

Hello everyone! In this video you will learn about cloud computing, different cloud service providers, characteristics of cloud computing and its applications.

Let's begin to understand, why the cloud is needed before understanding what it is and how it works. It all started with the invention of client-server architecture, an architecture in which multiple clients can access a single server to get things done or to store the data centrally such as storing the large setup files on a file to be accessed and installed on the machines of many employees. This will help to reduce the space required for storing these setup files on the individual machines of the employees and will make the installation process faster.

Now, these local servers have been replaced with Cloud, which allows the applications and data to be available on the remote servers maintained by the cloud service providers and accessible through the Internet. You may have used Gmail, Facebook, Amazon, and Netflix over the top(OTT) platforms. All these sites are hosted on the cloud. The applications available in the cloud may be accessed by millions of users at a time, due to the enormous amount of computing and storage available with it. This reduces the capital expenditure of the organizations while serving a large number of users, without investing in capital infrastructure.

So now you are ready to understand cloud computing. Cloud computing is a virtualization-based technology that

allows us to create, configure, and customize applications, without owning dedicated hardware or software. The term cloud relates to a network or the internet. It is a technology that uses remote servers on the internet to store, manage, and access data and applications online rather than on local drives. The data can be anything such as files, images, documents, audio, video, and more.

Let's know about some cloud service providers. Many companies are delivering services from the cloud. Some notable examples include the following:

**Google Cloud Platform (GCP)**, offered by Google, is a suite of cloud computing services that runs on the same infrastructure that Google uses internally for its end-user products, such as Google Search, Gmail, Google Drive, and YouTube.

**Amazon Web Services, (AWS)** is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis.

**Microsoft Azure**, often referred to as Azure is a cloud computing service operated by Microsoft for application management via Microsoft-managed data centres. It provides software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS) and supports many different programming languages, tools, and frameworks, including both Microsoft-specific and third-party software and systems.

**Now Let us see some Characteristics of cloud computing-**

**Clouds provide High availability and reliability which indicates that the servers are available as and when required and offered services are more reliable because the chances of infrastructure failure are minimum.**

**Another characteristic is High Scalability which means that the Cloud offers "on-demand" provisioning of resources on a large scale, without having engineers for peak loads.**

**Clouds are Multi-Sharing also.** With the help of cloud computing, **multiple users and applications can work more efficiently** with cost reduction by sharing a common infrastructure.

**Clouds are Device and Location Independent i.e.** Cloud computing enables the users to access systems using a web browser regardless of their location or what device they use e.g. PC, mobile phone, etc. **As infrastructure is off-site** (typically provided by a third-party) **and accessed via the Internet, users can connect from anywhere.**

**Clouds offer the Services in the pay-per-use mode.** The user does not need to pay in advance. The cost is charged based on the services and resources used.

**One very important characteristic of the cloud is Elasticity.** It allows the allocation and deallocation of resources as per need on runtime. You can observe this during the sale on major e-commerce websites. They can serve as many users as needed without going down.

**Let's See the advantages of cloud-**

It turns Capital Expenditure (CapEx) into Operational Expenditure (OpEx) resulting in Cost reduction

Provides On-demand & Responsive delivery of services

It may do Dynamic provisioning and de-provisioning of resources, as and when needed.

Provides Ubiquitous Network Access, & Resource Sharing  
Resources are utilized optimally. and Automated management for time-saving

Let's see some applications of the cloud. Clouds are used for Storing Files Online, hosting Video making and editing software, File converters, Antivirus applications, E-commerce applications, OTT applications, etc., and for Backup and recovery. Cloud applications are not limited to these, but they are increasing day by day.

Thank You