ABSTRACT

Routing is a router's process to forward packet into destination network. Router makes routing decision based on destination's IP address. In order to reach a precise routing decision, a router must read a routing table. One of many algorithm to create a routing table is distance vector algorithm, and then compare this algorithm with neural network method hopfield algorithm to determine which algorithm is best to be applied in simulation.

In this final project, there will be done core network simulation and analysis. Simulation itself will be done with software Network Simulator 2 and this simulation is focused to QoS performance which consist of delay, throughput, and packet loss. These parameters would be basic points for comparing distance vector routing algorithm and neural network method hopfield routing algorithm.

The result of link simulation with no background traffic condition shows that distance vector routing algorithm is better than neural network method hopfield routing algorithm. It can be seen from the result of simulation for each service indicates distance vector routing algorithm has a smaller packet loss 1.3592 % for video and 1.7% for voip, the throughput per user is greater 0.3196 Kbps (0.65%) for video , 0.3162 Kbps (0.65%) for voip, and smaller 0.6324 Kbps (1.97%) for data, and then delay a smaller 0.8192 ms (1.52%) for data, 0.6746 ms (1.77%) for video, and 1.0752 ms (2.73%) for voip when compared with the neural network method hopfield routing algorithm.

Key words : *Distance Vector*, *Neural Network*, *Routing*, **QoS.**