

Access_Denied - Secure Personal Cloud

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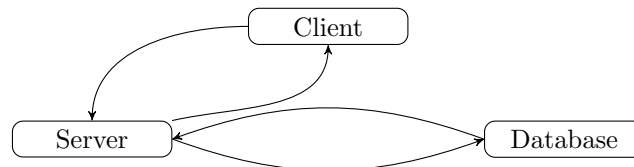
Declaration

I acknowledge and understand that plagiarism is wrong. This project is my own work, or my group's own unique group project. I acknowledge that copying someone else's work, or part of it, is wrong, and that submitting identical work to others constitutes a form of plagiarism.

1 System Architecture

1.1 Database Design

- Created a database which has two tables one for storing the details of the uploaded file along with it's owner and the other for storing files.
- The files uploaded are stored in the database as BLOBS and are organised according to the owners of the file using django-db-file-storage app of django.



1.2 Servers and Clients

- Implemented the linux client in python which can interact with the spc server.
- Facilitated storage of username and password in the client's computer which can be changed by the command **spc config edit**.
- Developed a web client where the user can signup, login and view his uploaded files using Django.
- Also facilitates the user to upload multiple files or a folder in web client

1.3 Users

- Users are able to interact with the spc system with the help of command line tool named spc
- Users can refer to a self implemented man page for spc stating all commands and their meanings with a few examples which can be accessed using man spc

1.4 Synchronization

- Implemented sync command with a directory argument which shows the user the difference between the directory in local and in cloud
- It also features sync option which asks the user what to do specifically with the observed directory
- Facilitated synchronization across multiple clients and dealt with race conditions.

1.5 Encryption

- Users are provided with AES encryption of files.
- Stores only encrypted data in the database.
- Files are uploaded by encrypting them first in client's device
- When files are downloaded, the files are first decrypted using the key provided by user in javascript and are then downloaded

Github Project : <https://git.cse.iitb.ac.in/ramprasatk/secure-personal-cloud>

References

- [1] *Inspired from Google*, available at <http://google.co.in>
[2] File storage in database as BLOBS from <https://django-db-file-storage.readthedocs.io/en/master/>
[3] Login and signup pages from <http://wsvincent.com>