Group 6
assignment 4 : ns3 simulation

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SINGLE FLOW ANALYSIS :

-dumbbell topology used Sender : H1,H2,H3,R1
Receiver : H4,H5,H6 R2

- H1 is attached with TCP Reno agent.
- H2 is attached with TCP Vegas agent.
- H3 is attached with TCP Fack agent.
- packet size: 1.2KB.

- Number of packets/QUEUE Size decided by Bandwidth delay product:
i.e. #packets /queue size = Bandwidth*Delay(in bits)/packetsize(in bits)

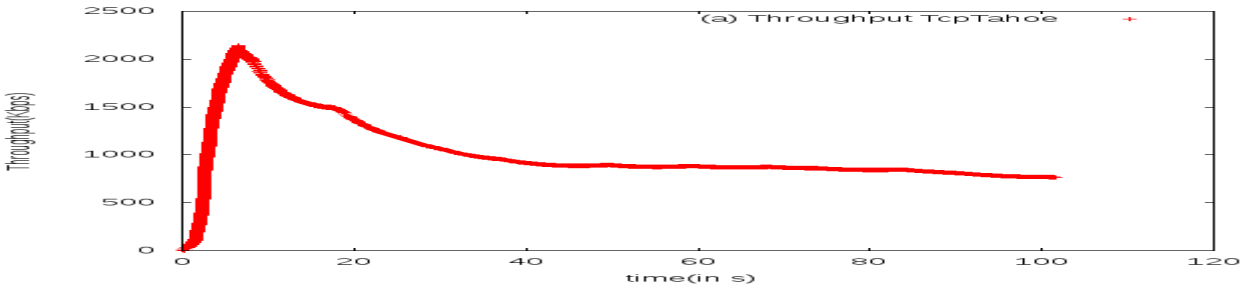
- Congestio n window, throughput, goodput and congestion loss VS Time traced using NS3
- Congestion window, throughput and goodput are measured using TraceCallbacks -
-T=100S SINGKE FLOW
-T=100 S OTHERS START AT T=20S MULTIFLOW

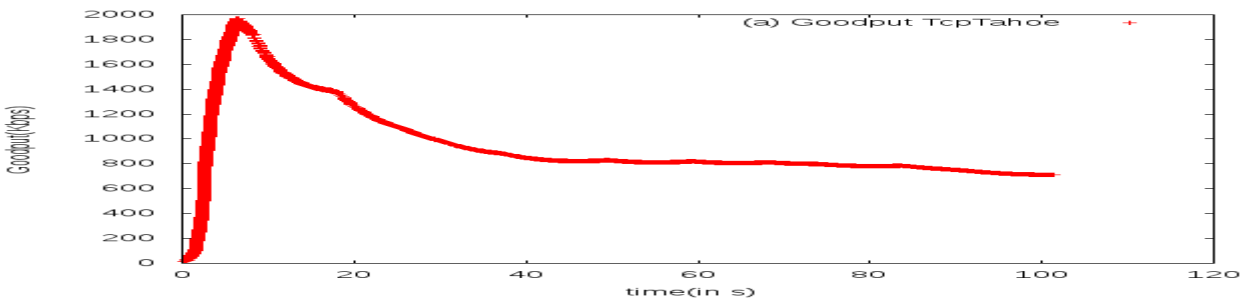
observation : throughput multiflow < single flow

