

lecture_notes

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1 Distro File System

2 Features we want:

- Login
- Open

- Close
- Read
- Write

3 It does not matter how our dfs is implemented or designed, as long as it implements the above features and is reasonable

4 There are 2 main models of distributed file system

4.1 NFS Model

- Smart Proxy
- Just forward all the requests
- Read ops on a file immediately pushed to server
- Write ops immediately pushed to server
- And so on. . . .

4.2 AFS Model

- Open and Close go across network
- Read and Write don't
- Caching strategy
- Cache locally, modify and push file when done
- Possibility for files to go out of sync - think github merge
- Whoever writes back their file first overwrites the server version
- This is called session semantics.

4.3 The session problem also occurs in NFS

- However, systems where this happens should more likely be using a database, not a distro file system

4.4 Why do people use afs?

- Designed for larger userbases
- The idea is that most people will not modify the files, but they will want to read them.
- (Think .exe's and such)
- Better use of caching, much less bandwidth use than NFS

5 Our DFS

- Think of AFS and NFS as two extremes in the spectrum of distributed file systems
- Either full caching or no caching
- "A good dfs will fall somewhere between these"
- This is a choice we will make for our own filesystems
- Maybe changes get pushed in time intervals, push new data every 2 minutes?

6 directory Server

- A directory server is a server in the distributed file system that stores the actual location of all the files, across all the servers
- A user asks the directory server for a file and it transparently retrieves it from wherever it is

7 Locking

- We could introduce a locking server
- We could also leave this to the individual file servers to manage their own locks
- "Normal strategy" is to put the locking for all the files in the one service

8 Authentication

- Authentication server
- A user logs in to the authentication server
- How do we let all the other servers know that the user has authenticated
- MORE to come here!% Created 2016-11-14 Mon 11:48