



REVIEW ARTICLE

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Deepali. B. Gothawal ,Deepali Patil, Sneha Chavan, Tejaswini Chandekar,Rohit Koti

D.Y.Patil College of Engineering,
Akurdi, Pune-411044,
Maharashtra, India
dgohil.1519@gmail.com,deepali93patil@gmail.com,
sneha.chavan1993@gmail.com,
tejaswinichandekar@gmail.com,
rohikoti123@gmail.com



QR Code for Mobile
users

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Mobile cloud Computing using Machine Server

Deepali. B. Gothawal ,Deepali Patil, Sneha Chavan, Tejaswini Chandekar,Rohit Koti
D.Y.Patil College of Engineering, Akurdi, Pune-411044, Maharashtra, India.

ABSTRACT

Mobile devices are becomes replacement for laptops and traditional computers. These devices are used not just for communication but also for many multimedia applications such as watching videos,listening to music and playing games. Thus the storage space available on mobile devices restricts the storage for multimedia files. The user has to delete some files to make space to add new ones. The storage can be increase either by increasing internal storage by manufacturers or addition of SD cards only serves to temporarily reduce the problem until we run out of space again. There is a need to permanently solve this problem and integration to cloud based storage appealingly solves this problem. Cloud Computing Application solves this problem by providing anytime/ anywhere access to the unlimited storage of a “cloud” to the Mobile Device users. To show feasibly of concept, Cloud Computing Application is implemented, which consists of Machine Server as a cloud and Mobile Device Client application. This application provides the Mobile Device users with the facility to upload download and share Cloud files from a Mobile Device. The biggest advantage of this application for mobile users is anytime/anywhere access to their Cloud files.

Keywords: SD, Cloud based file system application, MCC, Cloud computing, multimedia files.

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INTRODUCTION

With continuous growth in mobile technology Mobile Devices such as smart phones or tablets are becoming replacement for laptops and Personal computers. One of the important reasons behind the popularity of Mobile Devices is their small size and they are easy to carry as compared to laptops or PC's. Furthermore, like laptops mobile devices also come with so many features like camera, book reader, GPS, email vault and many more applications. However, unlike PC's Mobile devices have very limited memory to save all the applications and data. Also there are thousands of Mobile Device applications that can download to Mobile Devices and each one of them uses memory space. As there is increasing use of Mobile Devices the problem of limited storage space needed to solve. Presently, there are two existing ways to extend the memory storage of mobile Devices: using SD cards, Remote Access Applications. Although these existing ways help to extend storage of Mobile Devices to some extent but there are some drawbacks associated with these ways for example SD cards can't help you to secure data in case Mobile device is lost. Similarly with Mobile Remote Access Apps it is harder to view big PC screen on Mobile Device's small screen. Given these limitations of existing solution there is need for efficient solution which not only helps in extending the storage of mobile devices but also provides a better Data Reliability along with easy to use user interface.

This paper is proposing "Cloud Computing for Mobile Users Using Machine Server" which as a proposed solution to extend limited storage of Mobile Devices with simple and easy to use user interfaces along with efficient data reliability. This application facilitates Mobile Devices with large storage space of Machine Server. User can access Cloud file i.e. upload/download a file from cloud anytime, anywhere from mobile. The user can upload their data using the tag which makes easy to search and download the files which are already uploaded. The application also provides the security to the files as this application stores the data in encrypted form. This application is based on Client/Server model and it can be divided into two sub parts one is "Cloud Server" App running on Machine Server and another is "Mobile Device Client" running on Mobile Device. The Machine server and Mobile Client can communicate if they are connected in the same network.

LITERATURE REVIEW

In literature survey, we study the existing data storage application based on cloud and research on data storage application that have been developed such as Dropbox, Google Drive, Box, Sky Drive, Cloud Me etc. These methods can be used as an alternative to expand the mobile device storage on cloud. These systems have features like file upload, file modify, file sharing. These methods can be used as an alternative to expand the mobile device storage on cloud. The study of these applications shows that none of the applications is able to provide best performance under uncontrolled circumstances such as data reliability, performance and data security.

