Chapter 18
The University Cloud Library Model and the Role of the Cloud Librarian

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ABSTRACT

The latest trend of Cloud Computing is progressing fast and using this technology it is possible to publish and store information on a virtual cloud based infrastructure. Virtualization technology has been adopted by many data centers in the industry. It shares resources on a single system efficiently and reduces infrastructure costs. Libraries are using various technologies along with Web tools at a time. Information sharing and an open access culture are developing fast in the education field. How libraries can make use of the application of cloud computing and virtualization technology for common data storage and managing multiple servers and provide cloud based information services to patrons will be discussed in detail in this chapter. This chapter also discusses in brief the applications of these technologies in libraries along with the university cloud library model and the role of cloud librarians.

INTRODUCTION

The field of higher education has become one of the strongest adopters of virtualization as it allows the management of all resources like laboratories and libraries centrally and gives remote access to students through mobiles too. Today's librarians and IT experts are facing new challenges in managing electronic content archives. For giving quick and appropriate access to every piece of information libraries are adopting new technologies. What seemed a dream a few years back is becoming real nowadays. "Nowadays many university libraries are virtualizing servers and desktops, collaborating with other campus organizations and saving money and staff time," states Karin Kelley, a virtualization analyst at the 451 Group (Roscoria, 2011). They are planning to build and maintain their own data centers for information sharing.

DOI: 10.4018/978-1-4666-7230-7.ch018

Cloud based services provide a means for libraries to free resources on information technologies and focus on libraries' core competences – to manage, organize, and disseminate information. "Cloud based services are also bringing cutting-edge services to libraries that have less information technology expertise," according to Qin Zhu, a member of the IEEE Library advisory council (2012). A very recent example is that in February 2012 the Library of Congress and OCLC announced a new beta cloud based service for Small Libraries (WSSL), with which libraries with fewer than 20,000 items in their collections may construct a low cost, simple, but dynamic Website. Features include basic patron and inventory management, with checkouts, returns, holds, and renewals, among other functions. Many libraries are now adapting 3M cloud libraries applications. Let's discuss more in detail on the application of cloud computing in libraries.

SERVER VIRTUALIZATION

Server virtualization is a method of running multiple independent virtual operating systems or applications on a single machine. According to Roscoria (2011), this technology is a way of achieving higher server density and now it is pretty much a no-brainer for everybody. Via net computing devices now many desktops are running simultaneously on one machine without CPUs in LAN. This technology is a huge boon from a consolidation perspective and the cost savings. Essentially instead of having one application per server you can now have multiple apps on one machine, which saves a huge amount on hardware resources. With this the use of library resources has increased and also the use of library software by library staff is increasing in developing countries.

The desktop virtualization model allows the use of virtual machines to let multiple network subscribers maintain individualized desktops on a single, centrally located computer or server. The central machine may be at a residence, business, or data center. Users may be geographically scattered, but all may be connected to the central machine by a local area network, wide area network, or via the public Internet. All publishers, suppliers, consortia are using this technology for giving access to their digital resources like e-books, e-journals, articles, scholarly materials.

CLOUD COMPUTING

Cloud Computing is the improvement of Distributed Computing, Parallel Computing, Grid Computing and Distributed Databases. The basic principle of Cloud Computing is making tasks distributed in large numbers of distributed computers but not in local computers or remote servers. "The idea of cloud computing has emerged for outsourcing of computing infrastructure, storage of client data and applications that are accessed via a remote server" (Hosch, 2009; Knorr & Gruman, 2008). Traditionally, companies sold product CD's and one had to buy a license to use them. Now companies like Tally, Frank Borland products provide subscription services on the Internet, without the need for the customer to set up anything and pay on a monthly or yearly basis or just for the usage. Cloud computing also provides a common computing platform where users can build their own applications for use by others through the Web.

Cloud computing IS summarized AS follows:

- **SaaS:** Software-As-A-Service
- **PaaS:** Platform-As-A-Service
- **IaaS:** Infrastructure-As-A-Service
- **DaaS:** Desktop-As-A-Service

INFORMATION COMMON

Information common and resources common usage and sharing is possible because of this emerg-