

An Energy Consumption Evaluation of Reactive and Proactive Routing Protocols in Mobile Ad-hoc Network

In Mobile Ad-hoc NETWORK (MANET) each node has the possibility to move freely in the space and communicate with each other over wireless link without any centralized controller or base station. These characteristics makes MANET useful and practical in several fields like military scenarios, sensor networks, Rescue operations, students on campus, etc. but this kind of network still suffers from a number of problems, power consumption is one of the most crucial design concerns in Mobile Ad-hoc networks as the nodes in MANET have battery limited. In this paper, we will discuss about the aspect of energy consumption in MANET's routing protocols. A performance comparison of four routing protocols Dynamic Source Routing (DSR), Ad hoc On-Demand Distance Vector (AODV), Destination-Sequenced Distance Vector (DSDV) and Optimized Link State Routing (OLSR) with respect to average energy consumption are explained thoroughly. Then, an evaluation of how the varying parameters of network in diverse scenarios affect the power consumption in these four protocols is discussed. A detailed simulation model using Network Simulator 2 (NS2) with different mobility and traffic models is used to study their energy consumption.