

An efficient file system with Multi-Factor Authentication using Cryptography

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Abstract: This project concerning of both privacy and security for web-based cloud services. As sensitive data could even be stored within the cloud for sharing purpose or convenient access; and eligible users also can access the cloud system for various applications and services. We are implementing two factor authentication for the data and implementing secret key generation for each file and each file has unique secret key so no one can access the data without secret key and moreover we are adding one more module called project manager he will be allow the particular user to access the file so if user holds both the things then only they can access the file. The main objective of the project is that two implementing additional security for the files so no one access the file without admin and project manager acceptance certificate..

I. INTRODUCTION

Cloud computing can also refer to a virtual host computer system that allows enterprises to buy for, lease, sell, or distribute software and other digital resources over the online as an on- demand service and digital resources as a pay-as-you-go service over the internet. It not depends on a server or sort of machines that physically exist, because it's going to be a virtual system. There are many applications of cloud computing, like data sharing data storage, big data management medical information system etc. the advantages of web-based cloud computing services are huge, which include the convenience of accessibility, reduced costs and capital expenditures, increased operational efficiencies, scalability, flexibility and immediate time to plug.

II. EXISTING SYSTEM

In the existing system there is no file security, so any one can access the file without any permission so there may chance to steal the data.

Each data in the organization should be very important because all the file information contains project related content so many people who access the same system then the other people can able to hack the details. There is no proper monitoring system provided by administrator.

III. PROPOSED SYSTEM

We are implementing two factor authentication for the data and implementing secret key generation for each file and each file has unique secret key so no one can access the data without secret key and moreover we are adding one more module called project manager he will be allow the particular user to access the file so if user holds both the things then only they can access the file.

The main objective of the project is that two implementing additional security for the files so no one access the file without admin and project manager acceptance certificate. Since the user cannot use his secret key and trustee issued certificate to access the system. Our Application supports two factor authentications for file to allow the user to access the files.

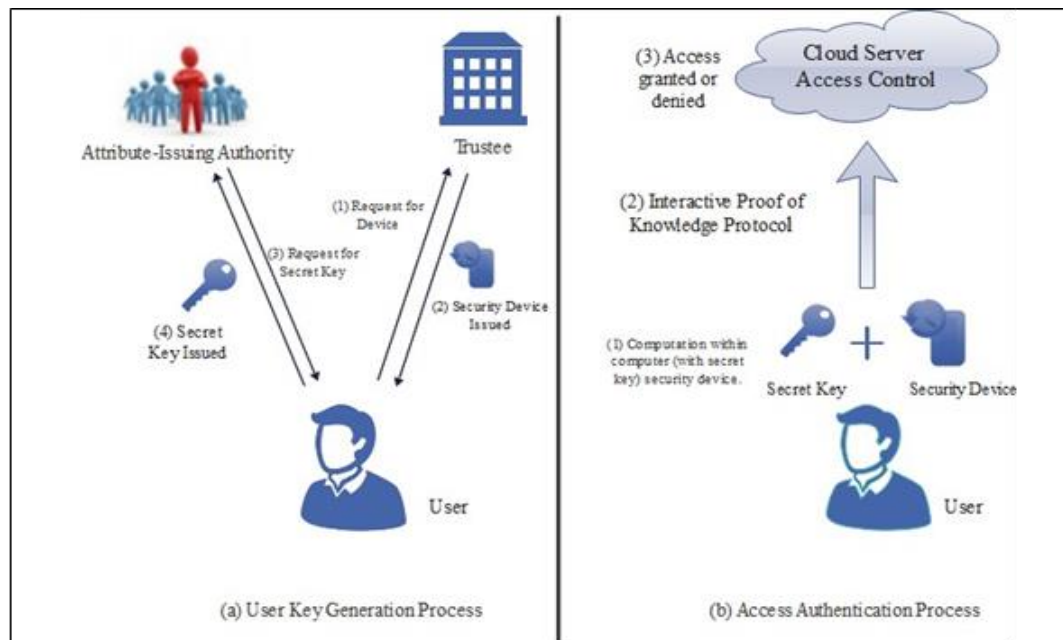


Figure. 1 Architecture Diagram

Workflow of the application

Module Description:

➤ **Module-1: USER FILE REQUESTS**

- Description: The user has to send request to trustee and authority for file download.
- Input: User will send the request for trustee and authority for file download
- Processing: Validates the user and sends the request to trustee and authority.
- Output: Request will be sent, trustee and authority can see the request of the user and added to database after getting response from both able to download file.

➤ **Module-2: TRUSTEE MANAGE USER REQUESTS**

- Input: Trustee will send the response to the valid user by granting request.
- Processing: The request will be processed by trustee
- Output: Request by the user will be granted as issued in the status and added to database

➤ **Module-3: TRUSTEE MANAGE USER REQUESTS**

- Input: Trustee will send the response to the valid user by granting request.
- Processing: The request will be processed by trustee
- Output: Request by the user will be granted as issued in the status and added to database

➤ **Module-4 : AUTHORITY MANAGE USER REQUEST**

- Input: Authority will send the response to the valid user by granting secret key to .
- Processing: Request processed by authority and in response generate secret key .
- Output: Secret key will be mailed to the user

IV. OUTCOME

Reduces the risk of a security breach drastically, and sensitive data stays protected. Besides this, an average employee has different resource accounts, and the company motivates the user to create complex and unique passwords for each of them as part of their best practices. Multi-factor authentication, or MFA, requires users to identify themselves through

multiple verification measures and credentials before granting them access to data. It provides additional security by adding protection in layers.

Sl.No	Test Case	Input	Expected Result	Actual Result	Pass/Fail
1	Check for valid mail and Password	Enter Mail and Password	Enter OTP	Enter OTP	Pass
2	Check for Invalid OTP	Enter Wrong OTP	Enter Correct OTP	Enter Correct OTP	Fail
3	Check for valid OTP	Enter Correct OTP	Login Success	Login Success	Pass
4	Wrong mail and correct password	Enter mail and password	Invalid mail	Invalid mail	Fail
5	Valid mail and Wrong password	Enter mail and password	Invalid Password	Invalid password	Fail
6	Invalid mail and password	Enter mail and password	Wrong Credentials	Wrong Credentials	Fail
7	Send Request for File	Send Request	Request Send	Request Send	Pass
8	Enter Wrong Secret to Download File	Enter Wrong Secret Key	Enter Valid Secret Key	Enter Valid Secret Key	Fail
9	Enter Secret Key to Download File	Enter Valid Secret Key	File Downloaded	File Downloaded	Pass

V. CONCLUSION

This project is mainly used to secure the file from other employees who share the same system and all of the company's files should be protected by a two-factor authentication procedure. Our project will achieve that security effectively and the file information should be very important to each organization so that only we are implementing this project with web-based computing services so that we are implementing the encryption technique for a file that is more powerful and secure because we are using the AES algorithm so that at last our project is the one that will make the file more secure.

VI.FUTURE SCOPE

This Detailed security analysis shows that the proposed System access system achieves the specified security requirements. Through performance evaluation, we demonstrated that development is possible. We leave as future work to further improve the efficiency while keeping all nice features of the system and that we will give more security to files like fingerprint matching and to enhance the trustworthiness of the files so in future we will give more security for the file and improve the efficiency of the file also.

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