2.1 Dropbox: The Dropbox offers one also some options for dealing with files that had been on almost any system. It is also possible that the older versions of a document to restore. Also one can share certain data in the Dropbox for non-registered users. Once installed, the client runs in the background and the sync process runs automatically. There are no limits for the traffic.

The drawbacks of Dropbox are users can not upload their own data with encryption and the encryption code used in the Dropbox is known only to the developers. This means that hacker shall have easy access to the data. The Dropbox developers the right to delete data from inactive free accounts.

2.2 Google Drive: Google Drive is a file storage and synchronization service provided by Google which enables user to save, share and edit the files. User can store documents, photos, music, videos etc. at one place. It syncs with mobile devices and computer, so if change are made from one gadget, it will automatically update. This service enslaves user from the use of various software so as to open different file formats. Google Drive initially provided 1 GB of storage for free.

One of the disadvantages that might happen will be the hackers, who hack or remove important data, or they install virus into the server and files are gone. Another disadvantage is when millions of user is uploading and downloading the data simultaneously, the speed will be slow down.

2.3 Box: Box is a cloud computing application that provides sharing of files, collaborating, and other tools for working with files that are uploaded to its servers. Users can determine how the data can be shared with other users. Users may invite other user to view, edit an upload documents, account's shared files and photos to a shared files folder and give other users to access and view shared files. Box is a service with diverse potential. It doesn't just synchronize and backup data, it helps to manage and share data too. It provides up to 10 GB of free storage for personal accounts. Depending on the type of account, Box provides features like unlimited storage space, administrative controls and custom branding.

Box is a well-rounded solution for storage, it syncs to only one specific file on the user's computer, a folder for the user's Box files. So, it requires some group and planning to use properly.

2.4 SkyDrive: SkyDrive is the feature offered by the Microsoft having many features. It is 25 gigabytes of Remote Hosting, allowing storing any file or document. Even better, it allows access those documents anywhere through an Internet connection. This enables to make a secure backup of important documents, assignments, or photos. Initially, the service offers 15 GB of free storage for new users. Users can edit documents in Word and pick up where they left off in the online app.

In SkyDrive there is a lack sophisticated admin tools, such as document permissions and password-protected files.

PROPOSED SYSTEM

Using the mobile cloud computing app user can extend the storage of mobile devices with simple and easy to use user interface and also provides the reliability of data. It allows user to configure laptop or PC as a cloud server and get access to it using this application. User can get access to the files stored in the cloud by which user can read, open, edit the currently opening file and store file back anytime/anywhere from the mobile devices. Files which are stored in mobile for a long period of time get deleted automatically from mobile and are stored on cloud.

Cloud based file system Application is designed to meet the existing need forexpanding storage of Mobile Devices along with easy to use Task oriented User Interface. Itallows users to keep all the files in a folder on the Cloud Server and usercan access this folder anytime, anywhere from the Mobile Device which generally hasbetter security. So, now user is no longer bounded to limited storage of Mobile Device, because users have access to unlimited storage space of Cloud. Also, user doesn't need tostruggle with Remote Access Applications which are very hard to use because of their pooruser interface.

There are several benefits in shifting computing from the desktop to the cloud. To overcome the problem of data leakage as seen in i-cloud recently, we are storing the data in encrypted form. Even if data is hacked its content will not be known as it will be stored in encrypted format. The primary constraints for mobile computing are limited energy and wireless bandwidth.

• System Architecture-

Selected files are sync with mobile and server for file synchronization. File which is downloaded to server gets deleted from mobile device. Each file is encrypted before saving in cloud. A background scan is performed for a file which is downloaded to mobile device if not in use for certain period gets deleted from it. In, Cloud File Management user can manage his file from server, add delete. In case of emergency, all files will be deleted from mobile device. Admin can view various reports about usage-daily upload/download graph, new user/old user, space utilized.

