

CLOUD COMPUTING : A MUST HAVE TECHNOLOGY

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ABSTRACT: *With the ever-increasing technological advances, it becomes imperative to use the concepts that emphasizes on the easy sharing of resources along with the view of their scalability that also without affecting the need and demands of end-user. Hence the term Cloud Computing has been evolved in IT industries. Cloud Computing is an expression used to describe a variety of computing concepts that involve a large number of computers connected through real-time communication network such as the Internet.*

The concepts of cloud computing uses the power of internet or internet based services to share information, hardware and software resources and to provide the same to the terminals and portables devices on-demand. The key concept or technology involved in cloud computing is Virtualization. That means end-user demand is served by virtual hardware, simulated by software running on one or more real-time machines. Such virtual hardware or servers do not physically exist and can therefore be moved around and scaled-up (or down) on the fly without affecting the end-user. Users can take benefit of cloud computing, without its deep understanding or expertise. In this paper, I am trying to give a brief evaluation of Cloud Computing as a result of evolution and adoption of existing technologies and paradigms. And the outcome of this review signalizes the face of the IT industries before and after the cloud computing

KEYWORDS: Cloud, SaaS (Software as a Service), PaaS (Platform as a Service), IaaS (Infrastructure as a Service), Cloud Computing

INTRODUCTION:

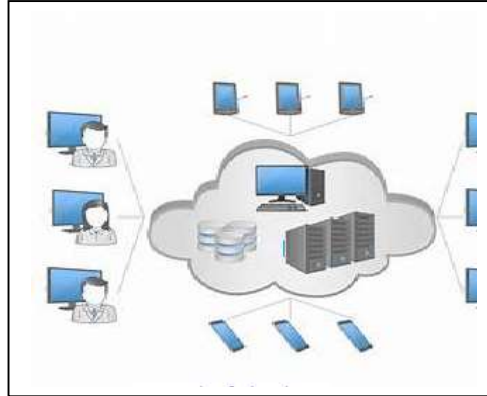
Cloud computing is a revolutionary concept, in which the term 'cloud' defines the collection of networks like real clouds which are the collection of water molecules, and that is available to one and all wherever one's go.

The user can make use of advantages of cloud computing boundlessly whenever demanded. Instead of setting up their own physical infrastructure, the users generally prefer a mediator provider for the service of the internet in cloud computing. The users have to pay only for the services they had used. The workload can be shifted to reduce the workload in cloud computing. A load of service is handled by the networks which forms the cloud that's why the load on local computers is not heavy while running an application. The cloud computing has many possibilities with some limitations, both arising from the fact that all data and applications are located on the Internet. Since the data stored online and applications on cloud can be access in real time, it can be used in various activities of everyday life, including in education.

Some of the key features of Cloud computing are:

- **Virtualization** : Cloud computing is a model for enabling convenient, on-demand network access to the shared pool of resources (e.g. servers, storage, applications and services), which can be rapidly provisioned and released with minimal management efforts.
- **Reliability**: improves with the use of multiple redundant sites.
- **Security** : can improve due to centralization of data
- **Cost Effective**:requisition of hardware and software at the user side is decreased. All we need to have a web browser like chrome to use cloud computing.
- **Quality of Service**
- **Maintenance**: of cloud computing application is easier, because they do not need to be installed on each user's computer and can be accessed from different places.

Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) are the three services provided by cloud computing. The basic examples of cloud computing which are used by general people in daily life are Facebook, YouTube, Dropbox, and Gmail etc. It offers scalability, flexibility, agility, and simplicity that are why its use is rapidly increasing in the enterprises.



EVOLUTION OF CLOUD COMPUTING

The Idea Phase- This phase incepted in the early 1960s with the emergence of utility and grid computing and lasted till pre-internet bubble era. Joseph Carl Robnett Licklider was the founder of cloud computing.

The Pre-cloud Phase- The pre-cloud phase originated in 1999 and extended to 2006. In this phase the internet as the mechanism to provide Application as Service.

The Cloud Phase- The much talked about real cloud phase started in the year 2007 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.

CLOUD COMPUTING - TYPES OF CLOUD

Cloud computing is usually described in one of two ways. Either based on the deployment model, or on the service that the cloud is offering.

