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ENHANCED KEY GENERATION BASED PROXY SERVER USING KEY PROTOCOL

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Abstract:

The main objective of this project is to develop a Computational Private Information Retrieval protocols on cloud architecture using erasure code for secured data forwarding. These protocols are too costly in practice because they invoke complex arithmetic operations for every bit of the database. Basically cloud storage architecture will have a collection of storage servers with higher end configuration which will provides long-term storage services over the Internet and also for the cloud storage system. Here storing and retrieving the data in a third party's cloud system and public auditing scheme causes serious problems and conflict over data confidentiality during the data transactions. Whenever third party big data storage will involved with the cloud server this conflict will occur naturally. Even thou there are various methods are available to overcome this problem like cryptography, key encryption and etc. But general encryption schemes protect data confidentiality during the transaction, but along with this process the main drawback will, it limits the functionality of the storage system. This is because; a few operations only supported over encrypted data. These methods will cause failure. In order to constructing a secure storage system that supports multiple functions is challenging when the storage system is distributed and has no central authority.

Keywords: cryptography, secure storage system, cloud storage architecture.

1. INTRODUCTION

A cloud storage system, consisting of a collection of storage servers, provides long-term storage services over the Internet. Storing data in a third party's cloud system causes serious concern over data confidentiality. General encryption schemes protect data confidentiality, but also limit the functionality of the storage system because a few operations are supported over encrypted data. Using Cloud Storage, users can remotely store their data and enjoy the on-demand high quality applications and services from a shared pool of configurable computing resources, without the burden of local data storage and maintenance. However, the fact that users no longer have physical possession of the outsourced data makes the data integrity protection in Cloud Computing a formidable task, especially for users with constrained computing resources. Moreover, users should be able to just use the cloud storage as if it is local, without worrying about the need to verify its integrity. Thus, enabling public audit ability for cloud storage is of critical importance so that users can resort to a third party auditor (TPA) to check the integrity of outsourced data and be worry-free. To securely introduce an effective TPA, the auditing process should bring in no new vulnerabilities towards user data privacy, and introduce no additional online burden to user. In this paper, we propose a secure cloud storage system supporting privacy-preserving public auditing. We further extend our result to enable the TPA to perform audits for multiple users simultaneously and efficiently. Extensive security and performance analysis show the proposed schemes are provably secure and highly efficient. . The storage server will be unique which has been distributed into much system for easy access of data. It contains only the encrypted data of the data owners.

2. LITERATURE SURVEY

We consider the problem of constructing an erasure code for storage over a network when the data sources are distributed. Specifically, we assume that there are n storage nodes with limited memory and k < n sources generating the data. We want a data collector, who can appear anywhere in the network, to query any k storage nodes and be able to retrieve the data. We introduce Decentralized Erasure Codes, which are linear codes with a specific randomized structure inspired by network coding on random bipartite graphs. We show that decentralized erasure codes are optimally sparse, and lead to reduced communication, storage and computation cost over random linear coding. In this correspondence, we address the problem of distributed networked storage when there are multiple, distributed sources that generate data that must be stored efficiently in multiple storage nodes, each having limited memory.

Plautus is a cryptographic storage system that enables secure file sharing without placing much trust on the file servers. In particular, it makes novel use of cryptographic primitives to protect and share files. Plautus features highly scalable key management while allowing individual users to retain direct control over who gets access to their files. We explain the mechanisms in Plautus to reduce the number of cryptographic keys exchanged between users by using file groups, distinguish file read and write access, handle user revocation efficiently, and allow an untrusted server to authorize file writes. We have built a prototype of Plautus on Open AFS. Measurements of this prototype show that Plautus achieves strong security with overhead comparable to systems that encrypt all network traffic. As storage systems and individual storage devices themselves become networked, they must defend both against the usual attacks on messages traversing an untrusted, potentially public, network as well as attacks on the stored data itself. This is a challenge because the primary purpose of networked storage is to enable easy sharing of data, which is often at odds with data security. Networked Systems Design and Implementation (NSDI),pp. 337-350, 2010.

Availability is a storage system property that is both highly desired and yet minimally engineered. While many systems provide mechanisms to improve availability – such as redundancy and failure recovery – how to best configure these mechanisms is typically left to the system manager. Unfortunately, few individuals have the skills to properly manage the trade-offs involved, let alone the time to adapt these decisions to changing conditions. Instead, most systems are configured statically and with only a cursory understanding of how the configuration will impact overall performance or availability.

