International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

COPY RIGHT

ELSEVIER
SSRN

IJIEMR Transactions, online available on 11th Sep 2021.

Link :http://www.ijiemr.com/downloads.php?vol=Volume-10&issue=ISSUE-08

DOI: 10.48047/IJIEMR/V10/I08/52

Title:- Cloud-Based Secure Text Transfer

Volume 10, Issue 08, Pages: 332-339

Paper Authors
[1]Dr. Nagendra Nath MVSS, [2]Haarika Nagaraju,[3]Kartheek Muppiri,[4]G. Prasanth Kumar, [5]Mounica Reddy Kotipi, [6]Sindhu Kothuri

Editor IJIEMR

www.ijiemr.com

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

Cloud-Based Secure Text Transfer

[1]Dr. Nagendra Nath MVSS, [2]Haarika Nagaraju,[3]Kartheek Muppiri,[4]G. Prasanth Kumar, [5]Mounica Reddy Kotipi, [6]Sindhu Kothuri

[1]*Dept of computer science and engineering*
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
nagendranath@sasi.ac.in
[2]*Dept of computer science and engineering*
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
haarika596@sasi.ac.in
[3]Dept of computer science and engineering
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
karteek592@sasi.ac.in
[4]*Dept of computer science and engineering*
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
prasanth@sasi.ac.in
[5]*Dept of computer science and engineering*
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
mounica574@sasi.ac.in
[6]*Dept of computer science and engineering*
Sasi Institute of Technology & Engineering (Affiliated to JNTU Kakinada)
TADEPALLIGUDEM, India
sindhu573@sasi.ac.in

Abstract:

Cloud computing is a type of computing that focuses on sharing computing resources rather than having local servers or personal devices to manage apps. When it comes to cloud computing, The term "cloud computing" refers to the use of the word "cloud" as a metaphor for "the Internet." Implies "a sort of internet-based computing" in which several services, such as servers, are combined. Storage and software applications are provided. Cloud computing offered a platform for better resource usage throughout the globe. Because it is a new subject, it is rife with issues that engineers and scientists are frantically attempting to solve. One of the major disadvantages of cloud computing is security. As a result, this project provides a secure file storage cloud technique based on encryption and Diffie-Hellman. The approach encrypts the cloud file and uses Diffie-Hellman authentication to verify the user's identity the needed file must be decrypted.

INTRODUCTION

One of the primary problems in the cloud computing world is cloud security. Storing personal and sensitive data on a third-party storage media exposes personal and sensitive data to substantial dangers of data theft and exploitation by hostile individuals. The danger is so great that it has different governments and other large organizations from taking action.

Even the most powerful computers in the world today may take millions of years to crack the code and read the file using the latter method. Our method entails encrypting the file with any common encryption technology and then utilizing Diffie Hellman for user authentication.

Due to the rapid advancement of computing, wireless technology, and networking, there has been a significant increase in subscriptions recently. One of the key benefits of cloud computing is the reduction of downtime and waste of expenses on servers and other computer equipment. A company is obligated to purchase the bare minimum of hardware to manage the highest amount of stress on its system. This wastes money in cases where the strain and traffic are very fluctuating.

Cloud computing advancements today provide significant benefits to users, as cloud infrastructures and platforms provide virtually large-scale computing power with elastic scalability and higher resource sharing and usage. This has the potential to overcome many of the traditional limitations of computing. cloud computing has the following distinct advantages by leveraging the benefits of computing in ubiquitous, convenient access, and location-based application services:

i. Efficiency in compute and storage:
By offloading demanding workloads and large data sets to the cloud, the device can reduce the amount of processing power and data storage required.
ii. More powerful applications:

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

Now that the device has access to a powerful cloud on the back end, we can construct more powerful applications than ever before.

iii Energy efficiency:

Because much of the resource-intensive work in apps can be offloaded to the cloud, clients may concentrate on reducing energy consumption without sacrificing performance.

iv. Thin Clients:

Because the client has fewer resource needs, we may develop less powerful devices that perform better overall when combined with a cloud platform. This allows us to "dumb down" clients such that they only manage user interaction and transfer all application work and data to the cloud.

