

Cloud Computing Technology: Present to Future

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Abstract – The cloud computing is a new computing model which provides a low-outlay, high accessible, scalability, ease of use, ease of maintenance, reliability. Cloud computing is a set of resources and services such as sharing of resources, network infrastructure, less IT are required for implementation. The cloud computing does not need to pay the cost for infrastructure, its installation. In this paper we will discuss about cloud computing, features, architecture and benefits of cloud computing

Index Terms— cloud computing; features; architecture; cloud security

I. INTRODUCTION

From the term “cloud computing” we can understand the telecommunication of Private Networks [1]. In cloud computing data access, computing, software and storage forces may not require the and awareness of physical location and system configuration, cloud computing is latest for those who will transform the from moveable devices to large data centre. The importance’s, and tie them to achieve highest output and will be able to solve large scale computation problems, cloud computing cooperate with superiority of forces and the prominent computing models of cloud, that is private, public, hybrid [2]. Cloud computing is a set of integrated and networked hardware, software and Internet infrastructure (called a platform).By means of the Internet for communication and transport provides hardware, software and networking services to clients.These platforms conceal the intricacy and details of the inventive infrastructure from users and applications by providing very simple graphical interface or API (Applications Programming Interface).

Cloud computing is provides a low-outlay, highly accessible, to make sure the security of data, high expansibility, more prominent mode of computing, more attainable, ease of employ and ease of continuance.

II. CLOUD COMPUTING

To define cloud computing, data will be accessed from any location, so people thought that their privacy of a data will be disturbed, so it will be little bit risky for using as far as privacy concern, replication time and cost also play an important role, how fast can the data be replicated is important. Handling over the crucial data to another company that give jitters to some people, corporate users will definitely some extent in adopting cloud services as they can keep their company

information under lock and key, customers pay these companies as they are reliable in security measures. Otherwise they would loose their clients, its their concentration to provide best services to their clients. Figure 1 shows cloud computing services.



Fig 1: Cloud Computing Services

III. FEATURES OF CLOUD COMPUTING

- User will use the data, application or other services with the help of browser regardless of the devices used and the user location [2].
- The infrastructure which is generally provided the other party and it is accessed by internet, cost is minimized to significant level.
- Its provides the low set-up outlay.
- Important services can be retained by using multiple websites which is usable for commerce purpose, and failure recovery.
- Enormous scalability.
- Blunder liberal & highly reliable.
- Intra- & Inter-cloud load balance.
- Instantaneous application deployment.
- The suppleness and elasticity allows these systems to scale up and down at will utilizing the resources of all Kinds (CPU, storage, server capacity, load balancing, and databases).
- Sharing of resources amongst a maximum collection of users.

- Cloud computing scalability so its performance can be monitored.
- Security can be as superior as conventional systems. On the other hand, security still remains an essential anxiety when data is quite confidential [3,7].

IV. ARCHITECTURE OF CLOUD COMPUTING

Cloud computing system can be divided into two sections: the front end and the back end [8]. They both are connected with each other through a network, usually the internet. Front end is what the client (user) sees whereas the back end is the cloud of the system. Front end has the client's computer and the application required to access the cloud and the back has the cloud computing services like various computers, servers and data storage.

Layers of Cloud Computing:

The below figure shows the different layers of cloud computing architecture [4].

Client
Application
Platform
Infrastructure
Server

Fig 2: Layers of Cloud Computing Architecture

Computer software and hardware which based on cloud computing for reliable services collectively called cloud client [5]. A cloud application delivers “Software as a Services (SaaS)” [10] over the internet, an in that we don't required any installing [5]. Examples are Salesforce.com (SFDC), NetSuite, Oracle, IBM and Microsoft [6, 9, 11].

Cloud computing delivers Platform services for using the cloud infrastructure as a platform “Platform as a Service (PaaS)”. Clients are provided platforms access, which enables them to lay their own adapted software's [8]. Examples are GAE, Microsoft's Azure [6].

