Chapter 5
Application of Cloud Computing in Library Information Service Sector

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ABSTRACT

Cloud computing is a process that provides services on virtual machines. Through the Cloud the information can be stored permanently on the Cloud servers which can be accessed by the Internet. The main aim of Cloud computing is to bring scalability in the system, due to which CPU and memory will be fully utilized. It is up to a customer that one can increase or decrease the resources in the Cloud according to his need. Cloud computing provides a fascinating possibility for libraries that helps to increase data storage capacity, reliability, performance, and reduce technology cost. This chapter elaborates how libraries and information centers can enhance their resources infrastructure with minimum cost, make effective systems, and provide better services to the user community at minimum cost and time. The aim of this chapter is to explain how librarian, information and computer science professionals and knowledge workers apply Cloud computing in the libraries and information center management. Chapter begins with the Cloud computing introduction in the context of Libraries which is called Cloud libraries. How libraries are using Cloud services today and what can the Cloud computing solutions do for the libraries are presented in detail. The chapter describes the potential role of Cloud computing to serve library needs. At the end of the chapter some live examples, where Libraries are adopting Cloud Computing, like Dura Space, OCLC, Library Thing, Library Cloud and Seer Suite are discussed.
INTRODUCTION

Today in the digital world where new technological trends flourish and fade on a daily basis, one new inclination promises more endurance. This trend is called Cloud computing. It will change the way of using computer and the Internet. Cloud computing is the third revolution in the IT after PC and Internet. With the advent of Cloud computing, unprecedented scenario has changed for computing and storing data. It has made tremendous impact on other commercial sectors and finding its place in the digital library domain. According to the definition given by NIST (National Institute of Standards and Technology), "Cloud computing is a model for enabling ubiquitous, 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 released with minimal management effort or service provider interaction.

The main objective of Cloud computing is to bring scalability in the system, due to which CPU and memory could be utilized fully. It is up to a customer that he/she can increase or decrease the resources in the Cloud according to his/her need. Its feature of resource scalability will have a direct impact on curtailing the organizational capital and its operational cost. Cloud computing concept brings sharing of resources among customers and thereafter cost factor will come down. Customer only pays for the amount of used resources on subscription basis. Depending on the needs users can subscribe different types of Clouds Public Cloud, Private Cloud, Community Cloud and Hybrid Cloud. Public Cloud as the name depicts is public to the subscriber who can access the cloud space with an Internet connection. Private Cloud is usually setup for an organization which limits the access within the organization. Community Cloud is shared among the community (consist of two or more organizations) who is having similar requirements. Hybrid Cloud is an amalgamation of at least two different clouds, where the clouds included are mixture of public, private, or community. There are three different types of Cloud providers that one can subscribe: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

Today in digital world, Cloud computing provides fascinating possibility for libraries that helps to increase data storage capacity, reliability, performance and reduce technology cost. As the growth of any library is completely dependent on the funds and its absence will deprive the library system in keeping pace with the improved forms of information. With incorporation of Cloud computing in our library system it helps to reduce the operation cost without worrying about any capital cost. Libraries with limited budget are not capable to purchase all book (eBooks) which make them difficult to keep pace with the ever growing information. Different libraries have their own data which may be present in other libraries also. In this way they replicate the data. Cloud computing aspect of sharing resource can play a vital role here. As data in Cloud library is shared among different libraries so replication of data can be eliminated. Cloud library will help in scaling up or down of data capacity according to the requirement. The combined efforts of the libraries in Cloud computing will not only improve efficiency (due to sharing) but also make the system more scalable to save money. Incorporating Cloud into libraries will help in converting the principal investment on infrastructure into operation expenditure. Its objective is to pay on pro-rata basis for the cloud services for part of computer system used. With the implementation of Cloud computing model installation of server is not required in the libraries and the services are provided by the Cloud service provider on periodic subscription basis. Maintenance of all
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