I. CLOUD SERVICE MODELS:

The cloud computing has major deployment models such as Private, Public and Hybrid, but has a different characteristic such as Client-Server Model, Grid Computing, Fog Computing, peer-to-peer computing. All the cloud deployment
models offer different services such as Infrastructure as a service, Platform as a service and Software as a service.

Infrastructure as a Service (IaaS): The service provider hosts all of the necessary hardware as well as the Internet connectivity link in this cloud service model. The virtual machine housed on this hardware, as well as the software (including the operating system) that runs on it, are solely the responsibility of the user. Storage, processing, networking, administration, and support components are all available on demand through this service (virtual servers). This infrastructure is accessible via the Internet, allowing businesses to move their data to the cloud. As a result, their in-house data centers will be dissolved or dismantled. Each of these services can be deployed as a private, public, hybrid, or community cloud by organizations or individuals. Amazon Elastic Cloud Computing and Simple Storage Service are two examples of IaaS. (S3).

Platform as a Service (PaaS): In this cloud service model, the user provides the application to be deployed, and the cloud service provider provides all of the components needed to run the application, also known as application hosting. This is the intermediate layer between SaaS and. It offers operating systems and an application development platform that can be accessed and used via the Internet. This platform is used by developers to create, test, deploy, and host web applications as a service over the internet. Google Application Engine, Microsoft Windows Azure, and International Business Machines, for example, are providers of such platforms as a service (IBM). PaaS examples include Google App Engine, Microsoft Azure.

Software as a Service (SaaS): The service provider provides the software application as well as all of the components required for its execution in this cloud service model. SaaS is intended to provide customers with a turnkey solution. Many web-ERP software solutions are SaaS cloud-hosted and provide accounting and business information to the user or customer. This is the most advanced layer of cloud computing. This layer includes applications such as text processors, video editors, and databases that are hosted by a cloud service provider and made available to users on demand via the Internet. Customer relationship management (CRM), email messaging, and Google Docs are all examples of software as a service.

II. METHODOLOGY

Given the engineering character of this work, design science was chosen as the research technique. Design science is the most natural choice for this research because it is an outcome-driven technique.

Even this paper's organized approach closely resembles most widely accepted design science definitions. Design science research technique is defined by Peffers (2008) as an iterative procedure with defined steps. Each step has a main activity, which is listed as follows:

1.The identification of a problem and motivation to solve it were discussed in the introduction.

2. Define the solution's goals, as described in the introduction.

3. Design, development, and demonstration; results and debate are given.

4. Evaluation; outcome and discussion comments

5. Communication; this refers to the whole paper.

Alan Hevner describes Design Science in a more descriptive manner as follows: Design Science is a method for creating artefacts to address issues, contributing to research, evaluating designs, and communicating the results to relevant audiences (Hevner, 2004).

These are only a few of the benefits that led to the selection of design science as the study approach for this work. Along the rest of the work, more evidence will be clearly shown, but implicitly.

- The identification of a problem and motivation to solve it were discussed in the introduction.

Cloud computing services today include everything from basic storage, networking, and processing power to natural language processing and artificial intelligence, as well as common office programs. Almost any service that doesn't require you to be physically near the office equipment you're using can now be supplied through the cloud.

- Define the solution's goals, as described in the introduction. Cloud computing's exact definition is still up for debate. The dynamic supply of IT capabilities (hardware, software, or services) from third parties across a network, according to Accenture, is a helpful and short definition. Cloud computing is a method of computing rather than a specific technology.
- Design, development, and demonstration; results and debate are given. DevOps, a new profession at the crossroads of software development and operations, has exploded in popularity in recent years. We focus on selecting optimal cloud deployments for distributed applications, which is

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

one of the many responsibilities that DevOps experts perform. Despite the availability of automated software deployment and management frameworks, good deployments still necessitate interaction with specialists, which is commonly accomplished through conversations on online technical forums and social media.

This paper's social networking platform combines social networking with automated application deployment on multi-clouds and knowledge derived from community-sourced information repositories. The Passage repository and Chef Supermarket are two such repositories used in the implementation. The value provided for DevOps experts is demonstrated through our user evaluation experiments.

