Key Distribution and Trust Based Scheme on Big Data Analysis for Group User on Cloud Service

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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 (TPA) 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 value from table then we analysis that value and automatically restored original value.

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

I. INTRODUCTION

The 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 SYSTEM

System Architecture:

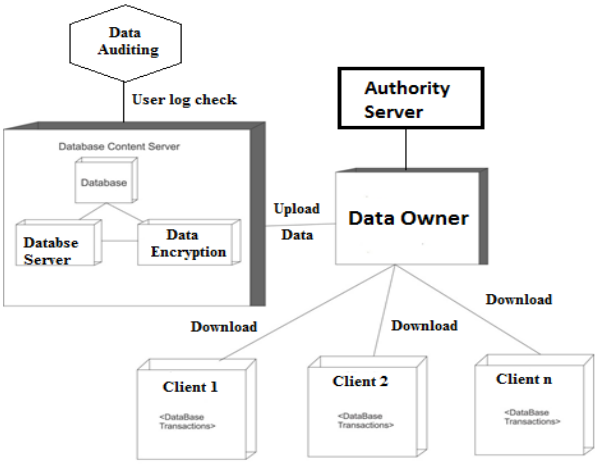


Fig 1. System architecture

Module:

Data Owner:
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. ALGORITHMS

Algorithm I – Encryption
Input: Block of File B= {B1, B2 …BN} p 1:
Step 1: Encrypt the block of file based on the secret key;
Step 2: Convert the plain text into the cipher text that is in the encrypted form;

Output: Identical data copies of different users will lead to produce same cipher text.
C=SBC. Encrypt (File, χ)
Where,
C=Cipher text,
SBC=Encryption
File=message (data)
Steps:
1. Get a 64-bit key from the user.
2. The keys are actually stored as being 64 bits long.
3. Encrypt each 64-bit block of data.

Algorithm II–
Input: Block of file B = (B1, B2, B3 … BN}
Step 1: Generate the hash key;
Step 2: Encrypt the data block with the help of hash key;
Step 3: Generate the tag and hash key from the content ofthe file;
Output: Obtain the decrypted file with the help of hash key;
1. H(M) = K (Key Generation)
Where,
M= Input file
H(M)=Hash value of file
K= Hash Key

2. E(K, M)=C (Encryption)
Where.
M-File,
K-Hash Key,
E-Encryption
C-Cipher Text

3. Tag(M)=T (Tag Generation)
Where,
M-File
T-Tag from File M

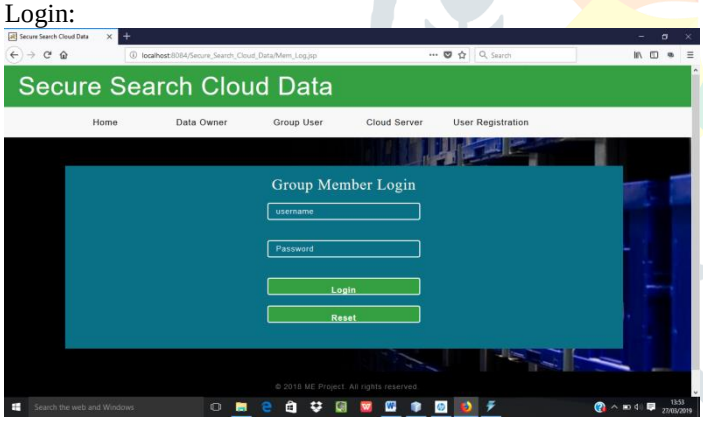
IV. SYSTEM ANALYSIS

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.

