Abstract

Live media services in mobile environments are fetching more essential with the explosion of technologies. Live Media streaming, in particular, is a promising technology for providing services such as live news clips, live sports. To avoid service interruption when the users keep moving, proper data management strategies must be engaged. In an earlier paper, the ideas and benefits of two-level cooperative media streaming with headlight pre-fetching and dynamic chaining were demonstrated and they using static bit rate delivery. In this paper, we propose the QoS-based dynamic adaptation techniques for the flexible employment and smooth integration of headlight pre-fetching and dynamic chaining to continuously provide quality streaming services to mobile users. And also it provides Variable bit rate delivery. We propose a new mechanism Upload Cache in Edge Networks brings benefit for both end users and service providers. For end users, it shortens the duration while user must stay online for uploading their generated content. Also for service providers, it reduces peak traffic volume between edge networks and data centers by slightly shifting the upload timing without incurring much extra latency overhead added. Our analysis with replaying the captured traffic shows that this mechanism reduces upload tether time of 24% end users by more than half and flattens the traffic peak for the access service provider by 37%. To avoid disconnection and/or service breakdown when the users keep moving, proper data management strategies must be taken by
all parties. We propose a two level framework and a set of new techniques for cooperative media streaming in mobile environments.

References


Index Terms

Computer Science
Multimedia
Keywords
QoS-aware adaptation  variable bit rate  caching system  traffic shaping