

ABSTRACT

An ad hoc network is a collection of wireless mobile host forming a temporary network without the aid of any established infrastructure or centralized administration that has dynamic topologies characteristics. The node in an ad hoc network can consist of Personal Digital Assistants (PDA) and laptops and are often very limited in resource such as CPU capacity, memory capacity, battery power, and bandwidth.

Simulation modeling of computer networks is an effective technique for evaluating the performance of networks protocol. A fundamental component of a packet level networks simulation is the traffic source model. Accurate modeling of the traffic source is the first step to optimizing very limited resource allocation.

This final assignment simulate how routing mechanism in wireless ad hoc network based on 802.11 wireless LAN which using DSR protocol that have different characteristic both mobility and scalability. The key feature of DSR is the use of source routing that the sender knows the complete hop-by-hop route to the destination. The data packets carry the source route in the packets header.

The final assignment also analyzing the effect of traffic source model on DSR protocol by comparing three kinds traffic sources model including CBR, Exponential and Pareto. This caused at most simulation which have been done previously, traffic source used only CBR model, even though this model is not valid for many types of transactions on ad hoc networks.

Simulation result show that the traffic model has a direct effect on the DSR performance. DSR perform for each traffic model decrease when mobility is high. Throughput of DSR protocol is best if CBR traffic modeling is used, nevertheless CBR is worse in the case of delay and PDR especially when mobility is high. Modeling traffic by using of Pareto traffic source, giving best performance when network condition is busy or when mobility and number of node growing larger.