3. MODULE DESCRIPTION

The public cloud environment is the IaaS/PaaS Infrastructure or Platform as a Service that we rent from Linux (IaaS) or Microsoft (PaaS). Both are enabled for web hosting. Then, your SaaS stack will run under your Internet environment most likely in a virtualized one on your own equipment which would make it private. In this project we specialize in private cloud technology. Here we execute in a cloud environment. If strict security requirements go public or hybrid and if not, try the public or community cloud environment. So that here we are implementing a web services for the output purpose as well as the environment will be shown in actual while hosting the application. So finally SaaS can be fully utilized in cloud environment as IaaS/PaaS. We consider the problem of constructing an erasure code for storage over a network when the data sources are distributed in the cloud server. Specifically, we assume that there are n storage nodes with limited memory and $k < n$ sources generating the data. We want a data collector, who can appear anywhere in the network for accessing the data, to query any k storage nodes and be able to retrieve the data. We introduce Decentralized Erasure Codes, which are linear codes with a specific randomized structure inspired by network coding on random bipartite graphs with encrypted format. We show that decentralized erasure codes are optimally sparse, and lead to reduced communication, storage and computation cost over random linear coding over the cloud server.It is one of the advanced encryption model which works on both real system and virtual systems. This works more efficient on cloud systems. Proxy re-encryption schemes are cryptosystems which allow third-parties (proxies) to alter a cipher text which has been encrypted for one party, so that it may be decrypted by another. Proxy re-encryption schemes are similar to traditional symmetric or asymmetric encryption schemes. It allows a message recipient (key holder) to generate a re-encryption key based on his secret key and the key of the delegated user. This re-encryption key is used by the proxy as input to the re-encryption function, which is executed by the proxy to translate cipher texts to the delegated user's key. Asymmetric proxy re-encryption schemes come in bi-directional and uni directional varieties. Proxy re-encryption schemes allow for a cipher text to be re-encrypted an unlimited number of times. Proxy re-encryption should not be confused with proxy signatures, which is a separate construction with a different purpose.

4. DATA FLOW

Asp.net is a server-side web application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. It was first released in January 2002 with version 1.0 of the.net framework, and is the successor to Microsoft's active server pages (asp) technology. Asp.net is built on the common language runtime (clr), allowing programmers to write asp.net code using any supported .net language. The asp.net soap extension framework allows asp.net components to process soap messages.

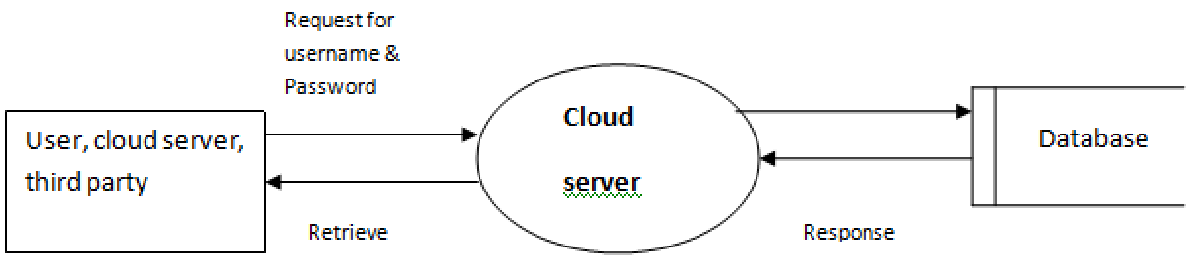
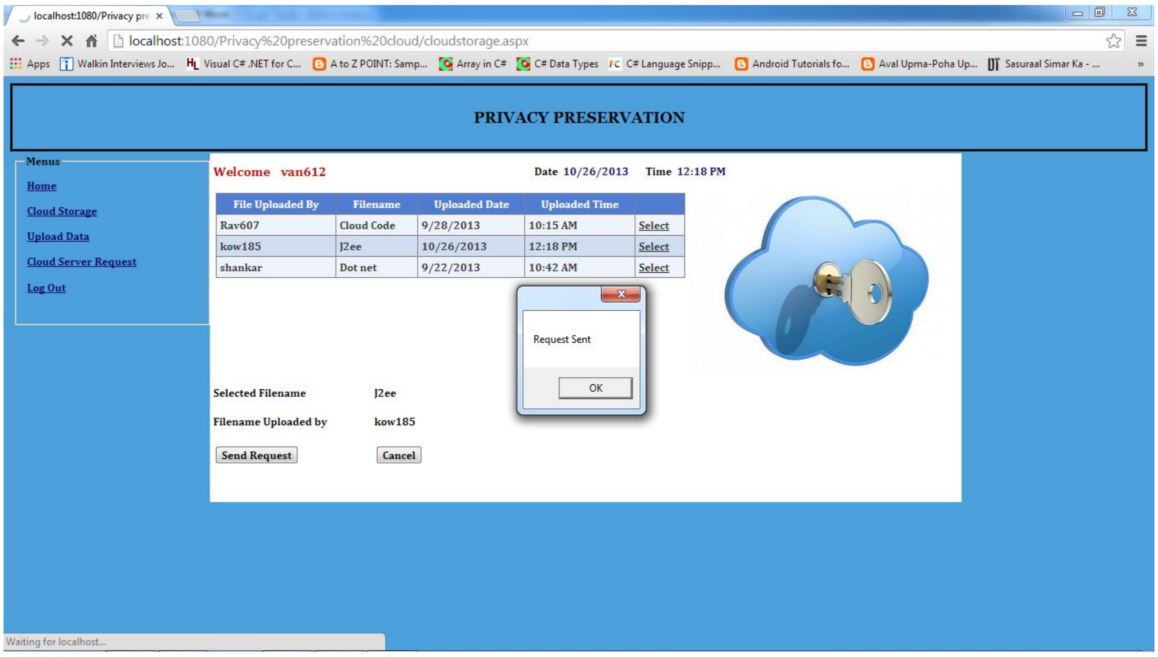

