IJARES/August 2015/Volume-3/Issue-8/2094-2098 **ISSN 2347- 9337**

**INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN ENGINEERING AND SCIENCE**

# PRIVACY ASSURANCE FOR DATABASE SERVICES IN CLOUD SYSTEM

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**ABSTRACT:**

Assuring of confidentiality during database as a service is a difficult problem. Cryptographic file systems as well as secure storage solutions point towards earliest works. Various alternative solutions have been introduced for storage services, whereas the solutions of data confidentiality for database service design are still immature. We initiate a novel design that construct services of cloud database by means of data confidentiality and option of executing simultaneous operations on encrypted information. The novel design merge cryptographic schemes that are traditional, as well as novel strategies for encrypted metadata managing on cloud database that is unreliable. Projected design has benefit of eliminating intermediate proxies that limit the ease of use, trustworthiness, and flexible scalability properties that are basic in cloud-based solutions.

***Keywords: Cryptographic system, Intermediate proxy, Metadata, Database service, Storage service, Cloud database.***

## 1. INTRODUCTION:

Several solutions were made for ensuring of confidentiality for the paradigm of storage as a service. In the cloud circumstance, in which essential data is placed in third party infrastructures which are not reliable, provision of data confidentiality is of most importance. Our work studies a solution for the issues of data consistency because of concurrent and autonomous client accesses

towards encrypted data [1]. We introduce a novel structural design that put together services of cloud database by means of data confidentiality and option of executing simultaneous operations on encrypted information. Hence we propose a secure database service as initial solution that permits cloud tenants to get benefits of ease of use, trustworthiness, and flexible scalability, devoid of exposing unencrypted information to cloud provider. The proposed secure database service design is modified to cloud platforms and does not set up any broker server among client as well as cloud provider. Possibility of combining ease of use, trustworthiness, and flexible scalability of a typical cloud database service design with data privacy is demonstrated all the way through a prototype of secure database service design supporting execution of independent operations to remote encrypted database from numerous clients. Secure database service design is straight away applicable to any of database service since it requires no alteration to cloud database services [2][3]. To achieve it secure database service design combines cryptographic schemes that are traditional, as well as novel strategies for encrypted metadata managing on cloud database that is unreliable. Elimination of trustworthy intermediate server permits secure database service design to attain same ease of use, trustworthiness, and flexible scalability of cloud database service design. This solution support distributed clients to connect directly towards an encrypted cloud database, and carry out autonomous operations those including of database structure modification.

## 2. METHODOLOGY:

A number of alternative solutions have taken place for storage services, whereas the solutions of data confidentiality for database service design are still immature. Our work introduce a novel structural design that put together services of cloud database by means of data confidentiality and option of executing simultaneous operations on encrypted information. Unlike secure database service design architectures that depend on a trustworthy intermediate proxy do not maintain most representative cloud situation where clients issue data structure modifications towards a cloud database. It moves away from existing methods that accumulate tenant data in cloud database, and accumulate metadata in client machine. Secure database service design is straight

away applicable to any of database service since it requires no alteration to cloud database services. Workloads that include alterations to database structure are supported by secure database service design but at overhead price that is acceptable to accomplish required level of data privacy. Projected structural design has benefit of eliminating intermediate proxies that limit the ease of use, trustworthiness, and flexible scalability properties that are basic in cloud-based solutions. Secure database service design offers a number of creative features that distinguish it from earlier works for isolated database services. Its design attains same ease of use, trustworthiness, and flexible scalability of cloud database service design since it does not necessitate any of intermediate server. The proposed design is modified to cloud platforms and does not set up any broker server among client as well as cloud provider. It does not need a trustworthy broker since tenant data as well as metadata stored by cloud database are constantly encrypted.

## 3. AN OVERVIEW OF PROPOSED SYSTEM:

Different approaches assure some privacy by means of distribution of data among several providers and by considering of secret sharing benefit. We set up a novel structural design that put together services of cloud database by means of data confidentiality and option of executing simultaneous operations on encrypted information. A solution was studied for the issues of data consistency because of concurrent and autonomous client accesses towards encrypted data [4]. Proposed novel structural design differs from other works since it does not require multiple cloud providers, and consider usage of SQL-aware encryption algorithms to manage carrying out of general SQL operations on encrypted information. The novel structural design is well-matched with criterion DBMS engines, and permit tenants to construct protected cloud databases by means of leveraging cloud services. Novel design is well-suited with most accepted relational database servers, and it is appropriate to various database system implementations since all adopted solutions are database agnostic. Novel database service design combines cryptographic schemes that are traditional, as well as novel strategies for encrypted metadata managing on cloud database that is unreliable. Proposed design combines cryptographic schemes that are traditional,

