ABSTRACT

One of the contributions of technology to increase the performance of the network is the ability to split a large broadcast domain into several smaller broadcast domains using VLAN (Virtual Local Area Network). VLAN technology works by dividing the network logically into multiple subnets. To connect a different VLAN network using interVLAN, inter-VLAN routing is a process for forwarding network traffic from one VLAN to another using a router.

Voice communications services are now starting move to a packet-based network. Communication services that popular is VoIP . VoIP offers a service that is reliable for users to interact with other users in real-time and have level of stability that maintained .

To realize the high availabity VLAN network then in this final project is implemented GLBP (Gateway Load Balancing Protocol) which the function as load balancing and backup router. So , with GLBP router can still do load balancing divide traffic although the router become forwarding / active router or standby / backup router.

From the measurement results without using background traffic and background traffic use at 20 Mb/s, delay obtained from the measurement result meets the standards ITU-T G.1010 for all scenarios. Jitter obtained is less than 1 ms for all scenarios. The throughput results obtained can stay up because of protocol GLBP gateway redundancy. GLBP protocol resulted when the router is off or there is a link-failure transfer will occur to active-gateway, so the service still available. The downtime value when the interface fastethernet 0/0 router 1 down equal to 9.302 s and 12.5 s when the interface fastethernet 0/0 router 2 down.

Keywords : Gateway Load Balancing Protocol (GLBP), VLAN, VoIP, QoS, Downtime