

Multi-Drive File Operation with Secure Authorized Data De-duplication

Prof. Snehal P. Chavhan, Ms. Kratika Pawar, Ms. Riya Gaur, Ms. Mrunali Dogare, Ms. Snehal Lande, Ms. Harshita Danwate
Department of Computer Science and Engineering
Smt. RajshreeMulak college of Engineering for Woman
RTMN University, Nagpur 440009, India.
chavhan.snehal@gmail.com, kratikapawar24@gmail.com, riyaarjunsinghgaur@gmail.com, mrunalimdongre@gmail.com, snehallande421@gmail.com, hardhanwate1234@gmail.com

Abstract—With the evolution of wireless communication technology, mobile devices have perform more and more important roles in the people's daily lives. However, data storage and sharing are hard for these devices due to the data inflation and natural extent of mobile devices, For this, we present a lightweight Multi-cloud-based storage framework, in which the data owner can access their data via network at any time and for anywhere by uploading data into the cloud. Generally speaking, each cloud drive will just free provide a small storage space. Thereby, a big one will come into start after adding all free space of this cloud drives together. For instance, if you have registered five Drop-box accounts and each one has offered 2GB free space, you can use the free 10GB space conveniently with the help of Multi-Cloud. To better protect data security, the first attempt to formally address the problem of authorized data de-duplication. Data de-duplication is one of the important data compression techniques for eliminating duplicate copies of repeating data and has been widely used in cloud storage to reduce the amount of storage space and save bandwidth .We develop this project in ASP.net technology and also use O-Auth technique for authentication.

Keywords: Cloud computing, single cloud, multi-clouds, cloud storage, data integrity, data intrusion, service availability, Mobile Storage, Quality of Service.

I. INTRODUCTION

Multi-cloud strategy is the accompanier use of two or more cloud services to minimize the risk of diffused data damage or stop due to a localized component failure in a cloud computing environment. Such a failure can occur in hardware, software, or infrastructure. Reasons for an adverse cloud event can vary from a single cable connector failure to an EMP (electromagnetic pulse), or from a natural calamity to an act of cyber warfare. Even the error of a single hard disk/drive unit can outcome in a huge-scale network outage if the malfunction takes place at a critical point in the system such as a host computer.

Multi-Cloud is a free Web based app that allows many cloud users to access all their online files from a single interface. And manage, shifting, sync or even manage sharing files between cloud storage services like Drop-box, Google Drive, Copy, One-Drive, FTP, WebDav, MEGA, etc. 26 cloud drives supported so far. With the help of Multi-Cloud, you can transfer files across cloud drives, do the centralized management and sync data between clouds. And more, it is FREE, safe and reliable.

Multi Cloud comprises the user and other external with which the system interacts. The user interacts with the device by giving their user id and password. If both user id and password are correct then the user can enter the system. To upload files in to the cloud storage, download files, view the file alerts, update his password, remove his files.The functions execute by the user are uploading and downloading of file into and rom the cloud. File data is encoded to provide the safety to

it.The user is expected to simply just know how to access the computer or a smart phone to upload his file. The user must have a high speed internet available in the device from which he is uploading or download the files. A basic need for any cloud-based data security solution needs to be the capability to decrease the costs of providing the same service that client could do themselves in their own data centres. One method being used to achieve this goal is data de-duplication across multiple end-user clients.

File-level data de-duplication compares a file to be backed up or archived with copies that are already provided. This is done by test its attributes against an index. If the file is unique, it is store in the cloud drive and the index is updated; if not, only a pointer to the current file is collect. The result is that only instance of the file is stored, and subsequent copies are replaced with a stub that points to the original file. An example of this method is match the name, size, type and date modified information of two files with same name being stored in a system. If this parameters match, user can be pretty sure that the files are copies of each other and that user can delete one of them with no problems.

