Flexible, Trusted and Private Personal Storage System in cloud computing

Sumit S. Sagane

I.T. Department
PRMIT & R, Badnera
Amravati, India
sumitsagane@gmail.com

Dr. G. R. Bamnote

Prof. & Head Department of CSE
PRMIT & R, Badnera
Amravati, India

Abstract: **A lot of personal information & potentially secure data that people share on their computer. This information is transferred to the cloud now a day. So, we proposed, restoring to cloud for improving the storage service of F2F system by characteristic of data availability & small friend group. We present personal storage system that is trusted friends with cloud storage. Personal storage system is secure & private offsite storage service. Personal storage system is the efficiently combines resources from trusted friends and cloud services to provide a flexible, trusted and private personal storage system.**

Keywords: **Personal storage system, data availability, Offsite storage.**

I. Introduction

Every user handle hundreds of gigabytes to store digital information including photos, video, work document and communication flow like email and social communication. Personal storage system that combines resources of trusted friends with cloud storage for improving the service quality achievable. Dropbox, Box.net is examples of new storage companies (Personal Clouds). Its sophisticated storage services to end users by making use of raw storage provided by data center owners.

Personal storage systems constitute an alternative approach to average personal storage [1], [2]. A social network consist of all the people i.e. friend, family and others with whom one shares a social relationship [3]. Users store their data in a set of social friends. Facebook has over 400 million active users. Over 63% of Facebook users have less than 100 friends [4]. User data is neither unknown peer nor stored in a centralized server. Popular social network such as MySpace and Facebook provide communication, storage and social application for hundreds of millions of users. Facebook in 2012, the number of members is 901,000,000 [5]. Social network provide a platform to facilitate communication and sharing between users [6]. It means a small number of trusted friends group on social network. Social network are popular infrastructure for communication, interaction, information sharing on the internet. Personal storage system is the efficiently combines resources from trusted friends and Cloud services to provide a flexible, trusted and private personal storage system.

II. Related work

In [1], it is important to take privacy into account when designing cloud service, if collection, processing or sharing of data. Various guideline and technique that used by software engineer to provide privacy. He explained different design pattern for privacy. Unauthorized access to personal data, security safeguard, allow user choice, user control are top tips for software engineers.

In [2], F2F is cooperative backup as well as private file sharing. It does not depend on global sharing. Authors used friends instead of random peers to improve the stability of existing systems. They argued that P2P systems with random neighbor selection are very unstable and that using friends provides incentives for nodes to cooperate.

Charl Blake presents [4], bandwidth is necessary for reliable peer to peer storage. This paper focus on scalability, storage guarantee & resilience to highly dynamic membership. It guarantees require redundancy. If bandwidth is more, data increases with time.

Scocial cloud [6], authors present a Facebook application that aims to create a Social Cloud, enabling friends to share resources within the context of a Social network. Their prototype application is a marketplace where friends trade their resources using auctions and bidding mechanisms mediated by contracts. However, as stated previously, the availability of these resources cannot be guaranteed by the sole usage of friends.

Online data backup [7], authors present a hybrid architecture where resources at peers (spare bandwidth, storage space) are complemented with temporal usage of Cloud storage services. They demonstrated that hybrid systems can be comparable to

traditional client-server architectures but at a fraction of their costs.

SafeStore [8] is a distributed storage system designed to maintain long term data durability. Also SafeStore store data redundantly across multiple storage service providers. SafeStore can provide highly robust storage. Audio protocol worked in SafeStore.

OceanStore [9] is utility infrastructure design to span the globe and provide continuous access to persistent information. Data is protected through redundancy and cryptography techniques. OceanStore is persistence object called globally unique identifier or GUID. It is personal information management tool such as calendar, email, contact etc. it can be used to very large digital library.

FriendStore is good online backup system [10]. FriendStore is a cooperative backup system where peers use their friends to store information. FriendStore aims to solve both the availability and denial-of-service problems thanks to trusted relationships. It consists of collection of nodes administered by different users. Calculating maintainable capacity and trading off bandwidth for storage [10].

III. Proposed Model

Base on observation of existing systems, It is very difficult to chat with friends when offline. No guarantee to reach our data to friends. Particular at night, user can't chat with friends, never access data from friends. So that this personal system will provide a cloud space to upload /download data the absence of friends and keep record in database who upload the data and download the data. Users are able to decide where to store their data which can completely on friend, only in cloud or mix of them. Maintain data availability during 24 hour of day is so difficulty to provide this facility during the period of day when user online.

