Computer Networks

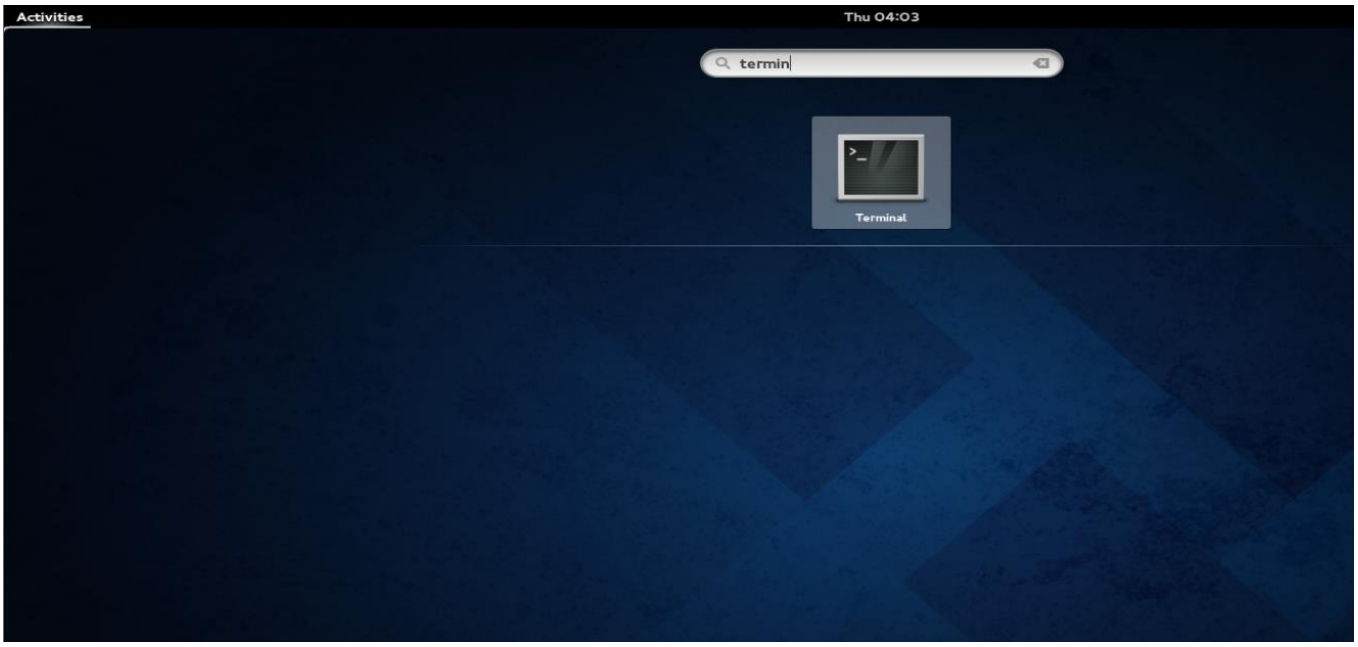
Lab Questions

Program-3

Aim: Implement an Ethernet LAN using n nodes and set multiple traffic nodes and plot congestion window for different source / destination

