ABSTRACT

Wireless Mesh Network (WMN) is a communications network made up of radio nodes are fitted with mesh topology. Wireless mesh networks often consist of mesh clients, mesh routers and gateways. WMN is a new trend in wireless communications that promise high flexibility, reliability, and performance. WMN has certain advantages, such as self-organized and self-configured, in other words to create and maintain connectivity in the event of damage to one node. In addition wireless mesh networks, also known as self-healing properties, that is how the network makes it possible to be able to perform re-routing as well as other way to keep their networks remain reliable ..

At this final project, Hybrid WMN implemented by using routing protocol Optimized Link State Routing (OLSR) and Ad hoc On Demand Distance Vector (AODV). Devices that used is a wireless station as a mesh client and mesh router as a wireless router. To build a system of WMN, mesh routers must be modified by using the firmware DD-WRT and OpenWRT.

The results of this study to obtain a comparison between WMN routing protocols OLSR and AODV. For self-organizing capabilities, OLSR is better with the average response time 18.85487 seconds compared to AODV that get 35.2240 seconds. For self-healing capabilities, OLSR routing protocol is better with the response time 26.4306 seconds compared with AODV are getting 35.2 seconds. And for the performance of QoS based on the distance, OLSR has decreased the average throughput 21.155%,, increased 16.093% of packet loss, increased 48.6387% of delay, and increased 61.70% of jitter. Whereas in AODV decreased 23.92% for average throughput, the increase 21.614% in packet loss, 52.67%, increase of delay, and increased 56.98% for jitter.

Keywords: WMN, OLSR, AODV, *Self-organizing, Self-healing*, QoS.