AN EFFECTIVE ADAPTIVE MEDIA PLAY-OUT ALGORITHM FOR REAL-TIME VIDEO STREAMING OVER PACKET NETWORKS

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ABSTRACT

The increasing demand to deliver rich multimedia content over the network has made video streaming an interesting area of research. Consequently, developments in protocols, communication and network infrastructure technologies have continued to change the concept of video streaming. However, there are a number of challenges that affect video streaming over packet networks (eg. the internet) such as bandwidth, jitter, packet losses, as well as how to efficiently perform multicast communication for multimedia content. In this paper, we propose an Adaptive Media Play-out (AMP) algorithm and model to reliably transmit packets, while reducing jitter and packet losses when streaming video in real time. The proposed AMP algorithm and model enables a valuable trade-off between the quality of service parameters and received video quality. Through simulation experiments, the performance of the AMP has been compared with the existing and conventional technique of buffering. On the basis of this study, it has been found that the AMP algorithm outperforms buffering to a large extent, in terms of buffer size, jitter, packet losses, and received video quality.

Keywords: Video streaming, AMP algorithm, Packet losses, Jitter.