CLOUD COMPUTING AND LIBRARY AUTOMATION: AN OVERVIEW

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ABSTRACT

Now a day's Technology is growing fast Cloud computing is a new technology model for IT services which many businesses and institutes are adopting. It avoids locally hosting multiple servers and equipment and constantly dealing with hardware failures, software installations, upgradations and compatibility problems. For many organizations, cloud computing can simplify processes and we can save time and money by using cloud computing. In this article we are going to discuss how cloud computing solutions could be advantageous to libraries in three basic areas: technology, data and community and how service platform to Digital Libraries through the use of cloud computing. Cloud computing is essential part of library automation; it is a need of today's era

Key words: Cloud computing, Library automation, e-library, Saas, Paas, Iaas

I.INTRODUCTION

Cloud computing is one of the exciting developments among the technocrats and animated librarians over the world as a technology solution as well as resource sharing venture. Today we are living in age of Digital Information. We can use Cloud computing in library section for collection of e –books, storage of data base organization processing and analysis of information and retrieval. In the field of higher education it has become one of the strongest adopters of virtualization as it allows the organization of all resources like laboratories and libraries centrally and gives remote access to students through mobiles too. Today's Libraries and IT experts are facing new challenges in managing electronic content achieves. The adoption of technology that enables an organization to understand the meaning of every piece of information to ensure quick and appropriate access when needed is required There are a variety of cloud-based services in the library world. The most obvious is cloud-based access to a library's book and AV collections through the Online Public Access Catalog (OPAC) that is part of the library's Integrated Library System (ILS). Through OPAC user can search the information titlewise, authorwise, and subjectwise. OPACs can be overlaid with cloud-based front ends or recommender systems to make them more user-friendly.

1.1What is cloud Computing?

Cloud computing could be a technology that permits sharing the resources and services over the web rather than

having these services and resources on native servers/ nodes or personal devices. Cloud computing is outlined because the sharing and use of applications and resources, Information of a network surroundings to urge work evaded concern concerning possession and management of the network's resources and applications. Cloud computing could be a approach of providing varied services on virtual machines allotted on high of an oversized physical machine pool that resides within the cloud. It is outlined a model for delivering data technology services within which resources square measure retrieved from the web through web-based tools and applications, rather than a direct association to a server. In servers knowledge and package packages square measure keep. Cloud computing structure permits access to data as long as Associate in Nursing device has access to the online. this type of system permits workers to figure distantly.

1.2 Definition of cloud Computing

Cloud computing may be a model for enabling everyplace, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and free with marginal management effort or service supplier interaction. Cloud model consists of five essential characteristics, three service models.

1.3 Use of cloud Computing in Library

With the recent advancement in data technology, libraries became machine-controlled with the advancement followed by networks and virtual Libraries .To increase the ability of cooperation and to make a major, unified presence on the net the library community will apply the conception of cloud computing. This approach to computing will facilitate libraries to avoid wasting time and cash whereas alter workflows.

 1. Most library computer systems are built on pre-Web technology

2. Systems distributed across the Net using pre-Web technology are harder and more costly to   integrate

3. Libraries store and maintain a lot of of constant knowledge lots of and thousands of times

4. With library data scatter across distributed systems the library's Web presence is weakened

5. With libraries running independent systems collaboration between libraries is made difficult and expensive

6. Information seekers work in common Web environments and distributed systems make it difficult to get the library into their workflow

7. Many systems are only used to 10% of their capacity. Combining systems into a cloud environment reduces the carbon footprints, making libraries greener

These improvements can be grouped into three basic areas: technology, data and community. Each offers some general and some unique opportunities for libraries.

II. CLOUD COMPUTING SERVICES

i)Software as a Service (SaaS)

Software package like CRM or CAD/CAM is accessed beneath cloud computing theme. Upon registration the user is allowed to use code accessible through web and use it for his or her analysis method. The connected

knowledge and work is also keep on native machines or with the service suppliers. we will use SaaS services on rental basis or on examine basis.

ii)Platform as a Service (PaaS)

Cloud vendors are unit corporations that supply cloud computing services and products. One amongst the services that they supply is termed PaaS. under this a computing platform like software package is provided to a client or user on a monthly rental basis. a number of the most important cloud computing merchandiser is Amazon, Microsoft, and Google etc.

iii)Infrastructure as a Service (IaaS)