Request for username & Password
User, cloud server, third party
Cloud server
Database
Retrieve
Response

Fig.1.Data flow

After four years of development, and a series of beta releases in 2000 and 2001, asp.net 1.0 was released on January 5, 2002 as part of version 1.0 of the .net framework. Even prior to the release, dozens of books had been written about asp.net, and Microsoft promoted it heavily as part of its platform for web services. Scott Guthrie became the product unit manager for asp.net, and development continued apace, with version 1.1 being released on April 24, 2003 as a part of windows server 2003. This release focused on improving asp. Net's support for mobile devices.



PRIVACY PRESERVATION

Welcome van612 Date 10/26/2013 Time 12:18 PM

File Uploaded By	Filename	Uploaded Date	Uploaded Time	
Rav607	Cloud Code	9/28/2013	10:15 AM	Select
kow185	J2ee	10/26/2013	12:18 PM	Select
shankar	Dot net	9/22/2013	10:42 AM	Select

Request Sent

Selected Filename J2ee

Filename Uploaded by kow185

Fig.2.System process

Distributed file system for cloud is a file system that allows many clients to have access to the same data/file providing important operations (create, delete, modify, read, write). Each file may be partitioned into several parts called chunks. Each chunk is stored in remote machines. Typically, data is stored in files in a hierarchical tree where the nodes represent the directories. Hence, it facilitates the parallel execution of applications. There are several ways to share files in a distributed architecture. Each solution must be suitable for a certain type of application relying on how complex is the application or how simple it is.

5. SYSTEM ANALYSIS

The two biggest concerns about cloud storage are reliability and security. Clients aren't likely to entrust their data to another company without a guarantee that they'll be able to access their information whenever they want and no one else will be able to get at it. To secure data, most systems use a combination of techniques, including, Authentication processes, which require to create a user name and password. Authorization practices -- the client lists the people who are authorized to access information stored on the cloud system. Many corporations have multiple levels of authorization. For example, a front-line employee might have very limited access to data stored on a cloud system, while the head of human resources might have extensive access to files. Even with these protective measures in place, many people worry that data saved on a remote storage system is vulnerable. There's always the possibility that a hacker will find an electronic back door and access data. Hackers could also attempt to steal the physical machines on which data are stored. A disgruntled employee could alter or destroy data using his or her authenticated user name and password. Cloud storage companies invest a lot of money in security measures in order to limit the possibility of data theft or corruption. The other big concern, reliability, is just as important as security. An unstable cloud storage system is a liability. No one wants to save data to a failure-prone system, nor do they want to trust a company that isn't financially stable. While most cloud

