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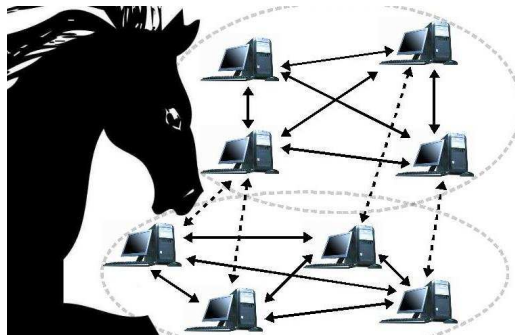
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Diploma/Master's Thesis “Implementing eQuus, A Robust P2P System”

Peer-to-peer (p2p) systems are highly dynamic in nature. They may consist of millions of peers joining only for a limited period of time, resulting in hundreds of join and leave events per second. We developed *eQuus*, a novel distributed hash table (DHT) which inherently exhibits a strong resilience to both *churn*¹ and peer failures. Most communication triggered by the maintenance protocols is local in nature, thus maintenance operations can be performed quickly and not much wide-area traffic is induced.

eQuus further guarantees that lookups are always fast—in terms of both the delay and the total number of routing hops—, although peers may join and leave the network at any time and concurrently. It is therefore a suitable network overlay for large and highly dynamic networks.



The goal of this thesis is to implement the eQuus system. Once the basic joining, routing and maintenance mechanisms are implemented, the focus will be shifted to the higher layers, namely the publishing and retrieving of content within the system. This work will also include a study of the performance of the system, presumably using PlanetLab², a worldwide testbed for distributed applications.

Requirements Good (!) programming skills and interest in (and basic knowledge of) p2p computing.

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¹In p2p lingo, the fast and permanent joining and leaving of peers is called churn.

²<http://www.planet-lab.org/>