

Cloud Computing Capability-Based System Security Access Mechanism

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Motivation

Lately, computer industry offers to costumers many ways to storage their data online. Although the large number of people are using those services, the security system architecture has not grown at the same rate as the number of users are increasing. It is, therefore, questionable how safe are files at clouds.

One alternative architectural structure of storage security is capability-based system, which consists in giving a user the rights based in a unique object identifier. In the case of this project, the capability file is storage in a specific server, not the cloud, and this file has all operations that the each user can do.

The Current Goal

To meet the demand of security on cloud computing, our research uses google drive to store all files of our clients and the server that runs our application on top of it and protects users' files.

Initially the user selects the file that it wants to read, modify or delete, and right after that, the application checks the permission of the user. However, depending on the permission that the user has, the selected file can be manipulated. This way the server controls based on the capability-file all permissions that users have, for each file stored on google drive.

Technology Security Problem

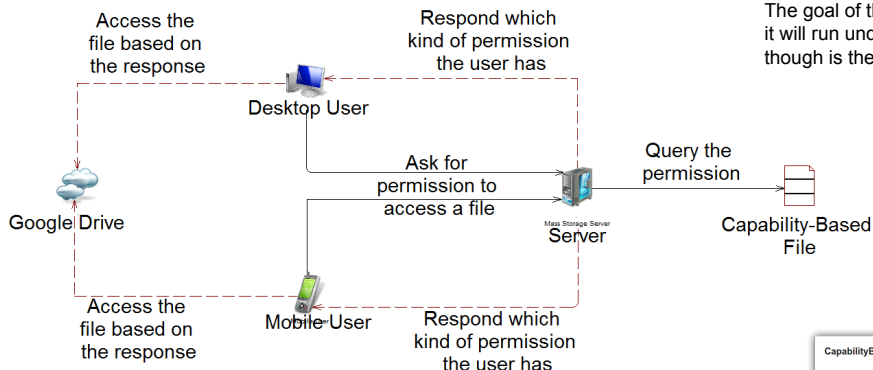
Initially the solution that came up was putting the capability-based file on google drive, in case to use the max of the google services. However, the problem that came up was that we did not have the total control of the file, and if somebody accessed the account that had the file, it would corrupt the whole point of having the capability-based system. Instead, we decided to put the file in our server running by the side of the developed application.

Application

The Application, developed in Java with Google Drive API, is capable to download and open any file from the cloud and change the capability-based file from the server. From now, it is just a desktop application running in a laptop, that limit the system propose, which should be embracing. Although it is not running in a server, it can be easily adapted to be a big accessed software.

Future Work

After the smartphone boom, applications are also developed for mobiles. To reach this market; this application can be developed for phones as well. The goal of the mobile project is the same as the desktop application, and it will run under the same capability-based software. The only difference though is the flexibility that the user will have.



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