



Impacts of Cloud Computing in Digital Library Services

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Abstract:

As the Next Paradigm Shift for Information Communication technology Industry, Cloud Computing is Still in the early stage. Just as the Previous major Information Communication technology Paradigm Shift from Centralized Computing to distributed Computing has had tremendous Impacts on the Internet Protocol (IP) networking (and vice versa), So in Many ways the cloud Computing represents natural evolution for the Internet Protocol (IP) Networking. This Paper Clearly discusses the Concept of Cloud Computing, types of Cloud Computing, application of cloud computing in the libraries, Digital Libraries, Impacts of Cloud Computing in digital libraries in 21st Century.

Keywords: Cloud Computing, Digital Libraries, Application of Cloud Computing, Impacts of Cloud Computing in Digital Libraries in 21st Century.

INTRODUCTION

Cloud computing becomes a new style of computing in which dynamically scalable and often virtualized. Digital library which makes Services provision over the internet accessibility, The impacts of cloud computing has also become a very significant technology trend, and many experts expect that cloud computing will reshape information communication technology ICT in almost all aspects of human endeavour in today's date. With the cloud computing technology, Digital library users, use a variety of devices to make and rendering the satisfied information needs to their target clientele such the devices are personal computers, laptops, PDAS to access information easily without facing difficulty and time wasted, programmes, Storage, and application enhancement platforms over the internet connectivity via services offered by Cloud computing providers. The very fundamental of cloud Computing technology in the Digital libraries are Cost Serving, high availability, and easy Scalability.

Cloud computing represents a paradigm shift in the way in which systems are deployed. the massive scale of the cloud computing systems enabled the popularization of the internet and the growth of some big services organisations. Cloud computing makes the long-held dreams of utility computing possible with a pay- as-you-go, infinite scalable globally available system. With cloud computing, you can start very small and also become bigger very fast. That is the reason why cloud computing revolutionary, even if the technology is built on is evolutionary.

Concept of cloud computing

cloud computing usually takes technology, services, and application that are similar to those on the internet and turns them into a self-service utility. The use of the word "cloud" makes reference to the two essential concepts:

Abstraction: cloud Computing abstracts the details of system implementation from the users and the developers. Application run on physical system that are not specified, data is stored in location that is unknown, administration of systems that is out sourced to other, and retrieve by users is ubiquitous.

Virtualization: Cloud computing virtualized systems by pooling and sharing digital library resources. Systems and storage can be provision as needed a centralized infrastructure, costs are accessed on a metered basis, multi-tenancy is enabled, and materials are scalable with agility.

Computing as utility is a dream that is date from the beginning of computing organization itself. A set of new technologies has come along that, along with the need for more efficient and affordable computing. Has enable an on-demand system to develop. It is these enabling technologies that are the focal point research.

Many people mistakenly believe that cloud computing is nothing more than the internet given a different name. Many drawings of internet-based systems and services depicts the internet as a cloud, and people refer to applications "running in the cloud", so the confusion is understandable. The internet has many of the features/characteristics of what is now being called cloud computing. The internet offers abstraction, using the same set of protocols and standards, and uses the same Applications and Operating systems. These same characteristics are found in an internet, an internet version of the internet. When an internet become larger enough that a diagram no longer wishes to differentiate between individual physical systems, intranet too becomes identified as a cloud.

Cloud computing is an abstraction based on notion on pooling physical sources and presenting them as a virtual source. It is a new Model for provisioning resources. For staging applications and for platform-independent user access to services. Cloud can in many different types and the services and applications that run on cloud may or may not be delivered by a cloud services provider. These different types and level of cloud services mean that it is important to define what type of cloud computing system you are working with.

To clarify how cloud computing has change the nature of almost all organisational systems development consider these three examples.

- **Google:** In the last decade, Google has built a world-wide network of data centres to service it is search engine. In doing so google has captured substantial portion of the world promotion and advertising revenue. That revenue has enabled the google to offered free software to users based on that infrastructures and has change all other organisational activities for user facing software. This is the classic software as a service case.
- **Azure Platform (AP):** By contrast, Microsoft is creating the Azure platform. It enables .NET framework application to run over the internet as an alternate platform for Microsoft developer software running on desktops.
- **Amazon Web Services (AWS):** One of the most successful cloud-based baseness is Amazon Web Services, which isa an infrastructure as a service offering that let you rent virtual computers on Amazon's own infrastructure.