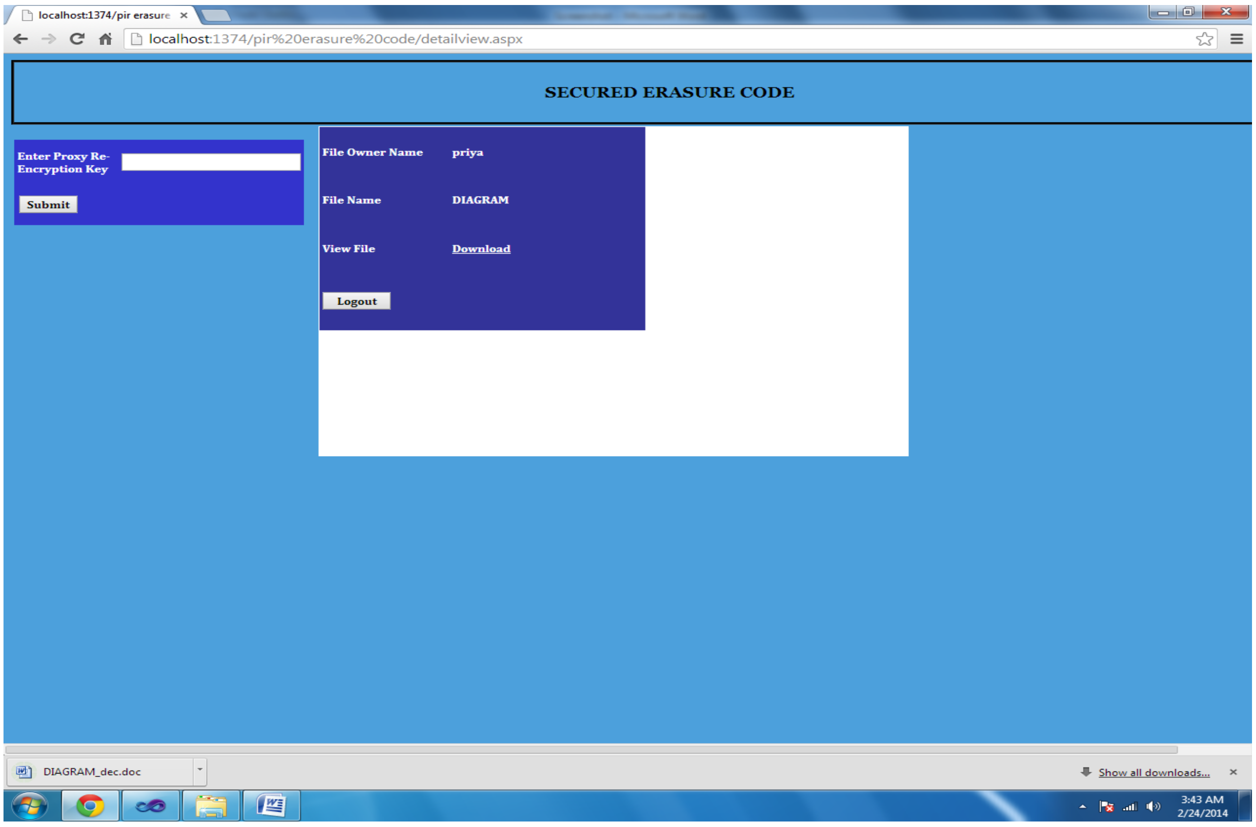


Fig.3.Time based encrypting

storage systems try to address this concern through redundancy techniques, there's still the possibility that an entire system could crash and leave clients with no way to access their saved data. Cloud storage companies live and die by their reputations. It's in each company's best interests to provide the most secure and reliable service possible. If a company can't meet these basic client expectations, it doesn't have much of a chance -- there are too many other options available on the market.

CONCLUSION

Thus we are concluding that all the result obtained according to the committed abstract. In this paper, we consider a cloud storage system consists of storage servers and key servers. We integrate a newly proposed threshold proxy re-encryption scheme and erasure codes over exponents. The threshold proxy re-encryption scheme supports encoding, forwarding, and partial decryption operations in a distributed way. To decrypt a message of k blocks that are encrypted and encoded ton code word symbols, each key server only has to partially decrypt two codeword symbols in our system. By using the threshold proxy re-encryption scheme, we present a secure cloud storage system that provides secure data storage and secure data forwarding functionality in a decentralized structure. Moreover, each storage server independently performs encoding and re-encryption and each key server independently perform partial decryption. Our storage system and some newly proposed content addressable file systems and storage systems are highly compatible. Our storage servers act as storage nodes in a content addressable storage system for storing content addressable blocks. Our key servers act as access nodes for providing a front-end layer such as a traditional file system interface. Further study on detailed cooperation is required.

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