Reference Model For Open Storage Systems Inter Connection Mass Storage With Key Documented

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Abstract- *The main aim of our project is to sharing the data in cloud. This paper shows how to share the data securely, efficiently and flexibly with others in cloud storage. The proposed system Key- Aggregate Cryptosystem will produces cipher text of constant size such that decryption rights can be assigned on user. By combining a set of secret key, the system will make a compact single key. By using this compact key, user can send others or can be store in a very limited secure storage. First, owner of the data Setup the public system next KeyGen algorithm generates a public or master/secret key. By using this key, user can convert plain text to cipher text. Next user will give input as master secret key by Extract function; it will produce output as aggregate decryption key. This generated key is safely sent to the receiver. Then the user with aggregate key can decrypt the cipher text through the use of Decrypt function. The proposed system will provide formal security analysis of our schemes in the standard model and also describe other application of our schemes. In particular, our schemes give the first public-key patient-controlled encryption for flexible hierarchy, which was yet to be known. Cloud storage is gaining popularity recently. In enterprise settings, there is a rise in demand for data outsourcing, which assists in the strategic management of corporate data. It is also used as a core technology behind.*

I. INTRODUCTION

Objective

To implement how to Securely, efficiently, and flexibly share data with others in cloud storage. Data sharing is an important functionality in cloud storage. For example, bloggers can let their friends view a subset of their private pictures; an enterprise may grant their employees access to a portion of sensitive data. The challenging problem is how to effectively share encrypted data. Of course, users can download the encrypted data from the storage, decrypt them, then send them to others for sharing, but it loses the value of cloud storage. Users should be able to delegate the access rights of the sharing data to others so that they can access these data from the server directly.

The proposed system Key- Aggregate Cryptosystem will produces cipher text of constant size such that decryption rights can be assigned on user. By combining a set of secret key, the system will make a compact single key. By using this compact key, user can send others or can be store in a very limited secure storage. First, owner of the data Setup the public system next KeyGen algorithm generates a public or master/secret key. By using this key, user can convert plain text to cipher text. Next user will give input as master secret key by Extract function; it will produce output as aggregate decryption key. This generated key is safely sent to the receiver. Then the user with aggregate key can decrypt the cipher text through the use of Decrypt function. The proposed system will provide formal security analysis of our schemes inthe standard model and also describe other application of our schemes. In particular, our schemes give the first public-key patient-controlled encryption for flexible hierarchy, which was yet to be known. Cloud storage is aining popularity recently

II. CLOUD OPERATIONS

The transition from onsite servers to a public cloud provider requires a significant paradigm shift. Due to the rising popularity of cloud computing, it's a change many organizations are in the process of adopting. Using CloudOps in conjunction with DevOps offers your operation more speed, scalability, and productivity. Facilitate your team's progression to CloudOps by implementing the following best practices.

Enable Agility

It's essential that your security or governance team is fully onboard with every aspect of cloud computing. If teams fail to work together and make usage more difficult, the end result will be less transparency and a lack of overall cohesiveness. Don't create more restrictions; instead, clearly define and implement necessary guidelines.

CLOUD SERVICE

The term "cloud services" refers to a wide range of services delivered on demand to companies and customers over the internet. These services are designed to provide easy, affordable access to applications and resources, without the need for internal infrastructure or hardware. From checking email to collaborating on documents, most employees use cloud services throughout the workday, Cloud deployment describes the way a cloud platform is implemented, how it’s hosted, and who has access to it. All cloud computing deployments operate on the same principle by virtualizing the computing power of servers into segmented, software-driven applications that provide processing and storage capabilities.

Public Cloud

Some public cloud examples include those offered by Amazon, Microsoft, or Google. These companies provide both services and infrastructure, which are shared by all customers. Public clouds typically have massive amounts of available space, which translates into easy scalability. A public cloud is often recommended for software development and collaborative projects. Companies can design their applications to be portable, so that a project that’s tested in the public cloud can be moved to the private cloud for production. Most cloud providers package their computing resources as part of a service. Public cloud examples range from access to a completely virtualized infrastructure that provides little more than raw processing power and storage (Infrastructure as a Service, or IaaS) to specialized software programs that are easy to implement and use (Software as a Service, or SaaS). 5 The great advantage of a public cloud is its versatility and “pay as you go” structure that allows customers to provision more capacity on demand. On the downside, the essential infrastructure and operating system of the public cloud remain under full control of the cloud provider. Customers may continue to use the platform under the terms and conditions laid out by the provider, but they may have difficulty repatriating their assets if they want to change providers. Should the provider go out of business or make significant changes to the platform, customers could be forced to make significant infrastructure changes on short notice. There’s also the risk of an unpatched security vulnerability in the cloud architecture exposing customers to risk.

