

ABSTRACT

Digital communication networks now a priority in various internet service providers, not apart from that voice communication or what was once based on circuits turned into packet-based technology because of efficiency problems. Geographical location differences also become a factor why packet-based communication networks, namely the internet, are a solution for the future.

With the Metro Ethernet Network that has used optical access media, different internet service provider backbone networks can be connected to each other using Metro Ethernet. Link efficiency and bandwidth are important factors in Metro Ethernet networks, to provide this, Metro Ethernet can use link bundling or Link Aggregation Group (LAG) to increase bandwidth and redundancies also flow labels to increase traffic efficiency on link bundling or LAG. The flow label will enter the labeling structure in the MPLS ip transport wich controls the amount of traffic based on the flow from the egress node origin to the ingress destination.

As a result of the tests that have been done, the FAT label can have a positive effect on load balance on the LAG with an average starting from 3% to 45% of the results of tests that have been carried out. From the results obtained, the use of VPLS service can increase load balance from LAG when using the FAT label by 42% and also with a lot of flow can increase load balance from LAG on metro Ethernet.

Keywords: Metro Ethernet, LAG, MPLS, FAT label, L2VPN.