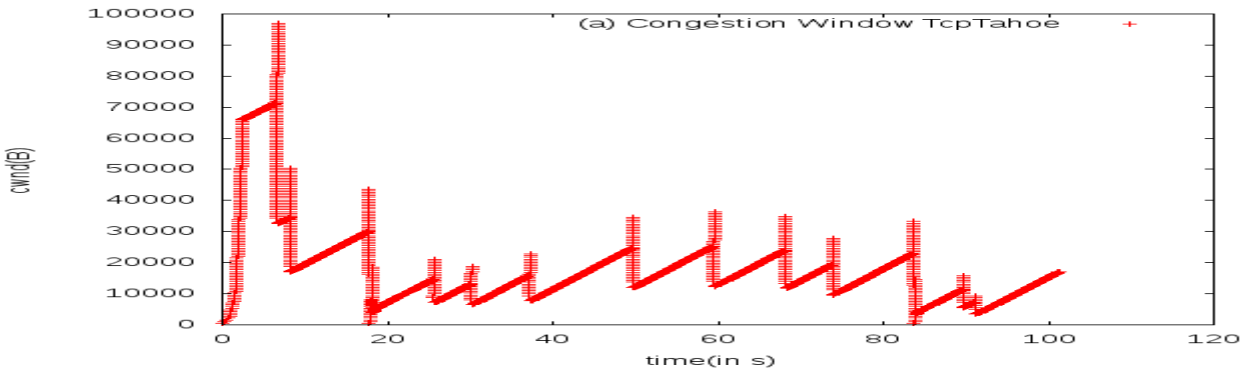
TCP TAHOE

SINGLE FLOW TcpTahoe attached to H2-H5

Total Packet Lost: 13(all congestion)
Max throughput: 2170 Kbps

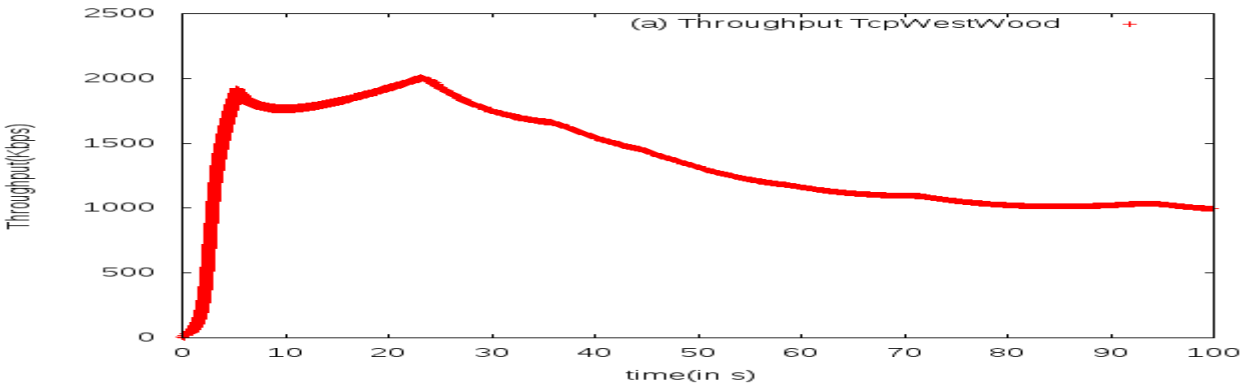


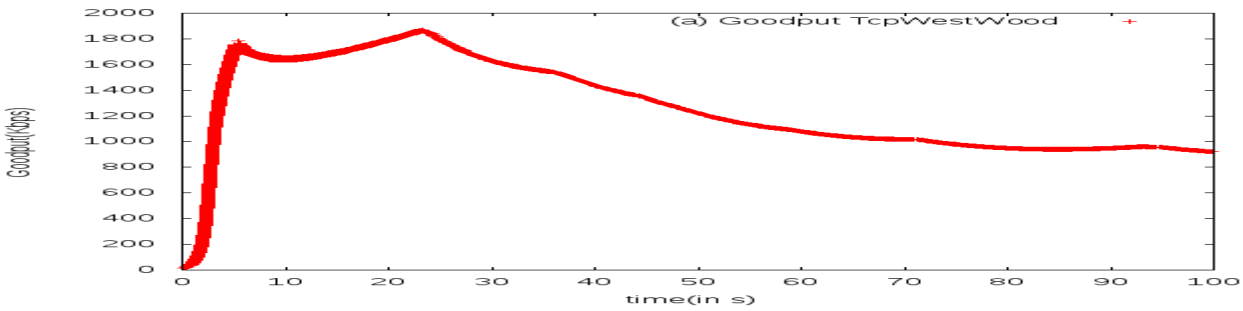


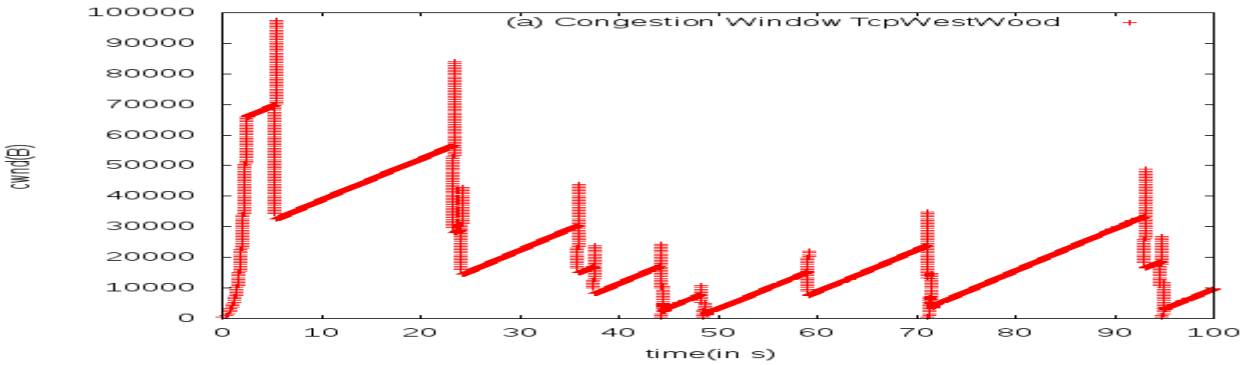


TcpWestWood

SINGLE FLOW TcpWestWood H3-H6
Packet Loss : 9 (Congestion Loss all)
max throughput :2070 kbps



