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Research Article

DEDUPLICATION MANAGEMENT AND ACCESS CONTROL ACROSS MULTIPLE CLOUD SERVICE PROVIDERS

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ABSTRACT

Cloud computing is an information technology (IT) paradigm that enables ubiquitous access to shared pools of configurable system resources and higher-level services that can be rapidly provisioned with minimal management effort, often over the Internet. Cloud computing relies on sharing of resources to achieve coherence and economies of scale, similar to a public utility. In order to protect the privacy and security of authorized users, the data has to be encrypted. However the data which is encrypted occupies much of the cloud storage space and data sharing among authorized users is complicated. The basic requirement for any cloud data storage with protection needs the ability to reduce the overall cost of providing the same service that clients could do in their own data centers. One method to achieve this is data deduplication across multiple end-user clients. Existing deduplication schemes involves extraction from scenarios of an application where the data is controlled by data owners or cloud servers. Depending upon the sensitivity of data they cannot satisfy demands of data owners. This paper presents a data management scheme which is heterogeneous that offers flexibility and access control across multiple cloud service providers. The performance is evaluated with security and implemented in real time scenario.

INTRODUCTION

Cloud computing allows centralized data storage and online access to computer services or resources. It offers a new way of Information Technology (IT) services by re-arranging various resources and providing them to users based on their demands. Cloud computing has greatly enriched pervasive services and become a promising service platform due to a number of desirable properties such as scalability, elasticity, fault-tolerance, and pay-per-use. Data storage service is one of the most widely consumed cloud services. Cloud users have greatly benefited from cloud storage since they can store huge volume of data without upgrading their devices and access them at any time and in any place. However, cloud data storage offered by Cloud Service Providers (CSPs) still incurs some problems.

With the continuous and exponential increase of the number of users and the size of their data, data deduplication becomes more and more a necessity for cloud storage providers. By storing a unique copy of duplicate data, cloud providers greatly reduce their storage and data transfer costs. Secure deduplication is a technique for eliminating duplicate copies of storage data, and provides security to them.

To reduce storage space and upload bandwidth in cloud storage deduplication has been a well-known technique. For that purpose convergent encryption has been extensively adopt for secure deduplication, critical issue of making convergent encryption practical is to efficiently and reliably manage a huge number of convergent keys. This paper proposes a heterogeneous data storage management scheme, which flexibly offers both deduplication management and access control at the same time across multiple Cloud Service Providers (CSPs). The performance is evaluated with security analysis and Comparison. The rest of the Paper is organized as follows. Apart from Introduction Section I covers Existing Work, Section II covers Proposed System, Section III describes Module Description, Section IV gives Results, Section V represent Future Enhancement and Section VI represents Conclusion.

Exıstıng Work

Many people now store large quantities of personal and corporate data on laptops or home computers. These often have poor or intermittent connectivity, and are vulnerable to theft or hardware failure. Conventional backup solutions are not well suited to this environment, and backup regimes are frequently inadequate. An algorithm is specified which takes advantage of the data which is common between users to increase the speed of backups, and reduce the storage requirements. [1]

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Secure deduplication is a technique for eliminating duplicate copies of storage data, and provides security to them. To reduce storage space and upload bandwidth in cloud storage deduplication has been a well-known technique. For that purpose convergent encryption has been extensively adopt for secure deduplication, critical issue of making convergent encryption practical is to efficiently and reliably manage a huge number of convergent keys. The basic idea in this paper is that we can eliminate duplicate copies of storage data and limit the damage of stolen data if we decrease the value of that stolen information to the attacker. This paper makes the first attempt to formally address the problem of achieving efficient andreliable key management in secure deduplication. [3]

A new identity-based identification (and signature) scheme is proposed based on error-correcting codes. This scheme issue to date is the first identity-based scheme not based on number theory. [4]

