Synchronization Using Mobile Cloud Computing

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Abstract:

Now a day's Mobile cloud storage are most popular to the storage and Exchange the Data .in the paper to identify, analyze and address the synchronization inefficiency problem of modern mobile cloud storage services. in the Existing Synchronization is fail to the available bandwidth. It generated the large amount of the data .it unwanted data are Synchronization to create traffic. We implement the Quick Synchronization of the data using three different technique use to improve the Synchronization efficiency to any other services and its improve the performance of the Synchronization time to the system. Data is generating day by day in cloud computing data is saved on cloud. So here we have to combine the mobile computing with cloud computing so that we can handle the mobile based application with cloud platform. So when we store our data on cloud. Here the existing commercial system fail to make full use of available bandwidth and generate a large amount of unnecessary traffic. It happens because of the inherent limitations of the sync protocol and the distributed architecture.

Keywords: *Mobile Cloud Storage, Mobile Networks, Measurement, Synchronization Efficiency*

Introduction:

The main objective is that Cloud computing offers a new way of service provision by re-arranging various resources over the Internet. The most important and popular cloud service is data storage. In order to preserve the privacy of data Users, data are often stored in cloud in an encrypted form. However, encrypted data gives new challenges for cloud data Storage services, which is hard for big data storage and processing the data on cloud. Here we are searching for the keyword and we will get the data which contain that word. So we are encrypting the data saved on cloud. To maintain the privacy References.

Problem Definition:

In this project we are using cloud computing for storage. In the recent years storage is a biggest issue in a organizations, so to secure the data and get at any time we use cloud. We are applying encryption to the data to avoid the security issue. We are synchronizing our data to cloud. Here we are making chunks of the file and storing on cloud.

Objectives

The main objective of the paper is to synchronize our data on cloud. And here main objective is to deduplicate the chunks uploaded on cloud. And to encrypt the data so that the privacy of the data should not get leaked. And at the time of file download there is a descryption on data.

System Architecture

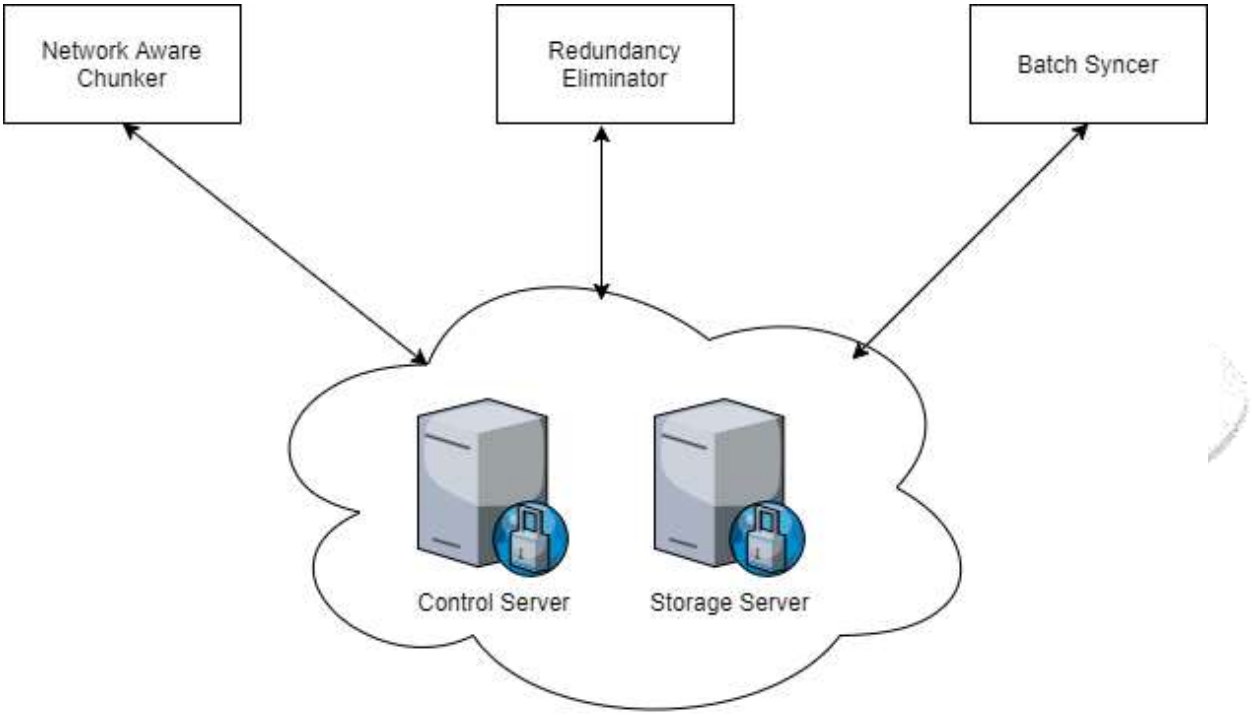

Fig 1: System Overview

In the above system the data in the form of file is uploaded to cloud. Here data is getting uploaded in the form of chunks. And here the chunks are made encrypted so that the data privacy will be saved. Here we used AES algorithm for encryption and we also focussed on deduplication so that the file with same contents will not be saved. Here every chunk is compared with every other chunks and then there is a updation of data.

