AIMD

Date:

1- Start by sending 1 MSS at a time (Slow Start) and grow exponentially
2- When threshold arrives, linearly increase the window size by adding 1 MSS

If

↳ Drop or Time out occurr
↳ Calculate threshold at that point
↳ Go to Slow start and grow exponentially

If 3 Ack received
↳ Calculate threshold at that po
↳ Reduce the window size equ threshold
↳ Grow linearly from that p

Date:

Transmission Time in Stop and wait (RdT3.0)

$$T_{Time} = T_{t(data)} + 2\,T_{propagation\ Delay}$$

$$\text{Utilization} = \frac{T_t}{T_t + 2\,T_{prop\ Dely}} \Rightarrow \frac{T_t / T_t}{\frac{T_t + 2\,T_{prop\ Del}}{T_t}}$$

$$= \frac{1}{1 + 2\left(\frac{T_{Prop\ Dely}}{T_t}\right)}$$

$$\text{Utilization} = \frac{1}{1 + 2a} \Rightarrow a = \frac{T_{Prop\ Dely}}{T_t}$$

$$\text{Throughput} = \text{Utilization} * \text{Bandwidth}$$

For Sliding Window Protocol, we send multiple segments at a time by

$$\text{Utilization} = \frac{W_s}{1 + 2a}$$

$W_s \Rightarrow$ Window Size

Date:

Window Size represent Number of Segments that can be transmitted at a time.

Suppose

MSS → Max Segment Size

if MSS = 2 bits and

Window Size = Ws = 8 bits

it means 4 Segments, each of size 2bit can be transmitted within window size 8 bit.

if Window Size = 10

if written without any unit then it represent number of Segment that can be transmitted at a time.

★ Number of outstanding pack is equal to number of packets transmitted but Acknowledgment not rece