

ABSTRACT

Nowadays, the rapid growth of the internet increases as well as the user and the applications running on the internet. Traditional IP networks offer users best effort service. In best effort service, all packets are indistinguishable and are given the same treatment. This has caused burden on the network with limited bandwidth and buffer space, resulting heavy congestion. With the presence of Quality of Service (QoS), IP network provides discriminate services. Differentiated Service (DiffServ) is a mechanism used for increasing the Quality of Service (QoS) on IP network. Diffserv is an IP QoS architecture based on packet marking that allows packets to be prioritized according to users' requirements. Multi-level Random Early Detection (MRED) has been introduced afterwards as an alternative scheme which is recommended for supporting the implementation of Diffserv.

In this final project would be introduced three schemes of MRED, which are RED with IN/OUT Coupled (RIO-C), RED with IN/OUT De-coupled (RIO-D), and Weighted RED (WRED). The performance of these three schemes would be analyzed using ns-2 simulation software. The tested performance metrics are throughput, packet loss and queue delay.

The result of simulation shows that the performance of RIO outperform WRED in protecting high priority packet in dynamic load condition or with the increase of source

Keywords : Congestion, Differentiated Service, AF-PHB, RIO-C, RIO-D, WRED.