Based on a deployment model, we can classify cloud as:

Public Cloud: When a cloud is available to the general public on a pay-per-use basis, that cloud is called a 'Public Cloud'.

Public cloud means that the whole computing infrastructure is located on the premises of a cloud computing company that offers the cloud service.

The location remains, thus, separate from the customer and he has no physical control over the infrastructure.

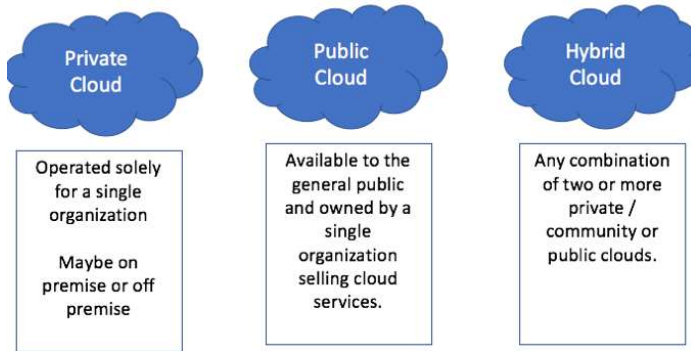
Public cloud examples are Amazon EC2, Windows Azure service platform, IBM's Blue cloud.

Private Cloud: The internal data centers of business organizations which are not made available to the general public are termed as a private cloud.

The private cloud is dedicated to the customer itself. These are more secured as compared to public clouds. It uses the technology of virtualization.

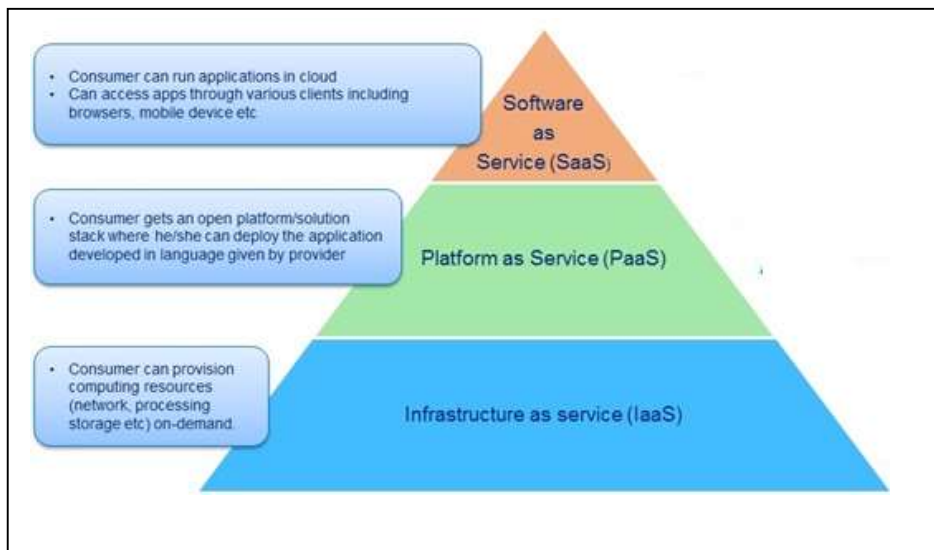
A private cloud is hosted on the company's own servers. Example of private cloud technology is VMware.

Hybrid Cloud: A combination of private and public cloud is called a hybrid cloud. Companies use their own infrastructure for normal usage and hire the cloud at events of heavy network traffic or high data load.



The **PaaS (Platform as a Service) model** delivers a pre-built application platform to the client. clients needn't spend time building underlying infrastructure for their applications. 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. On the backend, PaaS automatically scales and provisions required infrastructure components depending on application requirements. Google AppEngine is a popular PaaS provider, and Amazon Web Services also provides some PaaS solutions in addition to IaaS offerings. For example, LAMP (Linux, Apache, MySQL, and PHP), J2EE, Ruby etc.

The **SaaS (Software as a Service) model** provides ready online software solutions. 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. The SaaS software provider has complete control of application software. SaaS application examples include online mail, project-management systems, CRMs, and social media platforms.



CONCLUSION

In this review paper we described in short the introduction, evolution, types and components of cloud computing and also different approaches of cloud computing and some of its advantages. The application area of cloud computing will continuously be increasing. 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.

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