



A REVIEW ON HOMECLOUD-Personal Cloud

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ABSTRACT

Data is the new gold and with more data comes the need to for more storage. Cloud storage services are not a thing of the future but are being used abundantly right now. However, there are terms and conditions to this. Some of these cloud storage services provide limited amount of free storage before you have to start paying for them or they are not free at all or they are a onetime payment deal. Cloud storage services backup your data and give you the opportunity to free up space on your device. They are used for multiple purposes like uploading personal data, company data, sharing files among multiple users. This data can be accessed either through the public internet or a dedicated private network. The data that you transfer offsite for storage becomes the responsibility of a third-party cloud provider. This review paper introduces one such Cloud storage service called "HomeCloud" which is unique and has a completely different approach towards storage and its use.

I. INTRODUCTION

Nowadays everyone has a smartphone and with increased usage of different apps and media. This leads to a common issue that is a shortage of storage. According to survey done by SanDisk Storage appears to be a real problem for smartphone users in India, with 29% running out of space at least once a week and 62% running out of space at least every three months. Media files tend to take up a huge chunk of your device storage which could be utilized for something else. So how do you make space and keep your data at the same time?

We can back up our data. There are plenty of cloud storage services available like Google Cloud & Microsoft Azure. Some of these even provide free service when you first start using them. In the long run, these services tend to be costly and raise security and privacy concerns.

We are proposing a system where we can store and upload our data to the personal cloud that is

the Homecloud. We will be using an app to access the data and hardware to store the data.

Homecloud is a storage device of about 500GB to 1TB capacity which can be connected wirelessly using Wi-Fi to laptops, mobiles, tablets etc. We can also change, increase the storage limit by changing the hardware of Homecloud.

In this system, we can connect to the Homecloud through WIFI and an application present on the device. When a device is connected to Homecloud, the media files will be transferred to Homecloud and deleted from the device hence creating space. We can access the uploaded media through an application.

Since Homecloud is a hardware device which can be accessed only by you it reduces security and privacy concerns and makes data leak impossible. This will help us in:



- Reduces the manual labour one would need to put in to transfer data from their device to an external hard disk.
- Upload important documents so that you can access those when needed.
- Upload media received from social media apps to save space on your device.
- Centralized personal cloud which everyone can access.

II. LITERATURE REVIEW

A) A Load Balancing Algorithm For Private Cloud Storage (2013) Prabavathy.B, Priya.K and Chitra Babu [1]

This paper basically tries to solve the problem of increasing storage demands from the existing consumers or the increasing number of consumers. This paper proposes dynamic expansion of cloud storage with additional storage nodes. This algorithm attempts to balance the load during the data placement as well as in any later situations that lead to load imbalance.

These are considered as a set of storage nodes $S = \{S_i/i \in (1..n)\}$. Here one machine will control the nodes and will act as a centralized coordinator (CC). The centralized coordinator is used to coordinate the storage resources of the storage nodes (commodity machines).

B) A Self-Learning Scheduling in Cloud Software Defined Block Storage (2017) Babak Ravandi and Ioannis Papapanagiotou [2]

This method proposes storage management through software defined storage (SDS). SDS decouples the underlying storage hardware from the software that manages it thus reducing complexity. This method will create a self-learning scheduler without knowing storage backend nodes.

This method provides customization of block storage and optimized scheduling decisions based on the workload characteristics and performance of data. The proposed scheduler treats the storage backend nodes as a black box and requires zero knowledge of their internal states hence making them independent.

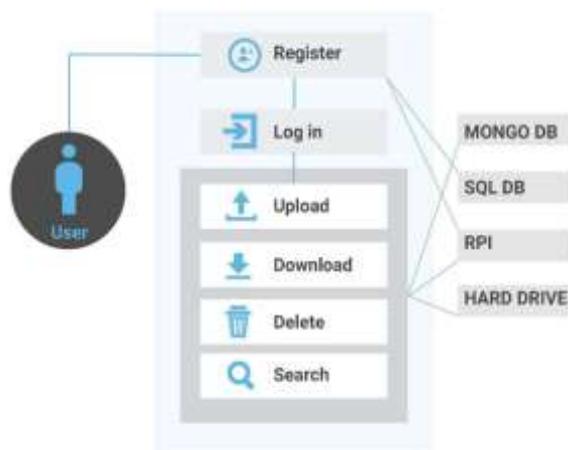
C) Secure Personal Cloud Storage (2015) Kheng Kok Mar, Chee Yong Law and Victoria Chin [3]

Authors of this paper suggested a way of storing data in portable stage device with features of cloud. This paper is introducing a way to split data into unrecognizable slices and disperse the slices.

This will be done through information dispersal algorithm (IDA). This algorithm will ensure data confidentiality and availability.

In IDA, a generator matrix A of n rows and m columns, as is used to transform the original file into n slices. A Cauchy matrix, in which any $m \times m$ sub-matrix is non-singular, can be used as the generator matrix.

III.FLOWCHART



IV. METHODOLOGY

1-Hardware

- Homecloud will act as personal cloud with hard disk in it.
- Homecloud will have WIFI connectivity.

2-Connectivity

- We will use WIFI of both the devices to establish a connection.
- We will be using an app to access the data and Homecloud to store the data.

3-Application

- A mobile application will be used to access the HomeCloud.
- After installing the required application, you have to register before you can use the HomeCloud services.

4-Accessing the data

- You can upload, download, delete or view the data using an application.

5-Managing the data

- Managing the data stored in homecloud will be using AI.
- Data duplication will be checked through an AI and if there are multiple files present then duplicate files will be deleted.

VI. REFERENCES

1. Prabavathy.B, Priya.K and Chitra Babu "A Load Balancing Algorithm for Private Cloud Storage " *IEEE – 31661(2013)*
2. Babak Ravandi and Ioannis Papapanagiotou" *A Self-Learning Scheduling in Cloud Software*

- Face detection AI will be used to segregate photos according to faces.

V. CONCLUSION AND FURTHER DEVELOPMENT

In this paper, we have proposed an efficient system where we can upload and download the media files, important data from a personal cloud. This personal cloud will be situated in a home or small office where we can access that physically too. This will be helpful to save important document as well as to upload extra media files on cloud and thus helping to save space.

This system will also use AI to delete duplicate files so that the cloud will be more efficient. Since Homecloud is a hardware device which can be accessed only by you it reduces security and privacy concerns and makes data leak impossible.

This system can be used in more places with some tweaks. We can use this in school, a college where everyone can use this as a common point for submitting your classwork, checking the time table, updating attendance. Everyone can access the study material. We can implement in the small firms where the sharing of documents is needed. Anyone from the firm can access the files or documents they need and upload the documents.

3. *Defined Block Storage" 2017 IEEE 10th International Conference on Cloud Computing*
3. Kheng Kok Mar, Chee Yong Law and Victoria Chin "Secure Personal Cloud Storage" *The 10th International Conference for Internet Technology and Secured Transactions (ICITST-2015)*