as well as novel strategies for encrypted metadata managing on cloud database that is untrustworthy. Secure database service design is intended to allocate multiple as well as self-determining clients to join directly to the cloud server devoid of any intermediate server. We take for granted that a tenant association get hold of a cloud database service from unreliable database service provider. The tenant deploys one or additional machines and install a secure database service client on each of them. Client permits user to bond to cloud database system to manage it, read, write and change database tables after making. The information that is controlled by secure database service includes plaintext information, metadata, encrypted data as well as encrypted metadata. Plaintext data comprises information that a tenant desires to store remotely cloud database. Secure database service adopts various cryptographic techniques to alter plaintext data into encrypted tenant information and data structures since even names of tables and columns have got to be encrypted. Secure database service clients construct set of metadata that consist of information that is necessary to encrypt as well as decrypt data. Still metadata are stored in cloud database. Secure database service moves away from existing methods that accumulate tenant data in cloud database, and accumulate metadata in client machine [5]. Alterations to database structure are supported by secure database service design but at overhead price that is acceptable to accomplish required level of data privacy. Contrasting from secure database service design that depend on a trustworthy intermediate proxy do not maintain most representative cloud situation where clients issue data structure modifications towards a cloud database. It is used as the initial solution that permits cloud tenants to get benefits of ease of use, trustworthiness, and flexible scalability, devoid of exposing unencrypted information to cloud provider and offers a number of creative features that distinguish it from earlier works for isolated database services [6].

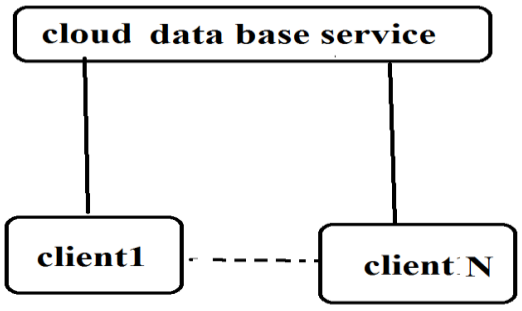


Fig1: overview of secure database as a service.

## 4. CONCLUSION:

Various approaches promise a number of privacy by means of distribution of data among quite a lot of providers and by considering of secret sharing advantage. Our work introduce a novel structural proposal that put together services of cloud database by means of data confidentiality and option of executing simultaneous operations on encrypted information. it is considered as the initial solution that permits cloud tenants to get benefits of ease of use, trustworthiness, and flexible scalability, devoid of exposing unencrypted information to cloud provider. Proposed database design combines cryptographic schemes that are traditional, as well as novel strategies for encrypted metadata managing on cloud database that is unreliable. This design offers a number of creative features that distinguish it from earlier works for isolated database services and moreover support distributed clients to connect directly towards an encrypted cloud database, and carry out autonomous operations those including of database structure modification. The novel design permit tenants to construct protected cloud databases by means of leveraging cloud services.

## REFERENCES

[1] H. Hacigu¨mu¨ s¸, B. Iyer, C. Li, and S. Mehrotra, "Executing SQL over Encrypted Data in the Database-Service-Provider Model," Proc. ACM SIGMOD Int'l Conf. Management Data, June 2002.

[2] J. Li and E. Omiecinski, "Efficiency and Security Trade-Off in Supporting Range Queries on Encrypted Databases," Proc. 19th Ann. IFIP WG 11.3 Working Conf. Data and Applications Security, Aug. 2005.

[3] E. Mykletun and G. Tsudik, "Aggregation Queries in the Database-as-a-Service Model," Proc. 20th Ann. IFIP WG 11.3 Working Conf. Data and Applications Security, July/Aug. 2006.

[4] "Oracle Advanced Security," Oracle Corporation, Apr. 2013.

[5] G. Cattaneo, L. Catuogno, A.D. Sorbo, and P. Persiano, "The Design and Implementation of a Transparent Cryptographic File System For Unix," Proc. FREENIX Track: 2001 USENIX Ann. Technical Conf., Apr. 2001.

[6] E. Damiani, S.D.C. Vimercati, S. Jajodia, S. Paraboschi, and P. Samarati, "Balancing Confidentiality and Efficiency in Untrusted Relational Dbmss," Proc. Tenth ACM Conf. Computer and Comm. Security, Oct. 2003.

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