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# CLOUD COMPUTING: A Deep Dive into the Future of Digital World

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## ABSTRACT

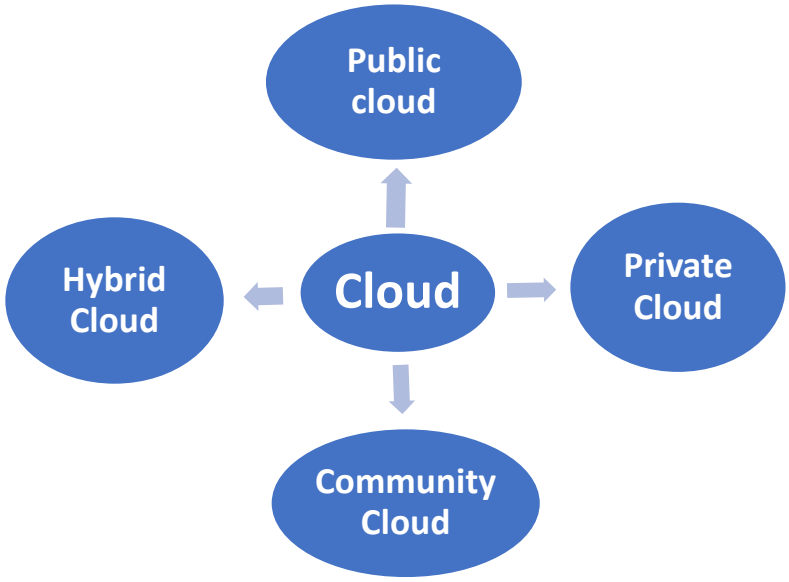
Cloud Computing, which was introduced in early 2000's one of the trending technology that has brought a revolution in the field of IT industry. It has changed the way we store, access and process the data. Cloud computing is a concept that is totally based on the internet.

The main aim of this paper is to provide a deep knowledge about this amazing technology Cloud Computing. It is capable of changing the huge part of the IT field as making the software more attractive and also most of the IT companies has been trying to shift their work to cloud and Cloud Computing has also helped us in pandemic times like covid-19 because people were able to work from home by accessing the remote files, applications and also help to collaborate with various employees in the all over world with the help of an internet connection. In this paper, we have tried to cover various aspects of Cloud Computing like types of cloud, its services, risks in cloud computing, its pros and cons.

## INTRODUCTION

The concept of Cloud Computing was firstly given by joseph Carl Robnett Licklider. He was the first person who developed the Cloud Computing in 1960's with his work on ARPSNET. His main aim to develop this technology was to make it easy to interact with people and data from any place at any time. As we all know about the real cloud, which acts as the storage of rain water molecules. Thus we can say that Cloud Computing is the storing and accessing of the services or data on the internet. It also provide us the on demand availability of the computer services like storage, servers, databases and computer networks. Sometimes even we do not know that we are using Cloud Computing like if we are sending an email, editing any documents or saving it, listening music or playing any online games, the Cloud Computing can be taken as the heart of everything. This technology is very advantageous for both the commercial or business user or the pleasurable user. Some of the very famous cloud services includes Microsoft Azure, Amazon web services and its most famous products are AWS Lambda and Google Cloud Engine etc. This technology is more beneficial because it do not require any software or hardware to use the cloud, we just need a web browser like google chrome to access the services on the cloud.

## TYPES




**1.Public Cloud:** As the name indicates in public cloud the services and applications can be accessed by anybody. There may be security issues as it is opened to anyone. It is like a shared cloud and in this the services are provided by a third party where the multiple users can access the resources while using the same infrastructure.

**2.Private Cloud:** It is just opposite to the public cloud. In this the all the services or the applications can be used by only a single user or customer. It is more secure as compare to public cloud and it is also known as internal cloud. In this there is no need share your hardware with anyone else.

**3.Hybrid Cloud:** The meaning of the word hybrid is combination. So hybrid cloud can be defined as the combination of the both public cloud and private cloud. In this, the organizations can use a mix of both private and public cloud services to meet their needs.

**4.Community Cloud:** In this the resources or services are share among various organizations and it also allow them to collaborate and access the shared resources while maintaining some privacy and control. Community cloud is a type of distributed system in which the different cloud services are integrated with each other.

