Cloud Computing

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ABSTRACT

Cloud computing is becoming an emerging technology for popular enterprise modeling where computing resources are available on-demand to the user as and when needed. Cloud computing is and will be a new way of providing Internet services and computers. Cloud computing use the internet technologies for delivery of IT-Enabled capabilities 'as a service', 'as a infrastructure', 'as a platform' to any needed users i.e. with the help of cloud computing we can access anything that we want from anywhere without worrying about anything like about their storage, cost, management etc.In this paper ,I have given a comprehensive study on the motivation factors of accepting cloud computing, review the several cloud deployment and service models. It also expands certain benefits of cloud computing over traditional IT service environment and security, privacy and internet.

Keywords: Cloud Computing, Types of Cloud Computing, Cloud Services (SaaS, PaaS,IaaS,),Virtualization.

I.INTRODUCTION

Like real clouds which are the gathering of water molecules, the term "cloud 'in cloud computing is that the collection of networks. Cloud computing is that the on-demand availability of ADP system resources, especially data storage and computing power, without direct active management by the user. The term is mostly accustomed describe data centers available to several users over the net. Large clouds, today, have functions distributed over multiple locations from central servers. The users should pay just for the services which they were using. The workload will be reduced by using the cloud computing. A load of services is managed by the gathering of networks which forms the cloud therefore the load on local computers isn't heavy while running an application. Therefore the requisition of hardware and software at the user side is decreased by using cloud computing. All we want to possess any application 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) . The basic examples of cloud computing which are used by general people in daily life are Facebook, Linked In, YouTube, Drop box, and Gmail, **Netflix, Google Docs** etc,. It provides features scalability, flexibility, agility, and simplicity that's why its use is rapidly increasing in the enterprises.

Fig (1): Networks of cloud

II. Evaluation of Cloud computing

In the year 1961, John MacCharty suggested in a speech at MIT that computing can be sold like a utility, just like a water or electricity. And in 1999, the Sales force Company started providing the applications to the customers through a convenient website. Amazon had started Amazon Web Services (AWS) in 2002 and they were providing the services of storage and computation. In the year 2009 big companies like Google, Microsoft, HP, Oracle had started to provide cloud computing services. Nowadays every person is using the services of cloud computing in their daily life. For example, Google Drive, Google Photos, and iCloud etc. In future cloud computing will become the necessity of IT Industries.
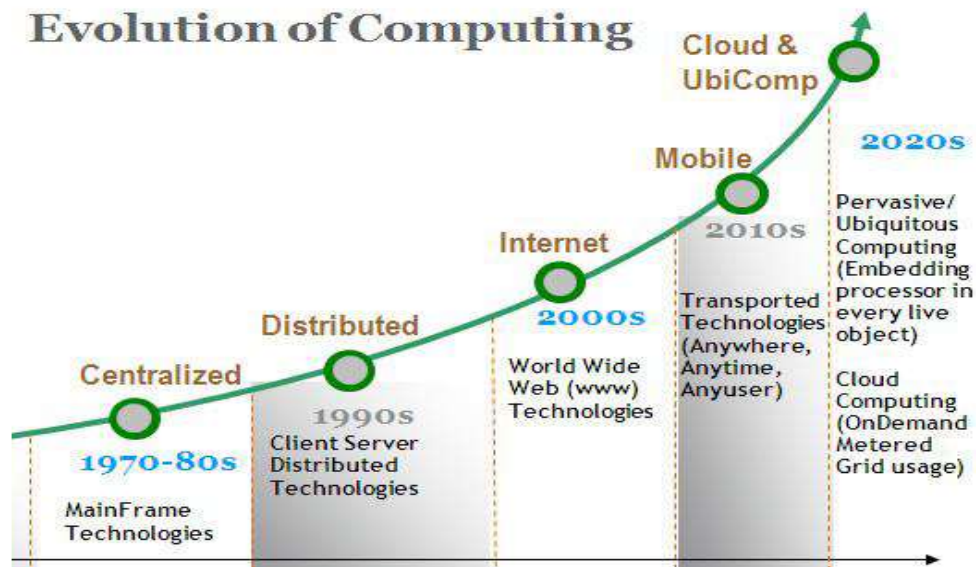

FIG (2): Evaluation of cloud computing

III. Components of Cloud Computing

The main components of cloud computing in a simple topology are divided into 3 parts, namely clients, data center, and distributed servers. The three components have specific goals and roles in running cloud computing operations.

III.I Client Computers: The end user can communicate with the cloud using the client computers

III.II Distributed Servers: The servers are distributed among the different places but acts like they as working with each other.

