

Abstract

Congestion is right to be the one biggest trouble in the internet networks. Longer delay time and higher packet drop rate are the impact caused by congestion. For transport layer who need reliable transmission like TCP, congestion bring such a serious effect. Because while using TCP, packet that not yet been received or discarded before reach the goal will be transmitted until the packet is received in correct and complete way. It needs a congestion control mechanism to reduce the impact given by congestion.

This final task present the influence of congestion control algorithm, Random Early Detection (RED) and Gentle RED (GRED), with followed addition of Explicit Congestion Notification (ECN) protocol. The purpose of applying congestion control algorithm RED and GRED and ECN protocol is to strengthen network performance by reducing the effects/impact caused by congestion.

The result of this final task are GRED able to reduce time delay and packet drop rate so as to produce better throughput values compared with RED. Addition of ECN protocols improve network performance using wether RED or GRED congestion control, seen from time delay, packet drop rate, and throughput.

Keywords: Congestion, TCP, Congestion Control, RED, GRED, ECN.