Cloud Computing presentation notes

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What is cloud computing?

Cloud computing is the on-demand availability of **computer** system resources, especially data storage and **computing** power, without direct active management by the user.

Cons of private Server.

1. Very Expensive
2. Constant Monitoring required
3. Scalability is harsh
4. Backup and restore issues

Advantages of Cloud based server

1. Makes Data sharing easy
2. Reliable service
3. Flexible scalability
4. Fast restore
5. Service latency minimized
6. Wide Spread spectrum.

Applications of cloud computing

Cloud Storage:

Google Drive is a great example of what cloud storage is where you can easily store and share your files securely

Cloud based Server

AWS has done very well since it was launched back in 2006 and is currently being used by other companies such as **Netflix** for almost all their computing needs.

Gaming

Don't Have a gaming PC? You don't need it. **Google Stadia** is one more application of Cloud computing where games are rendered on a server and streamed to your device. Soon the service will be available on smartphones with 5G Support.

Service Models in cloud computing

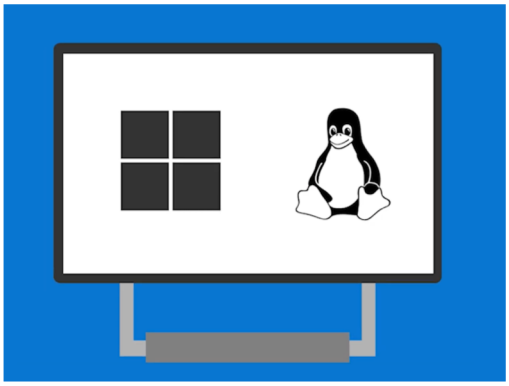
On the basis of services that cloud computing firms offer, the service model can be classified into these categories:

1. SAAS(Software as a service)

In this service the Cloud Provider leases applications or software(s) which are owned by them to its client. The client can access these software(s) on any device which is connected to the Internet using tools such as a web browser.

For example Office 365 is an online version of MS Office suite. They charge for this service on annual or monthly basis.

2. PAAS(Platform as a service)



In this service the Cloud Provider gives the ability to the customer to deploy customer created application using programming languages, tools etc that are provided by the Cloud Provider. The customer cannot control the underlying architecture.

For example Microsoft offers online windows OS to for you to deploy your applications and server apps for use.

3. IAAS(Infrastructure as a service)

In this service the Cloud Provider provides the customer with virtual machines and other resources as a service, they abstract the user from the physical machine, location, data partitioning etc. If the user wants a Linux machine, he gets a linux machine, he will not worry about the physical machine or the networking of the system on which the OS is installed.

For example Microsoft offers online windows OS to for you to deploy your applications and server apps for use.

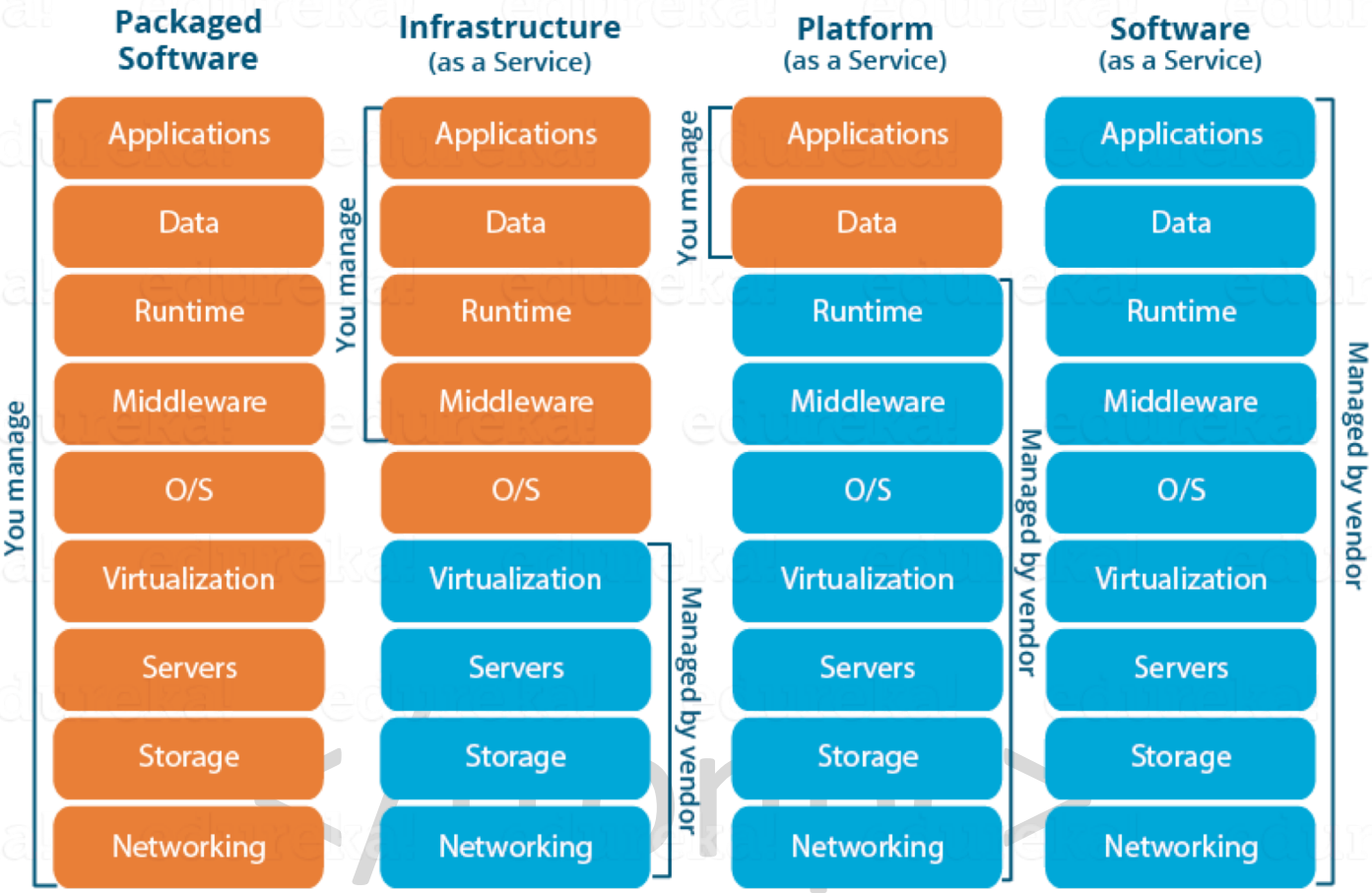
4. BAAS(Backend as a service)

