

Hello everyone! In this video you will learn about various Service Models of Cloud. These service models refer to the different services offered by Cloud to its user's based on the resources and control.

There are three primary cloud service models: Infrastructure as a Service, Platform as a Service, and Software as a Service. Let's understand them one by one.

Infrastructure as a Service or IaaS is one of the service models of cloud computing platforms wherein the customer organization outsources its IT infrastructure such as servers, networking, processing, storage, virtual machines, and other resources. Customers access these resources over the internet i.e. cloud computing platform, on a pay-per-use model. **Infrastructure as a Service**, which was **earlier called Hardware as a Service**, is a cloud computing platform-based model. In traditional hosting services, IT infrastructure was rented out for specific periods of time, with pre-determined hardware configuration. The client paid for the configuration and time, regardless of the actual use. With the help of the IaaS cloud computing service model, clients can dynamically scale the configuration to meet changing requirements and are billed only for the services actually used. IaaS cloud computing platform model eliminates the need for every organization to maintain the IT infrastructure. The figure shows cloud offerings in Infrastructure **as a Service model**.

The infrastructure as a Service model offers many advantages such as a CPU, memory, and storage configuration that may be chosen, as per the requirement. The hardware infrastructure, that is needed occasionally may be taken from the cloud, without purchasing it. No management of infrastructure is needed, as it is done by cloud service provider.

This model has some shortcomings also such as, an organization's data may be accessed by the cloud service provider if infrastructure as a Service offered by a public cloud. You need a very good internet connection for accessing your infrastructure. It can limit user privacy and customization options.

Platform as a Service or PaaS is a service model to offer cloud services as developer programming platform *to develop, test, run and manage the applications*. A developer is able to write the application as well as deploy it directly into this layer easily. In PaaS cloud computing platform, back end scalability is handled by the cloud service provider and the end user does not have to worry about to manage the infrastructure. All the infrastructure to run the applications will be over the internet. The figure shows the service offerings of **Platform as a Service model**.

Like the Infrastructure as a Service model, PaaS also has some advantages and disadvantages.

Advantages include, easy development. Developers can now focus on development and innovation without worrying about the infrastructure. There is no requirements for up-front investment in hardware and

software. Developers only need a PC and an internet connection to start building applications.

Applications deployed in cloud can scale from one to thousands of users without any changes to the applications. Disadvantages of PaaS include, vendor Lock In. the applications written in PaaS model are dependent on the platform provided by the PaaS vendor. Therefore, migration of an application to another PaaS vendor would be a problem. The corporate data may have the risk of privacy violation and using the data available on cloud and locally together may be a challenge.

The third prominent service model of the cloud is Software as a Service or SaaS. It is a software distribution model in which applications are hosted by a cloud service provider and made available to customers over the internet. It is also known as "**On-Demand Software**". In this model, software and associated data are centrally hosted on the cloud server. SaaS is accessed by users using a thin client via a web browser. The figure explains the service offerings of the Software as a Service model.

Advantages of SaaS include its pricing which is based on a monthly fee or annual fee, SaaS allows organizations to access business functionality at a low cost which is less than licensed applications. The software is hosted remotely, so organizations don't need to invest in additional hardware. All users will have the same version of the software and typically access it through the web browser.

Disadvantages of SaaS include security of data. As data is stored in cloud, security may be an issue for some users.

Because the data and application are stored in cloud at a variable distance from the end user, there is a possibility that there may be larger latency while interacting with the application than a local deployment.

Without the Internet connection, SaaS applications are not usable.

SaaS also limits the portability due to vendor lock in. also

Thank You.