Video Transport Improvement over MANET*

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Abstract

Real-time multimedia transport over MANET has stringent bandwidth, delay, and loss requirements. It is a great challenge to support such applications in wireless ad hoc networks, which are characterized by frequent link failures, congestion, and lack of central administration.

In this paper, via a simulation study, we study the performance of video streaming under different Routing protocols and video coding. Our studies have shown that AODV Routing Protocol with H.264 perform well in terms of video transport, but have unacceptable performance with aditional data sessions.

We analyzed and evaluated Quality of Service (QoS) extensions to the 802.11 MAC Protocol, like Packet Priority queuing used in 802.11e to serve different types of traffic.

We improved this mechanism to meet the demands of video transport. The proposed method gives the highest priority to video and voice packets. The results show that the proposed algorithm has improved the performance of video transport over MANET (reducing Delay 50% and improving PSNR with 12 %).

Keywords: Video Transport, QoS, MANET, Routing Protocols, Video Coding.

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