CS4032 - Distributed File System - Report

Killian Davitt - 13319024

January 26, 2017

Contents

1 General Overview

2 Authentication & Security

Security and authentication of the different services was mostly done using x509 certificates and RSA keypairs. This allowed for an incredibly robust security, but only required initially authenticating once per server. A fully configured x509 security system requires minimal effort to use after initial configuration.

3 Replication

A Gossip like system was implemented

4 Caching

Files are cached on the client side based on the hash. A client can ask a file server for the most recent file hash. If the hash is different to the one of the file stored locally, the cache is considered to be stale and the latest file is pulled from the file server

5 Locking

An advisory locking system was implemented using the lock service application. The lock service accepts requests from clients to lock a file. The lock service then records locally that the file was locked by a user a. If another client b attempts to lock the file the lock service will see that the file is already locked and will inform the user of such.

6 Transactions