

## Lecture 13: Some more TCP specifics

Midterm coming up: next friday Oct 2

## TCP Tahoe congestion control

0.  $ssthresh = \infty$
1. slow start until we drop a packet
2.  $ssthresh = cwnd/2$
3.  $cwnd = 1$ , restart slow start
4. upon reaching  $ssthresh$ , enter congestion avoidance phase (AIMD)
5. upon dropping packet, goto 2.

## TCP Reno

if we get a fast retransmit (triple duplicate acks), set  $cwnd/=2$

## Nagle's algorithm - dealing with header overhead

If an incoming packet is smaller than MSS,  
and if we have an outstanding packet,  
then hold on to it until

either MSS is reached, or no more outstanding packets

## Clarke's algorithm

Close the receiver window, until we have MSS bytes free.

```
SetSockOpt(sock, TCP_NODELAY, ....)
```

attacker

server