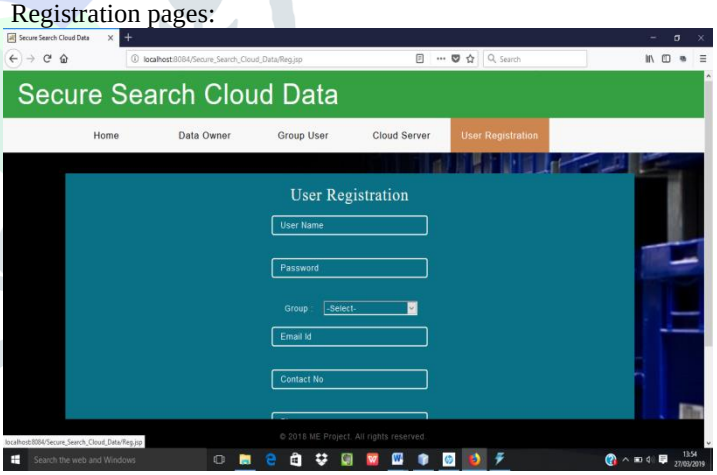
V. RESULTS

Input

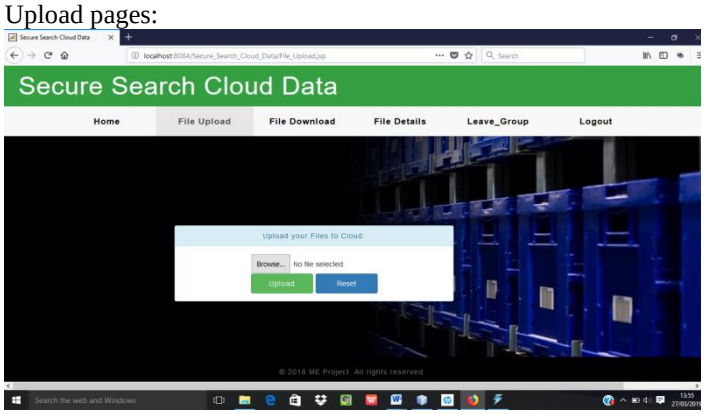
Login:

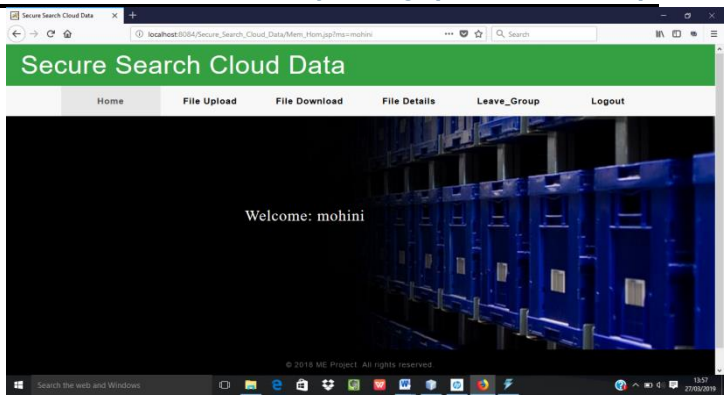


Registration pages:



Upload pages:

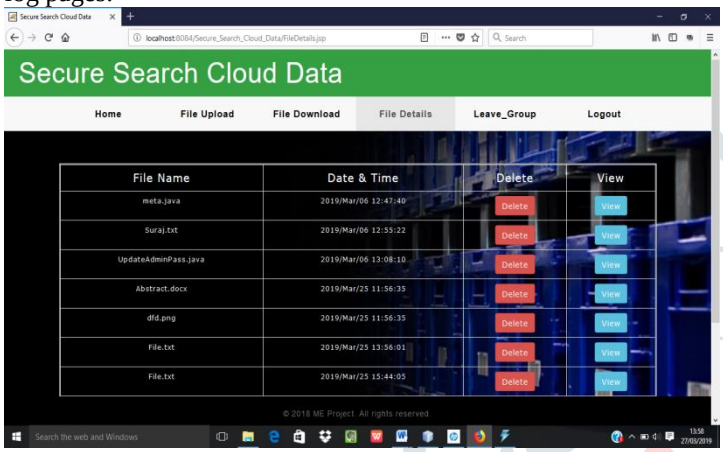




File details pages:

Output:

log pages:



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VII. CONCLUSION

Data privacy has become extremely important in the Cloud environment. The issue of file auditing of data on networks have been summarized. Offers 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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