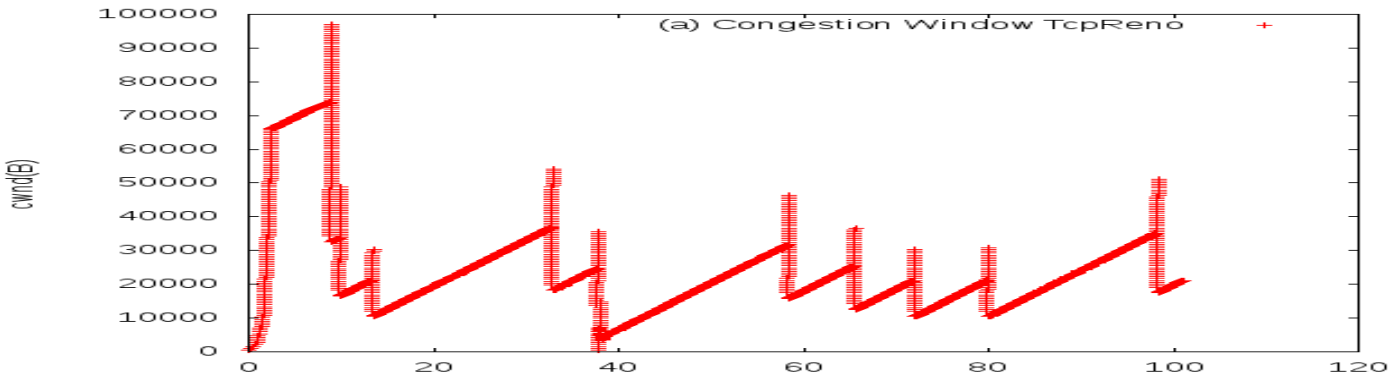


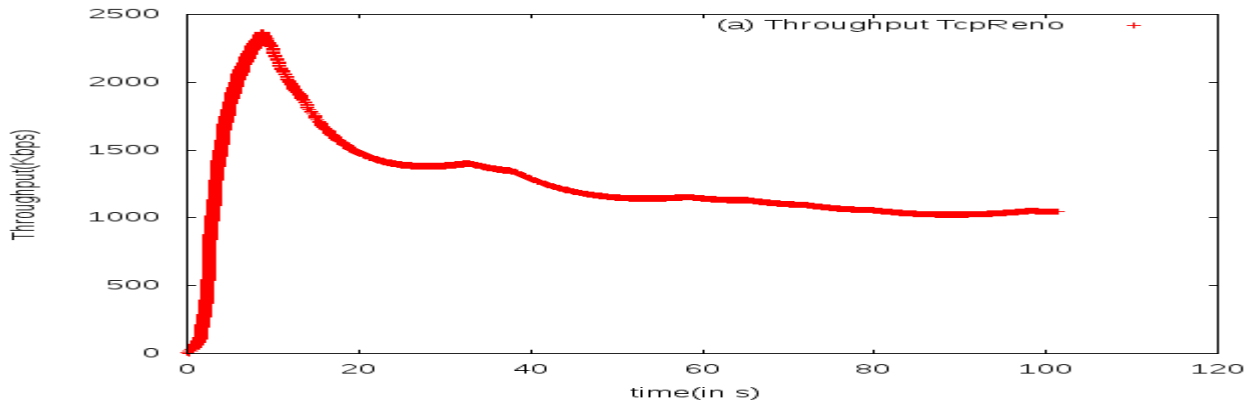


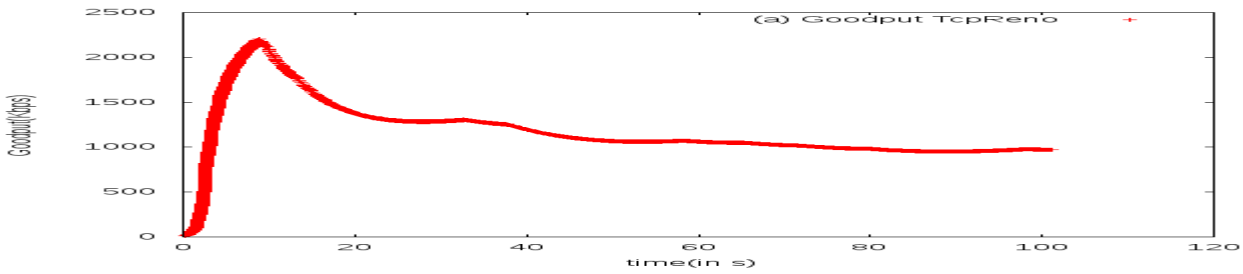
TCP RENO

SINGLE FLOW TcpReno attached to H1-H4

Packet Lost: 10(CONGESTION loss all)
