

# Building a low-latency, proximity-aware DHT-based P2P network

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**Abstract:** DHT-based P2P networks have a problem of topology mismatch which causes high latency for message routing. This paper focuses on improving the latency of routing process for Chord, which is a typical DHT-based P2P network protocol. We propose a simple method to build a Chord network based on the proximity of nodes in the underlying physical network. The idea of our method is the combination of two techniques: identifier selection in node joining phase and neighbor selection in network stabilization phase, both are performed based on physical network latency. We have evaluated our proposed solution by simulations. In a simulation network with 4096 nodes, the average latency of routing process in our method can reduce 30% comparing with the conventional Chord routing method. © 2009 IEEE.

**Author Keywords:** Chord; DHT; Low latency; Proximity-aware

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