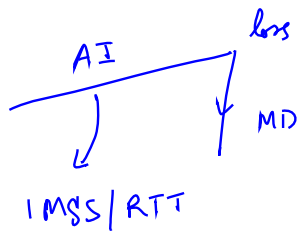


Window size



TCP TAHOE

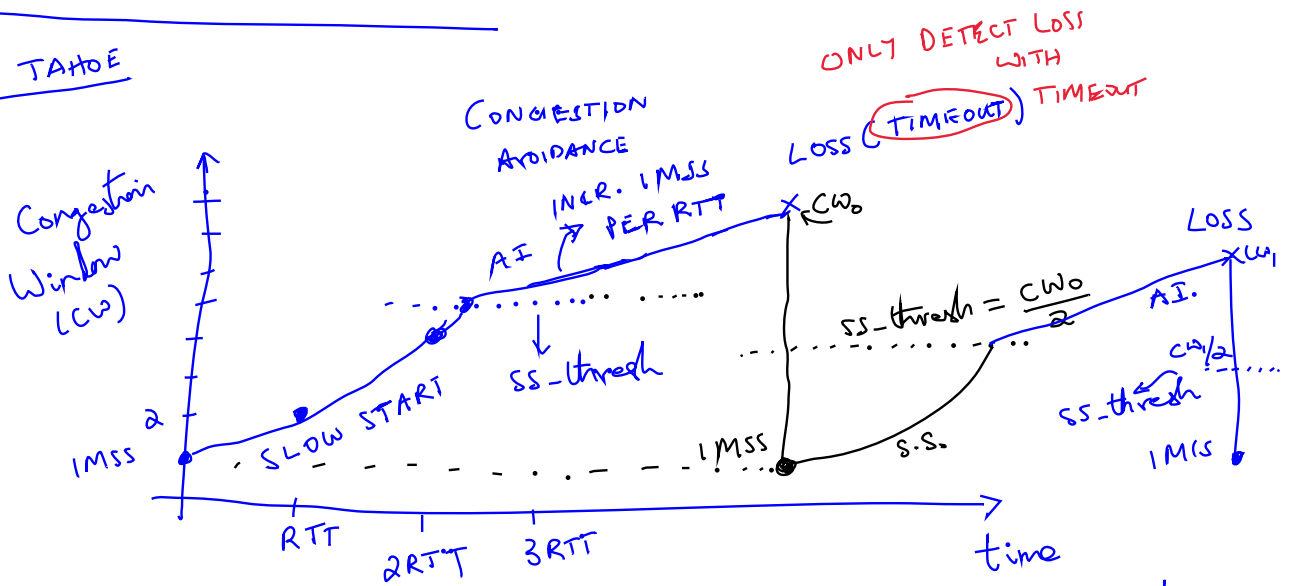
RENO

VEGAS

TCP CUBIC



TCP TAHOE



RTO: Retransmission Timeout

TAHOE RULES

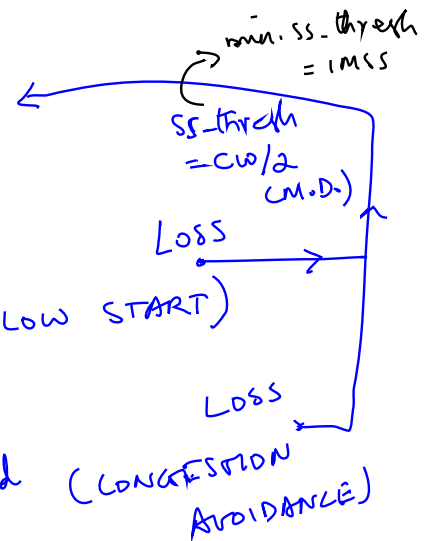
$CW = 1MSS$ (INITIALIZATION)

