Cloud Computing and Its Use in Libraries

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Abstract

Cloud computing is one of the most emerging technology in library or any organization. Cloud computing is 3rd revaluation technology. This article reveals that what is cloud computing and its components. The purpose of this article shows the type of cloud computing, merits, demerits, and its use in the libraries. Through cloud computing library services can be made strong.

Keywords: Cloud computing, web-based computing

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INTRODUCTION

Cloud computing has become a new buzz word in modern digital era. It is a computing model which is the based on Internet technology. It is a large paradigm where big pool of systems are connected to the network. Cloud computing refers to the computing environment where data application and users come together. It is developed in the 20th century, but used in the 21st century because 21st century gives it a suitable environment. In briefly where hardware and software come together, we can called cloud [1].

There are main example of cloud:
1. Gmail, Yahoo search engine
2. Twitter, Facebook media

Components of Cloud Computing

Cloud computing has three main components
1. Client
2. Data center
3. Distributer servers

Client

Client is the first part of cloud computing. In cloud computing, process pc, laptop, mobile are main clients.

Data center

Data center is a second component of the cloud, it is a data server.

Distributer server

It is the third part of cloud computing. There are three parts of cloud computing which plays a vital role in its application. Each part has its own purpose and plays a specific role of its use.

Cloud Services

1. *SaaS* (*Software as a Service*): In this service, users do not need to buy software, because users can install it.
   Service: Services are the set of applications developed by the service provider to use cloud infrastructure and platform.
2. *PaaS (Platform as a Service):* PaaS provide the cross platform integration for verity of resources of different knowledge-based location and different platform. PaaS users do not need to buy hardware and software. In the computer system, platform is the main thing who gives service. Anil Kumar Mishra [2] says about PaaS:
   "PaaS is an application delivery model that is independent from the specific operation system. It is running on, it is meant to be only, a web-based development infrastructure"
3. *IaaS (Infrastructure as a Service):* In infrastructure contain the resource of the information and logical architecture of the information. IaaS provide IT infrastructure to its users. Internet connectivity, automation of administrative tasks, policy-based service is the main components of IaaS.

Types of Cloud Computing

1. *Public cloud*: When the cloud service provide to general cloud on Internet called public cloud. It is known as public cloud model. Some examples of public cloud are as follows.
a. Google app engine (http://code.google.com e/openging [AQ: The URL provided is not accessible. Perhaps it has moved or has changed. Please verify and provide an accessible URL.])

b. Web fusion (http://www.webfusion.co.uk/ cloudhosting)

c. Amazon ECZ (http://ans.amazon.com/ecz/ [AQ: The URL provided is not accessible. Perhaps it has moved or has changed. Please verify and provide an accessible URL.])

d. Rack space cloud (http//www.rock space.cloud.com[AQ: The URL provided is not accessible. Perhaps it has moved or has changed. Please verify and provide an accessible URL.])

Public cloud is the most efficient method for library because library and its organization does not need to generate fund for the purchasing of hardware and software.

2. *Private cloud*: User model is originally developed and managed by a single organization or a third party if located in campus or nearby.

When any cloud dedicated to organization, this is known as private cloud. Private cloud permits only specific users. It is most useful to large organization such as universities, bank, railway board, and so on etc. There are two type of private cloud.

a. On premise private cloud

b. Externally private cloud

This cloud will facilitate users to data stores and its distribution on respective cloud. Through private cloud, resource sharing is possible in term of hardware and software, it is hosted within one's data center. Data security is the main problem of cloud but in the case of private cloud problems of data security is solved in large extent. Its main aim is to optimize utility of in-house resources, data privacy and trust, data transfer, cost saving, and so on.

3. *Hybrid cloud*: When a cloud is made from more than one cloud whether public, private, and community and bound together with standard, it is a hybrid cloud.

The composition of private cloud and public cloud called hybrid cloud. In this type of cloud, a part of cloud will be given to public users. Cloud computing increase flexibility of computing hybrid cloud's environment provide service on demand. Hybrid cloud according to Mohan R Kherde [3].

"In Hybrid model the individual organization manage its data along with infrastructure for its section on private cloud and also extend the service to other organization on their demand either free of charge or on payment basis."

It is widely used and provides more facilities and flexibility to make maximum use of resources [4].

4. *Community cloud*: Community clouds are those clouds which is related to any community. It may be railway board, bank community, business community, and so on. Community cloud hosted external or Internet [5].

Cloud Computing for Library

Cloud computing gives facility to the library. It is useful for library automation, technical in-house operations, and support various standards, such as, Manc21, XML, Z39.50, Unicode, and so forth, which are directly related to libraries [6,7].

Collection of knowledge, is the prime factor of library cloud computing, provides resource and capabilities of information technology to the libraries.

1. E-resources process is very essential for academic libraries. It is possible through cloud.

2. Sharing of database is possible through cloud.

3. OCLC is one of the important example of its co-web OPAC and can be uploaded on cloud. It provides cataloging tool over the Internet.

Merits of Cloud Computing

Cloud computing has many benefits. They are as follows:

1. Library service is very strong with the help of cloud computing

2. Data base sharing is possible

3. Cloud computing gives unlimited strong capacity

4. Cloud computing is most cost-efficient to use

5. Highly secured infrastructure

6. Use of cloud computing reduce cost of hardware software

7. No need of antivirus

8. Easy to access information from any where

9. Quick to market on time

10. Flexible and scalable infrastructure

Demerits Cloud Computing

No system is full of proof in the word[AQ: The sentence given here seems incomplete. Did you mean to give "No system is foolproof in the world." Please verify. Or please edit as necessary.]. Cloud computing has many merits but there is some of risk in its uses. It is as follows:

1. There is a risk of data loss
2. My be failure in compliance
3. There is a danger of hacking and threats
4. Library will need a very good Internet connection but sometimes problem in network connection or electricity can affect it.

CONCLUSION

Cloud computing is the solution for many problems of computing. Cloud computing is the one avenue for this move into the future. It can bring several benefits for library and give them a different future. So cloud computing is the new technology suitable for any environment.

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