- Evaluation; outcome and discussion comments:

Cloud computing is a type of parallel, virtual, distributed, configurable, and flexible systems, which refers to provision of applications such as hardware and software in virtual data centers via internet [10]. cloud computing services are configurable and customers pay fees based on the use of resources and services.

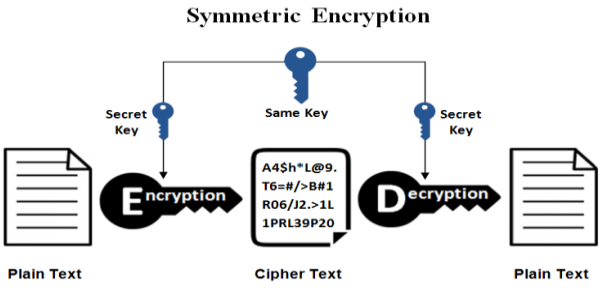
A. Techniques for encryption

There are two basic techniques for encrypting information:

I. **Symmetric encryption:** (private key encryption)

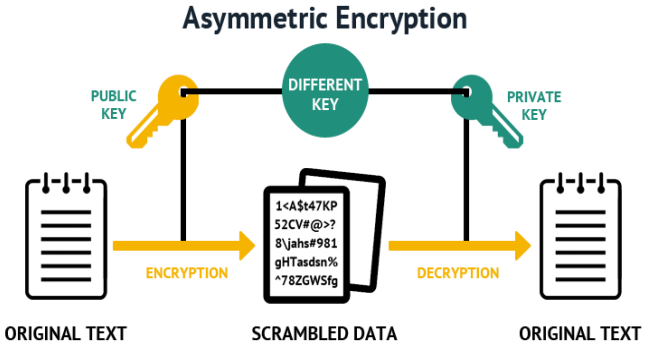
This method requires the sender and the receiver to have access to the same key. So, the recipient needs to have the key before the message is decrypted.

- There are various encryption techniques that are present some of which are:
  - Triple DES
  - Blowfish
  - RSA
  - Two fish
  - AES



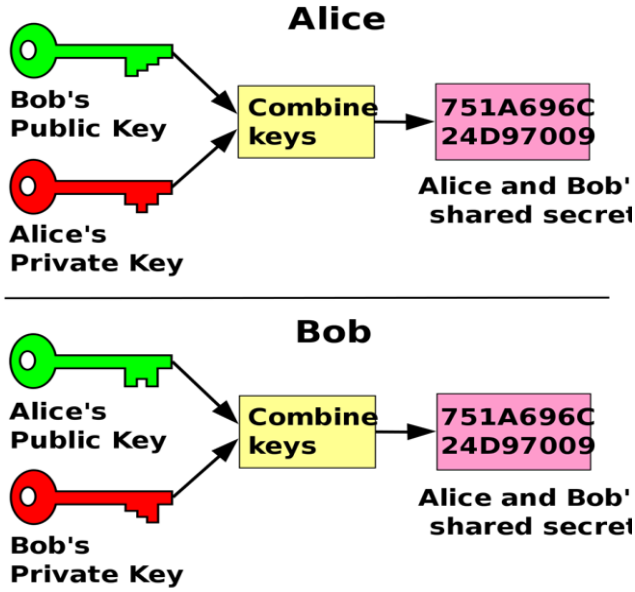
B. Asymmetric encryption*:* (public &private key encryption)

- This method uses two keys for the encryption process, a public and a private key. The user employs one key for encryption and the other for decryption, though it doesn't matter which you choose first.
- First, the sender obtains the receiver's public key. Next, the plaintext is encrypted by the sender using the receiver's public key; this creates ciphertext.
- The ciphertext is then sent to the receiver, who decrypts the ciphertext with their private key and returns it to plaintext.