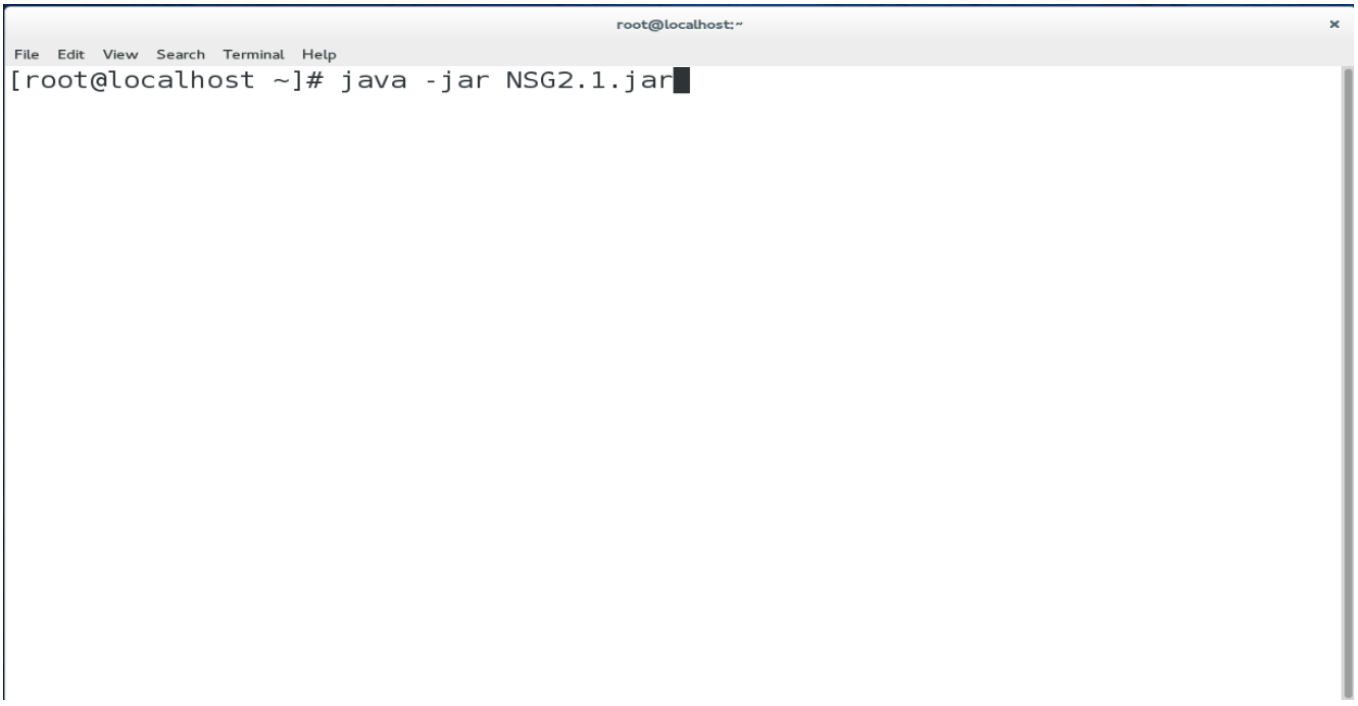
Steps to be followed:

Step 1: Click the Activities Panel on the top left side and search for **Terminal**



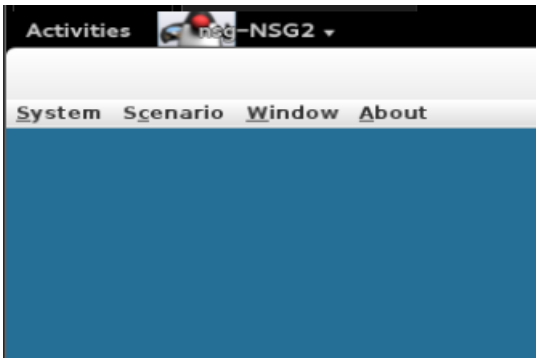
Step 2: Type the command in the **Terminal**

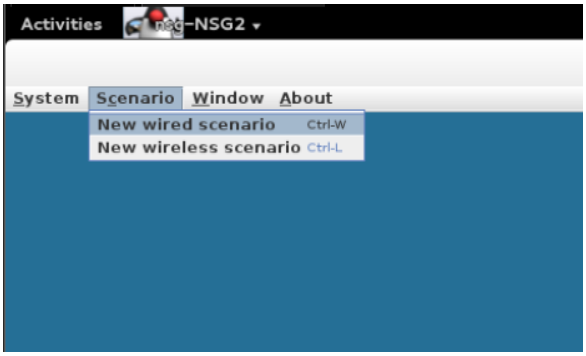
java -jar NSG2.1.jar



Step 3: Once Entered you will the redirected to a blue screen page there click on