Max throughput: 2414 Kbps





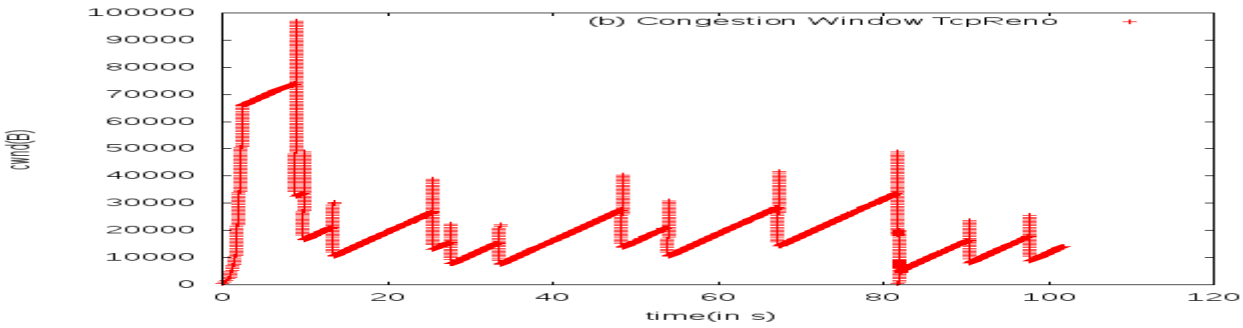


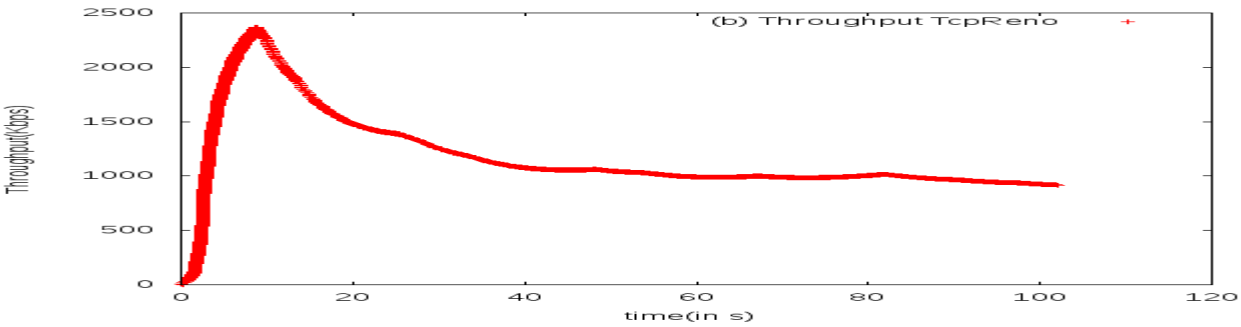
MULTIFLOW ANALYSIS

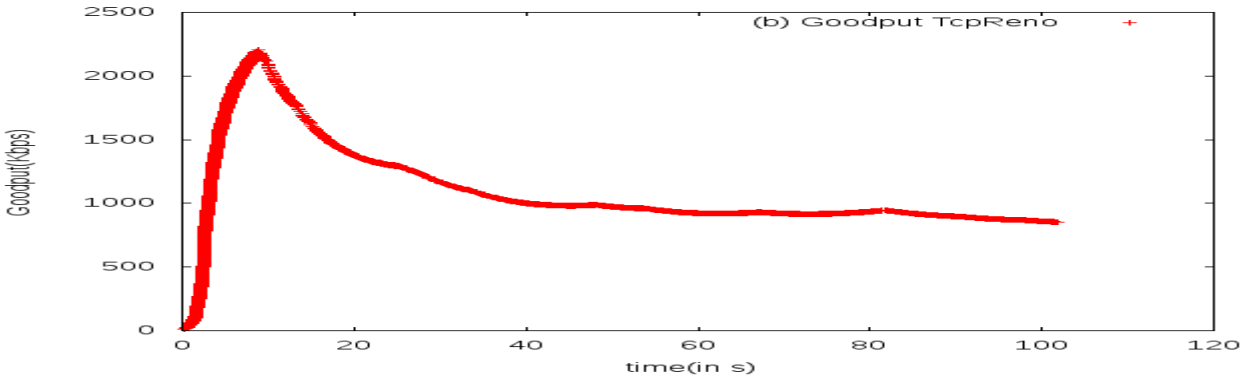
TCP RENO

