José Rufino

Título: **pDomus - A Prototype for Cluster-oriented DHTs**

Resumo:

The Domus architecture for Distributed Hash Tables (DHTs) is specially designed to support the concurrent deployment of multiple and heterogeneous DHTs, in a dynamic shared-all cluster environment. The execution model is compatible with the simultaneous access of several distributed/parallel client applications to the same or different running DHTs. Support to distributed routing and storage is dynamically configurable per node, as a function of applications requirements, node base resources and the overall cluster communication, memory and storage usage.

pDomus is a prototype of Domus that creates an environment where to evaluate the model embedded concepts and planned features. We present a series of experiments conduced to obtain figures of merit i) for the performance of basic dictionary operations, and ii) for the storage overhead resulting from several storage technologies. We also formulate a ranking formula that takes into account access patterns of clients to DHTs, to objectively select the most adequate storage technology, as a valuable metric for a wide range of application scenarios. Finally, we also evaluate client applications and services scalability, for typical dictionary operations, with several lookup methods and storage technologies. The evaluation also involves a comparison with a database and a P2P-oriented DHT platform. Results of the overall evaluation are promising and a motivation for further work.