II. OVERVIEW

Cloud service, also called cloud drive, which is made receivable for users on request via the Internet from a cloud computing provider's servers as inimical to being provided from a company's own on-premises servers. There are some popular cloud services, such as Dropbox, Google Drive, Box, Amazon S3, Amazon Cloud Drive, SugarSync, Alfresco, Hubic, Evernote, OneDrive(formerly SkyDrive), MEGA,

Cubby, MyDrive, WEB.DE, Yandex, HiDrive, MySQL, Flickr, MediaFire, OwnCloud, ADrive, BaiDu, WebDav and FTP/SFTP.

Free cloud services have limited volume, so some people create many accounts of different cloud drives. In order to operate multiple cloud services of yours, you can try some multiple cloud services management applications Multi-Cloud is one of them and free. It can aid you create full use of space of your Clouds, and sync, backup and transfer data across Clouds easily and freely. The data owners can use their data via networks at any time and from anywhere by upload data into the cloud. Users would like to store the data on multi-cloud with a distributed most necessary object related to cloud security danger is data integrity. The data stored in the cloud may suffer from loss during transition operations from or to the cloud storage provider. Cachinet al. gives manner to decrease the threats of data integrity.

That it is possible that the service might be not available from time to time. The user's web service may stop for any reason at any time if any user's files break the cloud storage policy.

III. PROBLEM DEFINATION

1. **Data Integrity:** One of the examples of the risk of attacks from both inside and outside the cloud provider, such as the recently attacked Red Hat Linux's distribution servers.
2. **Data Intrusion:** According to Garfinkel, another security risk that may happen with a cloud provider, such as the Amazon cloud service, is a hacked password or data intrusion. If anyone gains use to an Amazon account password, they will be able to use all of the account's instances and resources. Thus the stolen password allows the hacker to delete all the data inside any virtual machine instance for the stolen user account, modify it, or even disable its services.
3. **Service Availability:** Another major case in cloud services is service availability. Amazon mentions in its licensing agreement losses happen to any Amazon web service and the service fails, in this case there will be no charge to the Amazon Company for this failure.

IV. LITRETURE SURVEY

- 1) *Mohammed A. AlZain #, Eric Pardede #, Ben Soh #, James A. Thom "Cloud Computing Security: From Single to Multi-Clouds", 2012 45th Hawaii International Conference on System Sciences.* This paper surveys recent research related to single and multi-cloud security and addresses possible solutions. It is found that the research into the use of multi-cloud providers to maintain security has received less attention from the research community than has the use of single clouds. This work aims to promote the use of multi-clouds

due to its ability to reduce security risks that affect the cloud computing user.

- 2) *Prof. M. Ben Swarup#, Professor, Chukkala Varaha Sampath Pothabathula#, "design and implementation of a secure multi-cloud data storage using encryption", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3 Issue 5, May2014.* Multi Cloud includes the user and other external with which the system interacts. The user interacts with the system by giving their user id and password. If both user id and password are valid then the user can enter the system.
- 3) *Peng Xiao1* and Yanping Zhang2"CS-Mobile: A Cloud-based Distributed Storage Middleware for Mobile Devices", International Journal of Smart Home Vol. 7, No. 1, January, 2013.*

In this paper, we present a lightweight Cloud-based storage framework, which provides an easy-to-use file navigation service for attribute-based file querying or semantic-based data retrieving. Meanwhile, it incorporates an effective mechanism for users to verify their data integrity, which can relieve much burden from mobile devices. Experimental evaluations show that the proposed framework is effective to provide flexible and reliable data sharing in mobile computing environments.

V. PROPOSED SYSTEM

In the Proposed System, we present a lightweight Multi-cloud-based storage framework in which the data owner can access their data via network at any time and for anywhere by uploading data into the cloud. Generally speaking, each cloud drive will just free provide a small storage space. Thus, a big one will come into begins after adding all free space of this cloud drives together. For instance, if you have registered five Drop-box accounts and each one has offered 2GB free space, you can use the free 10GB space conveniently with the help of Multi-Cloud.

