HW3
Low-Rate TCP-Targeted DoS Attack
Deadline: Match 6th at 12:30PM

Task #2: Attack details (10 points)

1. What are the parameters used for each of the following and why? (max 1-2 sentences per point).
    a. **Attack period**: Minimum RTO is defined by T>=1+2RTT. For a minimum RTO of 1s and addition 0.1s seems optimal for the TCP Stream. Hence, the chosen attack period is 1.1s. Later an additional 0.1s seconds was added to obtain more accurate results.
    b. **Burst duration**: A burst duration of 0.2 was chosen, later an additional 0.1s was added to make it 0.3s due account for simulation timing factors.
    c. **Burst rate**: 10MBps was chosen, as it guarantees saturation of the link between switch1 and switch2 when the shrew attack is executed.

Part #3: Understand Attack Parameters (30 pts)
Task #1: Understanding the attack period (10 points)

1. Why did you choose that attack period from part #2?
   From the paper, we can see that when the minimum RTO and T are zero, TCP throughput is approximately equal to zero. Also, due account simulation timing factors, the attack period was chosen to be 1.1s to reduce the bandwidth to zero.

Task #2: Increase buffer size (20 points)

Is the attack successful, explain why? If not, explain why?

The shrew attack is not successful. Due to the increase in the buffer size, most packets are queued and not drop. That is to sat the TCP congestion window is maintained at a constant value and the timeout mechanism is not activated. The idea of the shrew attack was to fill the buffer quickly and initiate a force drop of legit packets. Hence, the attack was not successful when the buffer size was increased to 1000.