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

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