ABSTRAK

Mobile ad hoc network (MANET) adalah sebuah jaringan *wireless* yang tidak memerlukan infrastruktur dalam pembentukannya. Jaringan ini bersifat dinamis dan juga spontan. Jaringan ini memiliki beberapa protokol routing, salah satunya adalah protokol DSR (*Dynamic Source Routing*). Protokol DSR termasuk *On Demand Routing Protocol* (*Reactive Routing Protocol*). Proses pencarian rute hanya akan dilakukan ketika dibutuhkan komunikasi antara *node* sumber dengan *node* tujuan.

Penulis menguji kinerja dari protokol DSR dengan menggunakan simulator (NS2). Parameter yang akan di ukur adalah rata – rata *throughput* jaringan, rata – rata *delay* jaringan, dan *packet delivery ratio* berbanding dengan penambahan jumlah *node* dan jumlah koneksi. Parameter jaringan bersifat konstan dan akan digunakan terus pada setiap pengujian, sementara parameter yang berubah seperti jumlah *node* dan jumlah koneksi akan dibentuk secara *random*.

Hasil pengujian menunjukkan penambahan jumlah *node* dan juga jumlah koneksi tidak begitu mempengaruhi performa kinerja protokol DSR. Penambahan jumlah koneksi akan berpengaruh terhadap kinerja protokol DSR ketika ukuran paket diperbesar atau interval paket diperkecil. Dari ketiga parameter yang di uji, rata – rata *throughput* jaringan mengalami penurunan, rata – rata *delay* jaringan mengalami peningkatan, dan *packet delivery ratio* cenderung stabil atau tidak mengalami perubahan meskipun jumlah koneksi ditambah.

Kata kunci : DSR, *simulator*, *throughput*, *delay*, *packet delivery ratio*

ABSTRACT

Mobile ad hoc network (MANET) is a wireless network that does not need any infrastructur in forming. This networks are dynamic and also spontaneous. This networks have some routing protocol, one of the protocol is DSR (Dynamic Source Routing). DSR protocol is included On Demand Routing Protocol (Reactive Routing Protocol). The proccess of route searching is only does when it's needed in communication between source node and target node.

Author tested the performance of DSR protocol by using a simulator (NS2). Parameter that will be measure is the average of network throughput, average of network delay, and packet delivery ratio is equal with the additional node and amount of connetion. Network parameters are constant and will continue to be used in each test, while the parameters which changed like the number of nodes and the number of connections will be set random.

The result shows that the additional of amount node and also the amount of the connection is not really influence the ability of DSR protocol. By adding the amount of connection will give impacted to the ability of DSR protocol when packet size is zoomed or packet interval is zoom out. From these three parameters that have been tested, the average of throughput network had been decreased, the average of network delay has been raised, and the packet delivery ratio is stable or does not have changed although the amount of the connection has been added.

Keywords : DSR, simulator, throughput, delay, packet delivery ratio