C. The Diffie-Hellman algorithm

One of the brute approaches for secure transfer can be that user A can encrypt the using a key and later the key could be shared with user B. This approach has a risk of third-party eaves dropping. We needed a system in which two users can independently generate same key at both ends. This key could later be used to encrypt and decrypt the text. The diffie-hellman key exchange algorithm comes into picture. The best analogy for the Diffie Hellman is to think of **two people mixing paint**. Let's say that Alice and Bob agree on a random color to start with. Let's say that they send each other a message, **decide yellow as their common color.**



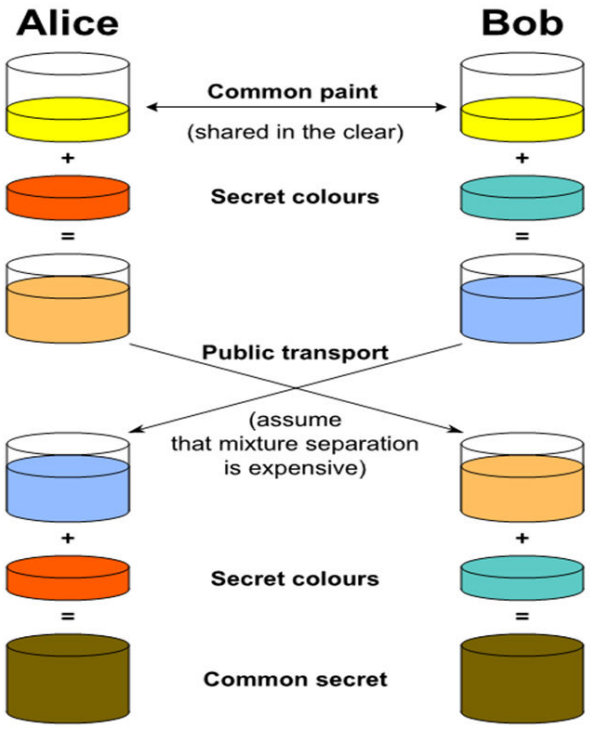
How does the Diffie-Hellman key exchange work

- Each of them selects a secret color that they keep to themselves – in this case, **orange** and **blue-green**. Alice and Bob each mix their own secret color together with their mutually shared color, resulting

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

in orange-tan and light-blue mixtures and then publicly exchange the two mixed colors.

- Finally, each of the two mixes the color they received from the partner with his or her own secret color. The result is a final color mixture (**greenish-brown**) that is identical to the partner's final color mixture.
- If a third party listened to the exchange, it would be computationally difficult for this party to determine the secret colors



**Protection of information:

Data Security When data is moved from the cloud, it leaves the cloud provider's direct control and may be processed and kept outside of the country's borders. As a result, when transferring personal information into a cloud environment, providers must be aware of privacy, confidentiality, and data security duties. It is not appropriate to transfer data from a public cloud if these issues cannot be addressed properly. The Information Technology Act of 2000 (ITA) was passed in India to make it easier to build a secure regulatory environment for multiparty IT and e-commerce. India's government has also issued an Information Technology (IT) notification.

**Performance Management:

Service standards are benchmarks used to guarantee that a cloud provider provides the level of service that consumers expect. When services are critical to the organization's and its clients' operations, it becomes a vital issue. For efficient performance management, the following components must be considered:

Service performance is measured in terms of important service levels for clients.
The ability to measure and audit performance should be simple.
The loss paid on top of the provider's failure to meet the desired service levels should not exceed the pre-calculated metrics.

III. DATA TRANSACTION MANAGEMENT

*The usage of databases has increased rapidly because of the
continuous growth of the Hardware devices with greater storage capacity and
more powered CPU along with the fast development of Wireless technology.
* devices are gradually more used for database applications like;
Sales Order Entry,
Product Inventory Tracking,
Customer and
Relationship Management.
* In Rapid technological developments computing has emerged as a result of rapid technological advancements in cellular communications like;
wireless LAN,
satellite services.
* Users in computing are not tied to a specific geographical location, rather, their point of connection to the network shifts as they move.
* By using data transactions people can now work from anywhere, at any time, as technology advances day by day, millions of users carry portable computer and communicator devices that use a wireless connection to access global resources. To provide unrestricted user mobility, each unit equipped with a wireless network can be connected to a global information network.
* Mobility and portability pose new challenges to database management and distributed computing. Database software support for computing is still in development. There is a need to provide standards for energy-efficient data access techniques, as well as to create database software systems that expand existing database system designs and platforms to meet
the restrictions imposed by computing.

