

## CLLOUD COMPUTING

**Dolly Kundra**

**Assistant Professor, Department of Computer Science & IT  
Guru Nanak Girls College, Yamunanagar**

**Email id - [dollyvarora09@gmail.com](mailto:dollyvarora09@gmail.com)**

**Saniya Malik**

**Assistant Professor, Department of Computer Science & IT  
Guru Nanak Girls College, Yamunanagar**

**Email id - [saniyamalikynr@gmail.com](mailto:saniyamalikynr@gmail.com)**

### **ABSTRACT**

*Now a days the term Cloud Computing is growing rapidly in IT Industry. Cloud Computing provides us a means by which we can access the applications as utilities, over the Internet. It allows us to create, configure and customized applications online. With Cloud Computing users can access database resources via the Internet from anywhere for as long as they need without worrying about any maintenance or management of actual resources. It is a web-based technology where quality services are provided to users including data and software, on remote servers. The cloud computing is a computing pattern where a huge number of systems are connected in private and public networks to furnish a balanced infrastructure for information and storage of files.*

**Keywords:** Cloud; Cloud Computing; SaaS; PaaS; IaaS; Services

### **1. INTRODUCTION**

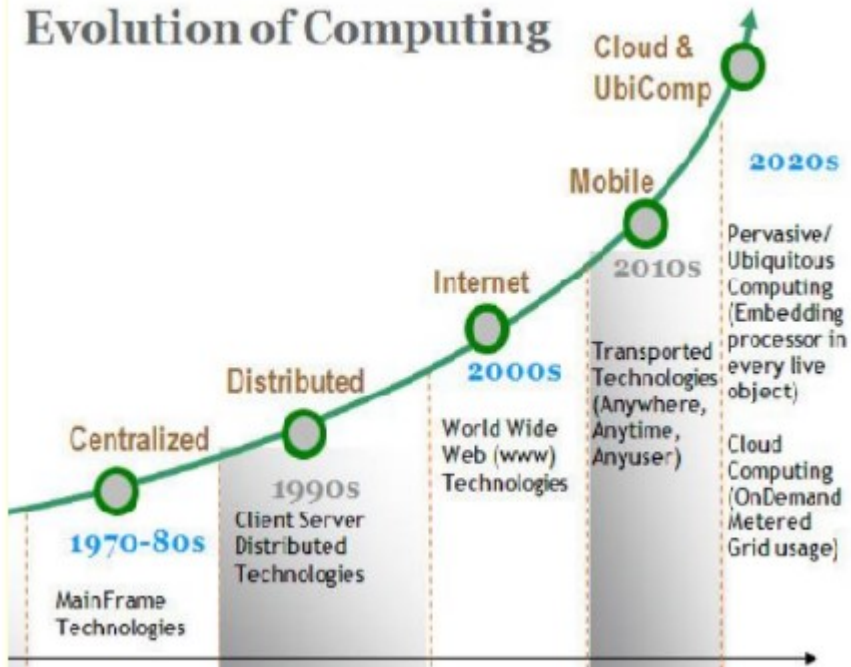
The term cloud refers to a Network or Internet. In other words, we can say that Cloud is something, which is present at remote location. Cloud can provide services over network, i.e., on public networks or on private network i.e. WAN, LAN or VPN. Like real Clouds which are the collection of water molecules, the term 'Cloud' in Cloud Computing is the collection of networks. Cloud takes all the heavy lifting involved in crunching and processing data away from the device you carry around or sit and work at. It also moves all of that work to huge computer clusters far away in cyberspace.

**Cloud computing** is named as such because the information being accessed is found remotely in the cloud or a virtual space. **Cloud computing** means that instead of all the computer hardware and software you're using sitting on your desktop, or somewhere inside your company's network, it's provided for you as a service by another company and accessed over the Internet, usually in a completely seamless way. With Cloud Computing users can access files and use applications from any device that can access the Internet. An example of a **Cloud Computing** is Google's Gmail.

### **2. EVOLUTION OF CLOUD COMPUTING**

**Cloud computing** was invented by Joseph Carl Robnett Licklider in the 1960s with his work on ARPANET to connect people and data from anywhere at any time and this was a early phase with the emergence of utility and grid computing and lasted till pre-internet bubble era.

