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Part 2 Project Progress Report

Friend search for distributed social networks

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Work that has been done

In my proposal I listed 4 main tasks, They were:

1. Implement the distributed hash tables Chord, Pastry and Kademilia in Erlang
2. Implement test infrastructure to manage the nodes and evaluate the differences in the performance of the different distributed hash tables
3. Setup a linux image for the virtual machines used for testing my distributed hash table implementations
4. Develop a front end and a search server to perform searches across the distributed hash tables

At this point I have done the following:

1. I have implemented the distributed hash tables Chord and Pastry in Erlang.
2. I have mostly finished the test infrastructure. Code that allows me to run the experiments I have designed across my distributed hash table networks still needs to be completed. The experiments themselves have been designed and logging infrastructure that allows me to collect metrics from the nodes is in place.
3. As I am running my tests on PlanetLab, I can't control the Linux images of the virtual machines I am using. Step 3 is therefore no longer relevant.
4. I have finished developing a web front end and a search server that is using the distributed hash tables to locate structures containing information about the person you are searching for, stored in the distributed hash table networks.

So far the distributed hash tables have been run across 97 physical machines each running several nodes. It works quite well.

The project is on schedule, and I have completed most tasks up until the second half of Lent term.

Change from the original plan

It was decided that Kademilia, the third distributed hash table, would not be implemented at this time and that – since we already have two distributed hash table implementations – the comparative evaluation does not suffer.