

ABSTRACT

Mobile ad hoc network (MANET) is a wireless network that has a set of nodes without fixed infrastructure. Networks of this type are commonly used in areas with isolated environments such as disaster areas or in the rescue operation. The most important limitations on an ad hoc system is the availability of power. Therefore, appropriate routing protocols are needed to efficiently power the limited availability.

MANET routing protocols that analyzed is AODV, DSDV and DSR. Where the DSR and AODV included in reactive protocols, while DSDV is one proactive protocol. In analyzing the large energy consumption of three routing protocols in use, it takes a simulator that supports various types of routing protocols in MANET, simulator NS-2 is used. The simulation uses several scenarios that the condition of 20 nodes, 40 nodes and 80 nodes in dynamic node and static node.

This final project analyzes the performance of the three routing protocols. The parameters to be analyzed and compared are the energy consumption, throughput, packet loss ratio and packet delivery ratio. In choosing the best routing protocol, these parameters are very important role.

The simulation result shows that the routing protocol DSDV is the minimum in energy consumption with dynamic topology conditions. In 20 node condition, average energy consumption in DSDV is 524,63 Joule, meanwhile in AODV and DSR are 538,99 Joule and 547,39 Joule. In the packet delivery ratio, its value decreases according to many nodes are used in the network, the most stable routing protocol for PDR is AODV as well as the throughput. On packet loss ratio, the DSR protocol is the most significant increase in PLR especially in 80 node condition.

Keyword: MANET, NS2, DSDV, DSR, AODV, energy consumption, throughput, packet lost ratio, packet delivery ratio