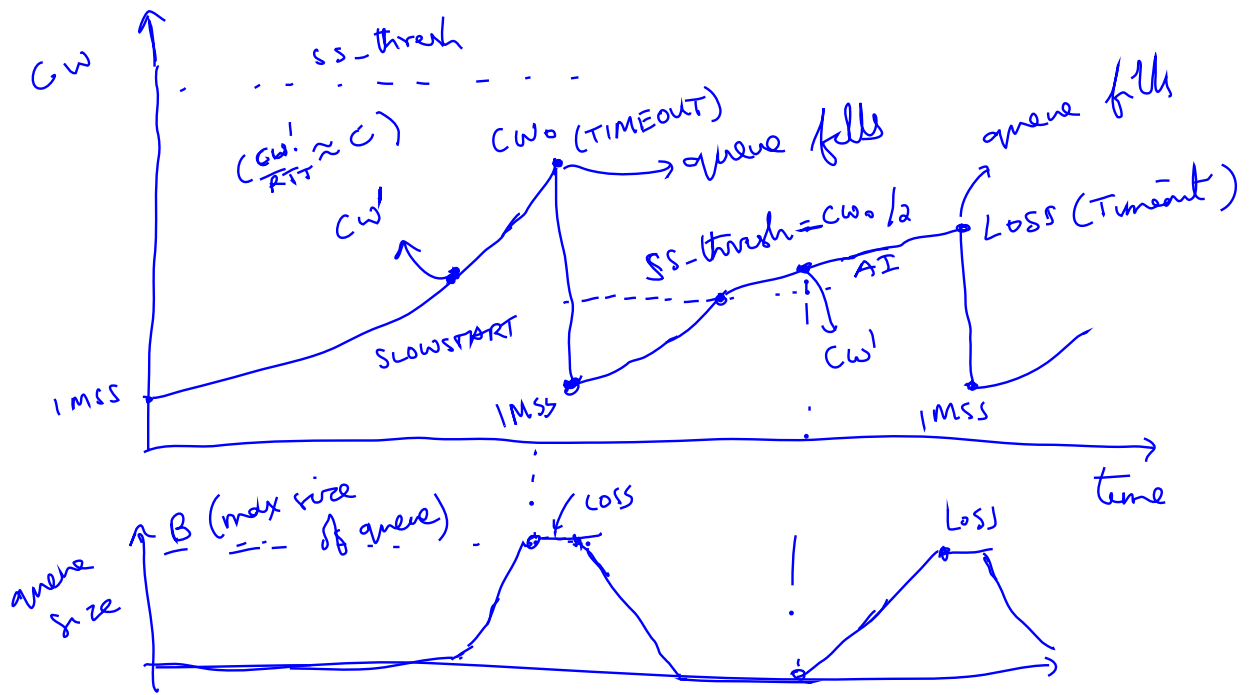
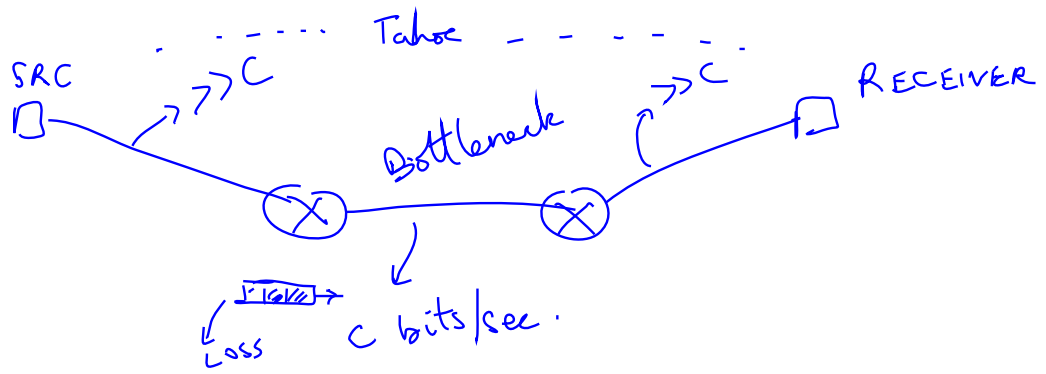
$CW += 1MSS$ for each received ACK (SLOW START)