SINGLE FLOW TcpReno attached to H1-H4

Packet Lost: 10(CONGESTION loss all)
Max throughput: 2416 Kbps



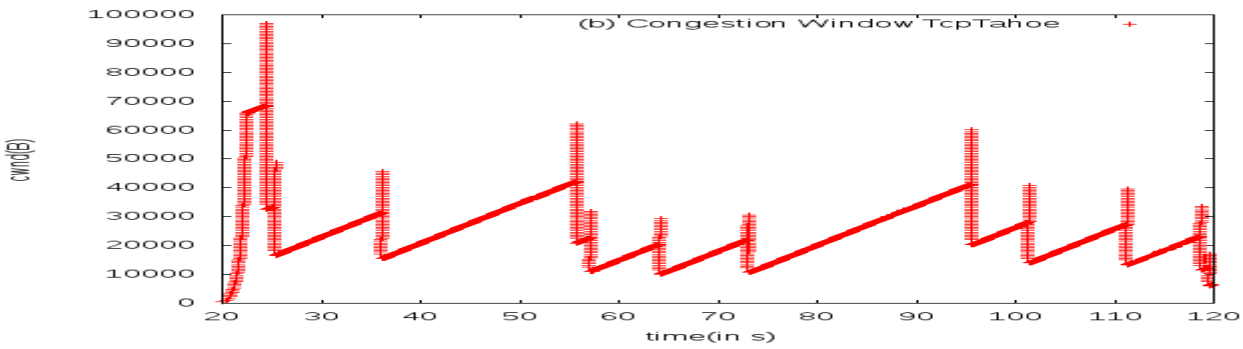


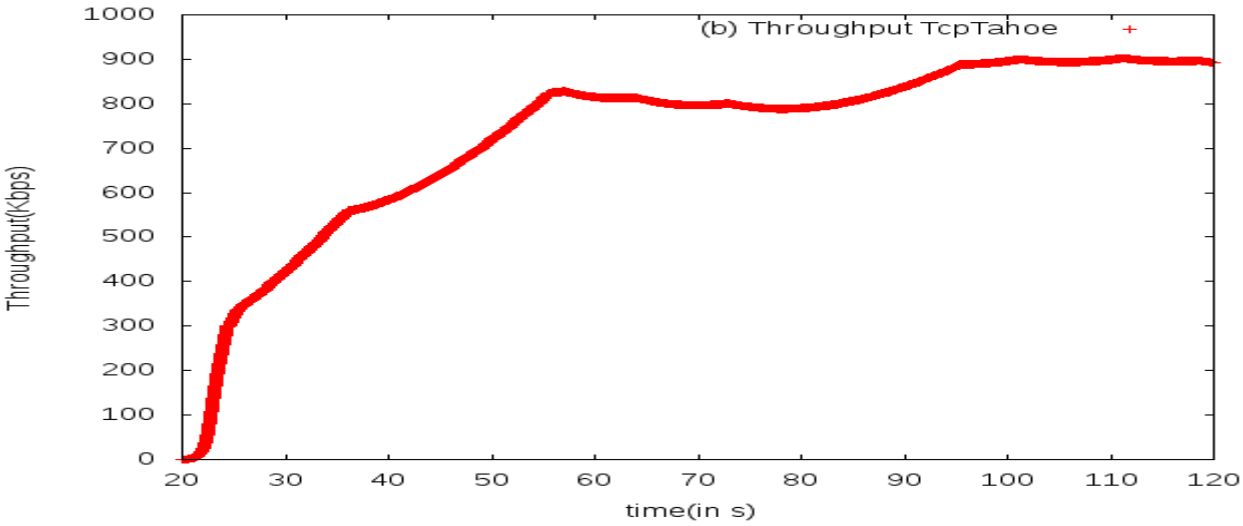