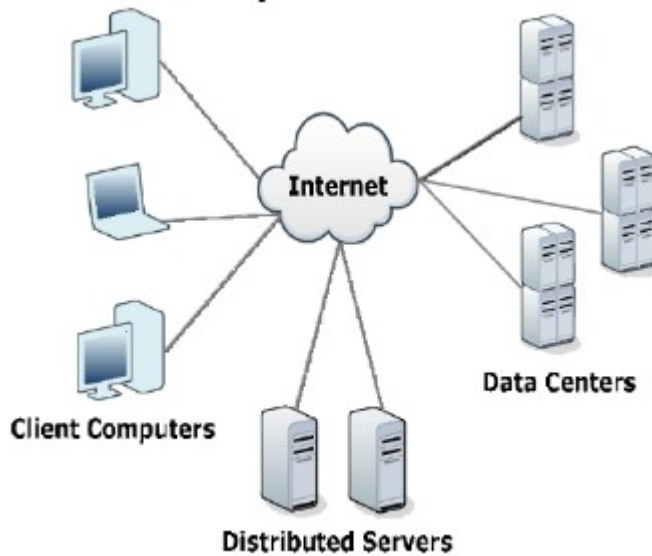
Then pre-cloud phase originated in 1999 and extended to 2006. In this phase the internet as the mechanism to provide Application as Service. In 2007 the real cloud phase started when the classification of IaaS, PaaS, and SaaS got formalized. The history of cloud computing has witnessed some very interesting breakthroughs launched by some of the leading computer/web organizations of the world.



### 3. COMPONENTS OF CLOUD COMPUTING

Cloud computing has three basic components as follows-

- I **Client Computers:** The end user can interact with the cloud using the client computers.
- II **Distributed Servers:** The servers are distributed among the different places but acts like they as working with each other.
- III **Data Centers:** Data centers are the compilation of servers.



#### 4. SERVICES OF CLOUD COMPUTING

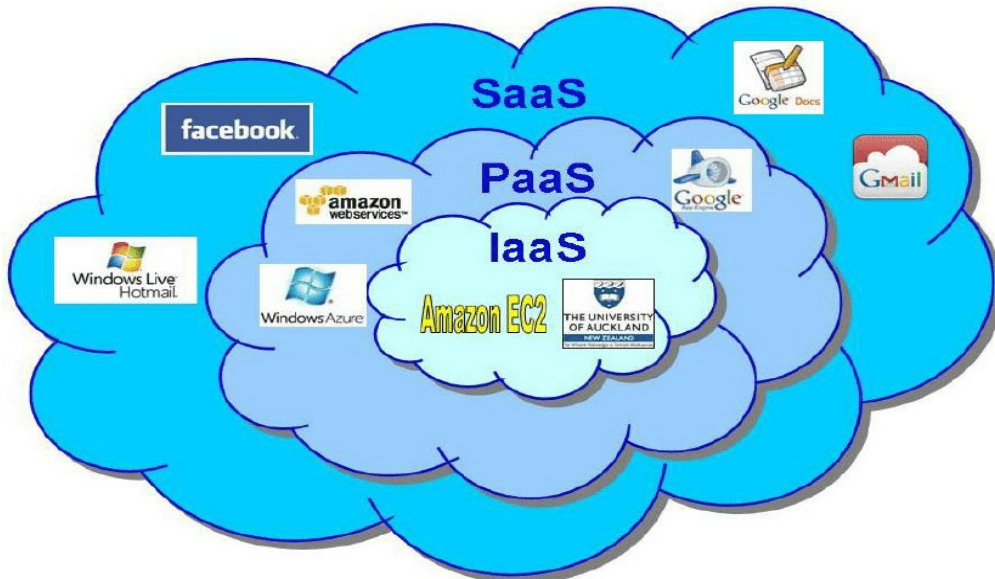
**Software as a Service (SaaS):** The way of carrying application as a service on the internet is known as software as a service. In place of installing the software on his computer, the user can simply access it via the internet. It makes the user free from managing the complex software and hardware. The SaaS users do not need to buy software or hardware, maintain, and update. The only thing user must have an internet connection and then access to the application is very easy. Example, Microsoft Office 365, Google Apps etc.