IV. TRANSACTION MODELS

* Collection of operations that form a single logical unit of work is called a transaction. If it takes place in the environment, it is called data Transaction. characteristics of data Transactions is provided as follows:
transactions are long-lived transactions due to the mobility of both data and users and due to the frequent disconnection.
The transactions require computations and communications to be supported by service stations
The transactions should support and handle concurrency, recovery, disconnections and mutual consistency of the

replicated data objects. Strategies under data management and the functionalities of Transaction such as
1) Concurrency Control and Commit Protocols,
2) Caching and Query Processing
3) Replication and Synchronization in databases,
4) Recovery in Databases.
5) Security in databases Concurrency Control and Commit Protocols Many worthwhile efforts have been made to develop concurrency control methods in environments. Three types of methods were found in the literature for concurrency control mechanism such as Locking, Timestamps and Optimistic Concurrency Control. Even though these methods are well suited for traditional database applications, they are not suitable for environments because of their inherent nature. When two clients access a data item concurrently where one client tries to read the data item while the other tries to write upon it, it may result in inconsistency. For this purpose a two phase locking protocol is used, which requests the server to lock all the data items demanded. However, this protocol requires the clients to communicate continuously with the server to obtain the necessary locks and detect the data conflicts, and hence is not suitable to the wireless environment where the capacity of communication bandwidth is highly variable and unexpected disconnection may occur. Catching and Query Processing:
The main purpose of Caching is to improve data access performance and data availability. Caching data from a central database stored in the Server, performing local queries on the cached data stored in a device and then finally synchronizing the updated data with the central database has become the common scenario. Caching technique is used to improve the query response time in Client Systems. This technique is very efficient when temporal locality exists in the access patterns between a query and its proceeding queries. Whenever a query is issued, the client cache manager checks its own cache. If it contains a portion of the requested data item then the local query processing starts Replication and Synchronization in databases: devices do not get continuous connection to the internet and are restricted to limited resources. To improve the availability of data and response time to access the data and to achieve the full offline functionality of data, Replication of the data is the only way to go.

V. RECOVERY IN DATABASES:

A. Architecture overview

Our proposed paintings created from 4 entities which include Trust Center (TC), Data Owner (DO), Data User (DU) and Cloud Server (CS). Usage of every element is defined withinside the following:

- TC: It is a trusted, robust, and effective entity with wealthy garage area created for safety purpose. It is used to check in DU and DO and to make steady communique among both DO and CS or DU and CS. It has get admission to bootstrap the whole safety machine hired in CS. It continues the name of the game key for all information proprietors and customers and additionally revokes keys primarily based totally on their beyond and contemporary behaviors.
- DO: The DO registers with TC. Authorized DO can ship their information to be saved in Cloud. DO add documents into CS with the aid of using 3 most important steps: information-touchy degree assessment, compression and encryption.
- DU: The DU is likewise registered with TC. These registered customers can get admission to the documents saved in CS. For information decryption, DU has to request the decryption key from the TC. This means that handiest customers who've rights to the name of the game key, can have the proper for information get admission to.
- CS: CS shops the documents dispatched with the aid of using the DO. It plays numerous operations together with information garage, retrieval, control and get admission to manipulate. It additionally affords numerous help capabilities for the DO together with ciphertext replace and document deletions from CS.

To keep information in a Cloud, DO requests mystery key from TC. The TC registers the DO in step with the user's credentials and problems a mystery key.
The DO compresses the information after which encrypts it with the name of the game key. It then shops the encrypted information to the CS. DU can then request the CS for the information get admission to. CS verifies the DU identification the use of TC. If the DU is authenticated, CS problems the important thing for decryption. To manipulate 3V's of big information, we deployed HDFS into Cloud environment, which affords enough garage area and get admission to manipulate for each information proprietors and customers.