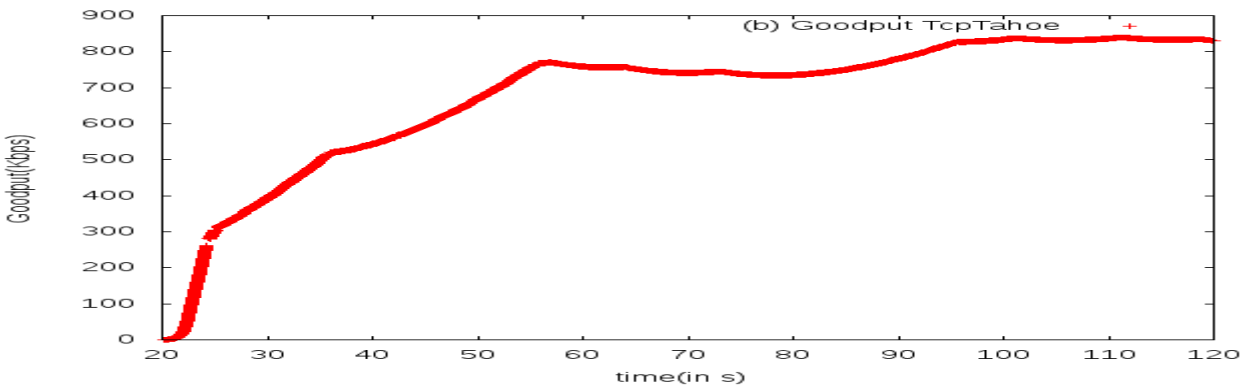
TCP TAHOE

MULTIFLOW FLOW TcpTahoe attached to H2-H5

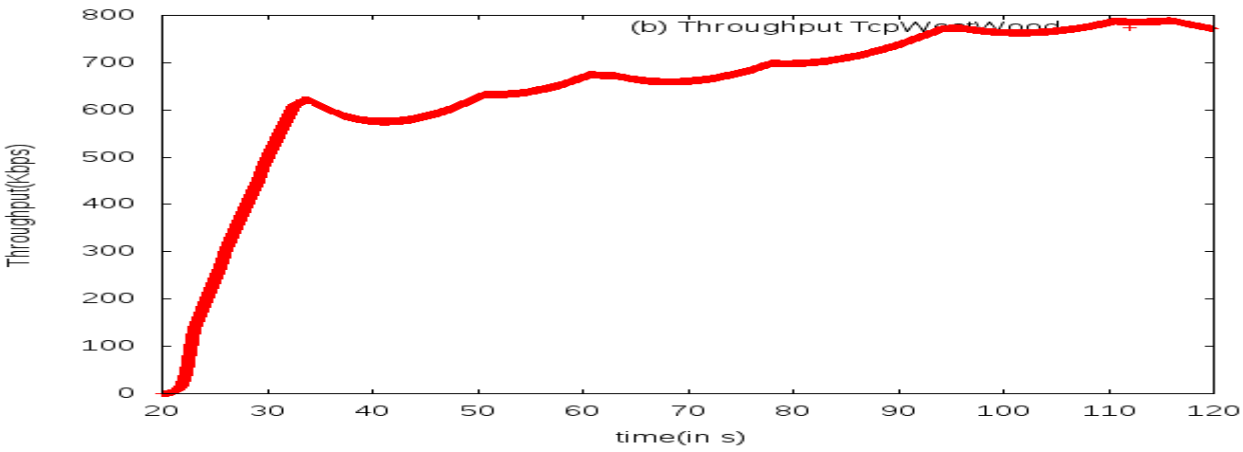
Total Packet Lost: 9(all congestion)
Max throughput: 2090 Kbps

