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APPLICATIONS OF CLOUD COMPUTING IN LIBRARIES AND INFORMATION CENTERS

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ABSTRACT

Information and communication technology is used widely in libraries and information centers due to its benefits and new ways of approach it is upcoming of in the area of LIC.The libraries have been automated, networked and now moving towards paperless and virtual libraries. To meet the challenges in the profession librarians also apply different platforms in LIC's for attaining economy in information handling .This paper covers the basic concept of cloud computing. The use of cloud computing in libraries and how cloud computing actually works.

***KEY-WORDS*-Cloud computing, Library and information center**

1. Introduction

Libraries and Information Centers are facing many challenges in the profession due to applications of ICT.New concepts are being added to make practices easy in the society, and libraries and information centers also accepting many new technologies in the profession as they suit the present information handling and they satisfy needs of knowledge society .To provide information to the users instantly the libraries have become automated. The emergence of e-resources e- publication, digital libraries, internet usage, Web tools applications for libraries, consortium practices lead to the further developments in LIS profession. The latest technology trend in LIC is use of cloud computing for various purposes and for achieving economy in library function.

2. Cloud computing

Cloud computing is the technology of computing, which is based on internet media. Using internet technology many servers share resources in terms of offering common platform for use of software applications. Different resources including information, networking computer and devices which are attached on request with the control of electricity grid.Itcan also be called as service architecture complete cloud computing system is service oriented and costumer focused. The main concept behind cloud computing is based on the cloud that is specifically designed for the processing each related device located in cloud of network. Cloud computing is

invisible to the user. The users of the service provider using clouds needs to pay for their resources and services rendered used in cloud computing environment.

3. Definition

Cloud computing can be defined as "on demand network access to a shared pool of configurable computing resources"(NIST definition of cloud computing)simply cloud computing is hosting library data and services beyond the library's wall and accessible via the web.

In the internet environment web tools are more useful and applied for scholarly and scientific communication. Few concepts associated with cloud computing are:

4. Cloud computing

Since the term is new it is necessary to review it in different angles to apply it appropriately Many definitions for cloud computing are expressed among which the most basic concept drag out is cloud computing is the avaibility of ICT based needs offered as services, often through a third party vendor acting as vices to the commercial mediator for faciliting shared services to the enterprises.

Finally cloud computing means –

- Customers do not own network resources like hardware software systems etc.
- Network resources are provided through remote data centers on a commercial and subscription basis
- Network resources are delivered as service over the web.

It has many advantages and recently proved as a resource sharing faculty in the information society.

5. Cloud Networking

- Cloud networking is one of the networking based technology that is responsible for facilitating the computer networks with the required resources. Cloud networking provides the resource when computer networks ask for the resource. They work exactly in the same way as other service providers company such as gas supply, telephone, electricity and gas supply companies. The list of the resources provided by the cloud networking to its users is in the simplest form so that its reader can understand them easily. The service providers facilitating its users with the abstract internet services is known as cloud.

6. Advantages of cloud computing

- Cloud computing enables user to frequently use the technological resource at inexpensive price.
- it is accessible and reliable interface for its user API technology make it more interesting for the users to interact with the human being.
- These computing techniques greatly reduce the total cost and capital expenses that come in arranging the infrastructure. Integrated resources are available at almost no cost to the third party users.
- Cloud computing is completely geographically independent .It users can access the system from the web browsers anywhere in the world at any time.
- Multi and large application pool is available for users.

- Reliability improved design versions of many redundant website have efficiently increase the performance and suitability of cloud computing more useful.
- Security: Security is at one level above as compared to the other networks because of the centralization of data and increased security feature of every individual component.
- Cloud computing systems are flexible and easy to maintain because components can be added or deleted from the infrastructure.

7. What is cloud computing?

According to Wikipedia Cloud computing is the delivery as a service rather than a product, where by shared resources, software and information are provided to computers and other devices as a utility over a network Cloud computing provides computation ,software ,data access, and storage services that do not require end user knowledge of the physical location and configuration of the system that delivers the services. Knorr and Gruman describes cloud computing as a new supplement consumption , and delivery model of ICT services based on internet protocols, and it typically involves provisioning of dynamically scalable based and often virtualized resources. It is a byproduct and consequences of the ease of access to remote computing sites provided by the internet. This may take the form of web based tools or applications that users can access and use through a web browser as if they were programs installed locally on their own computer.

