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Cloud Computing and Academic Libraries: An Overview

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Abstract:

Cloud computing is necessary application in Library & Information science. It is useful for security, virtualization, service oriented and good platform etc. it is a low cost infrastructure. Reliability is improved because of centralized networking. Present paper based on cloud computing their service delivery models and their potential area in the library.

Keywords: *Cloud computing, types of cloud computing, Iaas, Paas, Saas.*

1. Introduction

Cloud computing is completely, a new technology and it is known as third revolution after the PC and Internet. This technology is an enhancement of distributed computing, parallel computing and distributed databases. Among these grid and utility computing are known as predecessors of cloud computing. Data storage cloud is the main function of libraries partially those with digital collections storing large digital files on local server infrastructure. The files need to be copied, maintained and reproduced for patrons. This can strain the data integrity as well as control bandwidth. Moving data to cloud may be a leap for surface, it is believed that library would have some control over this data or cloud computing or IT infrastructure that exists remotely, often gives users increased capacity and less need for updates and maintenance and has gained wider acceptance among libraries.

2. What is Cloud Computing?

The basic idea of the cloud is always the same. It is a form of technology that allows enterprises and small business like to run applications that are houses always from the enterprises itself. Anyone connected to the Internet is probably using some type of cloud computing on a regular basis. Whether they are using Google's G-mail, organizing photo on Flickr or searching the Web with being they are engaged in cloud computing.

3. Characteristics of Cloud Computing

- **Reliability:** If multiple redundant sites are used reliability is improved. And because of this well designed cloud computing suitable for business continuity and disaster recovery can be implemented.
- **Security:** The major concern about cloud computing is security and privacy, especially the organization are dealing with private information related to the customer or users.
- **Performance:** It is monitored and consistent and loosely coupled architectures are constructed using the services as a system interface.
- **Cost:** It is claimed to be reduced and in a public cloud delivery model capital expenditure is converted to operational expenditure.
- **Multi-Tenancy:** Because of cloud computing, any application supports multi-tenancy that is multiple tenants at the same instant of time.
- **Service oriented:** Cloud computing systems are such that they are created out of other discrete services.
- **Virtualization:** The cloud computing environment is a fully virtualized environment. This technology allows services and storage devices to be shared and utilization be increased.
- **Flexible:** cloud computing services can be used to serve a large variety of workload types-varying from small loads of a small consumer application to very heavy loads of a commercial application.

4. Types of Cloud Computing Service Delivery Models

The following table shows the various types of cloud services as distinct models.

Types	What it is	Example
IaaS (Infrastructure-as-a-services)	Buying space / time on external servers	Amazon A3, Bungee, Dyn DNS
Paas (Platform-as-a-services)	An existing software platform to build your own application	Facebook, Heroku, force.com, Engine yard, Mendix, Google App engine
SaaS (Software-as-a-services)	Ready to use services accessed with a web browser	ADP, Mint.com, Google maps

Table 1

5. Difference between Traditional Computing and Cloud Computing

Need of big infrastructure which results more cost	Centralization of infrastructure in between with lower cost.
Need of human resources with high qualification	Human resource with high qualification can be reduced.
Security cost is high.	Because of centralization on network this cost is low
Maintenance of computers is very difficult & costly.	Maintenance is easier because less number of computers can be accessed from network.
Because of changing technology reliability is less.	Reliability is improved because of centralized networking.
Software development & system engineering has centered on the personal computers.	Hardware & functionality traditionally installed can be used for development of software's through networks in the internet cloud
For development of software's it takes long time.	Programmers can get developed software's from internet so for development of new software's time span is limited.
Design of software is focused on single application.	Because of this programmers can use constantly updated software components that can be embedded with other web applications.
For this we spend lot of money for limited application.	For this we spend limited money for huge application.

Table 2

6. Potential Area for Improvement in Libraries through Cloud Computing

The following potential areas of cloud computing in libraries have been mentioned briefly as follows:

- Most library computer systems are built on pre-web technology.
- A system distributed across the net using pre-web technology is harder and more costly to integrate.
- Libraries store and maintain much of the same data hundreds and thousands of times.
- With library data scattered across the distributed systems the library's web presence is 'weakened'.
- Information seekers work in common web environments and distributed systems make it difficult to get the library information into their workflow.

7. Examples of Cloud Libraries

OCLC, Ex libris, Polaris, Scribd, Worldcat, Encore, Discovery Science, Google Docs, ect.

8. Advantages of Cloud Computing

- Automatic software
- Back-up and recovery
- Cost efficient
- Easy access to information
- Unlimited storage

9. Disadvantages of Cloud Computing

- Technical issues
- Security issues
- Inflexibility
- Lack of support

10. Conclusion

Cloud computing is not a completely new concept in the library and information field. All the academic libraries are facing challenges of tremendous growth of easier information resources in this IT era.

Cloud environment is a highly developed network environment; it appears to the users of high-quality service and high security. The cloud computing model will encourage all academic libraries and their users to participate in a network and community of libraries by enabling them to reuse information & socialize around information. It can also create a powerful, unified presence for libraries on the Web and give users a local, group and global reach.

11. References

1. Sanchati, R & Kulkarni, G. (2011). Cloud Computing and digital libraries, Global Journal of computer science and technology (11).
2. Sutar, A. A. (2013). An Overview of using cloud computing in libraries. Indian Journal of Applied Research, 3(6), 303-305.
3. Dubey, S. S. (2012). Cloud Computing and Beyond, New Delhi: I. K. International Publishing House Pvt. Ltd.
4. http://common.wikimedia.org/wiki/file:cloud_computing.svg
5. www.nsa.gov/research/files/publications/cloud_computing_overview.pdf