

Cloud Computing Applications: An Open Source Software (OSS) Approach

Mahalakshmi K R, Rangaswamy

Abstract—World is moving towards “Cloud Computing” as part of the advancement of Technology in general and Informaiton and Communicaiton Technology (ICT) in specific. In simple form Cloud computing can be referred to as the application of computer for storing and accessing of data through the web enabled devices, rather than your computer's hard drive. Cloud computing is mainly performed functions are managing ,storing and processing data with help of internet.The present study aimed to see you how making the best use of the cloud storage application. There are many cloud storage providers that not only provide you the free cloud storage space but also with many other features. Some cloud storages are there in the market that not only provides the best user experience and incredible features, but helps users to enjoy the free services after the SignUp. It is clear from the study that all the cloud applications are easy to use for storage their personal and business data. Cloud applications such as mega, Media fire, Adrive, Surdoc cloud storage are easy to use and provide free storage space up to 50GB Microsoft is the largest company as measured by market cap. Its market share is \$889.286B.

IndexTerms— Cloud Computing, Cloud computing models, Market capitalization, Free Cloud Storage Services,Cloud Application, Media Fire, Mega, Google Drive, SurDoc.

I. INTRODUCTION

Cloud computing is emerging technology model for IT services,today many organizations and individuals are using to transform the way systems are built and services delivered, providing libraries with an opportunity to extend their impact(Sahu, 2015). Cloud computing is a paradigma that allow on demand network accessto shared computing resources.According to a Gartner report, cloud computing as “a style of computing in which massively scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies”.The classical mode of storing information such as hard drives, USB drives or any other storage devices have a lot of advantages. At the same time storage device gets damage, there is chance of getting lose of data. Hence, the virtual cloud storage is a replica of

the traditional storage devices where the users can store their data and keep their backup files on hardware and USB flash drives safely and securely(Jain, 2019).

II. CLOUD COMPUTING MODELS

There are certain services and model working behind the scene making the cloud computing feasible and accessible to end users, Basically there are two working models for cloud computing .they are

A. Deployment Model

B. Services Model

Deployment Models

Deployment Model means is the types or way of access to the cloud ,it can be categorized into four types such as Public Cloud , Private Cloud,Hybrid Cloud and community Cloud.

- **Public cloud:** Allows system and services to be accessible to general public ,this model mainly used for non critical activities is performed by using public cloud.Public cloud services provides resources such as application and storage which are available to the general public via internet.generally this platform is accessible to the general public

Examples are google.amazon,Microsoft offered cloud service via internet to the public.

- **Private cloud:** It's also called s virtual private cloudIn this kind of model allows system and services to be accessible with an organization , The Private cloud is operated only within a single organization, however it may be managed internally by the organization itself with the help of a services provider. It has more control over resources and hardware than public cloud.mainly aCritical activities are performed by using private cloud. Examples are IBM, Cisco, Dell and Red Hat – also build private solutions

- **Hybrid cloud:** In this model storage is a mixture of the both private and public model,its essentially environment of combination of both private and public cloud.

- **Community Cloud:** Allows system and services to be accessible by group of organization,it share infrastructure between several organization from specific community,it manage the activities internally by individuals or with the help of a services provider

A.Services models are the reference model on which the cloud computing is based on services Cloud computing models can be broadly categorized into three categories.

- **Software as a Service (SaaS):** Software as a service is distributed model, in which a complete application is offered or hosted by Vendor or service provider and made available

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Mahalakshmi K R, Research Scholar, Department of Studies and Research in Library & Information Science ,Tumkur University, Tumakuru-572103

Rangaswamy, Scholar, Department of Studies and Research in Library & Information Science ,Tumkur University, Tumakuru-572103

to the end user. SaaS is on demand service, Based on the demand you have the services made available to the user. its an independent platform, you don't have worry about the installation process and maintainance. At single instance of the Software runs on the cloud and multiple end-users are serviced. SaaS is simply Services provider provides a software or application in the form of services, this kind of architecture is known as Software as a service. It is based on the concept of lending an application from a Vendor rather than buying, installing and running and Maintainance software onerself (Rajan, 2012).

- **Platform as a Service (PaaS):** PaaS is made up of programming language execution ,environment an operating system ,web server and a database. Also Platform as a services is a layer of software, or development environment is encapsulated and offered as a service, upon which other higher levels of services can be built. In this kind of model customer has the freedom to build his own applications, which run on the vendors or services providers infrastructure. To meet fuctional requirements of the users to use the applications. PaaS provides the facilities required to support the complete life cycle of building web application and services from the help of internet. Google's App Engine, Force.com, etc are some of the popular PaaS examples (Sahu, 2015)

Infrastructure as a Service (IaaS): IaaS is mainly consisting hardware ,It offers the computing architecture and infrastructure and all computing resources, but in a virtual environment so that multiple user can access them resources include data storage, virtualization, server and networking. In this model most vendors are responsible for manging the above four resources. User will be responsible for takeing care of other resources suh as application, data runtime and middle ware, Major users of IaaS are system admins. Some common examples of IaaS are Amazon, GoGrid, 3 Tera, etc(Sahu, 2015).

