

*Undergraduate Thesis  
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***DESIGN AND ANALYSIS OF FAILOVER USING VRRP (VIRTUAL ROUTER REDUDANCY PROTOCOL) AND HSRP (HOT STANDBY REDUDANCY PROTOCOL) METHOD USING GNS3 APPLICATION***

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***Abstract***

*Data packets will pass through routers that are connected to each other to be able to send data to the destination, in normal circumstances the router can send data to its destination properly, but if the data entering through a router exceeds the receiving capacity of the router, there will be a buildup data traffic that causes data to accumulate and late to get to the destination or there may be a failure of data transmission because the router is not able to distribute the data that enters through its path.*

*The solution to the problem of data traffic is to apply failover to routers on the network to minimize the things that have been mentioned previously. A failure in a communication network is the process of instantly transferring tasks from a failed component to a similar component to avoid interference and maintain operation. Automatic failover is the ability to quickly transfer data automatically from failed components such as servers or network connections, to functioning components, and is essential for critical systems.*

*The results of the VRRP packet loss measurement get a percentage of packet loss 0.5% while the HSRP percentage of packet loss can be 1.3%. In the Failover time test from the main router to the supporting router in VRRP it takes 1 second and in HSRP it takes 3 seconds, then in the Failover time test from the supporting router to the main router. In VRRP it takes 2 seconds and in HSRP it takes 4 seconds. From the analysis data above, it can be clearly seen that VRRP is better based on measurement of Packet Loss and failover time which is smaller than HSRP.*

*Keyword: Failover, VRRP, HSRP, High Availability, GNS3*