

## **ABSTRACT**

In the current development of Internet Service Provider (ISP) requires a technology to support performance and connection you have, one with the other providers to do multi koneksi or often referred to as multihoming. Predicted the existence of the telecommunications world will move towards Next Generation Network (NGN) that all the system relies on IP-Base that will further add to the complexity of the existing network routing on the internet. Border Gateway Protocol (BGP) is a routing protocol that is currently also the de facto standard in the Internet network is a protocol that is capable of handling network traffic filtering with the use of the internet so that BGP, the network administrator is given the right to be able to choose which networks are allowed to in and out of the managed network. In general, an AS (Autonomous System) has one or more upstream link to the U.S. a higher level because of the importance of the availability of the upstream link, the one the U.S. should have at least two upstream link as redundancies.

BGP (Border Gateway Protocol) has its own algorithm as a routing protocol to determine the best path (best path). BGP algorithm will select the best path to use named parameters Attribute BGP. When the path to a goal has been missed by the algorithm selection mechanism BGP, BGP will always choose the path for the link terkait tidak having problems. BGP does not have a traffic engineering mechanisms as ever MPLS-RSVP, BGP juga do not have equal cost load balance mechanism as well as other routing protocols. It required a load balancing mechanism that can handle these problems in BGP.

From testing and analysis of background traffic obtained the maximum allowable for triple play service is 80 Mbps. In the background of this traffic video services already mengalami nearly 50% packet loss. Load balancing using AS\_PATH prepending method produces the highest delay. Failover Delay value after the BGP loadbalancing policy is not significantly increased dengan loadbalance system that is not affected in the event of redundancies.

*Keywords : BGP, Load Balance, Autonomous System*