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Cloud Computing: A Review Paper

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Abstract: *Cloud computing is a major aspect for present time. In today's world, it is going to become a part of life as it makes the work easy at every region as in business sector or for students or in any sector where we need to store data. With the help of cloud computing, life of people became easy because we don't have to carry data in the form of register and log, we can simply check our data anywhere by my personal handset or personal laptop. It is more secure as well. It is less costly than other traditional computing. In this paper we will discuss about the services of cloud computing, then about the types of cloud computing, after that we will discuss its important factor that how is it beneficial for us? How can we use it in daily life? We will also discuss about the challenges happening in future due to spread of cloud computing?*

Keywords: *Cloud computing, Server, Internet, API, Web browser, Networks, Virtualization, Security, Infrastructure.*

I. INTRODUCTION

Cloud computing is simply sort of a cloud as cloud have collections of water molecules similarly in cloud computing there's an oversized no. of networks. Cloud Computing resources include network, services, space for storing and applications^[1]. It's a brand-new technology during which we are able to operate or run any of the workflow application without having any in-house infrastructure. It is an on-demand resources and not need to manage directly. The term cloud computing is basically used to explain the center of data available on Internet for the users. It is a large network of powerful server which is used to provide services to the people.



In today's era of cloud computing, it is totally based on Internet. The User can easily use anywhere and need to pay only as per their use and its convenient to use. The setup of cloud computing doesn't need any infrastructure. We are also aware that Cloud computing has become so popular as blogger are also using it. In most of scenario, most of tech companies is using cloud and, in a survey, it made it clear that in upcoming years, cloud computing is going to be used more and more at large scale.

In our daily life, we are also using cloud computing in the form of Gmail, iCloud, dropbox or Netflix or Mx-player, etc. Developing cloud is an efficient role for increment of business.^[2]

In 1960, Joseph Carl Robnett Licklider had developed cloud computing with his work on ARPSNET to interact with data anywhere. Cloud computing always offers a simplified and streamlined solution to this complexity. The most important which includes cloud computing services are like Google Docs or email services. In most of cloud application, back-end process must rely on relational database as part of code is written in query language or SQL whereas in client-side program is to be executed in JavaScript embedded within HTML documentation. It deals with different parameters like computation, software, data access, storage, etc. It is a way of leveraging the Internet to consume software.

II. CLOUD COMPUTING SERVICES

Cloud services provide a wide range of services delivered over Internet as per demand. Cloud services are completely maintained by Cloud computing service providers. They are directly provided to the customers so that they don't have the need of a company to host any applications. When a cloud computing is recognized, the development of cloud technology is based on requirements. Leveraging our own global cloud network consisting of more than 2,16,000 application acceleration services in over 120 countries. Cloud computing services providers have the infrastructure to deliver their service. Today Cloud services became essential to meet the requirements of IT sectors. A variety of services are available including file storage, backup, project management tools, etc.



Generally, three most common and popularly known services are:

- A. IaaS
- B. PaaS
- C. SaaS

- 1) *IaaS*: (Infrastructure-as-a-Service) IaaS is known as Infrastructure-as-a-Service. It is most common cloud computing model emerged in 2010. IaaS are online service, which provides us high level API for various low-level details of network. This service is the most common on demand service which was provided to the user for another outsourced platform. The entire services are being controlled by cloud itself and the resources will be shared to multiple users.^[6]
- 2) *PaaS*: (Platform-as-a-Service): PaaS is often called as Platform-as-a-Service. It is a user friendly and permit users to use Platform and deploy software or apps in cloud. It is a popular service for performing development and deployment ^[7]. The Important thing in PaaS is that it's easily accessible anywhere through a web-browser.

The common scenarios of PaaS:

- a) Development framework
- b) Analytics intelligence
- c) Business intelligence
- d) Security

- 3) *SaaS*: (Software-as-a-Service) SaaS is usually referred as Software-as-a-Service. This model has the feature which permit end-user to use computer as a service. In SaaS, the appliances which we run are going to be on cloud. User can access SaaS application on any device.

The common scenarios of SaaS for application :

- CRM
- ERP

III. TYPES OF CLOUD

Generally, it is known that Cloud computing have categorized in to following parts:

- A. Private cloud
- B. Public cloud
- C. Hybrid cloud

- 1) *Private Cloud*: It is commonly called as corporate or internal cloud. Private cloud is essentially owned by one group or one people with high level firewall security. They are located on data center physically depending upon their own hardware. At that position the entire access of that cloud is having to that organization. IBM has started some of the private cloud sources providers like own cloud^c, critix cloud platform and etc.^[4] The whole cloud become private if it is dedicated with a single business or person with isolated access. IT sector is centralized with this business as the environment provided by them is precious. Private cloud is basically preferred due to having some large workload with confidential documents, financial data and etc.