It is the potential provided to the user to alter process, storage, networks, and different basic computing sources wherever the user is in a position to deploy and run impulsive package, which can embody operative systems and applications .The user doesn't manage or management the underlying cloud infrastructure however has management over operative systems, storage, deployed applications, and probably restricted management of choose networking elements.
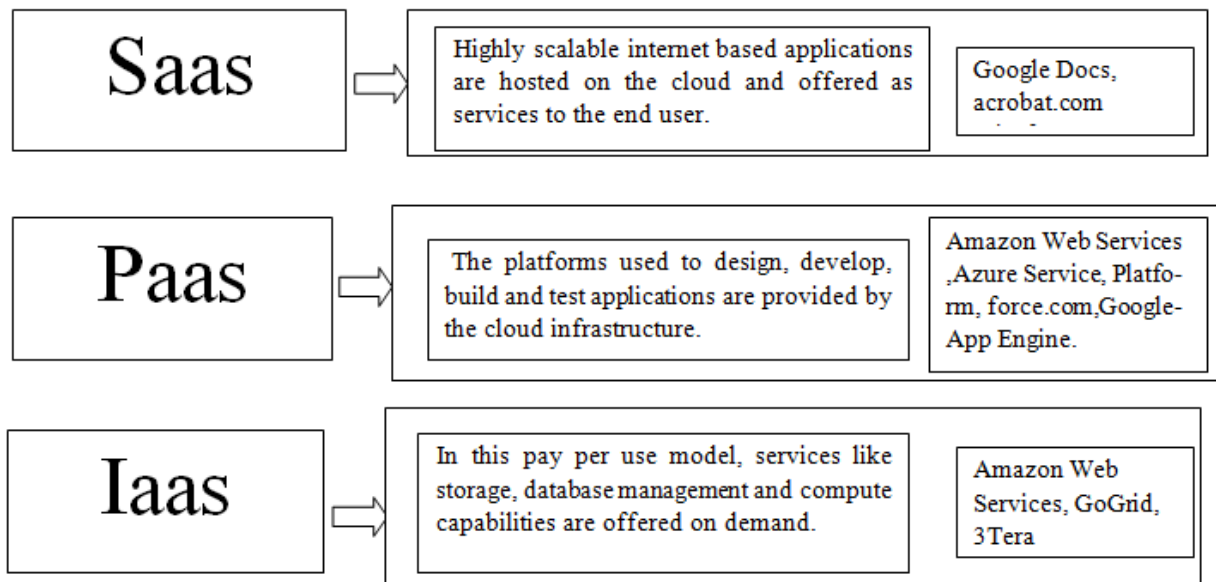

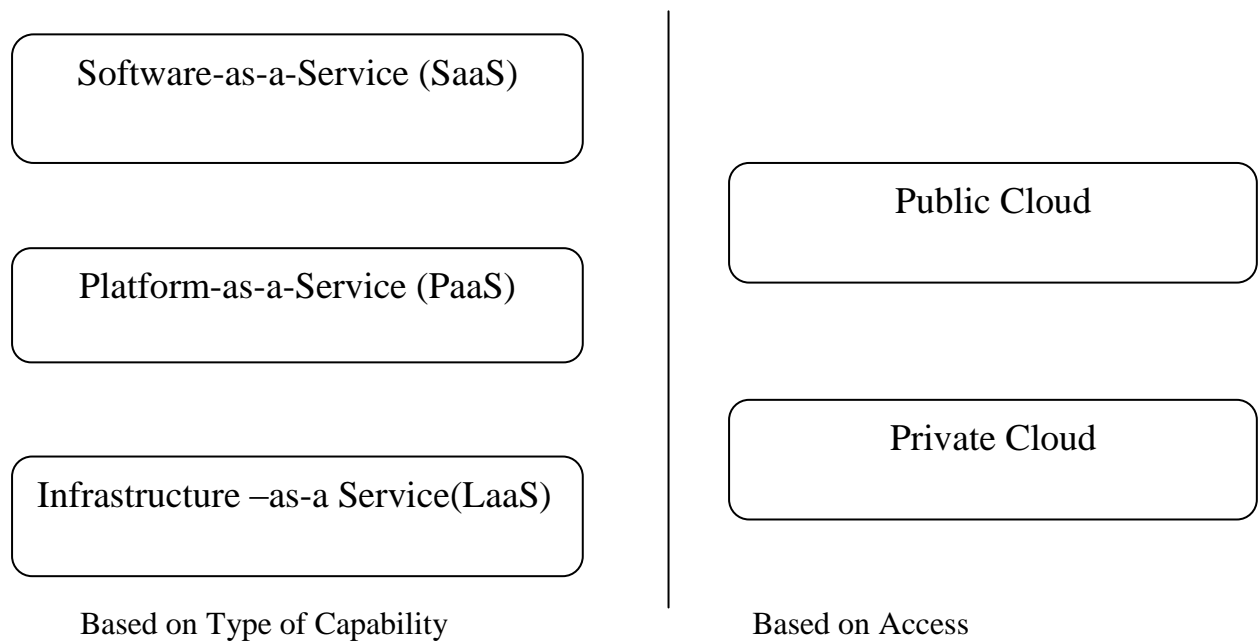**Figure No.1 Cloud Computing service model**