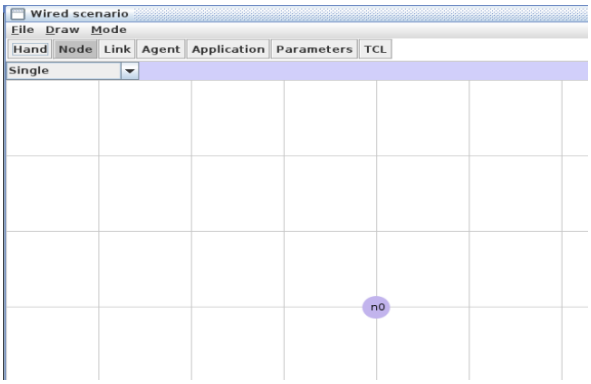
Scenario -> New wired scenario



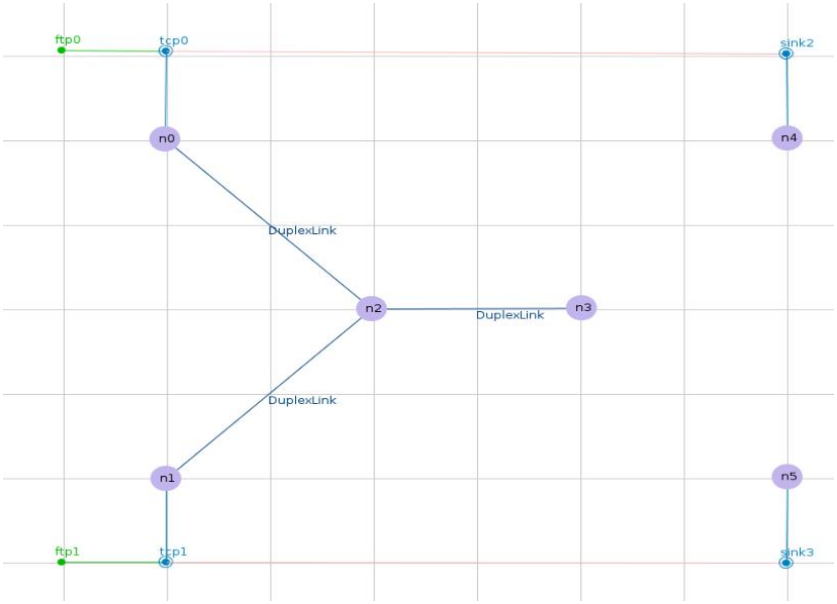


Step 4: Now you will have a blank screen here you must design your topology

Click on **Node** and click on the white screen to add the **Node**



Similarly make the following topology



One thing to change is in Node n1 use TCPReno

Step 5: Go to **Parameters->Save as Default -> Done**

Step 6: Go to **TCL** and save it

Step 7: Go to Terminal and type **gedit ecp3.tcl**

And make the following changes

#Links Definition

set lan [$ns newLan “$n3 $n4 $n5” 1Mb 40ms LLQueue/DropTail Mac/802_3 channel]

#Give node position (for NAM)

#Applications definition

Set f1 [open f1.tr w]

$tcp0 attach $f1

Set f2 [open f2.tr w]

