ABSTRACT

Along with the development of the age of information technology and telecommunications, the more the need for internet network speeds. Especially to connect one network to the other network, where the two network sites are located far apart and must require a secure connection.

With scalability and traffic engineering as the security side of MPLS technology has a high enough data access speed, but it can also avoid congestion in data traffic on a network,

From the test results it can be concluded that the implementation of an authenticated MPLS network was successfully carried out and the results of the quality of VoIP communication services for throughput without authentication are 0.536994 on the main line and 0.659747 mbit / s backup. while the throughput with authentication is 0.69350 on the main line and 0.76861 mbit / s on the backup line.

Packet Loss without authentication on the main line is 3.22% and on the backup line is 5.82%. while packet loss with authentication is 8.22% and on the backup path is 5%. Delay without authentication on the main line is 119,848 ms and the backup line is 121.40 ms. Meanwhile, the authentication delay is 122,429 on the main line and 122,474 ms on the backup line.

Jitter without authentication on the main line is 0.07028 ms and on the backup line is 0.06352 ms. While the jitter with authentication on the main line is 0.06982 ms and on the backup path is 0.06692 ms

Keywords: MPLS, *Routing Protocol Authentication*