Private Cloud

Private clouds usually reside behind a firewall and are utilized by a single organization. A completely on-premises cloud may be the preferred solution for businesses with very tight regulatory requirements, though private clouds implemented through a colocation provider are gaining in popularity. Authorized users can access, utilize, and store data in the private cloud from anywhere, just like they could with a public cloud. The difference is that no one else can access or utilize those computing resources. Private cloud solutions offer both security and control, but these benefits come at a cost. The company that owns the cloud is responsible for both software and infrastructure, making this a less economical model than the public cloud. The additional control offered by a private cloud makes it easier to restrict access to valuable assets and ensures that a company will be able to move its data and applications where it wants, whenever it wants. Furthermore, since the private cloud isn’t controlled by an outside vendor, there’s no risk of sudden changes disrupting the company’s entire infrastructure. A private cloud solution will also not be affected by a public cloud provider’s system downtime. But private clouds also lack the versatility of public clouds. They can only be expanded by adding more physical compute and storage capacity, making it difficult to scale operations quickly should the business need arise.

Hybrid Cloud

Hybrid clouds combine public clouds with private clouds. They are designed to allow the two platforms to interact seamlessly, with data and applications moving smoothly from one to the other.The primary advantage of a hybrid cloud model is its ability to provide the scalable computing power of a public cloud with the security and control of a private cloud. Data can be stored safely behind the firewalls and encryption protocols of the private cloud, then moved securely into a public cloud environment when needed. This is especially helpful in the age of big data analytics, when industries like healthcare must adhere to strict data privacy regulations while also using sophisticated algorithms powered by artificial intelligence (AI) to derive actionable insights from huge masses of unstructured data. There are two commonly used types of hybrid cloud architecture. Cloud bursting uses a private cloud as its primary cloud, storing data and housing proprietary applications in a secure environment. When service demands increase, however, the private cloud’s infrastructure may not have the capacity to keep up. That’s where the public cloud comes in. A cloud bursting model uses the public cloud’s computing resources to supplement the private cloud, allowing the company to handle increased traffic without having to purchase new servers or other infrastructure. The second type of hybrid cloud model also runs most applications and houses data in a private cloud environment, but outsources non-critical applications to a public cloud provider. This arrangement is common for organizations that need to access specialized development tools (like Adobe Creative Cloud), basic productivity software (like Microsoft Office 365), or CRM platforms (like Salesforce). Multi-cloud architecture is often deployed here, incorporating multiple cloud service providers to meet a variety of unique organizational needs.

Community Cloud

Although not as commonly used as the other three models, community clouds are a collaborative, multi-tenant platform used by several distinct organizations to share the same applications. The users are typically operating within the same industry or field and share common concerns in terms of security, compliance, and performance. 7 In essence, a community cloud is a private cloud that functions much like a public cloud. The platform itself is managed privately, either in a data centre or on-premises. Authorized users are then segmented within that environment. These deployments are commonly used by government agencies, healthcare organizations, financial services firms, and other professional communities.

III. SYSTEM ANALYSIS

EXISTING SYSTEM

The existing system of cloud storage bloggers can let their friends view a subset of their private pictures or data an enterprise may grant her employees access to a portion of sensitive data. The challenging problem is how to effectively share encrypted data. Of course users can download the encrypted data from the storage, decrypt them, then send them to others for sharing, but it loses the value of cloud storage. Users should be able to delegate the access rights of the sharing data to others so that they can access these data from the server directly. However, finding an efficient and secure way to share partial data in cloud storage is not trivial. The receiver decrypting the original Message using symmetric key algorithm.

DRAWBACKS:

1.Increases the costs of storing and transmitting cipher texts.

2.Secret keys are usually stored in the tamper-proof memory, which is relatively expensive.