## SERVICES

The cloud computing services are categorized into following three models:

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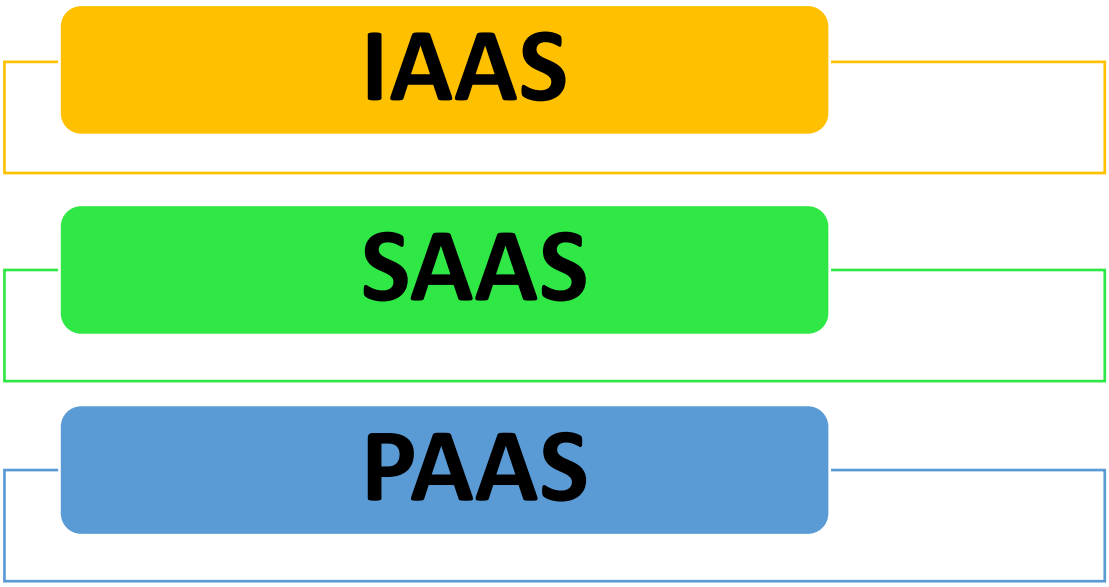
1. **Infrastructure As a Service**
2. **Software As a Service**
3. **Platform As a Service**



**1. Infrastructure as a Service (IaaS):** With IaaS, you can access virtualized computing resources such as servers, storage, and networks. It provides the flexibility to scale resources up or down based on your needs.

**2. Software as a Service (SaaS):** SaaS allows you to use software applications over the internet without the need for installation or maintenance. Examples include email services, customer relationship management (CRM) systems, and collaboration tools.

**3. Platform as a Service (PaaS):** PaaS provides a platform for developers to build, test, and deploy applications. It offers tools, frameworks, and infrastructure to streamline the development process.

## ADVANTAGES

There are lots of advantages of cloud computing:

**1.Scalability**: Cloud Computing provide us the facility to easily adjust our resources based on the needs. For example, increasing or decreasing the server capacity for your application.

**2.Data backup and recovery:** One of the very important advantages provided by cloud is data backup and data recovery. Once the data is lost, it is easy to restore it back.

**3.Cost savings**: Cloud computing can help to reduce the cost for your organization because we can purchase resources on need. Thus it reduces the cost of infrastructure.

**4.Security**: Data security is the one of the biggest advantages of this technology. It offers many techniques or advanced features like encryption algorithms so that data can be securely handled.

**5.Pay per use model**: Cloud computing provides the services as pay per use model. It means to pay the charges as per usage. It provides APIs or application programming interfaces to access the services.

## DISADVANTAGES

Cloud computing also has a few disadvantages:

**1. Dependence on Internet:** Cloud computing relies heavily on an internet connection. If the connection is slow or unreliable, it can affect your access to data and applications.

**2. Security concerns:** While cloud service providers have robust security measures, there is always a risk of data breaches or unauthorized access. It's important to choose a reputable provider and implement additional security measures.

**3. Limited control:** When you use cloud computing, you have less control over your data and infrastructure. You rely on the provider for maintenance, updates, and backups.

**4. Potential downtime:** Even the most reliable cloud services can experience downtime, which can temporarily disrupt your access to data and applications.

**5. Cost over time:** While cloud computing can offer cost savings initially, over time, the recurring subscription fees can add up, especially if you require a large amount of storage or computing resources.

## CONCLUSION

We can conclude from this paper that the cloud Computing is very beneficial technology and it provide us many benefits like scalability, data backup facility etc. But every coin has two faces so does the cloud computing. There are many risks in Cloud Computing like Data loss or breach, account hijacking etc. As Cloud Computing is totally relying on the internet, when there is no internet available we cannot use services of cloud. So we can say that it might be risky sometimes to use the cloud services.

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