

CS 342: Networks Lab
Assignment – 4: Network Simulation using NS-3
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Application – 6

***Instructions to run the program:**

1) Install ns-3 with other modules and libraries.

2) Install gnuplot using following command:

sudo apt install gnuplot

3) Template for running main.cc (It should be inside scratch folder):

**./waf --run "scratch/main.cc --prot=TcpScalable --for_loop=40 --siml=1 --offset=2 --run_time=1
--packet_size=1024"**

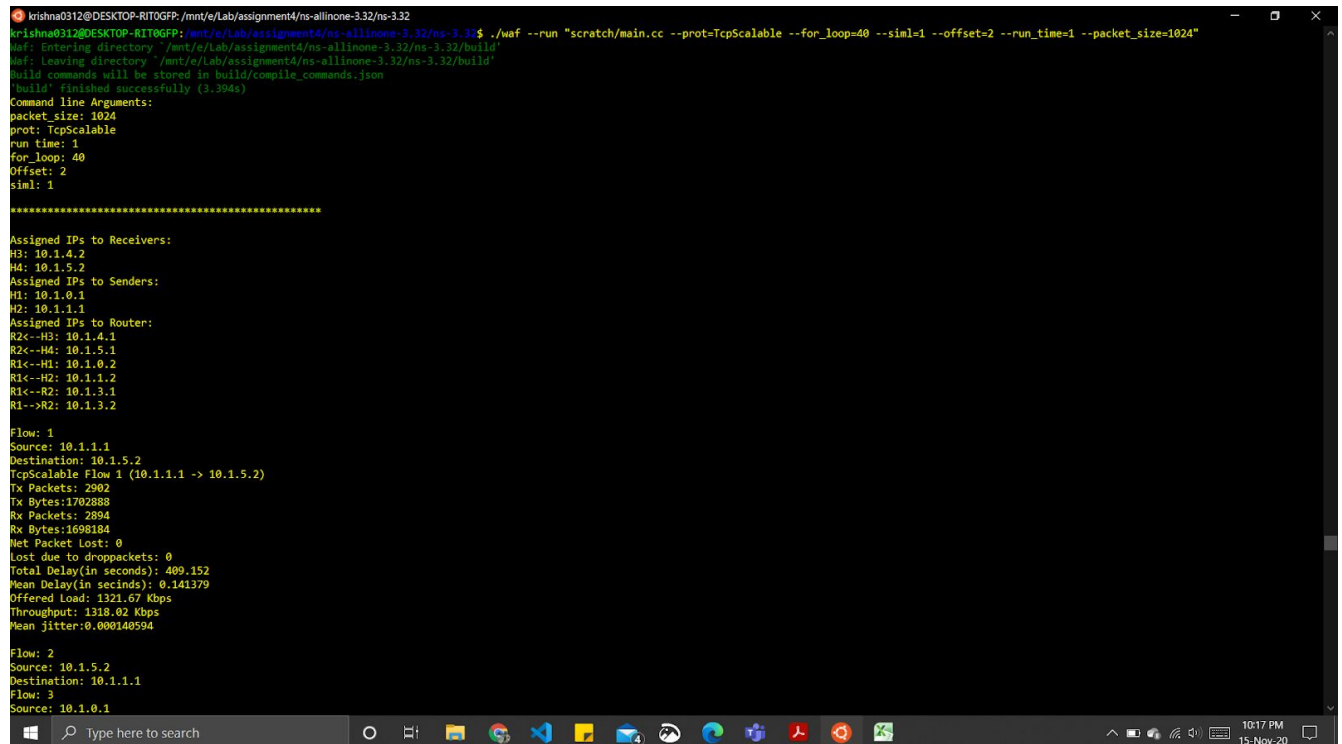
(Put the values accordingly in the fields above)

4) Plot the graph from generated "x.plt" file:

gnuplot x.plt

***Output:**

Attaching a screenshot after running the main.cc file:



```
krishna0312@DESKTOP-RITGFP: /mnt/e/Lab/assignment4/ns-allinone-3.32/ns-3.32$ ./waf --run "scratch/main.cc --prot=TcpScalable --for_loop=40 --siml=1 --offset=2 --run_time=1 --packet_size=1024"
waf: Entering directory '/mnt/e/Lab/assignment4/ns-allinone-3.32/ns-3.32/build'
waf: Leaving directory '/mnt/e/Lab/assignment4/ns-allinone-3.32/ns-3.32/build'
Build commands will be stored in build/compile_commands.json
'build' finished successfully (3.394s)
Command line Arguments:
packet_size: 1024
prot: TcpScalable
run time: 1
for_loop: 40
Offset: 2
siml: 1
*****
Assigned IPs to Receivers:
H3: 10.1.4.2
H4: 10.1.5.2
Assigned IPs to Senders:
H1: 10.1.0.1
H2: 10.1.1.1
Assigned IPs to Router:
R2<-H3: 10.1.4.1
R2<-H4: 10.1.5.1
R1<-H1: 10.1.0.2
R1<-H2: 10.1.1.2
R1<-R2: 10.1.3.1
R1->R2: 10.1.3.2
Flow: 1
Source: 10.1.1.1
Destination: 10.1.5.2
TcpScalable Flow 1 (10.1.1.1 -> 10.1.5.2)
Tx Packets: 2902
Tx Bytes:1702888
Rx Packets: 2894
Rx Bytes:1698184
Net Packet Lost: 0
Lost due to drop packets: 0
Total Delay(in seconds): 409.152
Mean Delay(in seconds): 0.141379
Offered Load: 1321.67 Kbps
Throughput: 1318.02 Kbps
Mean jitter:0.000148594
Flow: 2
Source: 10.1.5.2
Destination: 10.1.1.1
Flow: 3
Source: 10.1.0.1
```

All the graphs plotted for both the parts are included in the corresponding folders present in the zip file for convenience.