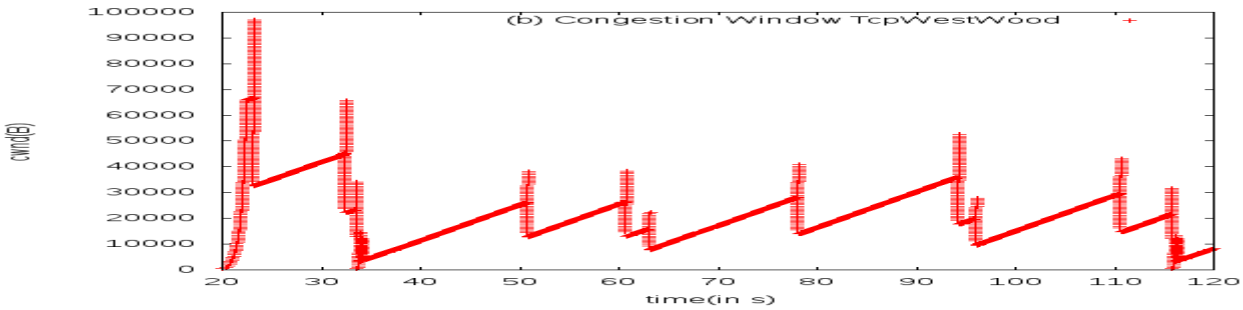


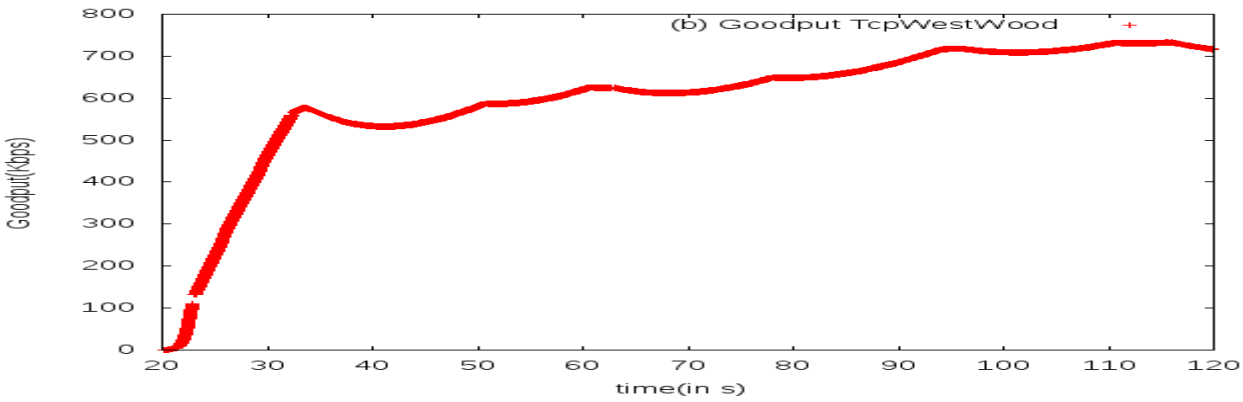




TCP WESTWOOD
MULTIFLOW H3-H6
PACKET LOSS 10(CONGESTION LOSS)
THROUGHPUT 810 Kbps


(b) Throughput TcpWestWood
Throughput(Kbps)
time(in s)
0
100
200
300
400
500
600
700
800
20
30
40
50
60
70
80
90
100
110
120


(b) Congestion Window TcpWestWood
cwnd(B)
time(in s)
0
10000
20000
30000
40000
50000
60000
70000
80000
90000
100000
20
30
40
50
60
70
80
90
100
110
120


(b) Goodput TcpWestWood
Goodput(Kbps)
time(in s)
0
100
200
300
400
500
600
700
800
20
30
40
50
60
70
80
90
100
110
120