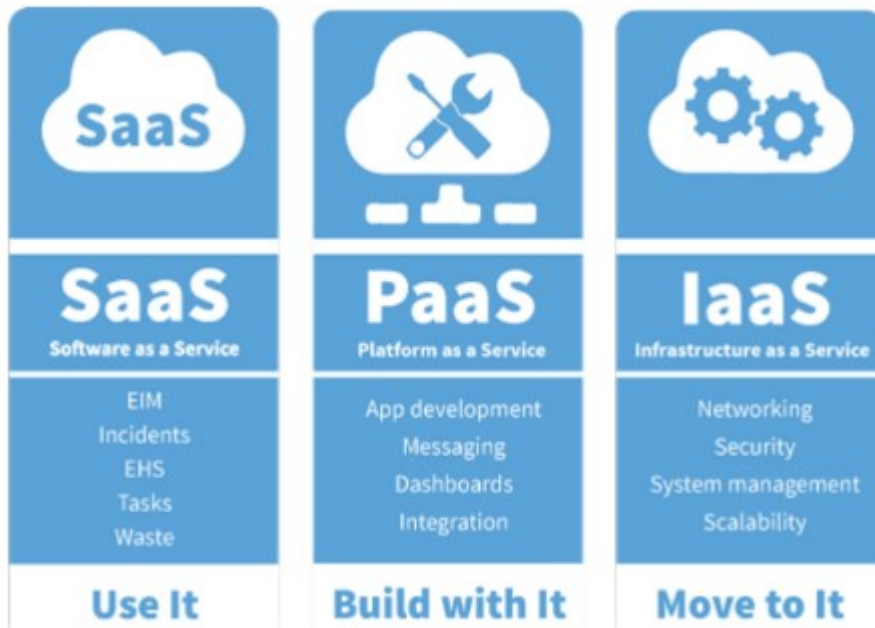
**Platform as a Service (PaaS):** A development environment or platform is given to the consumers as a service in PaaS, upon which user can deploy their own software and coding. The customer has the liberty to construct his own applications that can run on the provider's infrastructure. Product as a service providers offers a predefined composition of operating system and application server to obtain the management capacity of the applications.

For

Example, LAMP (Linux, Apache, MySQL, and PHP), J2EE, Ruby etc.



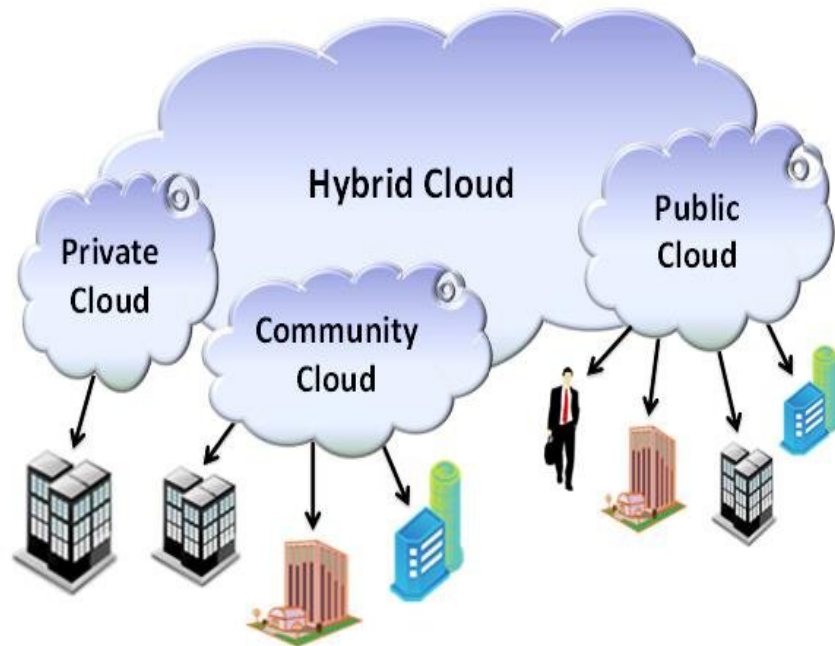
**III Infrastructure as a Service (IaaS):** Many computing resources are provided by the IaaS in the form of storage, network, operating system, hardware, and storage devices on demand. IaaS users can access the services using a wide area network, such as the internet. For example, a user can create virtual machines by login to the IaaS platform.