Generally, this model is misunderstood as SAAS, but this is a whole different realm. Because, they target developers by offering their APIs(Application Programming Interface) to developers, which can be implemented into their apps to have features like push notifications, storage, dashboard etc,.

Parse is the most known BaaS and it was acquired by Facebook on 2013. Provides integration with most computer languages and covers all services needed by an application. They offer a free tier for small apps.

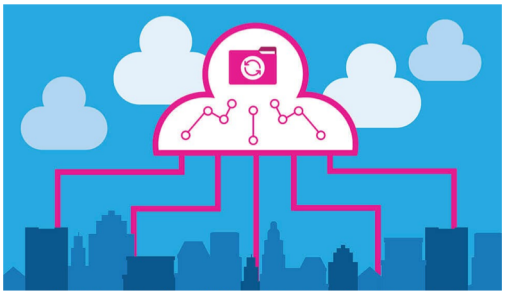
Another popular BaaS is **Firebase**, acquired recently by Google. It is targeted mostly at realtime apps and also offers storage.

Comparison Of various Service models



Deployment Models

1. Public Cloud

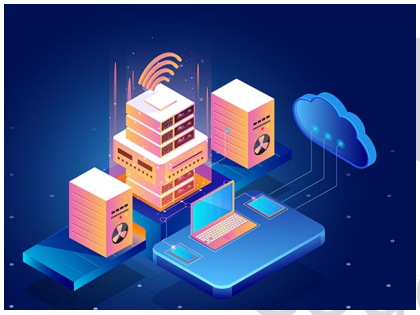


In a public cloud deployment mode, the services which are deployed are open for public use and generally public cloud services are free. Technically there maybe no difference between a public cloud and a private cloud, but the security parameters are very different, since the public cloud is accessible by anyone there is a more risk factor involved with the same.

2. Private Cloud

A private cloud is operated solely for a single organization, it can be done by the same organization or a third-party organization. But usually the costs are high when you are using your own cloud since the hardware would be updated periodically, security also has to be kept in check since new threats come up every day.

3. Hybrid Cloud



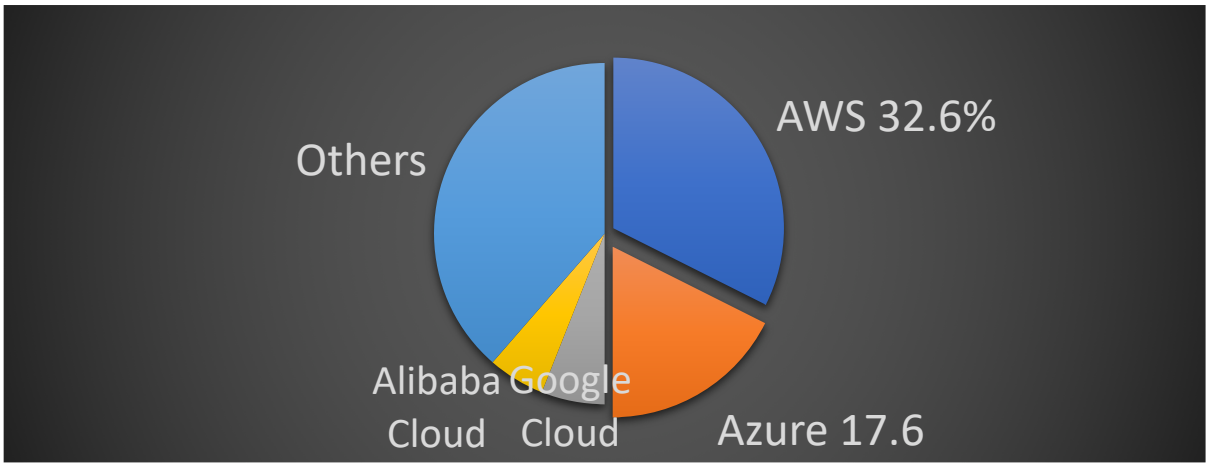
When there is a portion of data that must be kept accessible to the company only, it is stored on the private cloud and the portion of data open to the public is stored in the public cloud. This type of setup is called Hybrid cloud.

