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RESEARCH PAPER 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.
Cloud Computing has come of age later Amazons introduce the first of its kind of cloud services in2006. It is particularly suitable to Hong Kong because of the unbelievable amounts of the data that are being processed here daily in several sectors, and there are signs that subscription to cloud services by the local companies will soon be on a skyrocket course, despite a slow start in beginning years. As a research theme, cloud computing now easily tops any schedule of topics in a computer science because of its far-reaching suggestion in many sector in computing, especially a big data which without cloud computing is at the great concept. Cloud computing, the life time dream of computing as a utility, has the capacity to convert a huge part of the IT industry, making software even more attractive as a service and shaping the way IT hardware is designed and purchased.

KEY WORDS :*Cloud, SaaS, PaaS, IaaS, Cloud Computing.*

Introduction

Joseph Carl Robnett Licklider in the 1960s developed Cloud Computing with his work on ARPSNET to interact with people and data from in any place at any time. In 1983, CompuServe presented its users as a little amount of disk space that could be used to accumulate any files they choose to upload. 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:

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, Drop box, and Gmail etc. It offers scalability, flexibility, agility, and simplicity that's why its use is rapidly increasing in the enterprises.

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 I Cloud etc. In future cloud computing will become the basic need of IT Industries.

Cloud computing has three basic components as follows-

III.I Client Computers: *The end user can interact 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 Centres: *Data centres are the compilation of servers*

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.

This cloud calculating explanation includes the disposition of software over the internet to several productions who pay via contribution or a pay-per-use model. It is a valued tool for CRM and for requests that need a lot of web or mobile charge — such as a mobile sales organization software. SaaS is accomplished from a dominant position so trades don't have to concern about sustaining it themselves, and is model for short- term schemes. Compensations of Cloud Computing

1) *Back-up and bring back information Once the data is deposited in the cloud, it is calmer to get back-up and return that data using the cloud.*

2) *Improved collaboration Cloud applications expand association by allowing groups of people to rapidly and simply share information in the cloud via shared storage.*

3) *Outstanding convenience Cloud permits us to swiftly and simply access supply data anywhere, anytime in the entire world, with an internet assembly. An internet cloud substructure growths group output and competence by safeguarding that our information is constantly nearby.*

4) *Low preservation charge Cloud calculating reduce both hardware and software conservation costs for organizations.*

5) *Mobility Cloud adding allows us to simply entree all cloud information via mobile.*

6) *Unlimited storage capacity Cloud provide us a vast quantity of storage volume for storing our vital information such as pictures, pamphlets, auditory, audio-visual, etc. in one position*

Advantages of SaaS

Gain access to sophisticated applications. *To provide SaaS apps to users, you don't need to purchase, install, update or maintain any hardware, middleware or software. SaaS makes even sophisticated enterprise applications, such as ERP and CRM, affordable for organisations that lack the resources to buy, deploy and manage the required infrastructure and software themselves.*

Pay only for what you use. *You also save money because the SaaS service automatically scales up and down according to the level of usage.*

Use free client software. *Users can run most SaaS apps directly from their web browser without needing to download and install any software, although some apps require plugins. This means that you don't need to purchase and install special software for your users.*

Mobilise your workforce easily. *SaaS makes it easy to "mobilise" your workforce because users can access SaaS apps and data from any Internet-connected computer or mobile device. You don't need to worry about developing apps to run on different types of computers and devices because the service provider has already done so. In addition, you don't need to bring special expertise onboard to manage the security issues inherent in mobile computing. A carefully chosen service provider will ensure the security of your data, regardless of the type of device consuming it.*

Access app data from anywhere. *With data stored in the cloud, users can access their information from any Internet-connected computer or mobile device. And when app data is stored in the cloud, no data is lost if a user's computer or device fails. a security Information safety is one of the main benefits of cloud computing. Cloud suggestions several progressive structures connected to safety and confirms that information is firmly warehoused and felt*

TYPES OF CLOUD COMPUTING

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

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 . A higher security and privacy is delegated by private clouds through the firewall and internal hosting .*

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 .*

BENEFITS OF CLOUD COMPUTING

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*

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 provide flexibility*.

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

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.

Cloud computing marks the commencement of a new stage in the arena of data and communication technology as it carries with an development paradigm which has the possible
to change the way in which computing was done. Users are still getting aware through this expertise and a change from conformist subtracting to cloud computing will ensue but progressively. Owed to this technology, developers with novel ideas about internet services will no longer need to spend large amounts of currency in structure their programs and tools substructure abilities.

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