The user access the device by giving their user id and password. If both user id and password are valid then the user can enter the system. To upload his files in to the cloud storage, download his files, view the file alerts if any, change his password, delete his files. The functions access by the user are uploading and downloading of his file into and from the cloud. File data is encoded to give the security to it. The user is expected to simply just know how to use the computer or a smart phone to upload his file. The user must have a good internet facility available

in the system from which he is uploading or downloading the files.

VI. METHODOLOGY

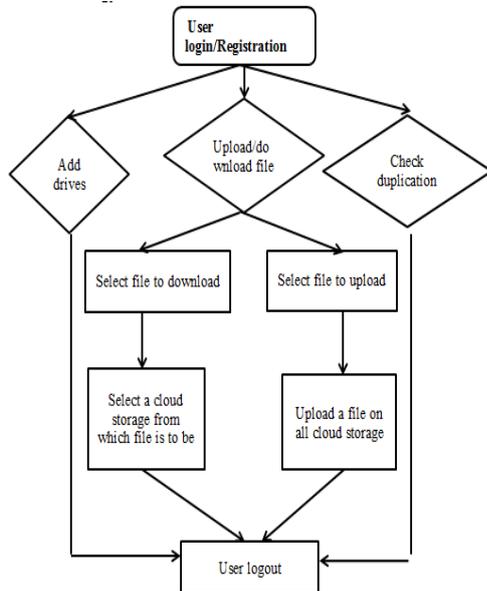


Figure 1 User level working flow

Following are the modules to be used in the project:

In multi-drive, firstly user has an account of Multi-Cloud .In Registration, enter prefer mail and type a username and password. This module contents:

1. Homepage: Homepage contents registration form.
2. About : Information about Multi-cloud. Contact : Contact numbers for help or any enquiry.
3. Password send via mail: User confirms registration in their email and then receives password and then login in Multi-Cloud. Its interface is friendly and simple.
4. Login form: This is login form of multi-drive. User must enter the email address and password send via the multi-drive to the email. This page contents:
 - i. Forget Password: If any error occurs during sending password then click on forget password.
 - ii. Register: If user has no account on multi-drive then click on Register.
5. Master page of multi-drive:
 - i. Upload/downloads files: User can upload data (like pictures, video, and files) and download file
 - ii. Add clouds : User add different clouds in one place
 - iii. Log-Out account : After use user can logout account
6. Select drives for linkup: Select a cloud to add to Multi-Cloud one by one. Drop-box is the first.
7. Select it and click “Next” button. Multi-Cloud allows its users to combine One-Drive Drop-box Google

Drive, Sugar Sync and Amazon S3 accounts all into it. Thus they don’t have to log in or sign out each time when they want to switch between different accounts, and you can transfer and sync data between two clouds easily and fast.

8. De-duplication: An example of this method is comparing the name, size, type and date modified information of two files with same name being stored in a system.

VII. FUTURE WORK

For future work, we aim to give a framework to supply a secure cloud database that will guarantee to prevent security risks facing the cloud computing community. Multi-Cloud offers many functions to let you backup, sync and move files between cloud services. With Multi-Cloud, you can export files from Drop-box to Google Drive directly.we implement a prototype of our proposed authorized duplicate check scheme and conduct test bed utilization by using our prototype.

VIII. IMPLEMENTATION

Proposed System has been implemented with the help of public cloud .Following step we performed for create account (fig.1): Registration of user, Log in to user’s account. Password send via mail: User confirms registration in their email and then receives password and then login in Multi-Cloud. Its interface is friendly and simple.

Master page of multi-drive contain following Modules:

- i. Upload/downloads files : User can upload /Download data (like pictures, video, and files)
- ii. Add clouds : (fig.2) User add different clouds in one place
- iii. Log-Out account : After use user can logout account

