Research Paper

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A Survey on Cloud Computing and its Services

Computer Science

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ABSTRACT

In this survey paper we gathered some details about the cloud computing and its Services which are providing the different services to the end users. In current technology the cloud computing is very famous buzz word. There are so many users who looking forward for cloud computing and everybody wants to know about it.
Now in current days cloud computing has providing a numerous advantages over many fields like Mobile Communication, Educational sector, Business field, Corporate sector with Application developers and for so many fields.

INTRODUTION

Lets we take the introduction about the cloud computing by taking the real world example. First we see the meaning of the words "Cloud" and "Computing". The word cloud means " A visible mass of condensed water vapor floating in the atmosphere, typically high above the ground [By Wikipedia]" As per our knowledge we can say the clouds are seen in the sky and clouds are seen by everyone and clouds are generated by the water which is evaporated from the earth to sky in the form of clouds and that water again coming down to earth by means of rain in the rainy season. In somewhat this technical clouds are works they store the data. Like natural cloud stores the water. From anywhere in the world users can store their data and from anywhere in the world users can download their data. Both technical cloud and natural cloud seems to be same in general but in the form of technical they are quite different. Now we can move for second word called "Computing". This means "The process of utilizing computer technology to complete a task. Computing may involve computer hardware and/or software, but must involve some form of a computer system". Now we can get some knowledge of what it mean by cloud computing.

Now we can see the definition of cloud computing in different ways. Let's see some of them first "The practice of using a network of remote servers hosted on the Internet to Store, Manage, and data, rather than a local server". Next "A computing cloud is a set of network enabled services, providing scalable, QoS guaranteed, normally personalized, inexpensive computing infrastructures on demand, which could be accessed in a simple and pervasive way" and generally we can say in cloud computing environment users, corporate and all kinds of companies move to the their data and applications to the remote cloud and then access them in a simple and pervasive way.

HISTORICAL BACKGROUND:

By looking historical background we got some information about emerge of cloud computing. It was started in the year 2006. When in 24-08-2006 is said to be the birth year of cloud computing. This day that test version of its Elastic Computing Cloud (EC2) by Amazon. That time this offers flexible IT resources means computing capacity, its gives the dynamic business relations between IT users and providers. Amazon made a target for developers, who had no wish to hold their own IT infrastructure, and instead, hired the existing infrastructure from Amazon via Internet until 2007 no one talked about cloud computing the first became popular in 3 march 2007 in which this word got entry in Wikipedia. Which again significantly contained a reference to utility computing. Today cloud computing generates over 10.3million matches on Google. This shows the usability and most important popularity of cloud computing. The scope of cloud computing grew from simple infrastructure services such as storage and calculation resources to include applications.

BENEFITS

There are several benefits in the cloud computing they are,

Cost Savings — Companies can reduce their capital expenditures and use operational expenditures for increasing their computing capabilities. This is a lower barrier to entry and also requires fewer in-house IT resources to provide system support.

Scalability/Flexibility — Companies can start with a small deployment and grow to a large deployment fairly rapidly, and then scale back if necessary. Also, the flexibility of cloud computing allows companies to use extra resources at peak times, enabling them to satisfy consumer demands.

Reliability — Services using multiple redundant sites can support business continuity and disaster recovery.

Maintenance — Cloud service providers do the system maintenance, and access is through APIs that do not require application installations onto PCs, thus further reducing maintenance requirements.

Mobile Accessible — Mobile workers have increased productivity due to systems accessible in an infrastructure available from anywhere[4].

