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Study of Cloud Computing Services

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ABSTRACT: Cloud computing technology has been a new buzzword in the IT trade and imagining a new prospect for future domain. It is a way of computing which is having vigorously accessible virtualized sources provided as a facility on the Internet. Today is the period of Cloud Computing Technology in IT Industries and Cloud computing that is based over Internet has the utmost influential architecture of computing resources. It decreases the period essential to obtain substantial resources and boot new server instances in minutes that allows anyone to swiftly scale capability, both up and down as the necessity varies. It calculates a collection of united and network hardware, software and internet infrastructure. It has numerous benefits over grid computing and other computing.

In this paper, I have given a brief of evaluation of cloud computing by studying many articles on cloud computing. The conclusion of this research concludes the aspect of the IT industries earlier and afterwards the cloud computing is introduced.

KEYWORDS: Public, Private, Hybrid, SAAS, PAAS, IAAS

I. INTRODUCTION

Cloud computing is the group of networked elements providing facilities essential not be separately called or copied by users but instead, the complete provider-controlled suite of hardware and software can be said as a shapeless cloud. Alike real clouds that are the group of water molecules, the word cloud in cloud computing is the group of networks. The handler can use the modularity of cloud computing endlessly whenever required.

Instead of setting up their own physical infrastructure, the users generally choose a moderator provider for the service of the internet in cloud computing. The users have to pay only for the services they had used this concept is known as 'PAY AS YOU GO'. The work load can be transferred to decrease the work load in cloud computing. A load of service is managed by the networks that creates the cloud that's why the load on local computers is lessen while running an application . So the request of hardware and software at the user side is reduced. All we need is to have a web browser like chrome to use cloud computing.

II. CLOUD COMPUTING

Traditional business applications have always been very expensive, complicated and you need a whole team of experts to configure, install, test, run, update and secure software, hardware. You eradicate all worries using cloud computing because you are not handling software or hardware that's responsibility of an experienced vendor.

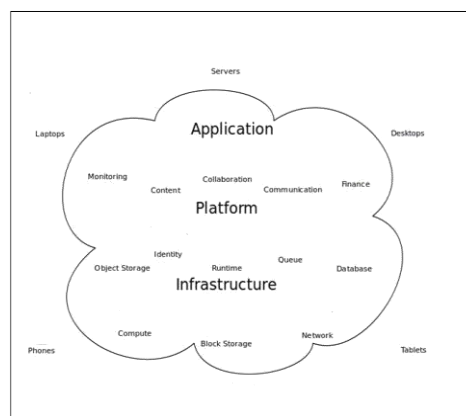


Fig. 1: Cloud Computing

New trend in IT is Cloud computing. All Businesses are running all kinds of applications with the cloud ; Like , Accounting , HR, Customer relationship management (CRM) and many more. Through a cloud application you just need to open a browser and then log in and customize application as per the need and start using it. Cloud computing means simply storing, accessing data and programs over an Internet instead of your computer’s hard drive, as well as with an online connection, cloud computing can be done anytime, anywhere.

Cloud computing is simply a model for assisting , global, suitable ,on-demand network access to a shared pool of configurable computing resources like networks, servers, storage, applications, and services that can be quickly provisioned as well as released with less management strength.

Following are the key features of cloud computing:

- Resource Pooling
- Easy Maintenance
- Self-Service and On-Demand Services
- Large Network Access
- Economical
- Automatic Services
- Security
- Pay As You Go
- Measured Service
- Quality of Service
- Availability

III. EVOLUTION OF COMPUTING

Back in 1960’s One day in a speech at MIT in John McCarthy said in his speech that like water and electricity, “ the computing can also be sold like a utility”. Later in 1999, the Salesforce Company started distributing the applications to the customers through a convenient website .Afterwards, Amazon Web Services were started by Amazon in 2002 and they started providing the services of storage and computation. In around 2009 many big companies like Google, Microsoft, HP, Oracle started providing cloud computing services and Nowadays each and every person is using the services of cloud computing in their day to day life. E.g. : Google Photos, Google Drive, and iCloud etc. Now cloud computing has become the elementary need of IT Industries .