Cloud computer providers deliver applications via the internet, which are accessed from a web browser, are stored while the business software and data are stored on servers at a remote location. Most cloud computing infrastructure consists of services delivered through shared data centers and appearing as a single point of access for consumers computing needs .Commercial offerings may be required to meet service level agreements but specific terms are less often negotiated by smaller companies.

8. Characteristics of cloud computing

Genes(2008)while defining cloud computing and cloud services pointed out some characteristics of cloud computing which states ,agility, application program interface, cost, device ,reliability,scalability,performance,security,maintainance and sustainability etc.These characteristics are useful for the service provision through cloud.

9. Cloud computing in Libraries and information centers

Cloud computing offers many interesting possibilities for libraries that may help to reduce technology costs and increase capacity reability,and performance for some type of automation activities. Cloud computing has made strong inroads in to other commercial sectors and is now beginning to find more applications in LIC.The cloud computing pushes hardware to more abstract levels .Most of us are acquainted with fast computing power being delivered from systems that we can see and touch.

10. Role of cloud computing in libraries

Cloud computing is a completely new ICT based technology and is known as 3rd Revolution after PC and internet. Cloud computing is an enhancement of distributed computing, parallel computing, grid computing and distributed databases. Among these, grid and utility computing are known as a predecessor of cloud computinging .Cloud computing has large potential for libraries. Libraries may put more and more content in to the cloud. Using cloud computing user would be able to browse a physical shelf of books.CDs, or DVDs or choose to take out an item or scan a bar code in to his mobile device .All historical and rare documents would be scanned into a comprenhsive, easily searchable database and would be accessible to any researcher. Many libraries already have online catalogue and share bibliographic data with OCLC.More frequent online catalogues are linked to consortium that share resources.

11. Advantages of cloud computing in libraries

Cost saving: In an era of shrinking budgets, it gets harder with each passing year to justify the purchase and maintenance of servers that aren't in use almost all the time. Cloud computing offers price saving due to economics of scale and the fact that you are only paying for the resources you actually use.

Flexibility and innovation: Libraries don't have to decide between devoting their limited server resources to the OPAC overflow traffic and a new mobile web application that one of your colleagues wants to develop. If they are both hosted in cloud the resources devoted to each will shrink and expand as traffic rises and drops.

Broad, General IT Skills: Cloud computing increases the pressure on IT professional to become well rounded employees with highly –developed managerial skills .Knowing how to configure and network a server isn't enough .Systems librarians have to manage complex projects and evaluate competing vendors on a variety of criteria. Holding vendors accountable is especially important a significant when they manage a significant chunk of your online data and IT infrastructure.

12. Challenges in India

1. Government grants and assistance towards cloud based model as in emerging issue.

2. Many organization, LIC are not aware about benefits of cloud computing

.3.Unwillingness to change funding and finance.

4. Cloud computing is required high quality broadband connection many organization and LICs in India lack of it.

5. In many websites cloud based computing may not work properly.

6. Delay of processing information ie.latency is also a big challenge.

7. It needs front and backbone infrastructure and appropriate quality of services.

8. Cost involvement is also a challenge especially in India.

9. Appropriate cyber law , act ,intellectual property rights, policy should be framed in this context.

Conclusion

Cloud computing is the next big wave in computing. It stands to change information Technology services for many environment .IT has many benefits one of which is betterment of hardware management, since all the computers are the same and run the same hardware. It also provides better and easier management of data security. Since all the data is located on a central server. Today cloud computing is the bingeing of **network based computing** over internet in force. It is the technology of the decade. There are innumerable benefits of cloud computing in library and other organization. Libraries in the future may have the objectives to transfer manual effort in to valuable activity. For this purpose, use of web as primary technology would be a better option and professionals should be trained for all.

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