Fig. 2 shows the seasoned posed machine structure wherein we illustrate the process. There are 3 Big information techniques we've got proposed on this structure:

(i). Big Data Outsourcing – Authentication, Compression, Encryption and Store

(ii). Big Data Sharing – Authentication, Decryption and Decompress

(iii). Big Data Management – Clustering and Indexing

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

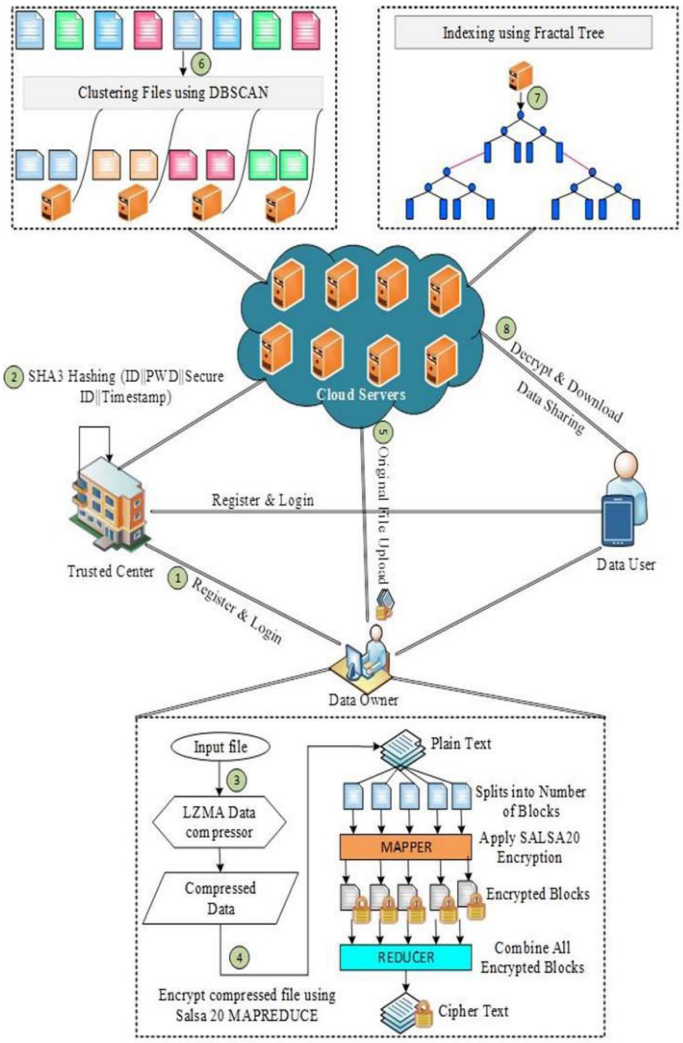


fig. 2. Proposed System Architecture

B. massive data outsourcing from data house owners

For data outsourcing to the CS, data owners should register their identities to the TC. There are 3 steps are involving during this
stage:

(1). Registration: during this step, the information owner registers to TC by following identities: Email ID, User ID, secret, Current Timestamp and Secure ID. User ID and Password are hashed and so given to TC for registration. once registration, TC generates a hash price for the data provided by the DO mistreatment SHA3-384 to store within the database. the main points of the registration method are shown in Fig. 3.

(2). Login: once DO logins to CS, they have to give the info: Email ID, User ID, Password, Current Timestamp and Secure ID. Then expect victorious authentication response from CS.

(3). Authentication: throughout the login, the DO given information is hashed and compared with the information base. The step-wise description of user authentication is shown in Fig. 4. once successful authentication to the TC, DO requests bush key for data encryption. TC generates a non-public key supported the sensitivity level requested by the DO. 3 sensitivity levels are outlined by DO:

(i). Non-sensitive
(ii) Sensitive and
(ii). Most sensitive.

However, coding isn't needed for the unrestricted information. the amount of access of information is additionally monitored within the cesium to avoid any security breaches. TC generates keys mistreatment SALSA20 coding algorithm. SALSA20–128 bits, and 256 bits of key size are used for Sensitive, and Most sensitive, levels of data, respectively. coding of enormous size of data, that desires outsourcing to the Cloud, could be a long process, that takes great deal of your time for encryption and decryption. To mitigate such issues, SALSA20 coding mistreatment-MapReduce framework is considered.

