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# Efficient and Secure Data Sharing in Cloud Computing

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**Abstract:** *With the development of big data and cloud computing, more and more enterprises prefer to store their data in cloud and share the data among their authorized employees efficiently and securely. So far, many different data sharing schemes in different fields have been proposed. However, sharing sensitive data in cloud still faces some challenges such as achieving data privacy and lightweight operations at resource constrained mobile terminals. Furthermore, most data sharing schemes have no integrity verification mechanism, which would result in wrong computation results for users. To solve the problems, we propose an efficient and secure data sharing scheme for mobile devices in cloud computing. Firstly, the scheme guarantees security and authorized access of shared sensitive data. Secondly, the scheme realizes efficient integrity verification before users share the data to avoid incorrect computation.*

**Keywords:** Efficient and secure, cloud computing, Cloud security

## I. INTRODUCTION

**Cloud file sharing provides** end users with the ability to access files with any Internet-capable device from any location. Usually, the user has the ability to grant access privileges to other users as they see fit. Although cloud file sharing services are easy to use,the user must rely upon the service provider ability to provide high availability (HA) and backup and recovery in a timely manner.

In the enterprise, cloud file sharing can present security risks and compliance concerns if company data is stored on third-party providers without the IT department's knowledge. Popular third-party providers for cloud file sharing include Box, Dropbox, Egnyte and Syncplicity.

This project made some updates with new extra functionality to cloud accounts. For example when managing projects or working on sales proposals you quite often need to share a file, +is totally NOT secure, and is not encoded in anyway - user files can easilybe intercepted.

This project done now is add the functionality to password protected for this file sharing system. It's really simple to use, user just click on the 'Share this file' as normal and password generated automatically for that message or file.

### What Is Cloud Computing?

Cloud computing is the delivery of different services through the Internet. These resources include tools and applications like data storage, servers, databases, networking, and software. Rather than keeping files on a proprietary hard drive or local storage device, cloud- based storage makes it possible to save them to a remote database. As long as an electronic device has access to the web, it has access to the data and the software programs to run it.

Cloud computing is a popular option for people and businesses for a number of reasons including cost savings, increased productivity, speed and efficiency, performance, and security.

### Understanding Cloud Computing

Cloud computing is named as such because the information being accessed is found remotely in the cloud or a virtual space. Companies that provide cloud services enable users to store files and applications on remote servers and then access all the data via the Internet. This means the user is not required to be in a specific place to gain access to it, allowing theuser to work remotely.

Cloud computing takes all the heavy lifting involved in crunching and processing data away from the device you carry around or sit and work at. It also moves all of that work to huge computer clusters far away in cyberspace. The Internet

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becomes the cloud, and voilà—your data, work, and applications are available from any device with which you can connect to the Internet, anywhere in the world.

Cloud computing can be both public and private. Public cloud services provide their services over the Internet for a fee. Private cloud services, on the other hand, only provide services toa certain number of people. These services are a system of networks that supply hosted services. There is also a hybrid option, which combines elements of both the public and privateservices.

**Key takeaways**

Cloud computing is the delivery of different services through the Internet, including datastorage, servers, databases, networking, and software.

Cloud-based storage makes it possible to save files to a remote database and retrieve themon demand.

Services can be both public and private—public services are provided online for a fee whileprivate services are hosted on a network to specific clients.

**Service Model**

In addition to these five essential characteristics, the cloud community has extensively used thefollowing three service models to categories the cloud services:

Software as a Service (SaaS). Cloud consumers release their applications on a hosting environment, which can be accessed through networks from various clients (e.g. web browser,PDA, etc.) by application users. Cloud consumers do not have control over the Cloud

infrastructure that often employs a multi-tenancy system architecture, namely, different cloudconsumers' applications are organized in a single logical environment on the SaaS cloud to achieve economies of scale and optimization in terms of speed, security, availability, disaster recovery, and maintenance. Examples of SaaS include SalesForce.com, Google Mail, Google Docs, and so forth.

