

## ABSTRACT

*According to the results of a survey conducted by the Indonesian Internet Service Providers Association in the period 2019 - 2020 showed 49.3% of internet users watched videos online. The large number of people accessing streaming services, can make data transfer speeds decrease. One solution is to solve the problem with MPLS which is a technology to transmit data over the network more efficiently. MPLS integrates the advantages of layer two switching with layer three routing in the network architecture, thus improving performance and efficiency in sending data packets. The scenario in this study configures the router using dynamic routing in the form of RIPng and BGP. This study analyzes the routing performance of which protocol is better applied to MPLS networks with variation of 10 and 15 routers for video streaming services by looking at QoS values in the form of delay, throughput, and packet loss using GNS3 and Wireshark applications. Based on research that has been done, the MPLS RIPng routing protocol with a variation of 10 routers and 240p resolution has a significant influence on the performance of the MPLS RIPng protocol in terms of throughput, packet loss, and delay, where the throughput value is 190730.67 kbps, packet loss is 73.93%, and delay is 55.05 ms. MPLS BGP routing protocol with a variation of 10 routers and 240p resolution also has a significant influence on the performance of the MPLS RIPng protocol in terms of throughput, packet loss, and delay, where the throughput value is 699260.98 kbps, packet loss is 2.39%, and delay is 15.52 ms.*

*Keywords : BGP, MPLS, QoS, RIPng, Video streaming*