

ABSTRACT

MANET (Mobile Adhoc Network) is a wireless adhoc network where each nodes free to move independently without requiring a fixed infrastructure. There will be setting up and termination of inter-link in a network or with other networks. Therefore each node must have a routing function to connect with other nodes to send packet from source to destination.

Various protocols are developed for MANET implementation. Mainly, MANET protocol is divided into two, namely table-driven (proactive) and on-demand (reactive) protocol. In table-driven protocol, routing tables are periodically updated. While the on-demand protocols, route discovery processed are performed only when the data transmission will be performed. Routing protocols of these type has both advantages and disadvantages of each. Therefore, needs to be done a performance comparison between the two types of this protocol.

In this final task used Dynamic Source Routing protocol (DSR) and Optimized Link State Routing (OLSR) which represents the type of protocol on-demand and table-driven respectively. The two protocols were selected because it is a widely used protocol for Manet. The scenario used is the network conditions during the addition of the number of nodes, increasing the number of connections, and increasing the speed. The parameters measured are delay, packet delivery ratio, and throughput.

In the cases where the number of network nodes increases from 30 to 110 nodes, DSR produces better performance than OLSR with range of delay, throughput, and the PDR values between 0,04-2,86 s, 5,38-286,76 kbps, and 19,80-100%. For conditions where the connection is increased from 5-25 connections, the average delay generated by OLSR better than DSR with a range 1,38-5,43 s, while for the throughput and PDR, DSR is better for 5-20 connections with the range 0,53-25,50 kbps, and for the PDR 0,04-99,03%. In circumstances where a network node speed increases from 10-12 m/s up to 20-22 m/s, with an FTP application, DSR provides delay, throughput, and the average PDR better than OLSR with the range of values 0.01-4, 52 s, 6,69-268,39 kbps, and 0,16-14,76% respectively.

Keyword : MANET, DSR, OLSR, Adhoc