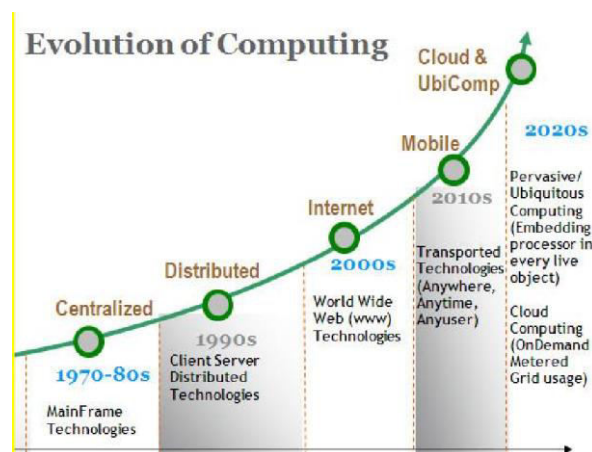


Fig 2 Evolution of Cloud Computing

IV. COMPONENTS OF CLOUD COMPUTING

Cloud computing has three basic components as follows-

- **Client Computers** : The end user can interact with cloud by using client computers.
- **Distributed Servers** : These servers are distributed amongst the different places but acts like they as working with each other.
- **Data Centres** : Data centres are the collection of servers.

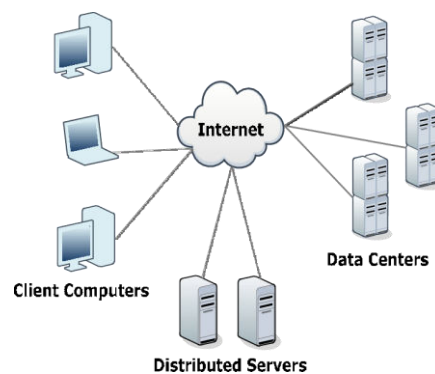


Fig 3 Components

Types of cloud computing

Two types of cloud computing :

A. Deployment Model :

- (i) Public Cloud
- (ii) Private Cloud
- (iii) Hybrid Cloud

B. Service Model

- (i) IAAS
- (ii) PAAS
- (iii) SAAS

A. Deployment Model

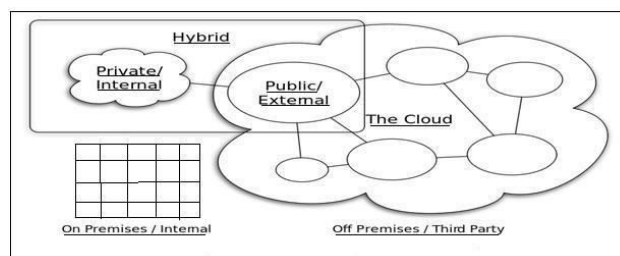


Fig. 4: Deployment Model in cloud

Public Cloud:

The public cloud is a computing service supplied by the third party providers over the public internet . These services are offered to any user who wants to use them and they have to pay only for the services they will consume.

Private Cloud:

The computing services provided over the internet or private network falls under the private cloud and these services are offered only to only selected users in place of common people . A higher security and privacy is given by private clouds through a firewall and internal hosting.

Hybrid Cloud:

Hybrid cloud is combination of public cloud and private cloud. In the hybrid cloud each cloud can be managed independently but the data and the apps can be shared between the clouds in the hybrid cloud.

B. Service model

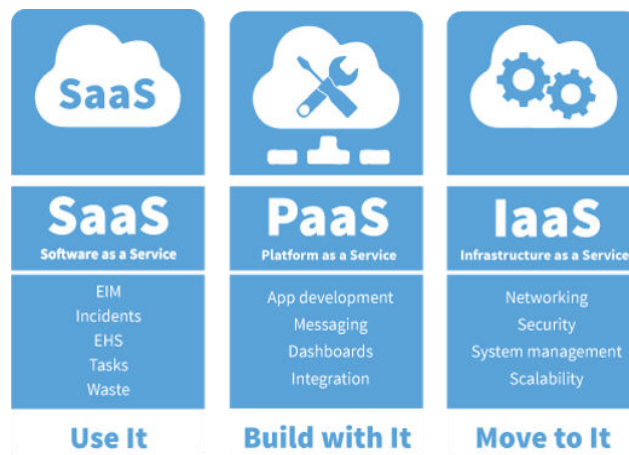


Fig 6. Services Offered by Cloud Computing

Software as a Service (SaaS):

This method 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 need not to buy any software or hardware, or maintain and update it. The only thing user need is an internet connection and then access to the application is very simple. Example, Microsoft Office 365, Google Apps etc.

