ABSTRACK

Virtual LAN (VLAN) is a grouping of several networks on devices to be able to communicate via virtual interfaces. The absence of restrictions in a network allows unauthorized parties to abuse computer networks such as accessing prohibited things, to avoid that from happening the Access Control List (ACL) method appears. In this study there are three VLANs where two VLANs are used for local communication and one VLAN is dedicated to being able to access public networks, to simplify VLAN configuration on many switch devices, a VLAN Trunking Protocol (VTP) is used. This study aims to determine the performance of ACLs on VLAN networks. The test is done by measuring the Quality of Service (QoS) on the VLAN network before and after the ACL is applied. From the QoS test results, it can be seen that very good performance is on a VLAN 10 connection to the public with a throughput value of 1,116.50 bps (standard > 100 bps), packet loss 0.998 % (standard < 2 %), delay 6.162 ms (standard < 150 ms) and good quality at 6,152 ms jitter (standard 1 to 75 ms) while the QoS value on local - public VLAN connectivity, local vlan - vlan 10 gets poor quality with a throughput value of 0 bps (standard < 25 bps), packet loss 100% (standard > 25%), delay ms (standard > 450 ms) and jitter ms (standard > 225 ms) However, the results of this QoS test indicate that the Access Control List is able to limit traffic from a network so as not to pass through it.

Keywords: *VLAN, Access Control List, Quality Of Service, Networking, Network Design, Network security.*