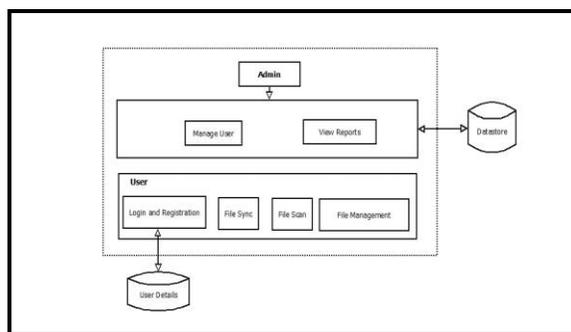


Fig: System Architecture

• System Flow –

Firstly, user login to the android application. User selects files he wishes to sync with server. Files are not uploaded to server and deleted from mobile phone. Cloud server encrypts the file and saves in server along with user details. Next time when system wants to access file, he will select just name of file which are loaded from server. Once selected, only that file is downloaded. If user doesn't use this file for certain duration its say a week, file is again deleted to save phone memory. User also login to server to manage his file. User can also upload file on server which later on can be synced with phone. User can also login to server in case of emergency, and can command phone to delete file from phone. User can access same file on multiple mobile phone as only retraction is his username and password. Admin can view report chart of usage of user.

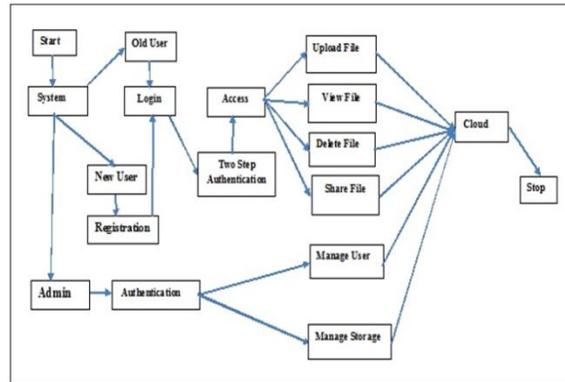


Fig: System Flow

EXPECTED RESULTS

Machine server which acts as a cloud makes files accessible for reading and writing to “Mobile Device clients” over network. It listens to the Mobile Device Client’s requests and it processes all the requests sent by the Mobile Device Client. Mobile Device Client such as to Mobile Device like, Mobile Phone, Tablet etc. is configured as a client by implementing client program which allows the Mobile Device to communicate with Machine Server. Once connection between the Cloud and the Mobile Device is established successfully, Client can send requests to Open/Read, Edit and Save files etc. Also user can Access/Open any file from Cloud, anytime, anywhere using his/her Mobile Device.

Each instance of the Mobile Device Client app sends file request to Cloud Server. In turn, the Cloud Server accepts these requests and processes them, and returns the requested information to the Mobile Device Client app. Reply to Mobile Device by sending that file. Cloud Server processes Mobile Device Client’s request to “Read a File from Cloud” by sending requested file to Mobile Device.

- System overcomes

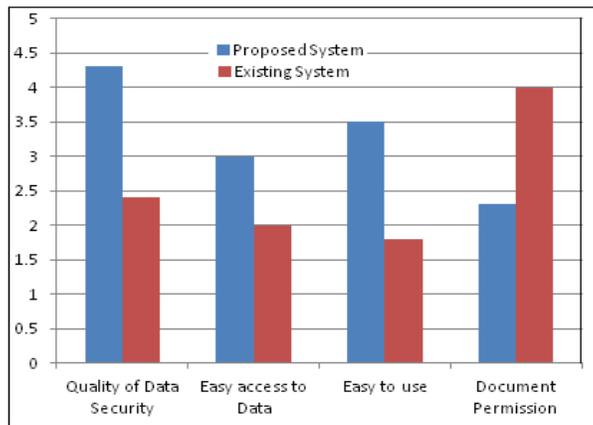


Fig: Comparison between Existing System and Proposed System

CONCLUSION

As mobile devices have become our primary data processing devices nowadays, mobile cloud computing has risen as a great extension to cloud computing field. Mobile Cloud offers data storage and processing capabilities to the resource limited mobile users which makes it very potential technology in near future. In this paper, we proposed a mobile app which offers the maximum utilization of cloud for storing data instead of storing in SD-card which also provides the security, reliability, flexibility, privacy for the data stored in the cloud. User can access the data stored in the cloud through internet anywhere/anytime.

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