Recently the Diophantine Equation Hard Problem (DEHP) was proposed. It is utilized to design a standard identification scheme model. Since the computation involves only simple addition and multiplication steps, the efficiency and the time cost are greatly improved as compared to the existing identification schemes. A zero knowledge identification scheme is proposed based upon DEHP. With the assumption such that DEHP is intractable, the security analysis is provided on the impersonation against non-adaptive passive attack (imp-pa) and show that this proposed scheme is more desirable due to high efficiency in terms of time computation.[5]

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Proposed System

A heterogeneous data storage management scheme is provided which flexibly offers both deduplication management and access control at the same time across multiple Cloud Service Providers (CSPs). Data deduplication is one of 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. Data leakage is prevented in the proposed system. The System is evaluated its performance with security analysis, comparison and implementation

Module Description

Secure Data key Encryption Technique

A user derives a secure data key from each original data copy and encrypts the data copy with the secure data key**.** The key generation algorithm that maps a data copy to a convergent key. The symmetric encryption algorithm that takes both the secure data key and the data copy as inputs and then outputs a ciphertext. The decryption algorithm that takes both the cipher text and the convergent key as inputs and then outputs the original data copy and the tag generation algorithm that maps the original data copy and outputs a tag.

Duplicate Check

The public cloud performs duplicate check directly and tells the user if there is any duplicate. Public Cloud can store and retrieve file. De-duplication has a removing duplicate file. Its will find out duplicate file.

Architectural Diagram

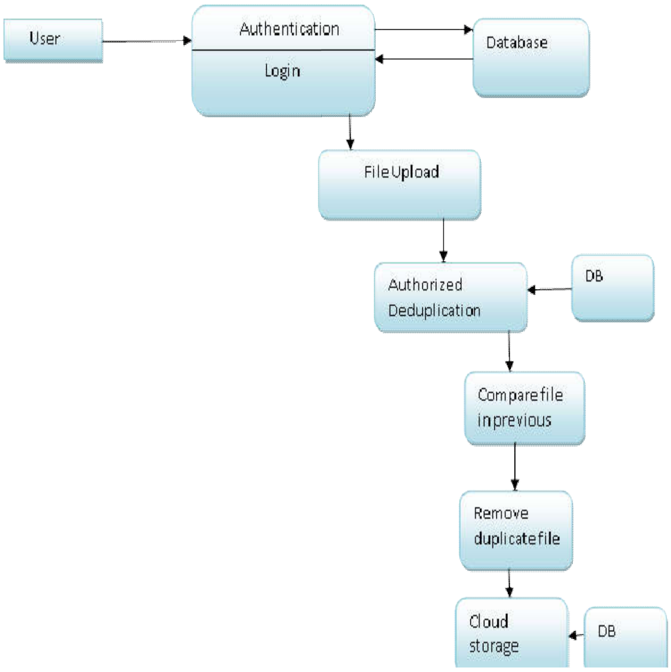
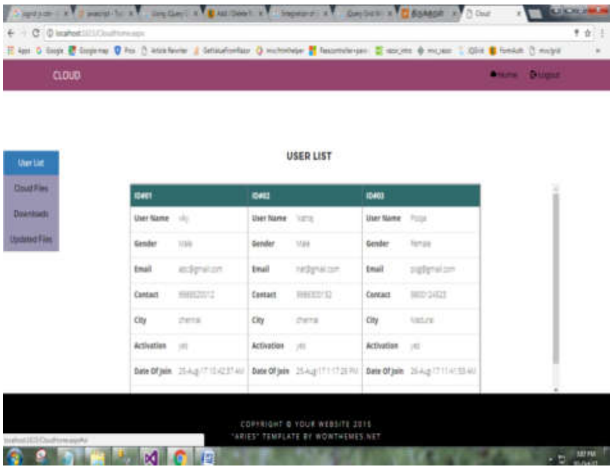


Fig 1 Architecture Diagram

The ability of a filter may strongly vary across different datasets, as in the case of conceptual clustering and blacklist. Filtering security alerts poses a number of assessment and validation challenges. The scarceness of publicly available datasets generated under real incidents slows down the research advances in the area of security data analysis Attribute-Based Encryption (ABE) was proposed to achieve access control on encrypted cloud data. It specifies a set of attributes to identify users and encrypts data based on an access structure specified by attributes. Thus, encrypted data can only be decrypted by the users that hold such attributes that can satisfy the access structure as in Fig 1. Existing schemes realized deduplication in either server-side or owner-sides.