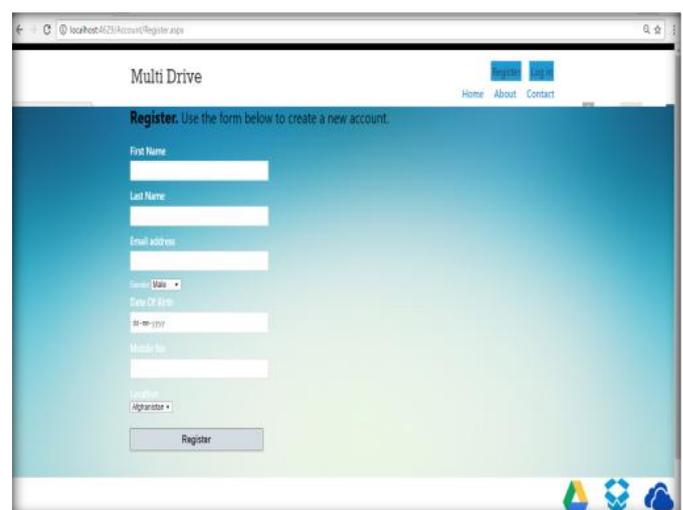


FIGURE1:USER REGISTRATION FROM

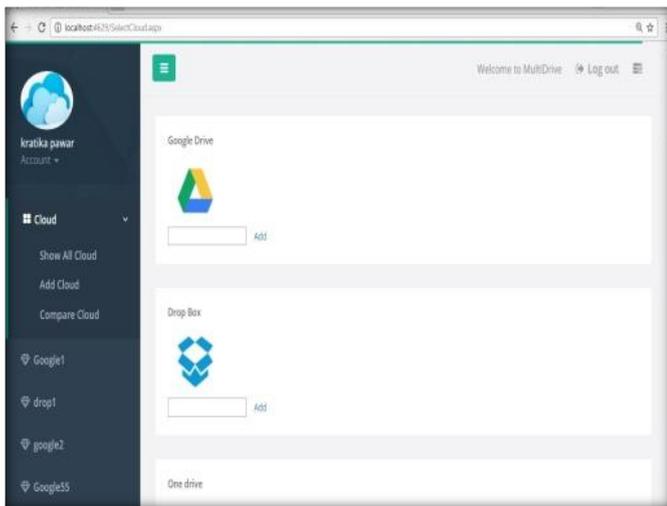


FIGURE 2: ADD CLOUD

IX. RESULT

Results are measured or analyzed and compared with traditional and other available systems. Multi-Drive application is totally FREE. User confirms registration in their email and then receive password, than they can log in Multi-Cloud. Its interface is friendly and easy. After that, user chooses a cloud to attach to Multi-Cloud one by one. Drop-box is the first. Select it and click “Next” button.

The authorization tract of Multi-Cloud is depend on O-Auth, which is an ideal authorization framework that enables third side applications to making a connection to HTTPS services without user-Id and password required. In this case, it’s 100% secure for you to use Multi-Cloud.

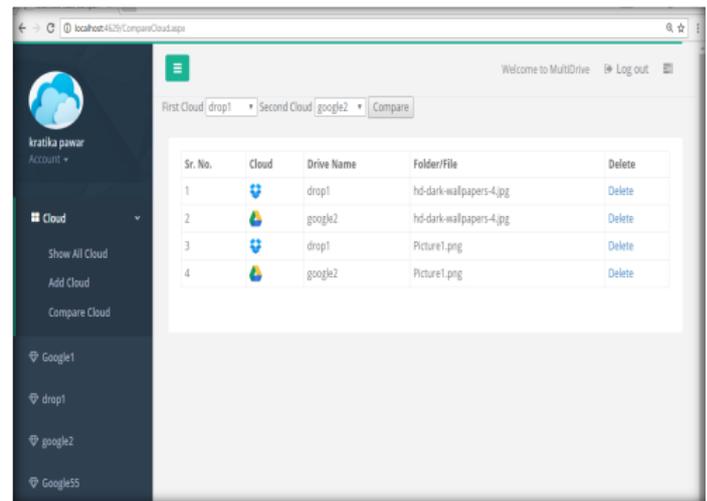


FIGURE 4: ELIMINATE DUPLICATE COPIES

Multi-Cloud allows its users to attach One-Drive Drop-box Google Drive, Sugar Sync and Amazon S3 accounts all into it. Thus they don’t have to log in or sign out each time when they want to switch amid various accounts, and you can shifting and sync data amid two clouds simply and fast.

