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A Review on Cloud Computing

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Abstract
Today is the era of Cloud Computing Technology in IT Industries. Cloud computing which is based on Internet has the most powerful architecture of computation. It reckons in of a compilation of integrated and networked hardware, software and internet infrastructure. It has various avails atop grid computing and other computing. In this paper, I have given a brief of evaluation of cloud computing by reviewing more than 30 articles on cloud computing. The outcome of this review signalizes the face of the IT industry's before and after the cloud computing.

Keywords
Cloud, SaaS, PaaS, IaaS, Cloud Computing.

I. Introduction

Like real clouds which are the collection of water molecules, the term 'cloud'in cloud computing is the collection of networks. The user can use the modalities of cloud computing boundlessly whenever demanded. Instead of setting up their own physical infrastructure, the users ordinarily 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 [2]. 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 [1]. So the requisition of hardware and software at the user side is decreased. All we need to have a web browser to use cloud computing. All we need to have a web browser like chrome to use cloud computing. Following are the key features of cloud computing: I.I Resource Pooling and Elasticity I.II Self-Service and On-Demand Services I.III Pricing I.IV Quality of Service
There are three services provided by cloud computing that are Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) [1]. 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's why its use is rapidly increasing in the enterprises.

Fig. 1: Network of Cloud

II. Evolution of Cloud Computing

One day in a speech at MIT around in 1960 John McCarthy indicated that like water and electricity, computing can also be sold like a utility. And in 1999, the Sales force Company started distributing the applications to the customers through a convenient website [3]. Amazon Web Services were started by Amazon in 2002 and they were providing the services of storage and computation. In around 2009 big companies like Google, Microsoft, HP, Oracle had started to provide cloud computing services [4]. Nowadays each and every person is using the services of cloud computing in their daily life. For example Google Photos, Google Drive, and iCloud etc. In future cloud computing will become the basic need of IT Industries.

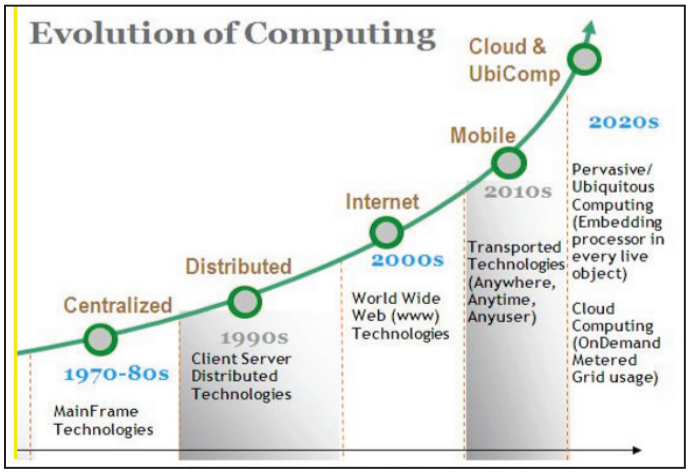

Fig. 2: Evolution of Cloud Computing

III. Components of Cloud Computing

Cloud computing has three basic components as follows-

A. Client Computers

The end user can interact with the cloud using the client computers.

B. Distributed Servers

The servers are distributed among the different places but acts like they as working with each other.

C. Data Centres

Data centres are the compilation of servers

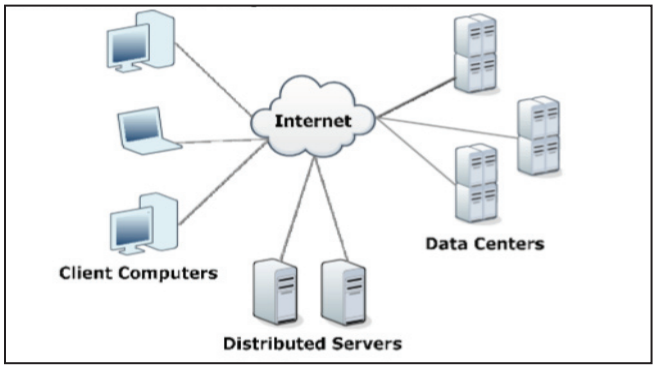

Fig. 3: Components

IV. Services of Cloud Computing

A. 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 [5].

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.

B. 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 [5]. 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.

C. 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 [5]. For example, a user can create virtual machines by login to the IaaS platform

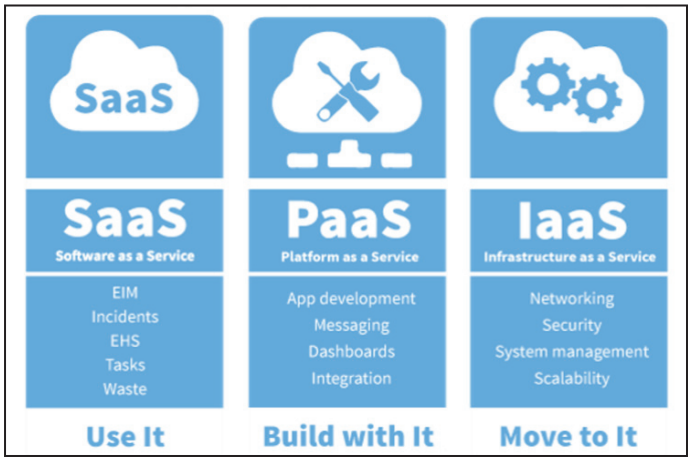

Fig. 4: Cloud Computing Services

V. Types of Cloud Computing

A. Public Cloud

The public cloud is a computing service supplied by the third party providers atop the public internet [6]. These services are available for any user who wants to use them and they have to pay only for the services they consumed.

B. Private Cloud

The computing services provided over the internet or private network come under the private cloud and these services are offered only to the selected users in place of common people [1,6]. A higher security and privacy is delegated by private clouds through the firewall and internal hosting. V.II Hybrid Cloud: Hybrid cloud is the combination of public cloud and private cloud. In the hybrid cloud, each cloud can be managed independently but data and applications can be shared among the clouds in the hybrid cloud [1, 6].

VI. Benefits of Cloud Computing

A. Cost Saving

In cloud computing users have to only pay for the services they consumed. Maintenance cost is low as user do not need to purchase the infrastructure [2].

B. 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.

C. Enhanced Security

Cloud computing provide high security by using the data encryption, strong access controls, key management, and security intelligence.

VII. 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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