RESULT

The result shows the implementation of data management with dedepulication. Fig 2. shows the user send request to get the file token from Authorized cloud. Fig 3. Shows the design of updating a file.



USER LIST

ID#01		ID#02		ID#03	
User Name	vijay	User Name	natraj	User Name	Pooja
Gender	Male	Gender	Male	Gender	Female
Email	abc@gmail.com	Email	nat@gmail.com	Email	pug@gmail.com
Contact	9988520012	Contact	9988303132	Contact	9800124523
City	chennai	City	chennai	City	madurai
Activation	yes	Activation	yes	Activation	yes
Date Of Join	25-Aug-17 10:42:37 AM	Date Of Join	25-Aug-17 1:17:28 PM	Date Of Join	25-Aug-17 11:41:53 AM

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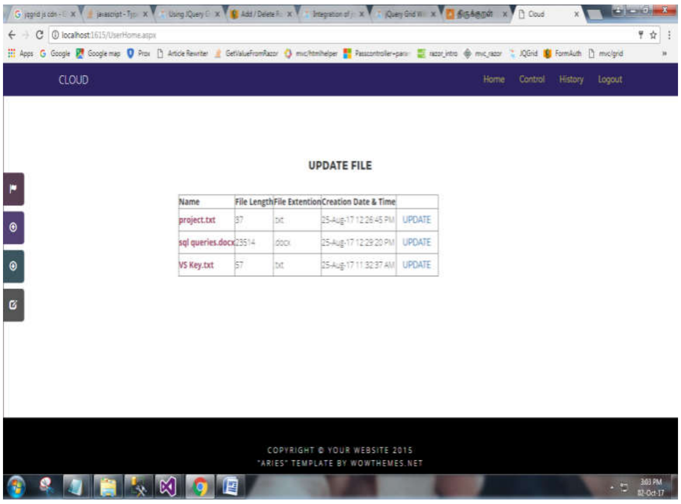
"ARIES" TEMPLATE BY WOWTHEMES.NET

Fig 2 Requisition of file token



UPDATE FILE

Name	File Length	File Extention	Creation Date & Time	
project.txt	37	txt	25-Aug-17 12:26:45 PM	UPDATE
sql queries.docx	23514	docx	25-Aug-17 12:29:20 PM	UPDATE
VS Key.txt	57	txt	25-Aug-17 11:32:37 AM	UPDATE

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3:03 PM
02-Oct-17

Fig 3 Updating file

Future Enhancement

In our future work, we will further enhance user privacy and improve the performance of our scheme towards practical deployment. In addition, we will conduct game theoretical analysis to further prove the rationality and security of the proposed scheme. It really possesses a file without the need to upload the entire file. Data ownership proof is an essential process of data deduplication, especially for encrypted data. But this scheme does not consider flexible deduplication control across multiple CSPs.

CONCLUSION

Information deduplication is essential and widespread in the practice of cloud information storage, especially for huge facts storage management. On this paper, we proposed a heterogeneous information storage control scheme, which offers flexible cloud records deduplication and get right of entry to control. Our scheme can adapt to various application scenarios and demands and provide economic big data garage control throughout more than one CSPs. it is able to acquire data deduplication and get entry to control with different security requirements. Protection evaluation, comparison with present work and implementation based totally performance assessment confirmed that our scheme is cozy, superior and green.

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