III. TOP TEN FREE CLOUD STORAGE SERVICES

Storing the files in the cloud ,where they can be shared for collaborating working if required is a great idea. Today there are many different options are available in the market. The cloud storage is easy to use and provide free storage space upto 50GB. These torage applications can be used to store both Personal as well as business information. Here is the list of the best free cloud storage services.

A. MEGA

MEGA is a one of the best cloud storage application hosted by Mega Limited, It was established in the year of 2003, The service is offered 15GB primarily storage space through web-based apps. Mega mobile apps are also available for Windows Phone, Android and iOS (Stacy Fisher, 2019). MEGA Mobile application enables to search, upload, download, stream, and share any of the files (Jain, 2019).

B. Google Drive

Google Drive is a file web based storage application and concur service founded 2012 by Google. Google Drive allows users to store, download and upload files on their servers with the help of internet, its transfore files across

devices and share files. Google Drive free cloud storage provides 15GB freespace to their users, its also have subproducts such Docs, Sheets, and Slides, which allows feature of editing of documents, spreadsheets, presentations, drawings, forms, and more (Jain, 2019).

C. Microsoft OneDrive

OneDrive (formerly known as SkyDrive) is a free cloud storage application hosted by Microsoft Inc. It was launched in August 2007. One Drive offers 5GB of storage space free of charge. It also offers 50GB, 1TB. OneDrive offers clients to store files and personal or official data on to the cloud, share files by using Android, Windows Phone, and iOS mobile other web enabled devices. Users can upload Microsoft Office documents directly to OneDrive (wikipedia, 2019).

D. Dropbox

Dropbox free storage cloud application allows users with the great features .which is operated by American company Dropbox, Inc. initial it is released on septmber 2008. Dropbox free storage offers a good storage space of free 2GB. Which works in different platform such as Windows, Mac, Linux, iOS, Android, BlackBerry, Windows Phone/Tablets (Stacy Fisher, 2018).

E. Apple icloud

iCloud is a free cloud storage application hosted by Apple Inc. it was launched on October 12, 2011. As of February 2016 its reached 782 million users. Apple icloud free storage offers a good storage space of 5GB. Its users can store data such as files, images and audio and vedio with the help of remote login facility for download and share files via internet (Jain, 2019).

F. Amazon Drive

Amazon Drive, formerly known as Amazon Cloud Drive, founded by Amazon.com in the year of 2006. It offers free limited 5GB storage secure space to its users for file storage, file backup, file sharing, and image storage. create an Amazon account to transferred and managed from multiple devices including web browsers, desktop applications, mobiles, and tablets. (Wikipedia, 2019).

G. MediaFire

MediaFire is an web storage application, founded in the year of 2006 it offers over 50 GB of free storage space to its users ,it is very easy to upload ,store and share the files with help of internet enabled devices, MediaFire makes it easy to share through email, on your website, social media, messenger, or anywhere with a link. (Fisher, n.d.).

H. pCloud

Founded in Switzerland, pCloud was a relatively newcomer to the online storage market when it began in 2013 (Fisher, n.d.). It offers 10GB of free storage space to its users.. pCloud offers, Instead of sharing the *files* in the folder, one can share the folder *space* (Fisher, n.d.).

I. ADrive

ADrive free cloud storage application , Founded in 2007 ,Which is most useful application for individuals, businesses and enterprise-level users. It offeres 50GB free storage space to its users, offers, Instead of sharing the files in the folder, one can share the folder space.

J. SurDoc

SurDoc is a free online storage application, it offers 100GB of storage space for initial users. Which Support

different platform such as Windows, Mac, Linux, iOS, Android, BlackBerry and File sharing is also supported with SurDoc. Most cloud storage websites offer these features such as Dropbox.

IV. OBJECTIVES

- To identify the free cloud providers and associated free data storage on the cloud.
- To identify the Estimated data space provided by Cloud storage Service providers
- To identify the most used data storage Application.
- To identify the market capitalization of free Cloud storage providers

V. SCOPE

The scope of the study is confined to the worldwide free cloud service providers only. It covers the top ten free cloud providers with their free offerings

VI. METHODOLOGY

The study was taken up through collection of data using journals, source sites, and various other statistical and business websites. Zotero open source reference management software has been used for all the referencing, style rendering and reference management purposes. The references cited in this study are in accordance with the APA 6th edition. For the collected data analysis, the investigation has used Microsoft Excel 2010

VII. INTERPRETATION OF DATA

The study was taken up through collection of data, using journals and various websites. The collected data has been tabulated and analyzed using Microsoft Excel 2010 and presented in the tables below.

