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论文

提供可靠服务的P2P流媒体点播系统

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摘要
针对P2P流媒体点播的稳定性和可靠性问题，该文提出一种基于节点可靠度和服务质量评价的点播系统结构RP2MoD。节点根据父节点的失效概率计算自身可靠度，并在点播时对父节点的服务质量作评价。父节点的选择、媒体数据的分配策略以及容错和恢复处理均以此为基础。理论分析和仿真表明，系统具有较强的容错能力，能提供稳定可靠的点播服务，而增加的可靠度和服务质量的相关操作对系统性能影响甚微。

关键词 流媒体点播 P2P 可靠度 服务质量等级

分类号

A P2P Media-on-Demand Architecture Supporting Reliable Service

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Abstract
Reliability and stability are essential to Media-on-Demand (MoD) system. Based on the node reliability and QoS assessment, a Peer-to-peer MoD architecture (RP2MoD) is proposed in this paper. In the proposed system, the reliable degree of each client is calculated based on the failure probability of its parents, and the QoS level of its parents is also assessed. The reliability degree and QoS level are the basis of MoD operations, such as the parent selection, the allocation strategy of the requested media data and the error resilience. Analytical and experimental results about the system performance show that the operations relative to the reliability degree and QoS level have little effect on the performance of the proposed system and result in a strong ability of fault tolerance. Thus the system can provide large-scale, steady and reliable MoD service in Internet.

Key words Mmedia-on-Demand (MoD) Peer-to-Peer (P2P) Reliable Degree (RD) Quality of Service Level (QoSL)

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