Optimization of Video Streaming through Bufferbloat Mitigation using Hybrid FQ-CoDel Algorithm

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Abstract

The major traffic in today’s internet is entirely filled with video data with increased use of Video on-Demand systems. Quality Of internet video has a great impact on user engagement. Video encoding and streaming over wireless networks become a big concern. Real time video service requires low end-to-end delay and the major concern is to reduce the queuing delay which has high impact on the video quality. Bufferbloat is one of the main reasons for experiencing high queue latency at the intermediate nodes. Optimization of buffer size in the network nodes is never practiced, though several AQM were used for reducing the queue latency. In this work, Hybrid FQ-CoDel mechanism is proposed which is the combination of both CoDel and Adaptive CoDel AQM mechanism with fair queuing for the reduction of queuing delay and to optimize video transmission. Here the Adaptive CoDel is targeted for video traffic data and on the other hand the CoDel is used for other low traffic network flow. The mechanisms of network classifier and the scheduler is used to achieve fairness in the network queuing. Hybrid FQ-CoDel is used for effective reduction of the queuing delay and to increase the network bandwidth utilization for video streams which will result in better quality of video.
References


Index Terms

Computer Science Algorithms

Keywords

Bufferbloat, CoDel, Adaptive CoDel, Queuing Delay.