

## **Abstract**

Bufferbloat occurs because of malfunction, buffer mechanism failure, or the excessiveness of buffer sizes that could increase network delay because piled packet on problematic network buffer. It could impact the congestion-avoidance on maintaining network resource and could impact reability and data-flow management on TCP packet. In previous studies about bufferbloat, generally suggest determining amount or buffer mechanism to be an option to handle bufferbloat. On the other hands, there is no sending mechanism or sending limiting, so on buffer there is no configuration how packet could enter. In this study, examined how the changes of TCP Congestion Control as the controller on network resource and limiting the sending packet, so that could decree the stack of packet on buffer. The test is done with the different character of congestion control, that is loss-based CUBIC, delay based LEDBAT, bandwidth estimation delay-sensitive BBR to be examine on bufferbloat network without changes on queue mechanism. Based on examine scenario, TCP BBR gives better network performance than LEDBAT or Cubic does base on scenario. Based on the analyze, usage of BBR give optimum result which stable delay and lower delay about 0,1 seconds to 0,8 seconds than cubic, and throughput higher 50% than LEDBAT.

**Keywords:** : *bufferbloat, TCP congestion control, TCP BBR, TCP Cubic, TCP LEDBAT, delay*