

# Application and Services of Cloud Computing for Library and Information Centre

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## ARTICLE DETAILS

### Article History

Published Online: 10 December 2018

### Keywords

Cloud Computing, Library Services, Cloud Deploy models, Cloud service models, Cloud Library

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## ABSTRACT

Library has important role in the progress of Education, University, society and country. Therefore, Library and Information Centre should adopt new technologies and ICT in Library Services. To purchasing new technical infrastructure and resources library and information centre need big fund for implementation and maintenance for technical infrastructure, it may be difficult for library and information Centre to accept new technologies. For library or organization, having financial problems, cloud computing is a best solution for it. Using cloud computing, we can borrow services and infrastructure on rent as per the requirement of library. Library and information centre has not to develop or maintain IT resources by itself. Institute needs to invest as per their requirement. In this study, disadvantages of traditional library system and advantages of library services with cloud computing are presented. And also discuss about the cloud services which are useful for Library users.

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## 1. Introduction

Library and Information centre are key factor for development for Education and country. In last few years, Library and information centre become more powerful using high Information Communication Technology. Implementation of new technology traditional library services being merged towards online library services. New technologies required IT resources with security to access large number of users, access online resources at a time. It is compulsory to provide high quality library services to users. Accepting new technology quite difficult to financial problem for library and information centre. Now cloud computing is best solution for purchasing and maintaining IT infrastructure. Cloud based library services can be accessed from any devices any time through internet. All thing is stored in cloud servers, user not required high configurable devices. User can have accessed online library resources when they want without any geographical location using cloud computing. Thus, cloud computing best solution for IT infrastructure. At present every user of library uses computers, laptops, smart phones and also using cloud based services such as gmail, facebook etc. so it's easy to implements cloud based library services in Library and Information centre. Most of computerized library and information centre want to adopt cloud computing for their users because it motivate users to use library services. Cloud based library services are more effective and independent than traditional Library services.

## 2. Disadvantages of traditional Library services

As traditional library services all user access their required study materials in physical format, no online resources are available in library. Books are kept in Lock and key and librarian worked as a custodian. User not approaches to desired materials, main work of librarian is circulation. Library budget is always low or reducing it, therefore it's become very difficult to purchase latest books or subscribing periodical. Users are not getting latest information due to poor library services. For all these disadvantages of traditional library

services cloud computing has become best solution for library and information centre.

## 3. Cloud Computing

There are different definitions of cloud computing, according to NIST (National Institute of Standards and Technology) Defining "Cloud Computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (such as networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models."

**3.1 Advantages of cloud computing:** There are lots of advantages of cloud computing such as Save budget, Instant update, low cost computer, increasing performance, Unlimited storage, no special IT person requirement, Data safety, anytime access, easy backup and recovery, Green environment, multitenancy, resource pooling etc

**3.2 Disadvantages of Cloud Computing :** before adopting cloud computing, organization have to check disadvantages of cloud computing like Data privacy and security, High internet bandwidth, customer care support, Legal Issues, Technical Issues, Vendor Lock, Data handover policy etc.

## 4. Service models of cloud computing

There are Three Service models of Cloud computing

**4.1 Infrastructure as a Service (IaaS):** This type of service provides infrastructure like storage, network devices, networks on cloud. User not control and manage cloud infrastructure, but control their storage, network processing services.

**4.2 Platform as a Service (PaaS):** This type of service provide user to build their own application on cloud, user can run, manage and process without any third party. It provide basic computing and storage to run application on cloud ex. Google AppEngine

**4.3 Storage as a Service (SaaS):** It provided services to users by web portals or program interface. Users shifting from the local computer to online software services which functioning same. Traditionally word, Excel, power point applications are now accessed services on the web via internet. Ex. Salesforce.com

## 5. Deployed models of cloud computing

There are four deployed models of cloud computing which are as follows:

**5.1 Private cloud:** Private cloud is run for an organization or company, data not available for general public. This type of cloud computing is managed by third party or internally. Private cloud is secure than public cloud. e.g IIT, Delhi's Badal

**5.2 Public Cloud:** Public cloud is open for public itself. Public cloud also known as external cloud, it run by third party and applications from the different client, both linked together on storage and network. User have to just sign up to use cloud based services. Public clouds are large and run, maintain by big cloud vendors.

**5.3 Community Cloud:** This type of cloud made for several organizations and helps to a particular gather community for shared data, information, policy and common concern. It managed by internally or third party and hosted externally or internally.

**5.4 Hybrid Cloud:** This type of hybrid cloud is combination of more than two cloud whether it is public, private or community cloud. Some services are borrowing from public or private cloud and hosted on public or private cloud.

## 6. Major Vendors of Cloud Computing

There are lots of Cloud based service vendors are available in market such as IBM, Google, Microsoft, CISCO, Amazon, ZOHO and many more.

## 7. Cloud computing in Library and Information centre

Cloud computing is newly tools for library and information centre. It gives access to ebooks, online databases, digital collections of library. It gives new opportunity to providing library services to end users. application of cloud computing in library services, pattern and work flow will be changed, library professional reduces their work load and implement new and

advance services to library users. using cloud computing, users are to access library resources and collaborate work to share new information anywhere and anytime through internet. Any library and information centre not purchasing all resources due to budgeting problem, anyone can access other resources on cloud after paying charges to cloud provider. Library and information centre access resources from cloud as per their requirement such as storage, software, virtual machine and other infrastructure. These way cloud computing is useful in library to provide better services to users. Cloud computing reduces IT infrastructure because it maintains by cloud service providers or third party. Cloud computing has many advantages in library and information Centre such as cost saving, new way of library services, free from maintain IT infrastructure.

Some of advantages of cloud computing in library are costly books, reference books, journals are not required as ebooks, ejournals, databases are available on cloud, which are available 24 \*7. all resources are updated no old data found on cloud, cloud based hardware and software available on cloud therefore no need to purchase costly hardware and software, powerful resources are obtain from cloud which are very useful for library users. there are so many cloud vendors are available in market like, Google cloud, Amazon, Microsoft etc.

**7.1 Application of Cloud based library service:** Library and Information centre now creating institutional repository with duraclouds, duraspaces, OCLC's Wordcat is best example of searching library catalogue online, Cloud based Library Website, Knibus is cloud based research platform to searching scholarly content, Storage services used for store files and folders in Dropbox, Google drive, Skydrive etc, Cloud based Library automation software also available like polaris and Ex-libris services, Cloud based social networking help to sort out difficulties and problems of Library on twitter, LIS forum which are useful in building community power.

## 8. Conclusion

Cloud Computing is new technology to provide better library services in a new way that has not been provide earlier. Traditionally Library services have limitation to fulfill requirement of users. It does not provide online ebooks, online journals as they want anytime and anywhere, user have to visit compulsory library to need required materials, now scenario changed library become E-Library, Cloud library and with help of ICT all library resources available on web and it accessible anytime anywhere with user authentications. Cloud computing very useful for Library for giving state of art library services to users to fulfil their requirement.

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