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基于IPv6地址聚类特性的Chord协议改进方法

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摘要 从IPv6地址的层次分配所体现出的网络聚类特性出发，创造性地提出了分段构造节点标识符的思想，将节点标识符分成两部分，分别通过哈希IP地址的前缀和剩余部分来获得，使具有相同标识符前缀的节点被映射到邻近逻辑空间中，实现了逻辑网络和物理网络的有效吻合，进而在Chord协议基础上巧妙地设计了改进系统Chord6。从仿真分析结果可以看出，Chord6的寻路性能较Chord有了显著的改善。

关键词 IPv6协议 P2P 分布式哈希表 Chord协议

分类号

Improved method of Chord protocol based on IPv6 addresses aggregation characteristics

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Abstract

Exploiting the network aggregation characteristics exhibited from assignment of IPv6 addresses，we propose a novel method to divide node identifiers into two segments that can be acquired separately from the prefix of hash IP address and the rest of the address.We extract topology information from IPv6 address prefixes and design a smart scheme to exploit the IPv6 address hierarchical feature，so as to construct an efficient version of Chord dubbed Chord6.Simulation results show that our method can significantly reduce inter-domain traffic that may cause the long routing latency.

Key words IPv6 P2P Distributed Hash Table（DHT） Chord protocol

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