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PeerRank:一种无结构P2P资源发现策略

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Abstract
One of the essential problems in P2P is the strategy for resource discovery. Related methods in unstructured P2P either depend on the flooding and its variations or utilize various indices, which results in too much overhead to forward messages or too expensive cost to maintain the indices. An adaptive, bandwidth-efficient and easily maintained search algorithm for unstructured P2P systems, PeerRank, is presented. The scheme utilizes the feedback from previous searches to probabilistically guide future ones. In addition, an effective caching and indexing mechanism is introduced, which remarkably enforces the search performance. The final simulation experiment shows that the strategy can remarkably improve the search efficiency with the small average path length, high success rates, very low bandwidth consumption, and the eminent adaptability to the change of hot resources..

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摘要
资源发现是P2P应用所面临的最核心问题之一.相关的无结构P2P系统主要采用了查询消息泛洪和信息索引机制,这会造成严重的网络带宽负担以及巨大的索引维护开销.给出了一种无结构P2P环境下能够节约带宽、容易维护的自适应搜索策略PeerRank.PeerRank依据用户结点命中查询的历史信息赋予结点相应权值作为查询消息路由的依据,引导查询快速接近目标资源.自适应缓存机制和索引机制的引入使搜索性能大为加强.最后的实验表明,附带自适应缓存和索引的PeerRank以其高搜索成功率、多副本发现和很短的时间响应,能够显著地提高资源发现性能.

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