.

Cloud computing offers three primary services:

- SaaS - Cloud provider offers software directly to user over the internet such a application can be access from anywhere any time.
- PaaS - Cloud user is provided with the environment to create & deploy custom apps.
- IaaS - Computer resources such as CPU, memory, storage, & N/w bandwidth are made available to multiple sharing users. This sharing of a pooled resources by multiple users is called multi-tenancy.
- There are three cloud deployment model
 - Private cloud - it is own by the organization so only staff are allowed to manage the private cloud. It is often administrated by in-house expert.
 - Public Cloud - it is owned and operated by cloud provider who have cloud infrastructure with some time spread across continents.
 - Hybrid Cloud - it takes advantages of private & public cloud.

Cloud users are interested in QoS offered by cloud service provider. The method for providing service on cloud requires some effort, because CP must determine the best flow & s/w configuration that will be suitable in terms of QoS for user, while at the same time ensuring optimum use of resources.

Cloud consumers want to select a Cloud service appropriate for them from the major service providers that can offer services with adequate QoS guarantee. Consequently cloud services have become very attractive to business but commercial offerings need to deliver the QoS expected by customers.

If the services being offered do not meet user's expectations - they can seek alternative CSPs -

The ability to specify the QoS is an important issue for users & providers alike. On Internet, QoS is based on transmission rates, error rates & other characteristics which can be measured, improved on and to some extent guaranteed in advance.

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QoS is the ability to provide different priority to different apps, users, or dataflow to guarantee a certain level of performance.

QoS is determined by the fulfillment of both

- functional &
- non functional required.

Meeting the user's requirement with regards to functionality will depends on service description.

The amount of nonfunctional service that has to be consider in cloud service is very high. Therefore QoS parameters are considered to be related to non functional properties of cloud service.

Five key QoS attributes are.

- reliability
- flexibility
- Performance
- Security
- Usability.

flexibility, the ability of the system to manage the functionality without destroying the system.

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Cloud Security

Presentation
Mobility

Presentation
Platform

Applications

Data

Metadata

content

Integration & Middleware

APIs

core Connectivity &
delivery

IoT

Abstraction

H/w

facilities