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Analyzing Online Game Traffic in Hybrid Mobile Ad Hoc Wireless Networks with/without Packet Aggregation

Computer Science
D-level thesis

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Abstract

Today's internet traffic significantly consists of network game traffic. This type of traffic is interesting with respect to its market potential and real-time requirements over network. This kind of traffic has completely different requirements as compared to the classical services therefore some optimizations are required to improve performance. In this thesis study, Quake3 game is studied in a MANET, which is a highly interactive online first person shooter game. These types of games require a minimum quality of service from network since they are fast paced and require quick user response. MANET is a network consisting of two or more mobile nodes connected wirelessly without any network centralized infrastructure. It is connected to external internet by the help of mobile nodes that act as gateways. Such a network is known as hybrid MANET. Providing better quality of service for games like Quake3 over MANET is quite challenging that requires some optimizations. In this paper, Quake3 game traffic is aggregated and then sent over internet connected wireless network. The basic goal of this thesis is to evaluate the performance of Quake3 over hybrid MANET with packet aggregation and no-aggregation. This is achieved by performing simulations in Network Simulator 2 (2.26). The results obtained suggest that packet aggregation showed better results for improving game performance in hybrid MANET.