ABSTRACT

Software Defined Network – Internet Protocol (SDN-IP) is an application of the Open Network Operating System (ONOS) which has a network defined by software in connecting external networks using the Border Gateway Protocol (BGP). SDN-IP is a Software Defined Network (SDN) based network that can control the network centrally by using a controller that is already working with a router to read BGP packets.

Video Streaming is one of the multimedia needed in the service to send audio and video which is done streaming by requiring a streaming server so that audio and video reach the client. Streaming video services allow broadcasting in real-time. Exchange of data in the form of audio and video simultaneously, thus requiring connectivity on the network that must always function even if there has been a failure in one of its components. This ability is called High Availability (HA).

Based on the results of testing and analysis, it can be concluded that the choice of network topology affects the performance of HA, the results of the failover delay test show that the Ring topology is more stable than the 2-D Mesh topology. The QoS test results show that the greater the background traffic provided, the smaller the throughput, the traffic on the network will be congested, so the available bandwidth is also getting smaller, so the number of bits sent every second is reduced. The results of the QoS measurement show a good category based on the ITU-T G.1010 standard.

Keywords: HA, *Performance,* QoS, SDN-IP, *Video Streaming*