if $CW \geq SS_thresh$

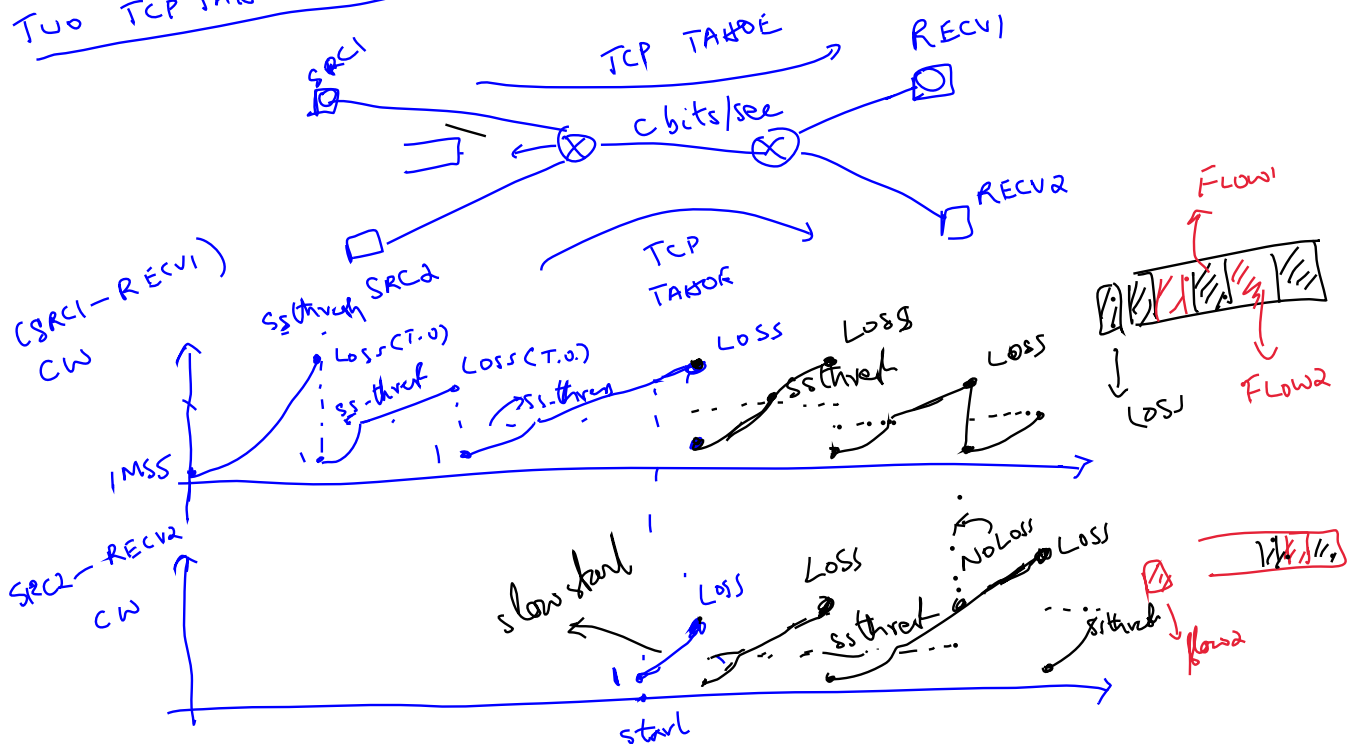
$CW += \frac{(MSS)^2}{CW}$ per ACK received (CONGESTION AVOIDANCE)

→ A.I.

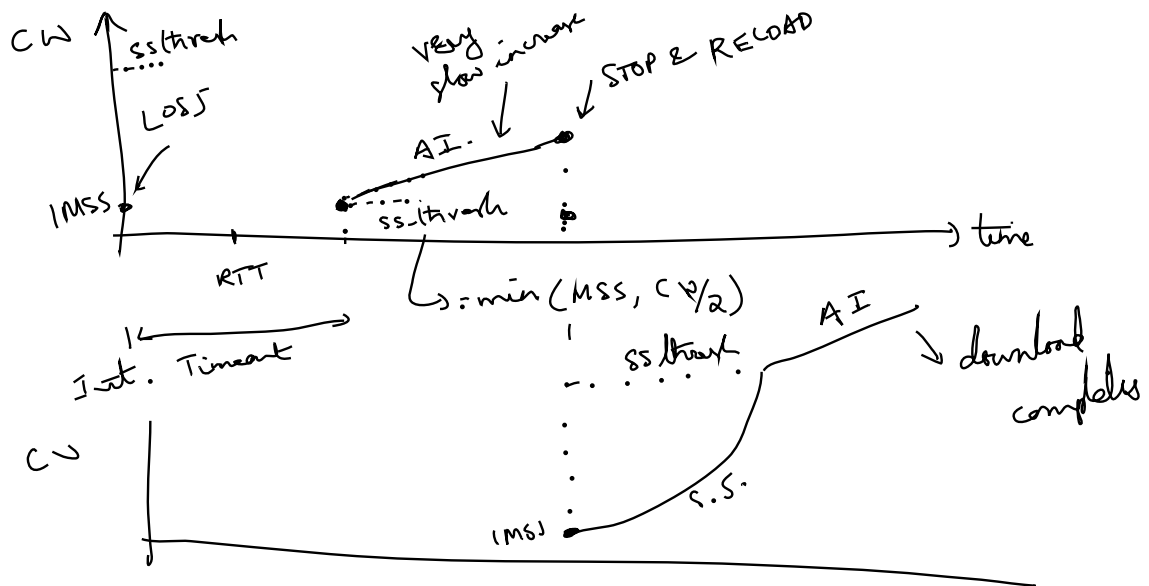




TWO TCP TAIHOE FLOWS.



