Tracker Assisted Peer Scheduling Strategy in Multi-channel P2P VoD Streaming

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Abstract

Peer-to-Peer Video-on-Demand (VoD) is a capable solution which offers thousands of videos to millions of users with complete interactive watching. Most of the commercial P2P streaming deployments PPLive, PPStream, UUSee have introduced a multi-channel P2P VoD system that allows user to view more than one channel at a time. Recent research studies have proposed a cross channel resource sharing algorithms to utilize the individual peer resources effectively, including bandwidth and cache capacity by enabling cross-channel cooperation among multiple channels. However, current multiple channel P2P VoD system deliver a video at a low streaming rate due to the channel resource imbalance and channel churn. In order to improve the streaming capacity, this paper proposes different effective helpers based resource balancing scheme that actively identifies the supply-and-demand imbalance in multiple channels. Furthermore, peers in a surplus channel serve its unused bandwidth resources to peers in a deficit channel that minimizes the server bandwidth consumption. This approach proposes a tracker assisted peer scheduling policy that effectively schedules the different chunks within each video in the process of fetching and serving chunks without impairing the
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streaming quality. Experimental evaluation shows that the proposed tracker assisted scheduling strategy achieves high streaming capacity under reduced server workload and improves streaming quality when compared to existing algorithms.

References


Index Terms

Computer Science  Signal Processing

Keywords

Cross channel cooperation, Tracker assisted peer scheduling policy.