Exercise No. 12

Peer-To-Peer Networks

Summer 2010

Exercise 1  *Constant hop lookup*

Kelips performs a lookup in only two hops, but needs $O(\sqrt{n})$ pointers. Outline a system that requires only $O(\sqrt[3]{n})$ pointers for a three hop lookup!

Exercise 2  *Rumor spreading*

Implement a simulation of rumor spreading for the random call model that uses push, pull, and push&pull. Simulate 10, 100, 1000, and 10000 nodes and give the diagram showing the ratio of infected nodes over the time (e.g. as an ASCII chart).