

## **ABSTRACT**

As we all know, the internet is the biggest source of information where we can get information and share information to others. There are many applications in the internet where each application is increasingly increasing its needs in the scope of performance in order to be satisfied by internet users satisfactorily. The higher level of performance required for each application it automatically also leads to increased traffic in the internet network when internet users access this application online. This causes the utilization of internet network is not optimal. The issue of a full buffer is persistent by a queue of data packets that flood the internet network waiting to be served. The buffer trend is always full-hold by the queue of data packets known as Bufferbloat. Initially, all routers on the internet network use the PQM (Passive Queue Management) DropTail mechanism to against Bufferbloat. Therefore in 1998, the IETF (Internet Engineering Task Force) recommended AQM (Active Queue Management) mechanism to be implemented on next-generation Internet routers. Then in 2012, Van Jacobson created an innovative method to become the current Internet service solution that is CoDel. CoDel is an algorithm designed to overcome bufferbloat on network links by setting limits on packet delays in the network.

In this research we mainly focus to the influence of traffic load variation on Packetloss, Mean Delay, Mean Jitter and Throughput in TCP / IP network using Passive Queue Management Droptail mechanism using mechanism Active Queue Management Controlled Delay. The concentration is preferred in Active Queue Management Controlled Delay mechanism analysis with variation of traffic load on Packetloss ratio, Average Delay, Average Jitter and Throughput in TCP / IP network.

Based on the simulation results obtained, we discuss the advantages Active Queue Management CoDel in improving QoS TCP / IP network. CoDel's performance in improving QoS TCP / IP network for packet loss ratio is better at 26.288%; for average delay is better at 97.755%; for average jitter is better at 69.284% and for throughput is better at 4.448%. This percentage is obtained by packet flow variation from 1 Mbyte to 1 Gbyte.

Keywords : Bufferbloat, PQM, AQM, DropTail, CoDel