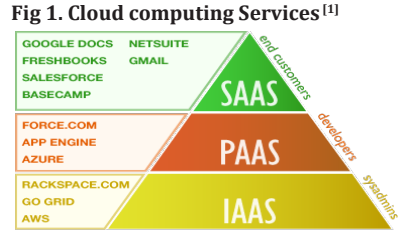
WORKING OF CLOUD COMPUTING

In this section we would like to take one simple scenario from that we are going to explain the working of the cloud computing. Lets take the scenario of one big company, there it is having managers, executives, developers and so on employees. Take the example of executive there he will make sure that all of his employees have correct hardware and software they need to the jobs. Now buying computers for everyone is not enough and he also have to purchase software or software license to give employees the tools they require. These kind of job is very cumbersome to executive to provide all necessary items to all employees. Instead of doing this executive can take an advantage of cloud computing feature where executive can hire the hardware and software of others through the help of cloud computing service providers. One of the best feature where application would allow workers to log into a web-based service which hosts all the programs the user may need for his or her job. Remote machines owned by another company would run everything from e-mail to word processing to complex data analysis programs. This is what we called cloud computing and it could change the working of entire computer industries.

CLOUD COMPUTING SERVICES

The fig shows the different kinds of services which provided by cloud computing

Fig 1. Cloud computing Services [1]



1. **Infrastructure as a service (IaaS):** It offers the hardware as the service, so that the firm can put whatever they want. IaaS providers Rent the resources such as server space, Network equipment, Memory ,CPU Cycles and Storage Space.

The is based on a utility computing basis and amount of resources consumed. Resources are typically billed based on a utility computing basis, so providers charge by how many resources are consumed. The service provider example is Amazon we Services(AWS) is one of the pioneers of such an offering. AWS Elastic Comput Cloud(EC2) is "A web service that provides resizable compute capacity." Once users signed up, users can use a simple API to request for any number (that will be resizable) of 'Instances' to be brought up. An instance may be a complete operating system running as a virtual machine over the cluster of machines in Amazone's data centers. Simple Storage Service(S3) is another popular IaaS offering from AWS.S3, as the name suggests, allows users to use an API to store and retrieve vast amount of data.

Many companies with a hybrid environment are likely to include IaaS in some form because IaaS is a highly practical solution for companies with various IT resource challenges. Whether a company needs additional resources to support a temporary development project, an on-going dedicated development testing environment, or disaster recovery, paying for infrastructure services on a per-use basis can be highly cost-effective[3].

2. Platform as a Service (Paas): It gives all resources required to build applications and services completely from the Internet,without having to download or install software. It also called as **Cloudware**. This PaaS model make all of the facilities required to support the complete life cycle of building and delivering web applications and services entirely available from Internet.

PaaS is used many users simultaneously it is designed to provide automatic facilities for concurrency management, scalability, fail over and security. It supports web development interfaces such Simple Object Access Protocol(SOAP). Representational State Transfer(REST), which allow the construction of multiple web services, sometimes called mashups. There are three different types of Paas are available they are

- Add on development facilities.
- Stand alone environment
- Application delivery-only environment

A primary value of a PaaS environment is that developers don't have to be concerned with some of the lower-level details of the environment. Infrastructure as a Service (IaaS) is at the foundational level and includes capabilities such as operating systems, networks, virtual machines, and storage. In the middle is the PaaS environment, which includes services for developing and deploying applications[2].

3. Software as a Service (Saas): This provides hosting service to customers who can access via Internet. For example take any Software that has traditionally been used on the desktop or run on a local server by an IT admin and offer it as a service and you become a SaaS provider. E-mail is probably the most common such software although we have been used to e-mail provided as a service for so long that it is difficult to think of it this way. Google Docs and Zoho office are other examples of SaaS where common office applications such as word processor and spreadsheet are provided as a service.

SaaS is not a stand-alone environment. Instead, these applications and services are frequently used in combination with lots of other cloud and on-premises models. Companies need their SaaS applications to couple with other applications and platforms on their own data center and with other cloud platforms[4].

CONCLUSIONS:

From this paper reader may get some knowledge about the cloud computing and its services. To summarize, the cloud provides many options for the everyday computer user as well as large and small businesses. It opens up the world of computing to a broader range of uses and increases the ease of use by giving access through any internet connection.

REFERENCE

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