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Implementation of Efficient Traceable Authorization Search System for Secure Cloud Storage

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ABSTRACT

Cloud computing has been emerged as a computing network over the Internet. Cloud data indulge storing of the data in the cloud as well as has sharing capability among multiple users. Due to failures of human or hardware and even Software errors cloud data is associated with data integrity. Several mechanisms have been proposed in order to allow both the data owners as well as the public auditors to audit cloud data integrity efficiently without retrieving the entire data from the cloud servers. A Third Party Auditor will perform integrity checking and the identity of the signer on shared data is kept private from them. In this project, we only investigate for auditing the integrity of shared data in the cloud with efficient user cancelation while still preserving identity privacy. We also enhance this system, when any user change the data from files then we analysis that files and generate the log for future analysis.

Keyword: Cloud computing, Data security authorized auditing, Fine-grained dynamic data update.

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I. INTRODUCTION

Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources (e.g., computer networks, servers, storage, applications and services).

Cloud storage is a cloud computing model in which data is stored on remote servers accessed from the Internet, or "cloud." It is maintained, operated and managed by a cloud storage service provider on storage servers that are built on virtualization techniques.

CLOUD computing is being intensively referred to as one of the most influential innovations in information technology in recent years. With resource virtualization, cloud can deliver computing resources and services in a pay-as-you-go mode, which is envisioned to become as convenient to use similar to daily-life utilities such as electricity, gas, water and telephone in the near future. These computing services can be categorized into Infra-structure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS).

Data Auditing and TPA:-

Data security is one of the major worries in the adoption of cloud computing. Compared to conventional systems, users will lose their direct control over their data. In this paper, we will explore the problem of integrity verification for big data storage in cloud. This problem can also be called data auditing when the verification is conducted by a trusted third party(TP). From cloud user's viewpoint, it may also be called 'auditing-as-a-service'. our system supports updates with a size that is not restricted by the size of file blocks, thereby offers extra flexibility and scalability compared to existing schemes.

For better security, our system combines an additional authorization process with the aim of eliminating threats of unauthorized audit challenges from malicious or pretended third-party auditors, which we term as 'authorized auditing".

II. PROPOSED WORK

Architecture:

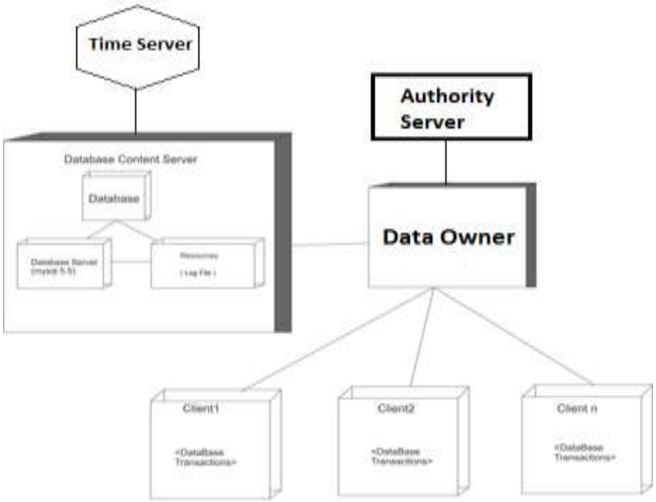


Fig 1. System Architecture

Module:

Admin
They are responsible for granting access privileges to the users of the respective group. Admin has the main access permission for maintaining the files over cloud. Admin can navigate through the group as well. Admin can view the log details of the activities carried on the cloud file storage.

User
Every user needs to register with the corresponding group for getting access permission and signature key from the same. Using the signature key they can get the access permission. they can upload the files to cloud. User from same group can view the content of the file from cloud and make changes over it and can save them. Simultaneously they can download the files as well.

Third Party Auditor (TPA)
TPA has the rights to validate the files which are available in the cloud. TPA is the respective authority for performing the verification of files which are uploaded by any user who are registered under a single group.

User Operations:
User can revoke their account at any cost.
The file key will be generated while upload each file into the cloud.
Every member can view the files which are available for the download access through the group.
This is the list of files available in the cloud for members.

III. SYSTEM ANALYSIS

We have created system in java. Data is stored in mysql database. We have created a web application with local server. Web application that communicates with local server and Trustee Server using REST API. We have uploaded text document on cloud. We have evaluated time required for tag generation and file encryption for security. Here we also calculate the file each file time, date which time user can do any activity for analysis purpose.

IV. MATHEMATICAL MODEL

System Description:
Input:

Upload file ()
U : Upload file on cloud.
E : Encryption File.
H : Generate Hash value.
I : Unique id to all file.

Output:
Check hash value of the all uploaded data

Input Function auditing (id, request, log, value)
ID : unique id for each file.
Request : User request for the any file.
Log : Check all file log on cloud.
Value: Compare hash value.

Output:
File do not change of data owner.

Success Conditions:
Generate the hash value and auditing on file uploaded.

Failure Conditions:
Our system fails when no any security policy applies to the input file.

V. ALGORITHM USED

1. Homomorphic Encryption with signature algorithm

The signatures concept is used to hide the identity of singer on each block so that the private and sensitive information of user.

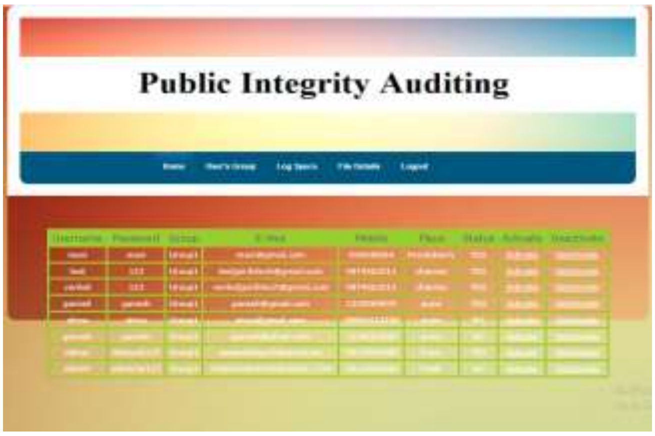
2. Data Integrity Verification algorithm

To maintain to overkill this issue here, we are giving public auditing process for cloud storage that users can check the integrity of data. The work that has been done in this line lacks data dynamics and true public auditability.

3. Hash key generation

It also uses random masking operation and index hash value in order to support the dynamic operations like insert, delete and update over the shared data for dynamic group.

VI. RESULT



Public Integrity Auditing

Username	Password	Group	E-Mail	Mobile	Place	Status	Activate	Deactivate
[illegible]	[illegible]	Group1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
test	123	Group1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	123	Group1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ganesh	ganesh	Group1	ganesh@gmail.com	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Fig 2. User List

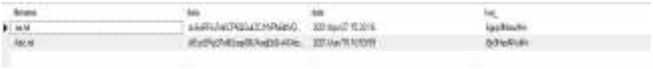

Fig 3. Encrypted data and Key

VII. ACKNOWLEDGMENT

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VIII. CONCLUSION

Data privacy has become extremely important in the Cloud environment. The issue of file auditing of data on networks has been summarized. Data storage that is secure and easy to share across platforms. Data stored is highly secured using the cryptography algorithms and digital signatures. It integrates some new concepts like data security, storage optimality, file integrity and authentication access which are not present in the current system.

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