

## **ABSTRACT**

Software Defined Network (SDN) is a renewal of technology on the network. Unlike existing conventional networks, Software Defined Network (SDN) separates the control plane from the data plane. The separation between the control plane and the data plane allows the Software Defined Network (SDN) to be controlled centrally. Furthermore, OpenFlow implementation is made possible to apply flow based on the network distribution in the distribution of source to destination. The use of the Spanning Tree routing protocol is one of the routing protocols to determine the path of data to be traversed.

In the research Raspberry Pi as one of the single board computer, has the ability to apply the model of network architecture. Raspberry Pi is therefore able to implement the Software Defined Network (SDN) model. Implement Network Software Defined Network (SDN) on Raspberry Pi using Spanning Tree protocol.

This research implements SDN using raspberry pi with software installation to support openflow usage on device. Tests conducted on Quality of Service (QoS) on delay, jitter, and packet loss parameters using Video Streaming on video quality 480p, 720p, and 1080p and using UDP background traffic of 1Mbps. The reference used in this study is ITU-T G.1010. The results obtained for delay and jitter values with good category on all video quality are 480p, 720p, and 1080p. However, the results of packet loss in getting bad results for the three video quality tested so that the network can not be said to be good.

**Keyword** : SDN, OSPF, Delay, Jitter, Packet lost