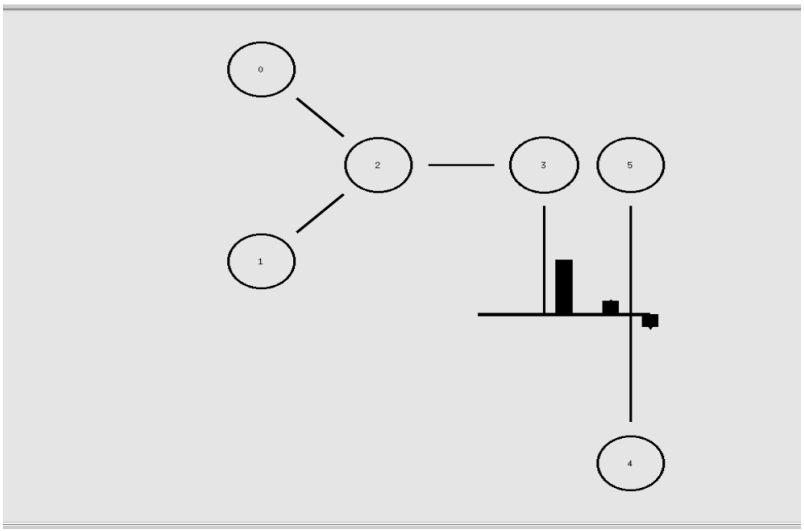
$tcp1 attach $f2

$tcp0 trace cwnd_

$tcp1 trace cwnd_

Step 8: In the terminal give the command **ns exp3.tcl**

Click the play button



Step 9: Update the AWK code

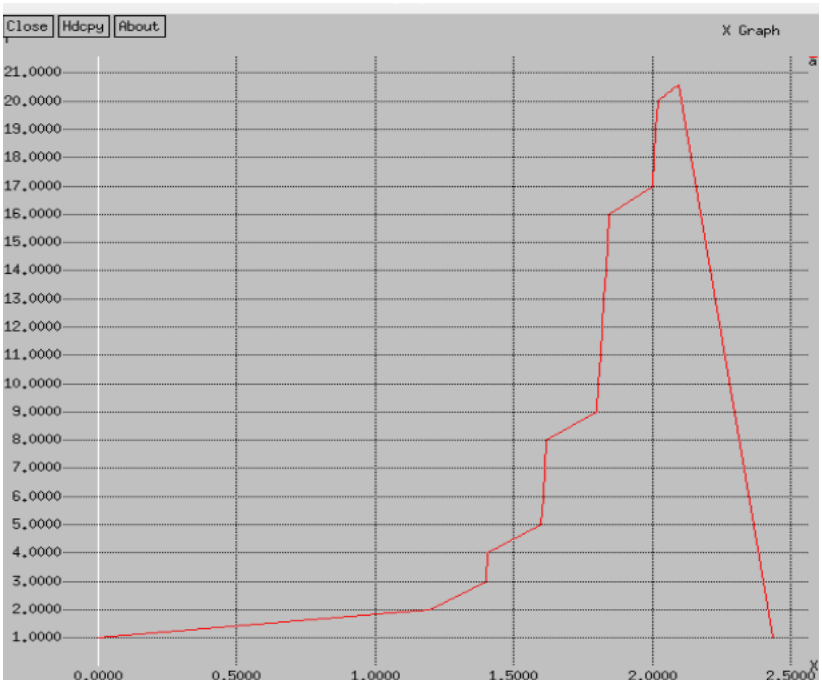
```
BEGIN{
}
{
        if(“$6 == cwnd_”)
        {
                printf(“%f\t%f\n”, $1, $7);
        }
}
END{
}
```

Step 10: Run the Awk code by the command

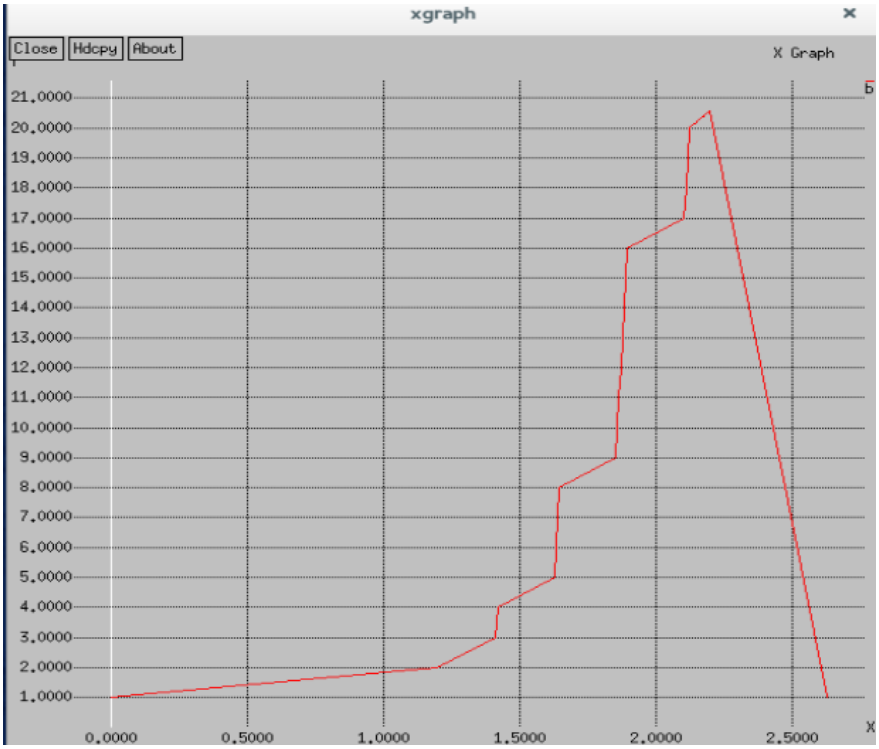
awk -f exp3.awk f1.tr
awk -f exp3.awk f2.tr

Step 11: We need the xgraph so assign the awk code as
awk -f exp3.awk f1.tr>a
awk -f exp3.awk f2.tr>b

Step 12: Next to get the xgraph the command is
xgraph a



xgraph b



Finally comparing both

xgraph a b