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P2P网络中基于DHT的自适应Chord风险模型

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摘要 针对Chord模型在节点加入或离开时产生大量消息，不适用于动态网络的问题，提出一种基于分布式哈希表（Distribute Hash Table，DHT）的自适应Chord模型，即Self-adaptive Chord。方法是该模型在节点加入或离开的时候暂不考虑整个网络逻辑拓扑的一致性，只简单更新其前驱节点和后继节点的路由表，而在节点转发消息时动态地调整各节点路由表，使得网络逻辑拓扑动态地趋向于一致。通过实验对比评估了自适应Chord和Chord性能，结果表明自适应Chord能有效降低由于网络动荡引发的消息数量，同时基本保留了Chord的高效率查询。结论为自适应Chord提供了一种在节点动荡频繁的环境下的候选解决方案。

关键词 分布式哈希表 自适应Chord 动态网络 网格计算 对等计算
分类号

Self-adaptive Chord risk model based on DHT for Peer-to-Peer networks

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Abstract
This study’s objective is to solve the problem that the Chord model is not appropriate for dynamic network as it brings large numbers of messages.A self-adaptive Chord based on DHT（Distribute Hash Table） is proposed.When node join or leave，it does not maintain consistency of entire network’s logic topology，but only update routing table of node’s predecessor and successor.Besides，nodes update their routing table when they transmit messages.Therefore logic topology of entire network tends to a consistent state.The experimental results show that self-adaptive Chord both evidently lessen messages caused by node join or leave，and basically reserve efficient search performance which is close to Chord.The conclusion indicates that model could provide a candidate solution of ad hoc P2P network with high churn rate.

Key words Distribute Hash Table（DHT） self-adaptive Chord dynamic network grid computing Peer-to-Peer（P2P） computing

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