- To providing social storage relationships among users.

Employ a social front-end as entry points of only those users which are members of the social network are capable of accessing to our Personal storage system. User management and access control issues are partially delegated to the social network avoiding additional complexity to the storage system.

- To storing and updating the data of users and the location of their data.

Users must download the personal storage client to connect to the system. This software enables users to perform basic data operations, such as storing and retrieving files from the system. Client can store their information in the storage space. Personal Storage Client is the generation of data redundancy before inserting a file into the system.

- Introduce the charts that show how user's data is distributed among his friends and cloud.

This chart will illustrate where user's data is store and whom a user is storing data. The application state maintains up to date the data management information about user's files. This information expresses which friends store which files and the network address of each friend. The maintenance process of this information is carried out by personal Storage Clients installed at participants. In fig 1 propose system show how user distribute data among friends.
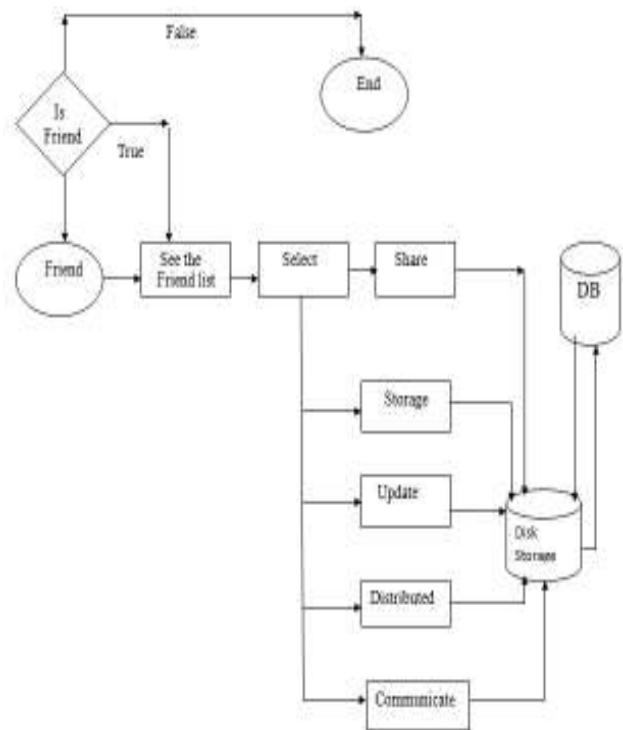

Fig. 1 Proposed System

Data availability & transfer time are the main drawback of F2F system.

Data Availability: Maximum friend of user are offline. During night hour, it failed to maintained high data availability. If a friend were to upload a data to each of friend & most of them were offline so the user would have to wait for those friend to come back online before completing all data transfer.

Small FriendGroup: a small FriendGroup contain trustable friend over 63% of Facebook user have less than 100 friends [4]. Minimum friend interact with each other. Cloud storing

service can completely guarantee data available and high amount of data redundant to make of friend.

IV. Implementation

Data transfer scheduling:

We applied random scheduling policy to schedule transfer among friend for both upload and downloads [11]. Block transfer is chosen completely on random. This mechanism reduces the upload TTS (Time Transfer Schedule). The main purpose is to schedule tasks to the adaptable resources in accordance with adaptable time, which involves finding out the proper sequence in which task can be executed [11]. Task scheduling mechanism can meet user requirement and improved the resource utilization and enhancing the overall performance of the cloud computing system also improve the resulting service quality.

Transfer Capacity:

Upload and download BTT (Block Transfer Time) distribution for friends and cloud are plotted separately [7]. If high speed network is available then block transfer are faster than restoring to cloud. Downloading data from cloud is more common than uploading data to it.

V. System Requirement

Hardware:
- Intel Core2 Duo
- 4GB DDR2 RAM.
- 100Mbps switched Ethernet links.

Software:
- Window XP/Vista/7
- Java
- Apache Tomcat
- SQL Server 2000 / 2005

VI. Conclusion

In this proposed system, an attempt is made to overcome the limitation of F2F system and also to provide secure personal storage system. Personal storage systems are aimed to secure and private off-site storage service. Personal storage system that combines the resources of trusted friends with cloud storage for improving storage service quality while preserving privacy. System will provides a flexible and user-defined cloud so that it improves the performance of storage

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