3. This is a versatile approach.

4. The costs and complexities involved generally increase with the number of the decryption keys to be shared.

PROPOSED SYSTEM

In this project, it makes a decryption key as more powerful in the sense that it allows decryption of multiple cipher texts, without increasing its size. Introducing a public-key encryption which key-aggregate cryptosystem (KAC) they using AES algorithm. In KAC, users encrypt a message not only under a public-key, but also under an identifier of cipher text called class. That means the cipher texts are further categorized into different classes. The key owner holds a master- secret called master- secret key, which can be used to extract secret keys for different classes. More importantly, the extracted key have can be an aggregate key which is as compact as a secret key for a single class, but aggregates the power of many such keys,i.e., the decryption power for any subset of cipher text classes. The sizes of cipher text, public-key, and master-secret key and aggregate key in our KAC schemes are all of constant size. The public system parameter has size linear in the number of cipher text classes, but only a small part of it is needed each time and it can be fetched on demand from large (but non-confidential) cloud storage.

ADVANTAGES

1.The delegation of decryption can be efficiently implemented with the aggregatekey, which is only of fixed size.

2. Number of ciphertext classes is large.

3. It is easy to key management for encryption and decryption.

IV. SOFTWARE ENVIRONMENTS

SOFTWARE DESCRIPTION

FRONT END

Java The JAVA language was created by James Gosling in June 1991 for use in a set top box project. The language was initially called Oak, after an oak tree that stood outside Gosling's office - and also went by the name Green - and ended up later being renamed to Java, from a list of random words. Gosling's goals were to implement a virtual machine and a language that had a familiar C/C++ style of notation. The first public implementation was Java 1.0 in 1995. It promised "Write Once, Run Anywhere” (WORA), providing no-cost runtimes on popular platforms. It was fairly secure and its security was configurable, allowing network and file access to be restricted. Major web browsers soon incorporated the ability to run secure Java applets within web pages. Java quickly became popular. With the advent of Java 2, new versions had multiple configurations built for different types of platforms. For example, J2EE was for enterprise applications and the greatly stripped down version J2ME was for mobile applications. J2SE was the designation for the Standard Edition. In 2006, for marketing purposes, new J2 versions were renamed Java EE, Java ME, and Java SE, respectively. In 1997, Sun Microsystems approached the

ISO/IEC JTC1 standards body and later the Ecma International to formalize Java, but it soon withdrew from the process. Java remains a standard that is controlled through the Java Community Process. At one time, Sun made most of its Java implementations available without charge although they were proprietary software. Sun's revenue from Java was generated by the selling of licenses for specialized products such as the Java Enterprise System. Sun distinguishes between its Software Development Kit (SDK) and Runtime Environment (JRE)which is a subset of the SDK, the primary distinction being that in the JRE, the compiler, utility programs, and many necessary header files are not present.

Primary Goals:

There were five primary goals in the creation of the Java language:

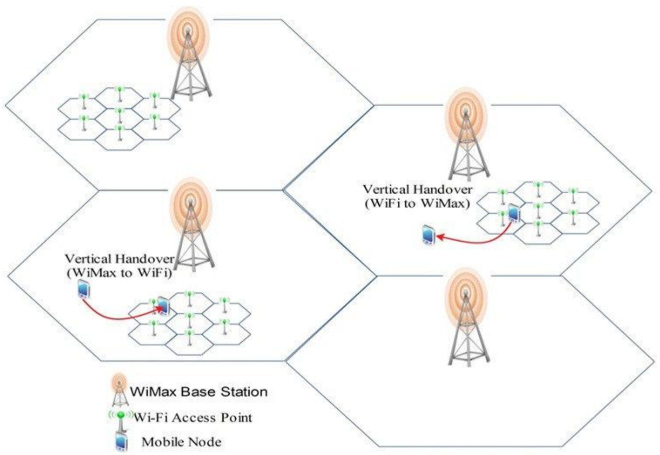
- It should use the object-oriented programming methodology.
- It should allow the same program to be executed on multiple operating systems.
- It should contain built-in support for using computer networks.
- It should be designed to execute code from remote sources securely.
- It should be easy to use by selecting what were considered the good parts.

MODULE DESCRIPTION

1. User Registration
2. Group Registration
3. File Access
4. Key Generation

1. User Registration

Here, the registration of user with identity ID the group manager randomly selects a number. Then the group manager adds into the group user list which will be used in the traceability phase. After the registration, user obtains a public key which will be used for group signature generation and file decryption.



Registration

2. Group Registration

There will be a group registration by giving group name and password. Admin is the only person to create a group, User needs to select the group they wants to join for data sharing.