III.III Data Centers: Data centers are the compilation of servers
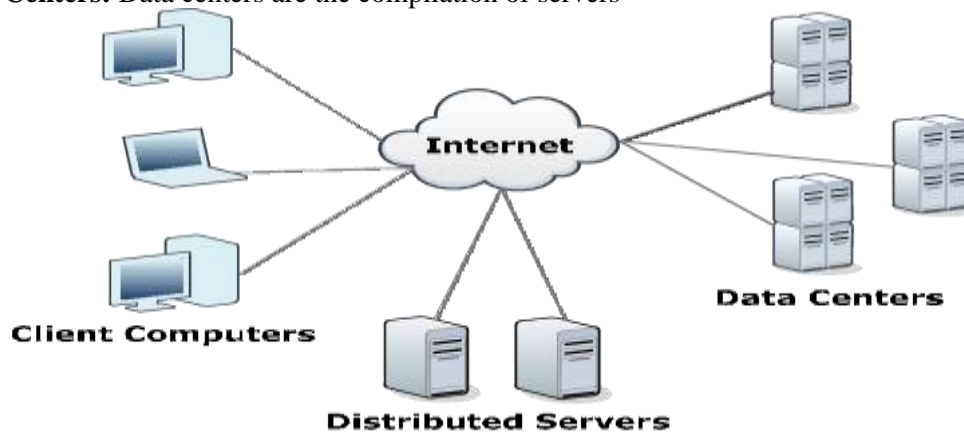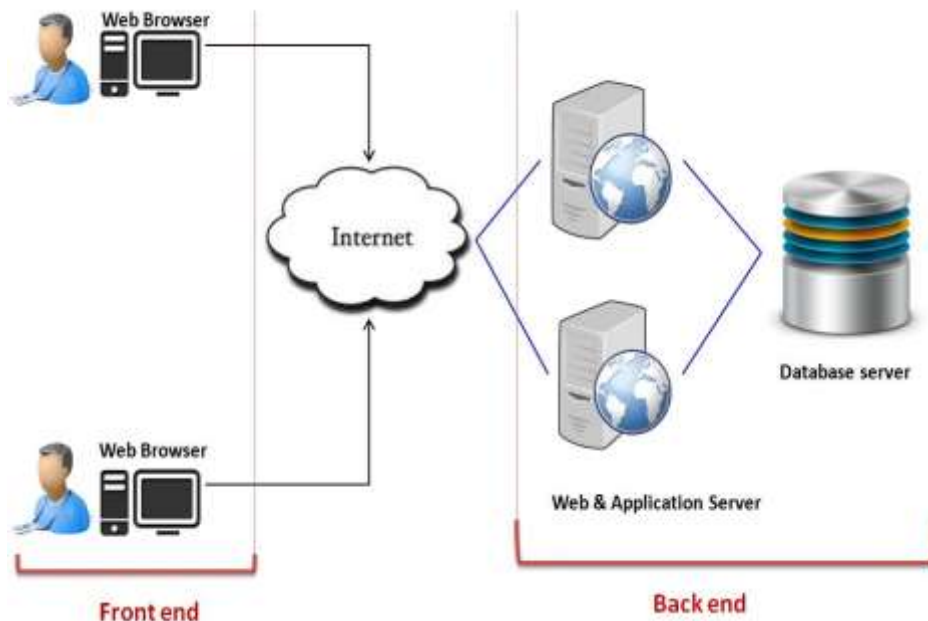

FIG(3):Component of cloud computing

IV. Cloud Architecture

Cloud Computing architecture have many cloud components, which are loosely coupled. We can categories the cloud architecture into two parts:

- Front End

- Back End

Each one is connected through a network, usually Internet.

V. Cloud Service Model

Cloud computing services provide service as information technology (IT) over network or internet which provides accessibility on demand and payment based on usages. Cloud computing services have full applications and development platforms, to servers, storage, and virtual desktops. Cloud Computing is divided into three services: ―IaaS", "PaaS" and "SaaS".

V.I Software as a Service (SaaS): This is a kind of software delivery model where end users consume the software application directly on demand. In place of installing the software in the individual's computer you can access it via the internet.It makes the end user free from managing the complex software and hardware. The SaaS users do not need to purchase any kind of software or hardware, maintain, and update. Example, Microsoft Office 365, Google Apps etc.

V.II Platform as a Service (PaaS): It is a development environment or platform is given to the consumers as a service in PaaS, in which consumers are allowed to build their own software and coding. The customer has the freedom to construct his own applications that can run on the provider's infrastructure [5]. PaaS provides a platform where software can be developed, tested and deployed. Examples: Google App Engine (GAE), Microsoft Azure, IBM Smart Cloud, Amazon EC2, salesforce.com,LAMP (Linux, Apache, MySQL, and PHP), J2EE, Ruby etc.

