Authentication and Encryption Based Cloud Data Access Privilege with Load Balancing Technique

R.V. Patil, Aishwarya Bhosale, Ramdas Choramale, Shiwani Tummulwar, Vaibhav Rajguru

Abstract: ***Cloud computing is a booming computing branch in which consists of a virtualized set of highly scalable computing resources and provided as an internet based computing where many users upload, download and modify data with cloud users. Problems in cloud computing are sharing data in a multi users, while data preservation and privacy of identity from a non-trustable cloud is still a challenge, due to the frequent change of the members of cloud. By allowing group signature and encryption techniques, any cloud user can anonymously share data with others. The main is to provide secure multi-owner data sharing in large groups. This poses a security challenge to the data stored on the cloud. As the result, the encryption cost is reduced; storage overhead and scheme are not dependent on the number of removed users with proof and experiments***

Keywords: Cloud, Server, Encryption, Decryption, Anonymity, Shared authority.

I. INTRODUCTION

We live in digital world, now everything can be done digitally. From buying grocery to doing remote operations, every single thig can possibly done using a computer. Considering this lifestyle we create huge amount of data every day. We create so much digital information every day that it is not possible to store it physically. We use clouds to store and preserve data. Cloud has emerged as new technological savior for data storage and processing. Clouds are easy to use and accessible by everyone. Three characteristics a cloud should have are Ease of usage, Security, Affordability. Now a days cloud is used to data sharing purpose as well. Cloud computing is advanced and dynamic branch of computer engineering. User does not need any extra knowledge to use cloud. Everyone is tech savvy now days. Create an account, upload file, download file can be done by anyone. Cloud is new big thing in the market. It can be used by a single person to multi-national companies. Cloud can be created or can be rented as well. Use of cloud is best way of collecting and preserving data in minimum coast and maximum security.

II. LITERATURE SURVEY

1. Control Cloud Data Access Privilege and Anonymity with fully Anonymous attribute based encryption [1].

Advantages:
- Supports data access privilege.
- Supports fully anonymity.
- Attribute based encryption.

Disadvantages:
- Does not support load balancing.
- User revocation facility is not available

2. Shared Authority Based Privacy preserving Authentication Protocol in Cloud Computing [2]

Advantages:
- Supports data sharing facility.
- Supports user privacy algorithm.

Disadvantages:
- Does not support data security.

3. Review on Load Balancing model based on cloud Partitioning for public cloud [3]

Advantages:
- Supports load balancing in cloud computing.
- It is based on partitioning of cloud.

Disadvantages:
- Even if single part of file is lost the process collapses and file can not be downloaded.

4. Comparative Study of Load Balancing Algorithms in Cloud Computing [4]

Advantages:
- Gives detailed information about load balancing techniques and algorithm.

5. Improving Cloud Data Storage Security Using Data Partitioning Technique [5]

Advantages:
- Provides security to the stored data and storage.
- Supports partition mechanism.

Disadvantages:
- Does not support user privacy algorithm
- Lack of load balancing techniques

III. LIMITATIONS

Cost of cloud is the major limitation for the system. Buying or renting a cloud is not affordable for everyone. Public clouds allocates limited space for usage that can be a problem. Maintenance of servers is a limitation; we have to keep on checking the server status. It requires moderate internet connectivity without internet we cannot access the cloud.

IV. MOTIVATION

We use cloud in our day to day life. We store our photos, music, videos, some important documents as well. An ideal cloud should have following features 1. Security2. Affordability

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3. Ease of usage.

In the present system one or the feature was lacking, this motivated us for constructing a system which is secure, easy to use and can be used in minimum expense.