1) SHA3 hashing rule

SHA3 could be a secure hashing algorithm, that is provides four hashing functions embrace SHA3-224, SHA3-256, SHA3-384, and SHA3-512. It additionally consists of 2 long Output Functions (XOFs) include SHAKE-128, SHAKE-256. The SHA3 hashing algorithm is planned for message authentication throughout the DO and DU registration process. it's supported the Keccak algorithm with Sponge Construction. The procedure for SHA3 hashing algorithm is as follows:

Pseudocode for SHA-3 Hashing rule

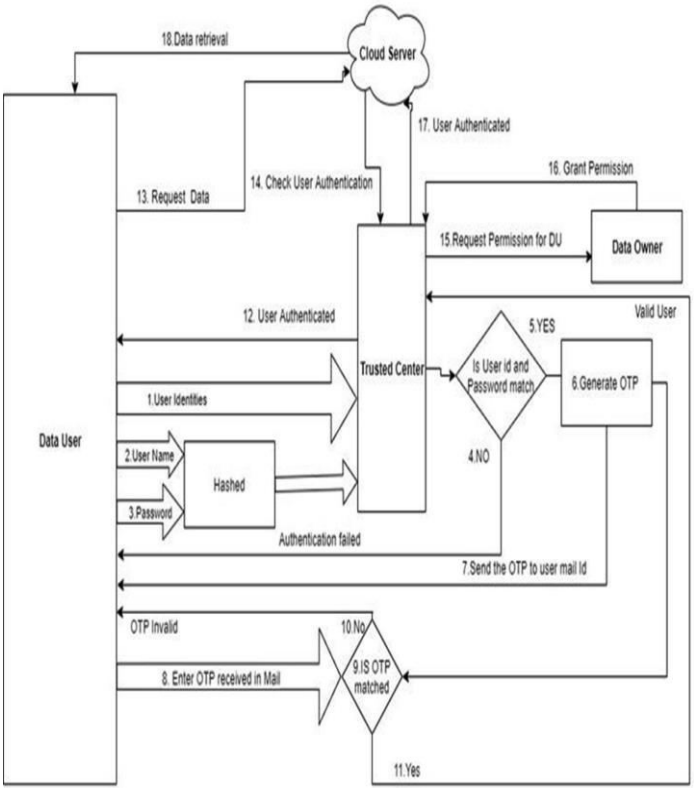
Step 1) Begin
Step 2) SHA3:= PROC(M::STRING, MT::Name:=TEXT)
Step 3) Local N; M; L;
Step 4) If Type (PROC name, ”INDEXED”)
Step 5) Then N:= OP (‘PROC name’)
Step 6) Else
Step 7) Error ‘Output length is not specified’
Step 8) End If;
Step 9) If Not N in Output (224, 256, 384, 512) Then
Step 10) Error ‘Not a Valid Output Length’, N
Step 11) End If;
Step 12) M:= Message to Bytes (M, MT);
Step 13) L:= Keccak (M, 1600, 1600–2.N, N, Hash);
Step 14) Byte to Hex String ð LÞ;
Step 15) End PROC

In hashing, the input is cushioning operates that are the messages provided in list of integers or bytes vary from zero to 255, Domain Associate in Nursing Bit Rate. In domain, it considers the Hash, XOF and KEC, which need varied paddings and run Domain Separation by differentiating input and such as a hash function. Finally, an output for this padding function is generated to the array, which contains padding message blocks each} and every block consists of list of integers.

The on top of procedure is enforced for hashing for secure user authentication at each TC and CS. PROC

International Journal for Innovative Engineering and Management Research
A Peer Revieved Open Access International Journal
www.ijiemr.com

indicates the procedure, N is that the output length bits (224, 256, 384, and 512). M is the message and MT is the message type. the total procedure is dead for hashing DO and DU info



VI. DATA TRANSACTION MANAGEMENT

*The usage of databases has increased rapidly because of the
continuous growth of the Hardware devices with greater storage capacity and
more powered CPU along with the fast development of Wireless technology.

*Devices are gradually more used for database applications like;

Sales Order Entry,
Product Inventory Tracking,
Customer and
Relationship Management.

* In Rapid technological developments computing has emerged as a result of rapid technological advancements in cellular communications like;

wireless LAN,
satellite services.

* Users in computing are not tied to a specific geographical location, rather, their point of connection to the network shifts as they move.