SAAS – Software As A Service



Fig 7. Software As A Service

Platform as a Service (PaaS):

A development environment or platform is given to the consumers as a service in PaaS, over which user can deploy their own coding and software. The customer has the freedom to build their own applications that can run on the provider's infrastructure. PaaS providers offers a predefined composition of operating system and application server to obtain the management capacity of the applications. E.g. : LAMP (Linux, Apache, MySQL, and PHP), J2EE, Ruby etc.

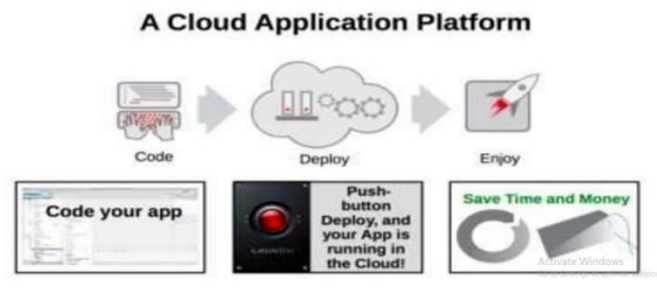


Fig 8. Platform As A Service

Infrastructure as a Service (IaaS):

Many computing resources are provided by the IaaS in the form of operating system, storage, network, hardware, and storage devices on demand. IaaS users can access the services using a wide area network, such as the internet. e.g. : a user can create virtual machines by logging to the IaaS platform

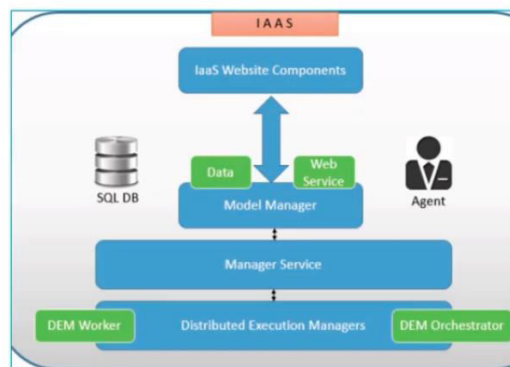


Fig 7. Infrastructure As A Service

V. CLOUD COMPUTING ARCHITECTURE

Step Cloud Computing architecture contains of many cloud components and each of them are loosely coupled. We can split cloud architecture into mainly two parts like Front End and Back End and also each of ends are connected through a network, usually through Internet.

A. Front End:

It states to client part of cloud computing system, as well as consists of interfaces and applications that are mainly required to access cloud computing platforms.

B. Back End:

It states to cloud itself, as well as consists of all resources required to provide cloud computing services. Back end comprises of huge services, security mechanism, data storage, virtual machines, servers, deployment models, etc.

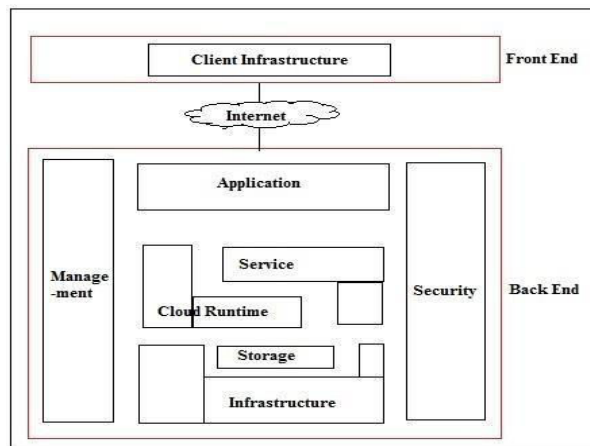


Fig. 4: Graphical view of Cloud Computing Architecture

VI. BENEFITS OF CLOUD COMPUTING SERVICES

Cost Saving:

In cloud computing users have to only pay for the services they consumed as it follows the 'Pay as you Go' approach. The Maintenance cost is very 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 strong access controls, key management, the data encryption, and security intelligence

VII. CONCLUSION AND FUTURE WORK

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 and the cloud is need of today's world.

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BIOGRAPHY

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