## 5. TYPES OF CLOUD COMPUTING

Basically, there are three types of cloud computing and they are:

- Public cloud
- Private cloud
- Hybrid cloud



- 1. **Public cloud:** Third parties buy and run the public clouds; they provide the low cost to each individual client in a “pay as you go” form. All these are controlled by the cloud computing provider and an advantage in it is that they might be larger than a company’s cloud.
- 2. **Private cloud:** These are made only for a single company or firm. These are two types of private clouds:
  - On-premise private cloud
  - Externally hosted private cloud
- **On-premise private cloud:** Every day more and more SMBs (Small to Medium Sized Businesses) are looking into Private Cloud solutions. A Private Cloud provides compelling benefits including improved ability to scale to meet demand, increased flexibility, and the elimination of potentially complicated and expensive server management costs.
- **Externally hosted private cloud:** An externally hosted private cloud is often referred to as a managed private cloud. The concept of an external private cloud causes anxiety among businesses for good reason. The core rationale a private cloud is so prized is because it offers greater security, privacy and control than a public cloud. So locating a private cloud in an external facility seems to negate this.
- 3. **Hybrid cloud:** The hybrid cloud is a combination of both public and private clouds and thus flexibility of a computer is increased. Each cloud can be managed independently but data and applications can be shared among the clouds in the hybrid cloud.

#### 6. PROS OF CLOUD COMPUTING

- **Cost Saving:** In cloud computing users have to only pay for the services they consumed. Maintenance cost is low as users do not need to purchase the infrastructure.
- **Flexibility:** Cloud computing is scalable. The rapid scale up and down in the operations of your business may require quick adjustment of hardware and resources so in order to manage this variations cloud computing provides flexibility.
- **Enhanced Security:** Cloud computing provide high security by using the data encryption, strong access controls, key management, and security intelligence.
- **Strategic edge:** Cloud computing offers a competitive edge over your competitors. It helps you to access the latest and applications any time without spending your time and money on installations.
- **High Speed:** Cloud computing allows you to deploy your service quickly in fewer clicks. This faster deployment allows you to get the resources required for your system within fewer minutes.
- **Back-up and restore data:** Once the data is stored in a Cloud, it is easier to get the back-up and recovery of that, which is otherwise very time consuming process on-premise.
- **Data Recovery:** The option of data recovery is available.

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- **Reliability:** Reliability is one of the biggest pluses of cloud computing. You can always get instantly updated about the changes.
- **Mobility:** Employees who are working on the premises or at the remote locations can easily access all the cloud services. All they need is Internet connectivity.
- **Unlimited storage capacity:** The storage and maintenance of large amount of information or data are possible. At any time you can quickly expand your storage capacity with very nominal monthly fees.

## 7. CONS OF CLOUD COMPUTING

- **Performance Can Vary:** When you are working in a cloud environment, your application is running on the server which simultaneously provides resources to other businesses.
- **Technical Issues:** Cloud technology is always prone to an outage and other technical issues. Even, the best cloud service provider companies may face this type of trouble despite maintaining high standards of maintenance.
- **Security Threat in the Cloud:** Another drawback while working with cloud computing services is security risk. Before adopting cloud technology, you should be well aware of the fact that you will be sharing all your company's sensitive information to a third-party cloud computing service provider. Hackers might access this information.
- **Internet Connectivity:** Good Internet connectivity is a must in cloud computing. You can't access cloud without an internet connection. Moreover, you don't have any other way to gather data from the cloud.

## 8. CONCLUSION

Despite all the pro and cons, we can't deny the fact that Cloud Computing is the fastest growing part of network-based computing. It offers a great advantage to customers of all sizes: simple users, developers, enterprises and all types of organizations. So, this technology here to stay for a long time. Today approximately all small and big industries are using cloud computing to manage storage, traffic, hardware requirements. So, it is clear that there is major impact of cloud computing on society and Business. We can use Cloud Computing for remote processing of the application, outsourcing, and data giving quick momentum.

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