Table 1: Market capitalization of Top ten free cloud storage Companies

Sl. No.	Cloud application	Parent Company	Market cap
1	Google Drive	Google LLC	825.226B
2	Microsoft Onedrive	Microsoft	889.286B
3	Dropbox	Dropbox, Inc.	9.176B
4	apple icloud	Apple Inc.	877.608B
5	Amazon drive	Amazon.com	841.116B
6	Media fire	MediaFire, LLC	15.129B
7	pCloud	pCloud.com	NA (Private company)
8	Adrive	ADrive LLC	NA (Private company)
9	Surdoc	SurDoc Corp	NA (Private company)

10	Mega	Mega Ltd.	NA (Private company)
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Table 2 : The estimation of data space provided by various cloud applications

Sl. No.	Name	Release Date	Data Storage
1	Mega	19 January 2013	50 GB
2	Google Drive	24 April 2012	15 GB
3	Microsoft Onedrive	1 August 2007	15 GB
4	Dropbox	June 2007	2 GB
5	apple icloud	12 October 2011	5 GB
6	Amazon drive	29 March 2011	5 GB
7	Media fire	20 October 2006	50 GB
8	pCloud	September 2013	2 GB
9	Adrive	November 2007	50 GB
10	Surdoc	21 December 2011	50 GB

Market capitalization is one of the best way to understand the brand value, market share is known as market cap, market capitalization is value of a company based on the total value of its outstanding shares of stock. As on date, Microsoft is the largest company as measured by market cap. Its market share is \$889.286B. Microsoft built its business by being a technology innovator and creating brand loyalty by understanding its customer base. Followed by apple with \$877.608B. third position holds by Google LLC with 825.226B. The market capitalisation concept is not applicable to a private companies Such as Adrive, pCloud as they are not gone public.

There are many free cloud storage application are available in the market. Which offers upto 50GB of free storage spaces. These storage spaces can be used for file storage both personal as well as business purpose. Investigation has chosen top 10 free cloud storage applications, listed by Neeru Jain written in an article on "10 Best Free Cloud Storage Services in 2019" published in "whizlabs.com" website. The data in the above table shows that mega, Media fire, Adrive, Surdoc cloud storage are easy to use and provide free storage space up to 50GB and both Google Drive and Microsoft OneDrive Provide up to 15GB free data storage Space for users. it is also can be seen that drop box and pCloud are providing less storage Space with 2GB, Surdoc, Adrive are private companies provide good Storage space upto 50GB for free of cost.

Table 3: Top ten free cloud Storage applications User Statistics

Sl. No.	Cloud application	User Statistics
1	Google Drive	2.1 million
2	Micosoft Onedrive	1 billion
3	Dropbox	250 million
4	Apple icloud	500 million
5	Amazon drive	768 million
6	Media fire	1 million
7	pCloud	43 million
8	Adrive	1.8 billion
9	Surdoc	N A
10	Mega	40 billion

The data from the above table shows that User base for the top cloud storage applications. Google Drive, is used by 2.1 billion people worldwide. Since Drive launched back in 2012, it has stored trillions of files including images,pdf and so on. 768 million users are registered in Amazon Drive, followed by 500 million users are using Applie iCloud and 250 million users are registered in Dropbox ,even they providing less storage(2gb) place compared other cloud storage application. In the same way 1 million and 1.8 million users are using both Media fire and Adrive

Table 4 : Top ten free cloud Storage applications Alex Rank (Global Rank)

Sl. No.	Cloud application	Alex Rank (Global Rank)
1	Google Drive	14
2	Micosoft Onedrive	106,639
3	Dropbox	62,390
4	apple icloud	83
5	Amazon drive	430
6	Media fire	10
7	pCloud	144
8	Adrive	5,295
9	Surdoc	57,906
10	Mega	NA

The data from the above table shows that Media fire secured top tenth place by Alexa Internet in Global Rank,Google drive Secured 14 rank, apple iCloud hold the next position with 83 Rank followed by pCloud 144 rank and Amazon

drive 430 Rank.table also shows that Microsoft Onedrive secured least Rank with 106,639.

VIII. RECOMMENDATION

IT user need to get more awareness on the various free cloud storage providing initiatives and how to make the best use of the available technology for their better decision making be it in home/ personal or office/ official purposes. It is recommended that we LIS professionals possess the best knowledge on the sources of information, in the similar fashion, it is also the need of the hour that LIS professionals spread the word on cloud computing, varous activities around it, and also free providers of cluod services as the world is moving towards Open Source Software (OSS) solutions for every problem. Because the world is movong towards four major initiatives such as Cloud Computing; Big Data, Analytics and Mobility

IX. CONCLUSION

Cloud computing has the potential to be a disruptive force by affecting the deployment and use of technology. The cloud could be the next evolution in the history of computing, following in the footsteps of mainframes, minicomputers, PCs, servers, smart phones, and so on. Cloud storage can reduce costs, simplify IT management, improve user experience, and allow employees to work and collaborate from remote locations. This simplifies sharing and collaboration among users. Although we try to be diligent about moving your stuff from one computer to the next, things inevitably get lost along the way.If our documents or data are backed up or stored online, they will be available from any computer at any time, without you having to do anything to get them off the first computer in the first place.

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