

An Introduction of Cloud Computing for Library Professional

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Abstract: Latest technological development has brought a dramatic change in every field then library is not exceptional in world. Now in the era of ICT which provides various trend to modernize library. Cloud Computing play important role in the field of LIS. It can also create a powerful, unified presence for libraries on the web and give user a local, group and worldwide reach.

Key Words: Computing, Cloud, Library Technology, Cloud Services.

I. INTRODUCTION

Now in the era of information and technology which provides various trend to modernize library. Cloud computing is the one of them. Cloud computing is the latest business buzzword and is also known as cloud technology, cloud application, or cloud based services. In this technology, data is permanently stored on the internet servers and can be cached by the users temporarily. This application is created using resources from more than one service and from more than one location. Cloud Computing allows consumers and business to use application without installation and access their personal files at any computer with internet access.

II. DEFINITION OF CLOUD COMPUTING

In nutshell, the cloud computing is: - the Fifth generation of computing (after Mainframe, Personal computer, Client-Server Computing, and the web) the biggest thing since the web? In another way "cloud computing" to put it simply, means "internet computing" for computation done through the Internet. With Cloud Computing users can access database resources via the internet from anywhere, for as long as they need, without worrying about any maintenance or management of actual resources.

Buyya has defined it as follow: - "cloud is a parallel and distributed computing system consisting a collection of inter connected and virtualized computer that are dynamically provisioned and presented as one or more unified computing resources based on service-level Agreements (SLA) established through negotiation between the service provider and consumers".

Forrester defines cloud computing as "A pool of abstracted, highly scalable, and managed compute infrastructure capable of hosting end-customer applications and billed by consumption".

Wikipedia has defined cloud computing as: - "internet based computing, whereby shared resources, software and information are provided to computers and other devices on demand through the internet".

Ellyssakroski (2009) has defined cloud computing: Means using web services for our computing needs which could include using software applications, storing data, accessing computer power or using a platform to build applications.

III. TYPES OF CLOUD COMPUTING

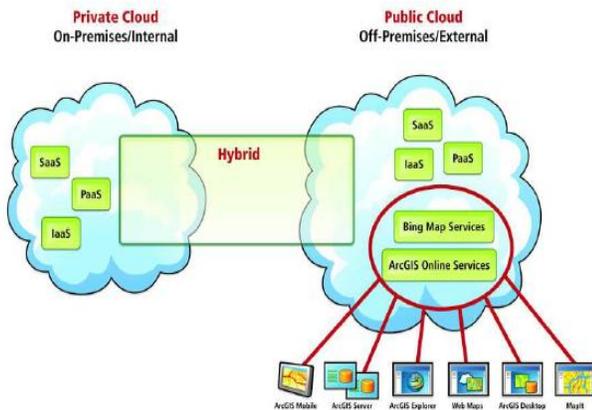
National institute of standards and technology US (NIST) listed four models:-

Public Cloud: when the cloud service provider provides cloud services to the general public on internet, such as a service provider is known as "public cloud service provider" and the model is called public cloud. Some examples of public cloud are Amazon, Google App Engine and Rackspace cloud.

Private Cloud: The individual organization develops the cloud for its different services purpose and section; it is called as Private Cloud. This kind of model is useful to the large organizations such as Railway, Bank and Post Office etc.

Community Cloud: community cloud shares infrastructure between several organization from a specific community with common concerns *i.e.*, Jurisdiction, security, compliance *etc.* Whether managed internally or by a third party and hosted internally.

Hybrid Cloud: Hybrid cloud are a combination of clouds *i.e.* private, public which remains bound without losing its original characteristic. Flexibility of this variation is enhanced because of change in degrees of association of the third party cloud provider depending upon the need of the organization.



Types of Cloud Computing

IV. CLOUD COMPUTING SERVICES

Hardware as a Service (HaaS): hardware as a service was coined possibly in 2006. As the result of rapid advances in hardware virtualization, IT automation and usage metering and pricing, users could by IT hardware as a pay-as-you-go subscription service. The Haas is flexible,scalable and manageable to meet your needs. Examples could be found at Amazon; EC2 IBMs Blue Cloud project, Nimbus and Eucalyptus.

Software as a Service (SaaS): Software or an application is hosted as services and provided to customers across the internet. This mode eliminates the need to install and run the application on the customer’s local computers. SaaS therefore alleviates the customer burden of software maintenance and reduce the expense of software purchases by on demand pricing. Google Chrome browser gives an interesting SaaS scenario: a new desktop could be offered, through which applications can be delivered (either locally or remotely)in addition to the traditional web browsing experience.

Data as a Service (DaaS): Data in various formats and from multiple sources could be accessed via services by users on the network. Users could, for example, manipulate the remote data just as it operates on a local disk or access the data in a semantic way in the internet. Amazon Simple Storage Service (S3) [14] provides a simple web services interface that can be used to store and retrieve, any amount of data, at anytime from anywhere of the Web. The DaaS could also be bound at some popular IT service, e.g., Google Docs and Adobe Buzzword.

Infrastructure as a Service (IaaS): Based on the support of the Haas, Saas and Daas, the cloud computing in addition can deliver the infrastructure as a Service (IaaS) for users. Users thus can on-demand subscribe to their favorite computing infrastructures with requirements of hardware configuration, software installation and data

access demands. The Google App Engine is an interesting example of the IaaS. The Google App Engine enables users to build web applications with Google’s APIs and SDKS across the same scalable systems, which power the Google applications.

V. LIBRARIES AND CLOUDS

This approach to computing can help libraries save time and money while simplifying workflows. This is a new approach to managing computing infrastructure and there is no server required in the library and also no device to configure. It can also create a powerful, unified presence for libraries on the web and give users a local, group and global reach. It is fully supported and managed by the service provider. Example Google a docs is not a cloud but an application running on cloud infrastructure and the resources are the cloud.

Online computer library center (OCLC) has been functioning as a cloud computing vender. They provide cataloguing tools over the internet and allow member institution to draw on their centralized datastore. World Cat is another example of cloud computing architecture drawing on the union catalogue infrastructure they have built up over the year.

Benefit Cloud Computing for Libraries:

There are flowing main benefits of cloud computing for the smooth functioning of a library is as:-

- To use the cloud computing technology in field of the libraries, the service can be made strong
- Sharing of database is possible.
- Cloud computing is very reliable, saleable and poses privacy concerns.
- Backup and recovery of data is much simpler them other traditional methods of data storage in the libraries.
- Cloud computing is also helps in improving the utilization of the IT infrastructure to large extant.
- Information store in the cloud gives the unlimited storage capacity.
- IT improves documents format compatibility.
- Latest version availability.

Disadvantages of Cloud Computing:

Cloud computing also has some challenges. The most important among them is the security, i.e. how secure is our library data in the cloud? Some other disadvantages are:-

- In cloud computing data may be lost and there is risk of the data loss.

- Quality problems with cloud service provider.
- Dependency.
- Constant connectivity required and does not work well with low speed connections.
- Time and budget constraint.

VI. CONCLUSION

Cloud Computing is a dynamic technology. Library are moving towards cloud computing technology in present time and taking advantage in building digital libraries. Using Cloud Computing user should be able to browse a physical shelf of books, CDs/DVDs or choose to take out an item or scan a bar code into his mobile device.

Cloud Computing enable innovation by alleviating the need of innovators to find resources to develop, test and make their innovations available to the user community. Innovators are free to focus on the innovation rather than the logistics of finding and managing resources that enable the innovation

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