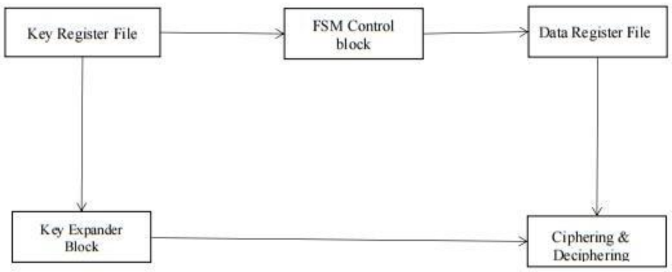
3. File Access

File access to store and share a data file in the cloud, a group member performsto getting the revocation list from the cloud. In this step, the member sends the group identity ID group as a request to the cloud. Verifying the validity of the received revocation list. File stored in the cloud
can be deleted by either the group manager or the data owner.

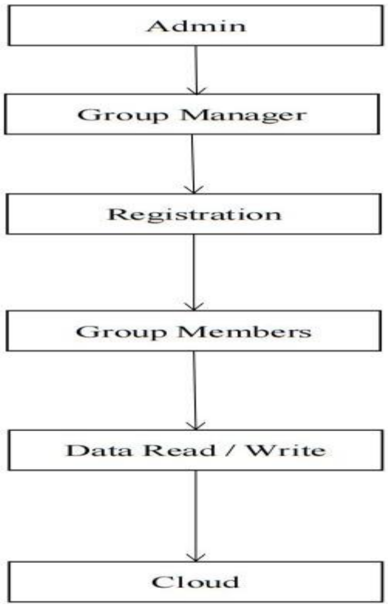
4. Key Generation

When a user wants to download a file , other users in the group have to give permission by giving their key. After permission the user who request for a file, will access the file by other user key.

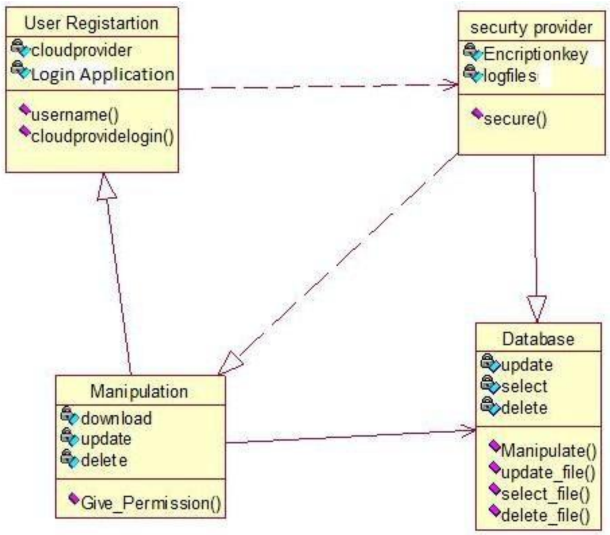
V. DIAGRAM



DATA FLOW DIAGRAM



CLASS DIAGRAM



VI. SYSTEM TESTING

After the source code has been completed, documented as related data structures. Completed the project has to undergo testing and validation where there is subtitle and definite attempt to get errors.

The project developer treads lightly, designing and execution test that will demonstrates that the program works rather than uncovering errors, unfortunately errors will be present and if the project developer doesn't find them, the user will find out.

The project developer is always responsible for testing the individual units i.e. modules of the program. In many cases developer also conducts integration testing i.e. the testing step that leads to the construction of the complete program structure.

This project has undergone the following testing procedures to ensure its correctness

1. Unit Testing
2. Integration Testing
3. Valitation Testing

VII. CONCLUSION

The proposed system will have design Key-Aggregate Cryptosystem For Scalable Data Sharing In Cloud Storage. A user is able to share data with others in thegroup without revealing identity privacy to the cloud. Additionally, supports efficient user revocation and new user joining. More specially, efficient user revocation can be achieved through a public revocation list without updating the private keys of the remaining users, and new users can directly decrypt files stored in the cloud before their participation. Moreover, the storage overhead and the encryption computation cost are constant.

VIII. FUTURE ENHANCEMENT

- As Key generation time is high compared to encryption and decryption procedure, it can be further reduced to have even better results.
- The AES Algorithm can be compared with some of the other popular symmetric
- key encryption algorithm.
- The algorithm can be analysed with other applications like cloud.

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