Related Works

1) A Secure Data Deduplication Framework for Cloud Environments:

Year: 2012

Author Name:

- Fatema Rashid
- Ali Miri
- Isaac Woungang

Description: Cloud service providers are able to maximize data storage space by incorporating data deduplication into cloud storage. Although data deduplication removes data redundancy and data replication, it also introduces major data privacy and security issues for the user. In this paper, a new privacy-preserving framework that addresses this issue is proposed. Our framework uses an efficient deduplication algorithm to divide a given file into smaller units. These units are then encrypted by the user using the combination of a secure hash function and a block encryption algorithm

Limitations: encryption of a data index of the deduplicated data using an asymmetric searchable encryption scheme, as temporary files whose sizes are close to that of the original .ppt file are created and deleted. Changes are automatically synchronized.

2) Actively Measuring Personal Cloud Storage:

Year: 2013

Author Name:

- Ra´ul Gracia−Tinedo
- Marc S´anchez Artigas
- Adri´an Moreno−Mart´ınez
- Cristian Cotes
- Pedro Garc´ıa L´opez

Description: The Personal Cloud model is a mainstream service that meets the growing demand of millions of users for reliable off-site storage. However, despite their broad adoption, very little is known about the quality of service (QoS) of Personal Clouds. In this paper, we present a *measurement study* of three major Personal Clouds: DropBox, Box and SugarSync. Actively accessing to free accounts through their REST APIs, we analyzed

important aspects to characterize their QoS, such as transfer speed, variability and failure rate.

Limitations: we present a *measurement study* of three major Personal Clouds: DropBox, Box and SugarSync. Actively accessing to free accounts through their REST APIs, we analyzed important aspects to characterize their QoS, backup/restore time for several types of files. Gracia-Tinedo et al. study the REST interfaces provided by three big players in the personal and to sync to cloud.

3) Augmenting Mobile 3G Using WiFi:

Year: 2010

Author Name:

- Aruna Balasubramanian
- Ratul Mahajan
- Arun Venkataramani

Description: Investigate if WiFi access can be used to augment 3G capacity in mobile environments. We _rst conduct a detailed study of 3G and WiFi access from moving vehicles, in three di_erent cities. We _nd that the average 3G and WiFi availability across the cities is 87% and 11%, respectively. WiFi throughput is lower than 3G throughput, and WiFi loss rates are higher. We then design a system, called Wi_er, to augments mobile 3G capacity. It uses two key ideas leveraging delay tolerance and fast switching |to overcome the poor availability and performance of WiFi.

Limitations: investigate if WiFi access can be used to augment 3G capacity in mobile environments. We _rst conduct a detailed study of 3G and WiFi access from moving vehicles, in three different cities. Delay tolerance.

4) Benchmarking Personal Cloud Storage:

Year: 2013

Author Name:

- Marco Mellia
- mellia@tlc.polito.it
- Herman Slatman
- Aiko Pras

Description: Personal cloud storage services are data-intensive applications already producing a significant share of Internet traffic. Several solutions offered by different companies attract more and more people. However, little is known about each service capabilities, architecture and – most of all – performance implications of design choices. This paper presents a methodology to study cloud storage services. We apply our methodology to compare 5 popular offers, revealing different system architectures and capabilities.

Limitations: compare the system capabilities for five popular cloud storage services focus on a specific service.

5) The Good, the Bad and the Ugly of Consumer Cloud Storage:

Year: 2010

Author Name:

- W. Hu
- T. Yang
- J. N. Matthews

Description: Files can be stored on demand and synchronization and services allow copies of file. With data uploading. Providing a form of file sharing.

Limitations: File sharing No on site backup.

6) A First Look at Mobile Cloud Storage Services::

Year: 2016

Author Name:

- Yong Cui
- Zeqi Lai,
- Ningwei Dai

Description: This paper to check the Capability of the mobile data and synching the data into the cloud and to check the complexity of that the data then its check the Mobile performance how its work its challenge to synchronize the data to the cloud to as per the paper.

Limitations: This paper overview is very complex its very time consuming process that its cost increasing. It to processing to the mobile cloud storage.