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┌─────────────────────────────────┐
│   Software-as-a-Service (SaaS)  │
└─────────────────────────────────┘

┌─────────────────────────────────┐          ┌──────────────────────────┐
│  Platform-as-a-Service (PaaS)   │          │      Public Cloud        │
└─────────────────────────────────┘          └──────────────────────────┘

┌─────────────────────────────────┐          ┌──────────────────────────┐
│ Infrastructure –as-a Service(LaaS)│        │      Private Cloud       │
└─────────────────────────────────┘          └──────────────────────────┘
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Based on Type of Capability   Based on Access

Figure No.2 Cloud Computing service model

III. SERVICE PROVIDERS OF CLOUD COMPUTING FOR LIBRARIES.

3.1 Ex Libris: Ex Libris could be a one in all well understand cloud service supplier primarily based in USA it's providing cloud answer within the field of libraries and consortia too. Sticker relies on varied normal and contains variety of options like compatibility, flexibility and migration of knowledge and data

3.2 Polaries Library systems: Polaris is one of the cloud based library automation system available in market. the company also provides standard acquisition and processing system. The systems use number of well know standards like MARC 21 for bibliographic data, XML, Z39.50 for information retrieval, Unicode.

3.3 Dura Cloud : Dura cloud is providing cloud answer for machine-controlled library services. Dura mater cloud may be a sister concern of the Duraspace that may be a collaboration of the Dspace digital library software and chapeau Commons. Chapeau Commons is one in every of the framework for digital repository. It offers complete answer for digital library with normal code and hardware answer. Dura mater cloud conjointly provides open ASCII text file and therefore the code must be put in on your machine. Where just in case if you employ Dura mater cloud storage and software you have got to subscribe Dura mater cloud services with a nominal price.

IV. CLOUD COMPUTING AND IT BASED SERVICES IN LIBRARY AUTOMATION

Most of library services can be scoped in to following three categories.

 i) **Data:** Bibliographic, Technical, Access, Licence

ii) **Content:** Collection, Subscription, Digital, Print, Publishing.

iii) **Services:** Library as a place, content-access, content-creation, research, preservation

V. E-LIBRARY SERVICES

E- Library refers to all the library resources that are available online through computers and databases. This is different from the open internets because E- Libraries have restricted access. E-library system facilitates library operations by offering

   i.   Systematic records of the library collection

   ii.   Reliable records of library patrons

   iii.   picture perfect check out and check in of library materials

   iv.   Ease of accessing statistical results

   v.   Generate real time report for management decision

   vi.   Outstanding/Overdue loan

   vii.   Periodic loan transactions

   viii.   Bother free stock taking of library materials

   ix.   Personalized service to each patron

Specific access account to library patrons to search or make reservation of library materials anywhere and anytime at their conveniences

5.1 Examples of Cloud libraries:

1. OCLC

2. Library of Congress (LC)

3. Exlibris

4. Polaris

5. Scribd

6. Discovery Service

7. Google Docs / Google Scholar

8. Worldcat

9. Encore

5.2 Advantages and Disadvantages to cloud Computing

Advantages

- Cost Effective.
- Flexible innovative
- Round the clock assess
- User centric
- Openness
- Transparency
- Interoperability

- Representation

- Availability anytime anywhere

- Connect and Converse

Disadvantages

- Risk of data loss.

- Failure in compliance

- Constant connectivity require

- Dependency

- Quality problem with cloud service provider

- Time and budget constraints

- Since all the developed and deployment have been done by Cloud service provider, it is difficult to get good grip on overall system.

VI. CONCLUSION

Cloud computing is the third generation platform. Library automation is a concept of data collection, data storage and data retrieval and we can use cloud computing effectively in library automation as it is cost effective, flexible, innovative, open access to access data anywhere, anytime as per users need. It can be used through internet. This approach to computing can help libraries to save time and money while simplifying workflows.

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