* By using data transactions people can now work from anywhere, at any time, as technology advances day by day, millions of users carry portable computer and communicator devices that use a wireless connection to access global resources. To provide unrestricted user mobility, each unit equipped with a wireless network can be connected to a global information network.

* Mobility and portability pose new challenges to database management and distributed computing. Database software support for computing is still in development. There is a need to provide standards for energy-efficient data access techniques, as well as to create database software systems that expand existing database system designs and platforms to meet
the restrictions imposed by computing.

CONCLUSION AND FUTURE ENHANCEMENTS

The goal of this work is to provide a completely new method to transparency that includes robust, dependable, and simple security measures. The architecture or environment of the system, the system requirements itself, and a real-world deployment of a simplified version of it have all been described in different chapters. The proposed work is to deal with the problem of safe cloud file storage. This approach is a simple implementation of the recommended methodology that can be tweaked and adjusted to meet specific requirements. It suggests using encryption and Diffie Hellman to create a double layer of security for cloud-based files.

REFRENCES

[1]. Renaud, K, Ramsay, J. Hair, M. (2006) "You've Got E- Mail! ... Shall I Deal With It Now? Electronic Mail from the Recipient's Perspective, International Journal of Human-Computer Interaction, 21:3,313-332, 2006.

[2]. Ron, B. (1972)Fax Invades the Mail Market, New Scientist, Vol. 56, No. 817pages 218–221.

[3]. Sean, L.(2012) Gmail, Hotmail and Yahoo mail Users VentureBeat. Retrieved from:

[4]. http://venturebeat.com/2012/06/28/gmail - hot mail-yahoo-email-users/ on Monday, 5th May, 2015. Sommer, F.(2015)Cloud Computing Stats, The Cloud Market. Retrieved from: http://www.slideshare.net/rapidscal e/cloud-computing-stats-the-cloud market on Monday, 5th May, 2015

[5] K Murata, E Fujita, S Kojima, S Maeda, Y Ogura, T Kamei, T Tsuji, S kaneko, M yoshizumi, and N Suzuki noninvasive biological sensor system for detection of drunk driving in IEEE Transactions on information technology in biomedicine 15, no. 1, page no 19-25, 2011.

[6]. ^Zeng, Jiaan (2014). Multi-Tenant Fair Share in NoSQL Data Stores. 2014 IEEE International Conference on Cluster Computing (CLUSTER). IEEE. doi:10.1109/CLUSTER.2014.6968761Instead of 10 copies of the OS, 10 copies of the DB, and 10 copies of the app, it has 1 OS, 1 DB and 1 app on the server." – CNC Cookbook CEO, Bob Warfield on Multi-Tenantcy. Developer Home »

[7]. "Apex Code Best Practices "UPDATED March 2016The Force.com Multitenant Architecture an Under the Hood Look at Force.com Articles: Robert, "Jeff Bezos Risky Bet" BusinessWeek, November 2006.

3."Cloud Computing, "Wikipedia. [Online]. Available: http://en.wikipedia.org/wiki/Cloud_computing

[8]. Expert Group Report, "The Future of Cloud Computing. Opportunities for European Cloud computing Beyond 2010,"2010. [Online].Available: http://cordis.europa.eu/fp7/ict/ssai/docs/cloud-report-final.pdf

[9]. M. Armbrust, A. Fox, R. Griffith et al. (2009, Feb.)"Above the clouds: A Berkeley view of cloud computing. "EECS Dept. University of California, Berkeley. Tech. Rep. UCB/EECS-2009-28.[Online]. Available: http://www.eecs.berkeley.edu/Pubs/TechRpts/2009/EECS-2009-28.html

[10]. D. Kovachev, D. Renzel, R. Klamma, and Y. Cao, " community cloud computing: emerges and evolves," Proc. 1st Intl. Workshop on Cloud Computing (in conjunction with) 11th Intl. Conf. on Data Management (MDM'10), Kansas, MO,
2010, pp. 393-395.

[11]. Alan, R.H, March S.T, Park J, (2004). Design Science in Information Systems Research MIS Quarterly, Volume 28, Issue 1, pp. 75-105. http://dl.acm.org/citation.cfm?id=20 17217.