More companies are shifting their database to cloud servers because costs less and monitoring costs are cut. More expenses can be done on business growth.

Some Cloud providers

Why Choose AWS?

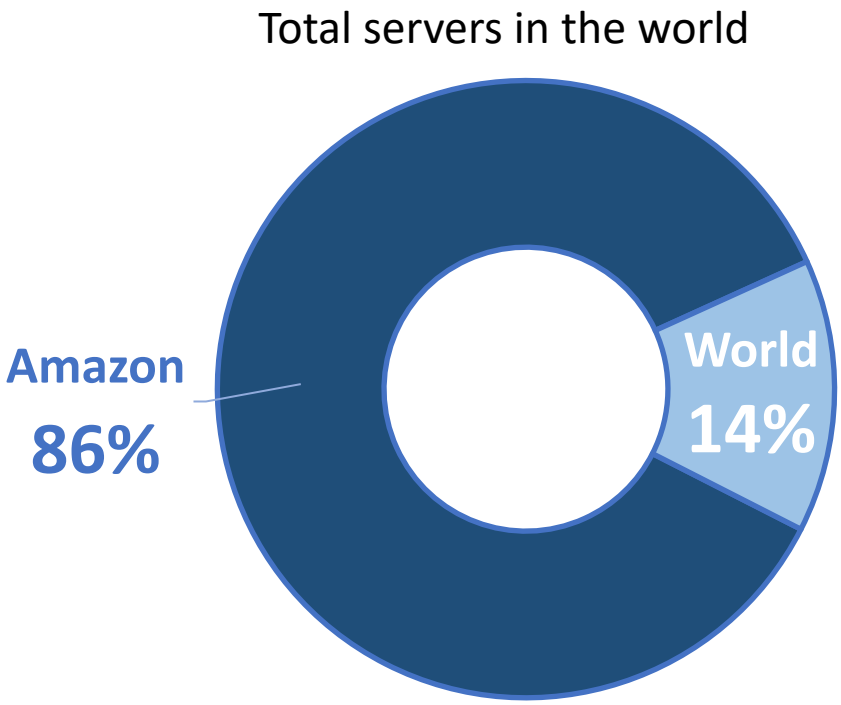
1. Cloud computing market share.



2. More Mature model

Aws Has been in the cloud computing market since 2006. Google started cloud services in 2009 and Microsoft Azure in 2010

3. Server Capacity

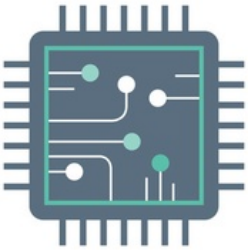


4. Flexible Pricing

You only pay for the number of hours you use a server

DOMAINS IN AWS

Compute



Here you have a service known as EC2 (Elastic compute cloud). Just like a raw server that can be configured to be anything. More like a new PC where you can install various software and Either host a website or an app.

Migration

It's all about transferring your database to and from the AWS infrastructure. It has popular service called Snowball where Amazon sends you a device just like a hard drive. You transfer your data to this Device and it is then carried to the AWS infrastructure and uploaded To the servers.

Security and Identity Compliance

Here you can authorize users and can set user Rights. For example one of your employee can Launch instances, but can't commit changes And the other can commit changes but can't Launch it.

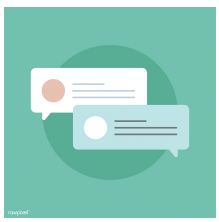
Storage

It has services like S3(Simple storage service) Which is a object based file system. Here you Store files and can use them as and when Needed.

Networking And content Delivery

It includes services like rout53 which is a DNS(Domain name System) that redirects The traffic to you instances of web applications through your domain name. We need this Because we can't remember IP Addresses.

Messaging



Messaging domain is all about simple email Service that can be used to send emails in Bulk to your customer base. Here you can Also handle the reply that you get from each Customer.

Database

This domain includes services like RDS (Relational Database Service) It not a database In itself but can manage your databases like MySQL. They automatically update the DB Engines and commit to your changes.

Management Tools

You can use these tools to manage you AWS Infrastructure. This has a service like cloud Watch that is an all in one cloud monitoring Tool.