ABSTRACT

The needs of fast service, comfortable and inexpensive has been moving the research in the sector of information technology. Virtualization is growing rapidly. With virtualization we can come off from physical dependence, because, with virtualization, one physical amount can functioning as a lot of physical amount. With Virtual Local Area Network (VLAN) we can have multiple networks with just one manageable switch. And for connecting inter-VLAN it is enough to use one router and one interface. So much money can be saved. VLAN is a logical grouping of users and network resources are connected to ports that have been determined administratively on a switch.

Because of the VoIP (Voice over IP) services is a real-time service, then the VLAN that has been implemented should be high availability, the availability and service levels must always be 100%. At this final task will be implemented the Virtual Router Redundancy Protocol (VRRP) to achieve high availability of inter-VLAN. The VRRP has a function to takeover routing task for the data packets that enter the virtual router group when the master router that acts as the main router is down or get interruption of performance.

From the results of measurement and system analysis of Inter-VLAN VRRP implementation, the quality of VoIP is decrease due to the increase of the header of 24 bytes. Worst conditions obtained from the Inter-VLAN VRRP master backup mode but still meet the QoS standards. It can be fixed on VRRP load sharing mode that proved to be stable with a better QoS value. In scenario 2 (testbad), can be proved that VRRP capable of maintaining VoIP quality with compliance to the QoS standards despite the failed link. In scenario 3 also found that VRRP is not an expensive solution because it proved that can have a function as load sharing that improving network performance.

Key words : VRRP, VLAN, Inter VLAN, QoS, *Downtime*