

ABSTRACT

Quality of services is a parameter that needs to be considered in a remote communication system. One of the services that is developing is video streaming. Video streaming itself works on RTP protocol, or real-time communication. To create ideal remote communication, determining routing protocol of a communication network can affect the value of Quality of Service (QoS). Routing protocol is a rule or standard that regulates data flow and determines the path that occurs on the network. With the addition of MPLS to the network, it is expected to help the performance of the routing protocol.

In this final project will simulate the IPv6 network with OSPF routing protocol and also IS-IS which will be added MPLS technique with xconnect method. Afterwards QoS analysis will be carried out for video streaming services. The simulation works using 1 laptop which is divided into 2 PCs using VMware, GNS3 as a simulator and Cisco 7200 as a router.

The results of simulation and analysis obtained that IS-IS routing protocol without implemented by MPLS or with MPLS xconnect gets better result than OSPF on IPv6 network. It can be seen from the differences of throughput at 61 Kbps, delay 6 ms, packet loss 3%, and jitter 3 ms. This is because OSPF routing protocols have a higher complexity because introduction neighbours of OSPF are more complex than IS-IS.

Keywords : Routing protocol, MPLS, OSPF, IS-IS, GNS3, xconnect, IPv6, video streaming.