V.III Infrastructure as a Service (IaaS): Virtualization is the main concept behind IaaS where user have virtual desktop and consumes the resources like network, virtualized servers, storage, routers , supplied by cloud service provider. IaaS users can use the services by accessing the internet. For example, a user can create virtual machines by login to the IaaS platform
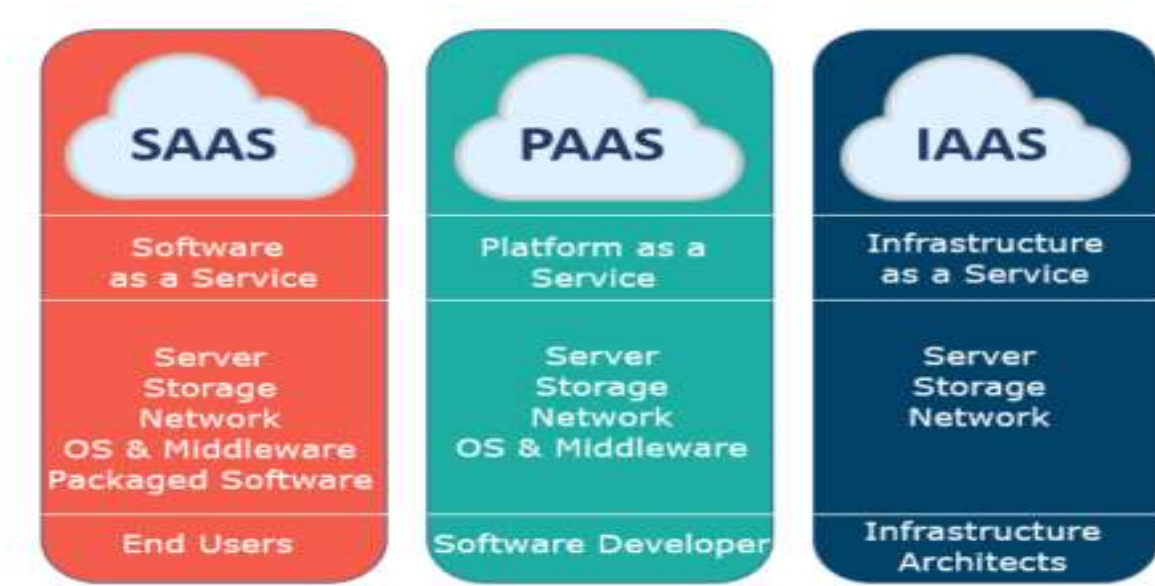
Fig (2): Cloud Computing Services

VI. TYPES OF CLOUD COMPUTING

VI.I Public Cloud: This model allows cloud environment as publically accessible 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.

VI.II 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. An organization to provide the high level control over cloud services and infrastructure privately. In other words we can say that a private cloud is constructed specifically to provide the services within an organization for maintaining the security and privacy.

VI.II Hybrid Cloud: It is the mixture of private cloud and public cloud. In the hybrid cloud, every cloud can be managed independently but applications and data can be shared among the clouds in the hybrid cloud.

VII. BENEFITS OF CLOUD COMPUTING

VII.I Cost Saving: In cloud computing, cloud users have to only pay for the services they consumed. Maintenance cost is low as user does not need to purchase the infrastructure

VII.II Flexibility: Cloud computing is scalable. The speedy rescale and down within the operations of your business might need fast adjustment of hardware and resources therefore so as to manage this variations cloud computing provides flexibility.

VII.III Enhanced Security: Cloud computing provides the data encryption for high security, management, and security intelligence strong access controls key.

VIII. Virtualization

Virtualization is rapidly integrating the fundamental way of computing. One of the most vital features of virtualization is that it allows sharing of applications to multiple customers and companies. This task is done by assigning a logical name to a physical resource and providing a pointer to that physical resource on demand. Cloud Virtualizations also handle the workload by transforming traditional computing and make it more scalable, economical and efficient. Cloud Computing can also be called as services and application delivered to help the virtualized environment. This environment can be public or private. With the help of virtualization, the customer can maximize the use of resources and reduces the physical system which is in need.

Conclusion

Cloud computing continues to expand, to dominate the transactions of data as a result. it offers several blessings, permitting the users to own access simply, instantly to any network device. It is to be noted that the wealthy and up-to-date folks in technology can afford the implementation of the cloud systems reception. the long run IT systems can bear nice changes if massive and tiny companies adopt the cloud ADPS. The cloud ADPS can become additional and more vital by the characteristic it offers: having omnipresent information. Extending the cloud ADPS development ought to be the most concern of the service suppliers. the aim of this development lies within the development of the standard and Efficiency of the organizations' services. The Internet of the long run that's the cloud computing implies all the economical activities, Making therefore associate infrastructure network that integrates all sorts of resources and every one varieties of utility domains. Thus, the analysis bearing on the cloud technologies forms a virtual a part of the long run of the Internet.

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