STOP & RELOAD
web page download slow, hit stop & reload, downloads fast

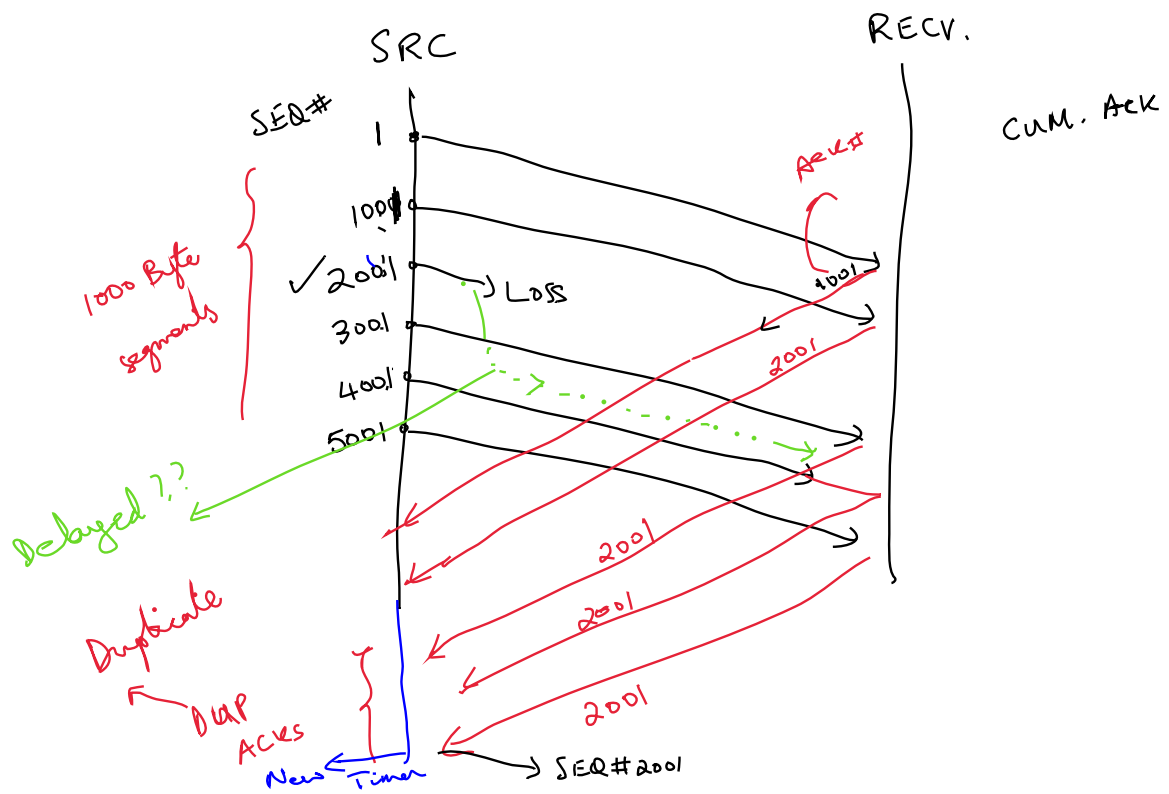


Question: 1) Should $CW = 1MSS$ after Loss

2) Can we detect loss in other ways

ENHANCEMENTS (INCLUDED IN RENO)

↳ 1) FAST RETRANSMIT

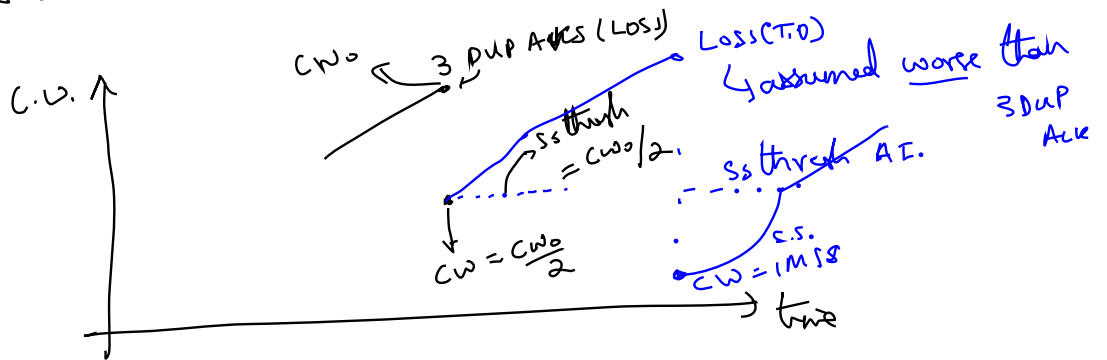


Fast Retransmit: Retransmit segment with SEQ# 2001 (disable dd timer)
 if 3 DUP ACKs received ~~for~~ with SEQ# 2001
 ↳ new way to detect packet loss (Triple dup ACKs)

2) FAST RECOVERY

When loss detected due to 3 DUP ACKs

[Note: For T.O.
 loss CW = 1MSS
 as in Tahoe]



TCP Reno: Includes Fast Retransmit, Fast recovery