

ABSTRACT

Increased public demand for information technology services led to the needs of a very large bandwidth, but it needed a guarantee of quality service (QoS) in terms of packet loss, delay, and throughput. Therefore, the ability to provide quality services and high bandwidth will be access to the key requirements of the future.

PON (Passive Optical Network) is a network architecture based on optical fiber that provides higher bandwidth than traditional network-based copper. In the PON architecture, there are various studies and the development of different multiplexing methods, such as Time Division Multiplexing (TDM) and Wavelength Division Multiplexing (WDM).

In this final project, conducted simulations and analysis of the link with multiplexing TDM and WDM. Simulations were performed using the software Network Simulator 2 and focuses on the link observed by analyzing the QoS performance parameter including delay, throughput, jitter, and packet loss.

The results of the simulation analysis shows that the performance TDM has a better QoS when using the packet size is smaller 300 byte than using packet size 500 bytes. While WDM networks with packet size 500 bytes, as a whole has a better performance than TDM networks. So that it can be concluded that the number of wavelengths that affect the performance generated by the network.

Keywords: Epon, QoS, TDM, WDM