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Distance Learning through Public Cloud ensuring Security of Data

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Abstract: *The Main aim of this system is to introduce the system which will enable students to study from home. It will provide the mobility for students and enable them to study from their home also. Students can access the data through mobile phones from educational data cloud. As teachers are going to upload all the important educational data on cloud, there should be recovery mechanism to ensure safety and integrity of the data. This proposed system focuses on how students can learn from anywhere also how recovery mechanism for cloud data can be ensured.*

Keywords: *Mobile, cloud, Mobility, SaaS, Recovery Server, TPA Serve*

I. INTRODUCTION

Cloud computing is a paradigm in which information is permanently stored in server and cached temporarily on clients space that include pc's, tablets and mobile phone. SaaS is a model of software deployment where an application is hosted as a service provided to customers across the Internet.

By removing the need to install and run an application on a user's own computer it is seen as a way for businesses to get the same benefits as commercial software with smaller cost outlay. SaaS also alleviates the burden of software maintenance and support but users relinquish control over software versions and requirements. The other terms that are used in this sphere include Platform as a Service (PaaS) and Infrastructure as a Service (IaaS)

Mobile devices to enhance their learning. Mobile learning (m-learning) is not only electronic learning (e-learning) but e-learning plus mobility. It is clear that learning via mobile brings many benefits for mobile users. It brings the convenience for them since they can learn anywhere they want in any convenient time from a portable device. However, there is some research pointing out restrictions of traditional mobile learning such as: expensive mobile devices, high cost of network, poor network

II. PROPOSED SYSTEM

A. User will First Login from Their Mobile Device

The login facility is given so that the user with valid rights is able to access the data from cloud.

B. User Authentication

The authentication algorithm is used for validating the user. Using this authentication mechanism the user will get verified. Mac Authentication algorithm is used for this purpose.

C. Peers-to-Peer Connection

D. Workflow:

User will logs onto its mobile and then will go through authentication algorithm. If the user is authorized then he will get access to the educational cloud. Students can access the assignments given to them and also they have the facility to send a query to the teacher regarding specific topic.

III. SYSTEM DESIGN

This is the workflow diagram of the system. First the user has to register from the mobile device to the cloud server located remotely. After registration mobile user has to login with username and password. When mobile user sends its username and password then it will get encrypted using blowfish algorithm and then it will transmit to the cloud server. When password is transferring automatically IMEI number is also get transferred. At the server side, server will allow teachers to login and add study materials that can be accessed by the mobile users.

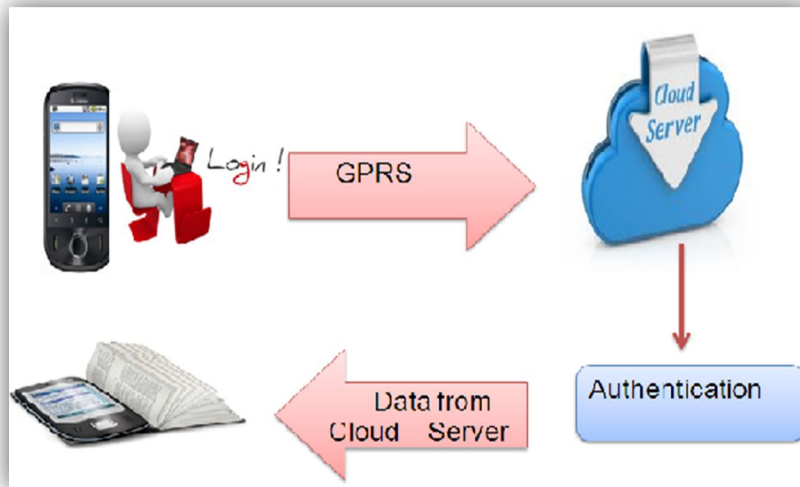
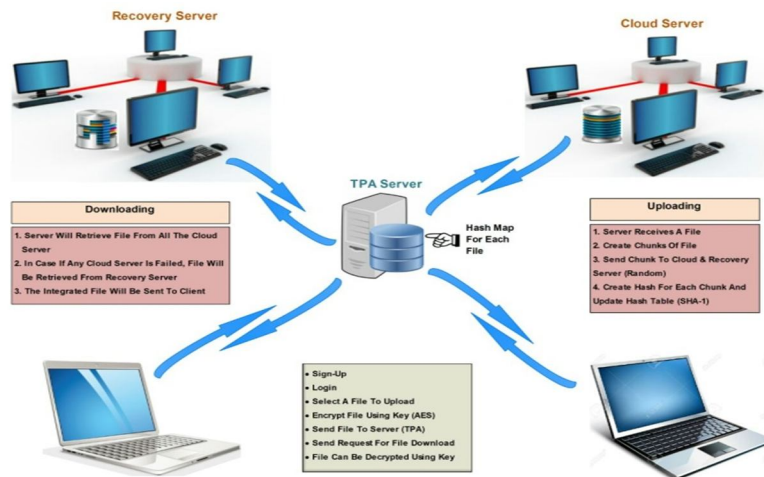


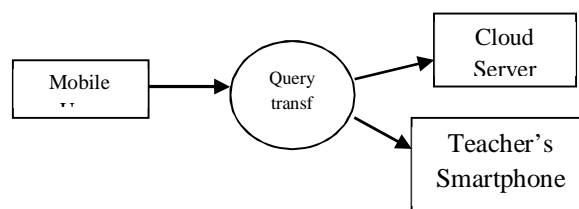
Fig.1: System Design



How Recovery Server will work??

- 1) First User has to register for cloud service provider.
- 2) Sign-in : Authentication will get performed to ensure security of data
- 3) Select file to send to the server then encrypt using AES/Blowfish and send to TPA (Third Party Authentication) Server.
- 4) TPA server receives a file, then it creates chunks of file and then sends it to cloud and recovery server as well. Create Hash for each chunk and update hash table.
- 5) TPA server will retrieve file from cloud server on student's request. When any of cloud server fails file will be recovered from any of the recovery server. Selected topic will be transferred from cloud server to mobile

Students will be able to send query related to some topic if they are not able to understand it. Query will go from mobile client to cloud server and at the same time notification will also go to the teachers mobile. When they will see the query they can answer it either from phone or from server. This implies that teachers also have flexibility to resolve the query from anywhere.



A. Encryption/ Decryption of Files

Blowfish algorithm is used for Encryption and Decryption which is symmetric Block Cipher. It takes a variable length key ranging from 32 to 448 bits making it ideal for securing data. It was designed in 1993 by Bruce Schneider. Blowfish is Feistel Network, Iterating a simple encryption function 16 times.

- 1) Using Blowfish algorithm, password and IMEI no. of user's device will get encrypted. Note that IMEI number will automatically sent with password in encrypted format.
- 2) This encrypted data will be send to cloud server
- 3) If the user is authorized, he will be granted access otherwise access will be denied.

B. Benefits of Proposed System

- 1) *Flexibility*: Mobile users (Students) have flexibility to study from anywhere they want. There is no need to sit in a classroom and attend the lectures. Similarly they can ask questions to teachers at anytime.
- 2) *Improving Data Storage*: Use of the cloud enables teachers to store large amount of educational data on the cloud server.

IV. CONCLUSION

In traditional way of learning students have to sit in a classroom and learn but using the modern approach of learning they can learn from anywhere. Information at your fingertip is the motivation. Students are allowed to fetch the data from their home. Also they can send the query to the teachers related to some topic.

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