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Statistical Analysis of Data Access Techniques in Cloud

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Abstract— As per recent trend, cloud computing is the most high in demand, reliable and efficient technology. There are amazing benefits that are available with cloud computing like minimum investment cost, tremendous storage space, virtualization, resource sharing. The Cloud users are beneficial with this technology as they can use the large volume of data in cloud and access it anytime, anywhere easily from any corner of the world. This is achievable in pay per use or pre-paid basis. As this is a pro it also has cons, i.e security and Market competition. Many users can request for data, so, technologist need to ensure they authenticate and authorize the users to access this data. This is achievable thru access control schemes which not only allows a authenticated and authorized user to access the data but also can deny access to malicious user. In this paper we are discussing the same pain area i.e existing access control schemes along with Analysis and techniques to improve the speed of data access.

Keywords— *Cloud Computing, data access, compression techniques.*

I. INTRODUCTION

Cloud computing is a extensively broad term, however the study by Mell and Grance, it may be characterized by the subsequent 5 basic options that are common for all cloud services: self-service queries, network access, resource pooling and its utilization, speedy snap and measured service. The cloud computing is very useful within the infrastructure of the business. The cloud computing involves many technologies, comprised of hardware and software system with the construct of distributed computing, virtualization, net systems management, communication networks, huge information services, and information analytic. It produces main computing services to people and organizations via the Internet, and allows them to access a pool of shared resources like storage servers and applications. Businesses of all sizes area unit adopting cloud computing at associate increasing rate because it provides them with great advantages like price effectiveness, since they are not even have to invest for the hardware and computer code resources, however merely pay per use. Cloud service suppliers supply network services, infrastructure and applications within the cloud to each corporations and people . Cloud computing deals with quantifiability, ability, virtualization, delivery models and quality of service.

II. RELATED WORK

To give satisfactory output of our research we studied following researches.

In This paper we studied the concept of Cloud Computing to achieve a complete definition of what a Cloud is, using the main characteristics typically associated with this paradigm in the literature Temporary Access Control (TTAC) focuses on the data security at the data accessing time [10]. In TTAC, the DO maintains an access Policy (P) for encrypting a data. When the CSP receives an access request for data, s/he verifies whether the temporal constraint is satisfied in policy within the current time (tc). TTAC has many benefits, such as flexibility, supervisory and security. It restricts user or customer access rights by assigning a time, according to which the users can access data or file from the cloud server.
UCON is a conceptual scheme that offers decision-making capability for the users. All the advantages of the traditional ACMs are offered by UCON, where a negotiation module is maintained to increase the flexibility in such a manner that when user request is unmatched with the access policies, the users request is not straightly terminated; rather this model offers the user to choose a subsequent alternative by negotiation. Therefore, the user may get another chance for data accessing.

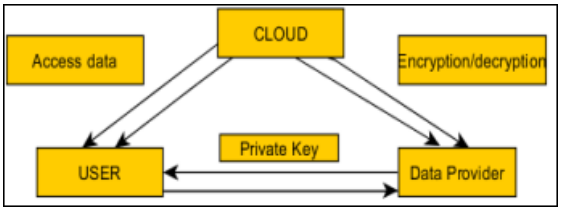
In ABAC, data access request is granted based on the users attributes, where data or files are assigned with meaningful attributes. In ABAC, a dummy attribute (AttD) is used for key management, and the access structure of each user is characterized by an access tree. The root node of the access tree is an AND gate, and at least one child of the root node is a leaf node allied with AttD . Here, the CSP manages all the tasks. ABAC does not offer confidentiality of the file and scalability simultaneously.

In GBAC, when the users belong to a private cloud, they can communicate with another private cloud. In this scheme, the CSP has a gateway, which translates the requested data into security assertion markup language (SAML) format. This SAML formatted file is then sent to the target organization. In this scheme, the gateway performs a major role for communicating data. GBAC scheme may have to search the entire database to provide a single file or data that may result to increase the time and difficulty to maintain the cloud database.

Purpose-based access control model (PBAC) was proposed by Sun and Wang. A purpose tree is maintained by the CSP in PBAC, where every node of the tree is a purpose, and the relationship between the purposes are shown by the edges. The access purpose must be matched with the intended purpose for accessing any data or file from the cloud server. Intended purpose can be defined as the purpose, which is associated with the file or data. Here, in this scheme, on the basis of the association between the data access purpose and the intended purpose of the data, access requests are granted

III. METHODOLOGY

1. Design of login and signup in cloud.
2. Design of data upload and download in cloud.
3. Addition of security layer in the cloud environment
4. Addition of compression technique for data Access.
5. Integration of security with compression
6. Result evaluation and comparison



The model consists of three entities,

i. Cloud service provider: CSP is the main administrator of any organization that provides infrastructure and cloud services for both users and DOs by using a number of servers having sufficient storage space and power.
ii. Data owner: DOs can be any user, who stores his/her own data or file on the cloud database.
They depend on the service provider for maintaining the data.
iii. User: Users are the entities who desire to access a data or file or any type of service from the CSP. Only the authorized users are allowed to communicate with the cloud server.
The proposed scheme consists of four main operations, namely user authorization, operations on the CSP, data storage and data access. There are various cloud computing services and these are as follows:

USER-AUTHORISATION: To access the data from cloud server, the user should be registered first. At first, a registration request to the CSP has to be sent by the user.
DATA STORAGE: It is the main process that includes method for storing the data at DO and CSP. Data Storage is an important parameter for the cloud computing services.
DATA OWNER: A secret key is generated by the Dos for data storing. Encoding with the PROWN is done after the encryption of secret key by DOs.

IV. RESULTS AND DISCUSSION

The current system is not much efficient in providing the speed and accuracy. With this implementation, we are trying to achieve better searching time and data access time for cloud services. The cloud service providers can easily and efficiently monitor the database.

V. CONCLUSION AND FUTURE SCOPE

The conclusion of our work is A new access control scheme has been proposed thru our work, where the CSP does not check the entire cloud database for providing the public key of the data owner. So, the searching time can be reduced for providing the public key of the data owner. The data accessing time can be automatically decreased because of the minimization of the searching time, so users can pay less for utilizing the cloud services. In the proposed scheme, the system overhead can be minimized, and the CSP can efficiently maintain and monitor the database.

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