ABSTRACT

The development of technology at this time is increasingly fast both technologies in the fields of health, transportation, and telecommunications. Technology in the field of telecommunications, especially computer networks, is not developing fast. Today's computer network technology still uses conventional network concepts in which a network with each device will run separately and it makes a network inflexible to changes made. At this time a technology that can answer problems in conventional networks has emerged. Technology (Software Defined Network) SDN is a technology that is able to separate the 2 main functions of a network device namely control plane and data plane which will then be connected to an SDN controller so that the network configuration will be centralized and easier to make changes such as configuration, supervision, addition and reduction of network devices. Routing Information Protocol (RIP) is a routing protocol that has the ability to handle routing for small scale networks with a routing mechanism that calculates the shortest number of routes that can be passed. The RIPv2 routing protocol is applied to SDN technology using RouteFlow. Quality of Service parameters (Delay, Jitter, Throughput and Packet Loss) are measured with the scenario of adding traffic loads.

In this Project simulation of Software Defined Network with Routing Protocol RIPv2 and POX as a Controller with Institut Teknologi Telkom Purwokerto network topologi, and analyzes its performance. RIP protocol performance measurement applied to the SDN network by measuring throughput, delay and packet loss is still at the ITU-T G.1010 standard value with background traffic given from 25 Mbps to 100Mbps. Whereas the value of the jitter parameter on the VoIP service only meets the ITU-T G.1010 standard when background traffic given between 25 to 75 Mbps.

Keywords: Software Defined Network, RIPv2, Background Traffic, QoS.