

Hjemmeeksamen 1 – INF 5510

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Analyse av NoPester

Programmet består hovedsakelig av en klient-del og en server-del. Klientdelen må initialiseres med server som parameter.

FilObjektene som blir registrert på server er en minimal versjon av filene som ligger hos klientene. Bare filnavn og hash ligger på server.

LNN er tatt i bruk som identifikator for nodene, da denne verdien er unik. Dette gjør det lett å fjerne noder vha å bruke en map-datastruktur.

Server tilbyr to funksjoner til peers, en liste over filer, og en liste over hvilke klienter som har en spesiell fil.

Alle noder som har registrert en fil på serveren blir lagt til i en liste. Serveren sjekker hvert sekund om noen av nodene har gått ned. Nodene selv har også en failsafe hvis de skulle forespørre en fil fra en node som har gått ned.

Hash-funksjonen er lagt i ett eget objekt slik at denne raskt kan byttes ut hvis den finnes utilstrekkelig.

Filer identifiseres med både filnavn og en hash av innholdet, derfor er det mindre sjanse for kollisjoner.

Når filer skal overføres mellom peers, så er det peeren som har filen som initierer move-kommandoen til noden som forespør filen.

Testeksempel.

peer 0 har fil 1+2
peer 1 har fil 3+4
peer 2 har fil 5+6
peer 3 har fil 7+8
peer 4 har fil 9+10

peer 0 kopierer fil 7
peer 1 kopierer fil 5
peer 2 kopierer fil 10

peer 3 kopierer fil 3,5,9
peer 4 sletter fil 10

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Terminal — emx — 122x81
Registering file file 1 from client located at node no.1138984924
File does not exist on server
Registering file file 2 from client located at node no.1138984924
File does not exist on server
Registering file file 3 from client located at node no.1155767471
File does not exist on server
Registering file file 4 from client located at node no.1155767471
File does not exist on server
Registering file file 5 from client located at node no.1172544597
File does not exist on server
Registering file file 6 from client located at node no.1172544597
File does not exist on server
Registering file file 7 from client located at node no.1189335816
File does not exist on server
Registering file file 8 from client located at node no.1189335816
File does not exist on server
Registering file file 9 from client located at node no.1286859488
File does not exist on server
Registering file file 10 from client located at node no.1286859488
File does not exist on server
Registering file file 7 from client located at node no.1138984924
File does exist on server
Registering file file 5 from client located at node no.1155767471
File does exist on server
Registering file file 10 from client located at node no.1189335816
File does exist on server
Registering file file 3 from client located at node no.1189335816
File does exist on server
Registering file file 5 from client located at node no.1189335816
File does exist on server
Removing file file 10 hosted at node 1286859488 from server.
State for server
10 files in database.
Filename: file 1
Clients:
Client number1138984924

Filename: file 2
Clients:
Client number1138984924

Filename: file 3
Clients:
Client number1155767471
Client number1189335816

Filename: file 4
Clients:
Client number1155767471

Filename: file 5
Clients:
Client number1172544597
Client number1155767471
Client number1189335816

Filename: file 6
Clients:
Client number1172544597

Filename: file 7
Clients:
Client number1189335816
Client number1138984924

Filename: file 8
Clients:
Client number1189335816

Filename: file 9
Clients:
Client number1286859488
Client number1189335816

Filename: file 10
Clients:
Client number1189335816
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Terminal — emx — 81x5
Emerald listening on port 17379 43e3, epoch 34788 87dc
Here be node number #1 with LNN 1138984924
retrieving file 7 from client 1189335816

Terminal — emx — 79x6
Emerald listening on port 17635 44e3, epoch 40111 9caf
Here be node number #2 with LNN 1155767471
retrieving file 5 from client 1172544597
Transferring file 3 to 1189335816

Terminal — emx — 79x5
Emerald listening on port 17891 45e3, epoch 40021 9c55
Here be node number #3 with LNN 1172544597
Transferring file 5 to 1155767471
Transferring file 5 to 1189335816

Terminal — emx — 79x8
Emerald listening on port 18147 46e3, epoch 54024 d308
Here be node number #4 with LNN 1189335816
Transferring file 7 to 1138984924
retrieving file 10 from client 1286859488
retrieving file 3 from client 1155767471
retrieving file 5 from client 1172544597
retrieving file 9 from client 1286859488

Terminal — emx — 80x6
Emerald listening on port 18403 47e3, epoch 392 188
Here be node number #5 with LNN 1286859488
Transferring file 10 to 1189335816
Transferring file 9 to 1189335816
Deleting file file 10 from client
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