There are some of the technologies required for the architecture of Private cloud, they are:

- a) Virtualization
- b) Management software
- c) Automation

Basically, it manages compute, network, storage and etc. available on their network.

2) **Public Cloud:** It is an on-demand computing service managed by third party organizer and distributed or shared with so many organizations with the help of public internet. Public cloud may provide a number of the services like Iaas, PaaS, SaaS to user to use as per need they need to try and do the payment. It basically source and services so anyone should buy and use in keeping with their convenient. It's a preferred solution within the aspects of storage.

There are numerous pros of using this cloud:

- a) Less expensive
- b) Low server Management
- c) Security
- d) Flexibility

3) **Hybrid Cloud:** In hybrid applications are running on different environment as basically it approaches a widespread since no one is relying on public cloud. Like Google cloud, we may use it in both the aspects like either in private or in public mode. Hybrid Cloud consist of their applications and contents during deploying across public or private cloud such as compute, networking and storage. This type of cloud provides the benefits of both public and private cloud.

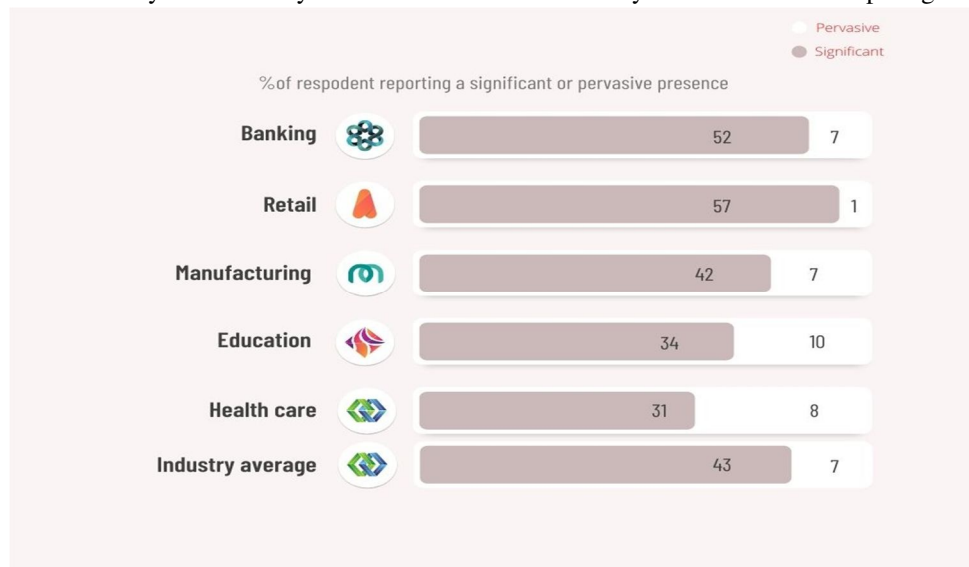
There are some of the common hybrid cloud scenarios:

- a) Big data processing
- b) Separating critical payloads
- c) Dynamic changing
- d) Temporary processing
- e) Flexibility

IV. IMPORTANCE AND BENEFITS OF CLOUD COMPUTING

Today, cloud computing is one of the major sources for industries. It is not only best for Company or business but also having a great benefit for single person user to save their data easily and able to access anywhere. For personal purpose, cloud computing can be used in services like Google cloud or Apple iCloud or Microsoft One drive. It is so important because it offers flexibility, data recovery, easy access and a higher level of security. In place of using any other traditional computing cloud computing is a major factor for benefits to grow and work in less cost. A question always arises that what is the need of cloud computing? Basically, it is numerous individual and encountered in today's world. we need it because it gives us opportunity to handle my work on server without engaging more space and more cost on hardware to maintain data. It is very simple delivery of computer services. The major real-life benefits are that we can access any of my own data anywhere, we don't have to carry anything with us to showcase, it saves our time, reduce cost, benefits of environment and security.^[5]

First, we need to understand the dynamics in key Industries to understand the dynamics in cloud computing^[3].



There are some important sources for cloud computing:

- Efficiency
- Flexibility
- Scalability
- Security
- Accessibility and Increased Collaboration
- Disaster Recovery
- Saving Costs
- Strategic edge

The attractive benefits are to create multi cloud computer with the help of **RDSH**. The RDSH (Remote Desktop Session Host) is a deployment based on session where multiple cloud session can be used on a single Windows based server.

V. CONCLUSION

This paper concluded the Introduction part of Cloud computing, about its development and the purpose of development. In this paper, it is concluded that there are mainly three services provided: 1.) SaaS (Software-as-service) 2.) PaaS (Platform-as-service) 3.) IaaS (Infrastructure-as-service). We have discussed that how all these services working and what are its benefits? We have proposed the types of cloud computing, its importance and benefits.

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