Cloud computing delivered the “Infrastructure as a Services (IaaS)” and provides a infrastructure according to usage, with use of these services client has not purchase any servers data centre or any network resources, as a result customer can achieve faster services with low cost [2]. Examples are GoGrid, Flexi scale, Layered Technologies, Joyent and Mosso/Rackspace [6].

V. TYPES OF CLOUD COMPUTING SERVICES

Public Cloud: With the help of public cloud user can access the cloud as much as they can and they have to pay only for there usage i.e pay-per-use, it can comparable to the internet bill in our homes whatever we use the access the internet, only that much have to pay, this will help in IT cost reduction [2].

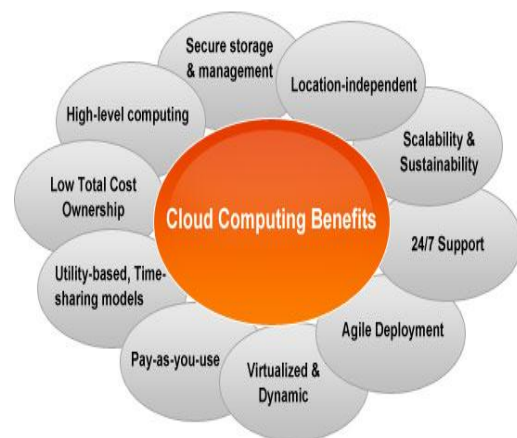
Private Cloud: A private cloud is used in with in the infrastructure, the main usage of private cloud is that we can sustain and deal with the security with in the infrastructure and we can get the optimum result from it, in other language private cloud can compare is easily manageable [2].

Hybrid Cloud: As name defined hybrid means mixture of two things, here also hybrid cloud is a mixture of public and private cloud, it will need private cloud for usage within the organization so we can use the public cloud.

VI. BENEFITS OF CLOUD COMPUTING

Maintenance Easily: The maintenance of the infrastructure in hardware and software is easier, thus it is less hectic for the IT team also the application which required more space it will easier to use in the cloud environment as compare to using the environment of its own. Instantaneous Software Updates: In cloud computing, no longer faced with choosing between superseded software and high upgrade costs. When the application is web-based, updates occur automatically - obtainable the after that we log into the cloud. When we access a web-based application, we acquire the latest version - exclusive of needing to pay for or download an upgrade.

Management Of Calamity: Cloud computing is very reliable when any disaster is about to come or it happen, backup of all the data is remain offsite for future handling, it will also take backup of crucial data because is always helpful. Enhanced Performance: By means of little outsized programs hogging your computer's memory, we will see better recital from your PC. Computers in a cloud computing system boot and scamper more rapidly because they have fewer programs and processes loaded into memory.



Green Computing: Due to large usage of the system, harmful emission will be generated, electricity usage will be larger so we can use cloud computing for ignoring all that, energy consumption is the main drawback of this present day systems but by using the cloud computing we can save that energy at some extent [2].

VII. CHALLENGES

As all others data communication fields or technologies cloud computing is also facing challenges. The mostly asked term is “security and privacy”, the issue associated with all related areas. Though many risks can be eliminated through new security software’s such as encrypted file systems and data loss prevention software. Hybrid cloud is also a solution but organizations are still need some specific workout to ensure privacy in their enterprises. Other challenge is the difficulties the contractual relationship as the integrated ecosystems of providers to provide complete solution and practically it is hard to find solution in single contract. Challenges can be concluded in managing the cloud and lock in dealing problems [14]. However problems and challenges vary enterprise to enterprise and many of them can be solved by proper planning contracting and management of services and mutual consciousness of client and service provider.

VIII. CONCLUSION

In this paper we have discussed a new wave in the field of information technology: cloud computing technology. We have also explain all the advantages, features, about the cloud computing, also the architecture, there is no doubt cloud computing is currently best technology that fulfil all the requirement of business world. We can have approximately infinite computing capabilities, scalability, pay-per-use scheme and so on. However this wave still needs to resolve some of its existing issues with urgency.

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