V. RELATED WORK

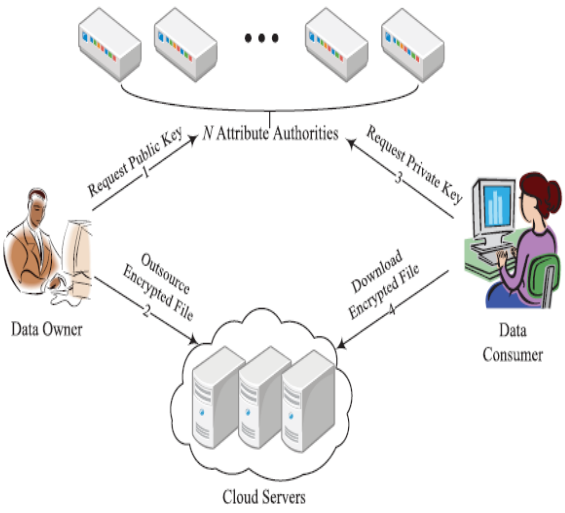
We have a cloud based system. Our system is secure, easy to use. User will upload the file on the cloud. Any user can access the file with owner's permission. Here file will be encrypted while uploading and decrypted while downloading. User identity will be hidden for preserving the user privacy.

VI. METHODOLOGY

This paper represents the idea of cloud computing system, the main aim of the system is to provide security to data, privacy to user, load balancing for servers and share authority for cloud users. We are using encryption and decryption algorithm for security of data. While uploading he file, it will be encrypted with an encryption downloading it will be decrypted with a decryption key. We are using anonymity algorithm for user privacy.

We would be using dynamic load balancing techniques for accurate load distribution on the servers. With shared authority user can share uploaded files with other users as well.

Architecture Diagram



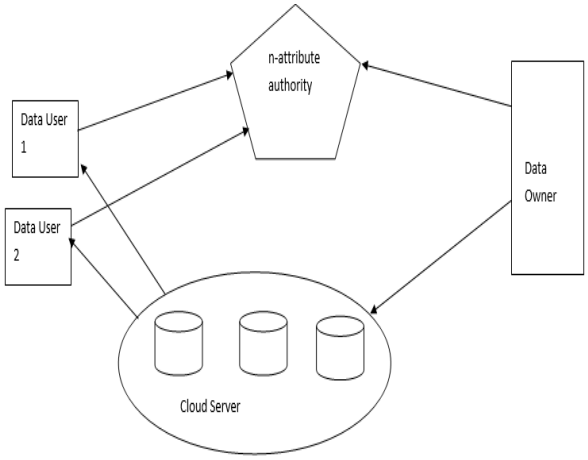
VII. PROPOSED SYSTEM

In the recent past we have seen cloud as the emerging Database management system. Cloud is used mainly for data storage. Large amount of data can we stored virtually and can be accessed any time and from anywhere. Existing system was vulnerable to data and user security threats.

We are proposing a system which is very secure for user and data, and is very simple to use. We are securing the data using encryption-decryption, data will be converted cipher text while encryption and it will be converted into decipher text while decryption process. Anonymity algorithm will be used to preserve privacy of user. We will be using load balancing techniques to reduce load from the servers, it will create less time-consuming system.

We will be providing shared authority so that any other user can access data by requesting permission from data owner.

We



VIII. EXPECTED RESULT

It is a process of reassigning the total load to the individual nodes of the collective system to make resource utilization effective and to improve the response time of the job, simultaneously removing a condition in which some of the nodes are over loaded while some others are under loaded. To improve the performance substantially_ We have a backup plan in case the system fails also partially To maintain the system stability. To work on future modification in the system. We expected from the system to give full privacy to the user data and security provided to the user so no one hack the system. The system will be used by real user. Our main purpose the User will use system which is friendly.

IX. CONCLUSION

After conducting case studies and studying the results we have made few conclusions, which are given. Cloud computing is need of time. It is necessary to make cloud computing system safe, less time consuming, user friendly.

Our proposed system is safe for both user and user data, it has load management mechanism, it has shared authority so that data can be shared with data owner's permission. It is compilation of all the necessary features for cloud computing system.

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