De-duplication is used to eliminate duplicate copies. An example of this method is comparing the name, size, type and date modified information of two files with same name being stored in a system.

X. CONCLUSION

The creation and growth of a cloud computing based secure multi drive data storage using encryption application uses multiple cloud storages to store user’s data. We have used two methods Multi Agent system (MAS) and Data Encoding technique. These are merging together to give a new method which provides security in both data transmission and storage place also. When the user uploads the data, the data is split into sub parts by the third party agent and then each part is stored abundantly into different multiple cloud storage. There is an also greater degree of reliability as when any cloud drive inclusive the portion of the file stored gets extinct then the other cloud storage which contains the file portion. The selection of the cloud storage to store the file parts is done randomly and at most care is taken such that no two portion of the same file are stored in the same cloud storage. The system is designed with greater functionality which allows the user to upload or download the file from any place and from any device just by logging into his cloud account.

REFERENCES

[1] Mohammed A. AlZain #, Eric Pardede #, Ben Soh #, James A. Thom “Cloud Computing Security: From Single to Multi-Clouds”, 2012 45th Hawaii International Conference on System Sciences.

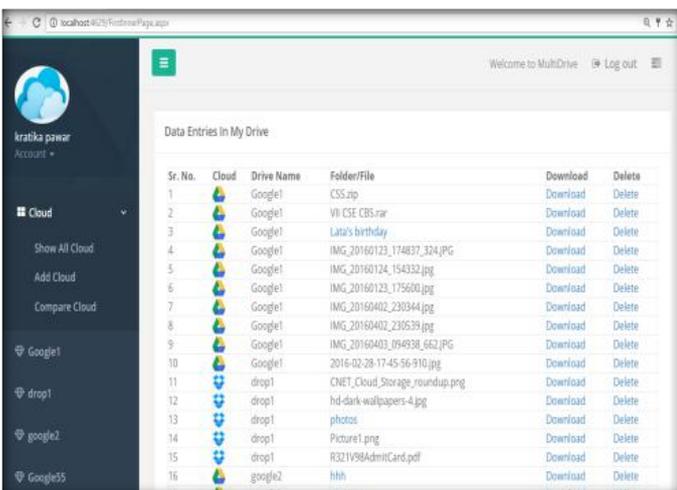


FIGURE 3: ALL CLOUD’S DATA IN ONE PLACE

- [2] Prof. M. Ben Swarup#, Professor, Chukkala Varaha Sampath Pothabathula#, "design and implementation of a secure multi-cloud data storage using encryption" , International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3 Issue 5, May 2014.
- [3] Peng Xiao^{1*} and Yanping Zhang² "CS-Mobile: A Cloud-based Distributed Storage Middleware for Mobile Devices", International Journal of Smart Home Vol. 7, No. 1, January, 2013 .
- [4] Mandar Kadam, Stewyn Chaudhary "Security Approach for Multi-Cloud Data Storage" , International Journal of Computer Applications (0975 – 8887) Volume 126 – No.4, September 2015 .
- [5] Sarang Mandloi¹, Priya Saxena² "Implementation of Cloud Storage System using Multiple Cloud Services" International Journal of Emerging Technology and Advanced Engineering Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 5, Issue 9, September 2015).
- [6] Prof. M. Ben Swarup, Chukkala Varaha Sampath Pothabathula Srikanth , " DESIGN AND IMPLEMENTATION OF A SECURE MULTI-CLOUD DATA STORAGE USING ENCRYPTION" International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3 Issue 5, May 2014.
- [7] Jin Li, Yan Kit Li, Xiaofeng Chen, Patrick P.C. Lee, and Wenjing Lou "A Hybrid Cloud Approach for Secure Authorized De-duplication", IEEE TRANSACTIONS ON PARALLEL AND DISTRIBUTED SYSTEMS, VOL. 26, NO. 5, MAY 2015.'