7) Client Bandwidth: The Forgotten Metric of Online Storage Providers:

Year: 2011

Author Name:

- Andreas Bergen
- Yvonne Coady
- Rick McGeer

Description: In this paper to check to size of the data to the Synchronize the data and check. it store to Data provider in to the cloud and the improve the performance data center.

Limitations : In this paper its only improve the Data center performance. And its very costly and complex.

8) Towards Network-level Efficiency for Cloud Storage Services:

Year: 2014

Author Name:

- Tsinghua
- Cheng Jin

- Tianyin Xu
- Christo Wilson

Description: In this paper to we zoom into the problem towards a comprehensive Understanding of traffic usage efficiency. Different from the simplified benchmarks used in the above mentioned studies we consider the diversity of access methods, client locations hardware configurations, and network conditions to match the real-world usage. Indeed, we discover that these factors lead to different traffic usage patterns, some of which are even not expected.

Limitations: In this paper to the data storing time is more. It's not very efficient to data transfer its creating the more traffic.

9) An Empirical Analysis of a Large-scale Mobile Cloud Storage Service:

Year: 2002

Author Name:

- Zhenyu Liy
- Xiaohui Wangy
- Ningjing Huangy

Description: In this paper an examines data of HTTP requests from mobile devices in a large-scale cloud storage service, to study the system's artifacts and data transmission performance. Our results suggest a backup-dominated usage pattern for mobile users backups.

Limitations: The implications provide guidance to mobile cloud providers to cut down the cost, increase indirect revenue and improve performance. and hacking only no shared segments for chunk removal.

10) Packet Caches on Routers: The Implications of Universal Redundant Traffic Elimination:

Year: 2008

Author Name:

- Ashok Anand
- Archit Gupta
- Aditya Akella

Description: In this paper use data compression techniques and its calculate the similar data to the find the system its using the network protocol to transmission of the Data.

Limitations: In this paper to less find the similar data that why its store redundant data. its get more space and its gets more cost.

Limitation of Study:

The only limitation of the system is that here we can't give mp3 and pdf files it is the limitations of the system so that in future we will going to design our system according to that.

Design of the Study

- Input: File in the form of text/Doc.
- Output: File
- Functions :

1 Upload the file in the encrypted form.
2 File gets uploaded on cloud.
3 File is Encrypted by the server.

- Uploading file is passed to the chunk method so there is a spillting of file.
- Then there is a deduplication check.
- Success Conditions: File in decrypted format.
- Failure Conditions: Time period to user.

Tools Used

- **Software Requirement:**
    - Operating System : windows 8 and above.

- Application Server : Tomcat5.0/6.X
- Language : Java
- Front End : HTML, JSP
- Database : MySQL

- **Hardware Requirement:**
  - Processor : Intel i3/i5/i7
  - RAM : 4 GB (min)
  - Hard Disk : 20 GB(min)

Statistical Technique Used

We have developed Login and Registration which manages the user profiles (User), here the user registers and logins to the system. Then file is uploaded on cloud in the encrypted format. And file is getting uploaded in chunk format. Then there is a deduplication check and file download.

Algorithm

- **Data Encryption Standard**: In our system, we have used DES to provide encryption to the uploaded files. Along with that we will be using conjunctive keyword to download the file.

Data Encryption Standard:

```
Cipher(byte in[16], byte out[16], key_array round_key[Nr+1])
begin
byte state[16];
state = in;
AddRoundKey(state, round_key[0]);
for i = 1 to Nr-1 stepsize 1 do
SubBytes(state);
ShiftRows(state);
```

MixColumns(state);

AddRoundKey(state, round_key[i]);

end for

SubBytes(state);

ShiftRows(state);

AddRoundKey(state, round_key[Nr]);

end

Our Approach:

The system will work in three operating modes:

1.User:

In this module user registers and logins and uploads the file in encrypted format. Then there is a decryption at the time of file download.

Experiment Result:

This system will collect the file which a user want and that file is in decrypted format.

Future scope:

In this project we can developed a system which will save the data on cloud and and download the data. In that we also added the functionality of file deduplication so that same data will not be saved on cloud .and this will save the space and and optimize the time. At the time of file download there is a concept of encryption and decryption. We further implement QuickSync to support the sync operation with Dropbox and Seafile. Our extensive evaluations demonstrate that QuickSync can effectively save the sync time and reduce the significant traffic overhead for representative sync workloads. Here in future we will deal with other types of data.

Conclusion:

In this paper we are implementing the Quick Synchronize operation. we developed the diffident technique to use the system to Synchronize the data to the cloud. its removing the

redundancy of the data and the improving the performance to the Quick Synchronize system Our extensive evaluations demonstrate that Quick Synchronize can effectively save the sync time and reduce the significant traffic overhead for representative sync workloads.

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