

工程与应用

OXVoD: 一个基于分层结构的P2P视频点播系统

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摘要 可扩展性和高播放连续度是视频点播系统大规模应用的关键。提出了一个分层结构的P2P点播系统, 融合了Distributed Hash Table (DHT) 的精确高效和Gossip协议的简单实用。该系统上层结点为下层结点提供下载服务, 有效均衡负载。提出了一种数据调度策略, 通过在基于Gossip协议数据可用信息交互过程中添加少量本地信息, 帮助下载者选择最优下载源, 提高系统播放连续度。仿真实验表明, OXVoD可以在服务器负载稳定的情况下, 保证99%以上的结点正常加入系统, 并获得96%以上的播放连续度。

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OXVoD: A video-on-demand system based on P2P delamination structure

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Abstract

Expansibility and high degree of playing continuity are key points to large-scale application of video-on-demand system. This dissertation presents a P2P video-on-demand system based on a delamination structure. It combines the accuracy and efficiency of the DHT (Distributed Hash Table) with the simple practicability of the Gossip protocol. The superstratum nodes of this system offer downloading services to the substrate nodes, through which it leads to loading equilibrium. This paper also presents a data downloading strategy, it can help nodes find the optimal download resource and finally enhance the playing continuity of the system by adding a small amount of local information to the information exchange process which based on Gossip protocol. The emulation experiments show that OXVoD can ensure more than 99% of nodes joining the system normally and obtain a playing continuity more than 96% on the condition that server load is stable.

Key words [P2P](#) [video on demand](#) [Gossip protocol](#) [Distributed Hash Table \(DHT\)](#)

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