Types of cloud computing

Usually, the types cloud computing can be categorized into three categories they are:

Public cloud computing: The public cloud usually owned and operate by third party cloud service providers; this is delivered their computing sources like storage and servers over the internet. So, the Microsoft Azure should be an example of a public cloud computing. And a public cloud, software and all hardware and other supporting infrastructures are owned Manage by cloud services providers. you can retrieve and manage your account using a web browser.

Private cloud computing: A private cloud means to cloud computing resources utilized exclusively by a single organization. Private cloud can also look physically locate in an organization also pay third party services providers to host their private cloud like Digital library services. A private cloud is also one in which we can maintain both services and infrastructure on the network.

Hybrid clouds computing: Usually is the combination of both public together by technology which also allows data and applications to share between the two.i.e., public and private this usually allowed data and applications to move among themselves a hybrid cloud gives Digital libraries a greater Flexibility to information sharing like Inter Library Loan Services (**ILLS**). As well as more deployment options and help optimizing the existing security, infrastructure and also compliance.

Application of Cloud Computing in Libraries in 21st Century: library Automation and house-keeping services: the cloud computing services usually support almost all types library to automated their services in accordance with the modern age. The Polaris make provision of variant cloud based such information resources acquisition, cataloguing services, system process, Digital contents and also provision of inclusion of cutting edge information and communication technologies (ICT) used in Libraries and also support various standard which include XLM,Z39.50, MARC21,Unicode etc. presently a lot of the software vendors like Ex-Libraries ,OSS Libs are also rendering this services on the cloud and third party services offering hosting of this kinds of services on the cloud to save Libraries from investing in hardware for this purpose.

Digital libraries: Digital libraries usually comprised of digital services and materials that are stored, process and disseminate via digital binary devices and networks. Which built in central library ethic that supports open access to a lot of information sources. The thing that makes difference is digital library operates in an electronic medium. Digital library as a technology is notion that encompasses an integrated set of services that consist resources storage, information retrieving, information resources searching, protection of information. Jorgensen, and Yerkey (1996)., Remote access to digital libraries transforms it to a virtual library, this implies that a digital library can have an existence without digital library. The Digital library Federation described digital library as "organizations that makes a provision of resources, which comprised specialized library staff, to structure, select, interpret, distribute, offer intellectual access to, and also preserved the integrity of an ensure the persistence over time of collections of digital works so that they are readily and economically available for utilize by a define community or set communities" (William Bk et.al 1998).

Impacts of Cloud Computing in Digital Libraries In 21st Century

Some years back almost all type of libraries operated their services manually. But this age transforms all the library services by automating all their services and means of their information acquisition and dissemination via a cloud computing application technology in digital libraries which is highly beneficial in many ways.

The benefits of cloud computing in digital libraries in 21st are as follows:

- ❖ **Resources Sharing:** cloud computing technology gadgets enable groups of libraries to share and keeps their resources at one place, and makes provision available information resources accessibility and more numbers of sources to their clientele.

- ❖ **Highly Automated:** The library personnel are no more worry about the keeping software up-to-date. Usually, the CSP take care of the software update as new version release. Whenever the server is updated, every user utilizing the services get access to the new version without updating anything.
- ❖ **Storage Elaboration:** Cloud computing hold more storage than a personal laptop, or computer systems well as the server will be available in the libraries and other information centres which is possible to expand the when the needs arise.
- ❖ **Installation Simplicity Maintenance:** Digital Libraries are no more concern about constant server update or other computational matters.
- ❖ **Cost Saving:** Cloud computing technology (CCT) is usually subscribed increasingly. So digital library is subscribed only for the information sources they actually utilized.
- ❖ **Flexibility:** cloud computing technology also makes provision of more flexible to the digital libraries to elaborated their services any time the need arises, by more other space on the servers.
- ❖ **Better Mobility:** The patrons and digital libraries personnel can connect to the server in the library from where ever they are, rather than their presently appear at their desk only by having their personal laptop or computer system and internet connectivity.

Conclusion:

With Cloud Computing Application to Digital Libraries as a new to Consume Information Communication Technologies (ICTs) Services, Digital Libraries can be much more flexible and productive in utilizing dynamically Allocated resources to created and operate. Cloud Computing will also continue to Evolve as the foundation for the future internet where will be interconnected in a Web of content and services.

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