Platform as a Service (PaaS). PaaS is a development platform supporting the full "Software Lifecycle" which allows cloud consumers to develop cloud services and applications (e.g. SaaS) directly on the PaaS cloud. Hence the difference between SaaS and PaaS is that SaaS only hosts completed cloud applications whereas PaaS offers a development platform that hostsboth completed and in-progress cloud applications. This requires PaaS, in addition to supporting application hosting environment, to possess development infrastructure including programming environment, tools, configuration management, and so forth. An example of PaaS is Google AppEngine.

Infrastructure as a Service (IaaS). Cloud consumers directly use IT infrastructures (processing, storage, networks, and other fundamental computing resources) provided in the IaaS cloud. Virtualization is extensively used in IaaS cloud in order to integrate/decompose physical resources in an ad-hoc manner to meet growing or shrinking resource demand from cloud consumers. The basic strategy of virtualization is to set up independent virtual machines (VM) that are isolated from both the underlying hardware and other VMs. Notice that this strategy isdifferent from the multi-tenancy model, which aims to transform the application software architecture so that multiple instances (from multiple cloud consumers) can run on a single application (i.e. the same logic machine). An example of IaaS is Amazon's EC2.

Data storage as a Service (DaaS). The delivery of virtualized storage on demand becomes a separate Cloud service - data storage service. Notice that DaaS could be seen as a special typeIaaS. The motivation is that on-premise enterprise database systems are often tied in a prohibitive up-front cost in dedicated server, software license, post-delivery services, and in- house IT maintenance. DaaS allows consumers to pay for what they are actually using rather than the site license for the entire database. In addition to traditional storage

interfaces such as RDBMS and file systems, some DaaS

offerings provide table-style abstractions that are designed to scale out to store and retrieve a huge amount of data within a very compressed timeframe, often too large, too expensive or tooslow for most commercial RDBMS to cope with. Examples of this kind of DaaS include Amazon S3, Google BigTable, and Apache HBase, etc.

**Deployment Model**

More recently, four cloud deployment models have been defined in the Cloud community: Private cloud. The cloud

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infrastructure is operated solely within a single organization, and managed by the organization or a third party regardless whether it is located premise or offpremise. The motivation to setup a private cloud within an organization has several aspects. First, to maximize and optimize the utilization of existing in-house resources. Second, security concerns including data privacy and trust also make Private Cloud an option for many firms. Third, data transfer cost [2] from local IT infrastructure to a Public Cloud is still rather considerable. Fourth, organizations always require full control over mission-critical activities that reside behind their firewalls. Last, academics often build private cloud for research and teaching purposes.

Community cloud. Several organizations jointly construct and share the same cloud infrastructure as well as policies, requirements, values, and concerns. The cloud community forms into a degree of economic scalability and democratic equilibrium. The cloud infrastructure could be hosted by a third-party vendor or within one of the organizations in the community.

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## II. PROPOSED SYSTEM

In Proposed Cloud Storage system user download the file on the cloud. Which ismeans End user is getting the more speed about the Internet when they will click on the User. Because the cloud is also similar to the database which is means is also database but having the more space that a reasonable user getting more speed to search the information as well as getting more security about the data.

Advantages

- Cost and Time efficient
- Portable
- Secure and data sharing
- Back-up and restore data
- Unlimited Storage Capacity
- Excellent Accessibility

Objective are as follows:

- To provide cloud-based data security.
- To improve cloud-based file management.
- To implement efficient file retrievals.

## III. CONCLUSION

In this project "EFFICIENT AND SECURE DATA SHARING IN CLOUD COMPUTING" concluded that the application works well and satisfy the end users. The project is designed, tested and finally implemented in a systematic manner. The application is tested very well anderrors are properly debugged. The application is simultaneously accessed from more than onesystem. Simultaneous login from more than one place is tested. Further enhancements can be made to the application, so that the web application functions are very attractive and useful manner than the present one. The speed of the transactions become more enough now

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