Practical 10

Title:

Create TCP server and client using mininet hosts and plot the speed graph.
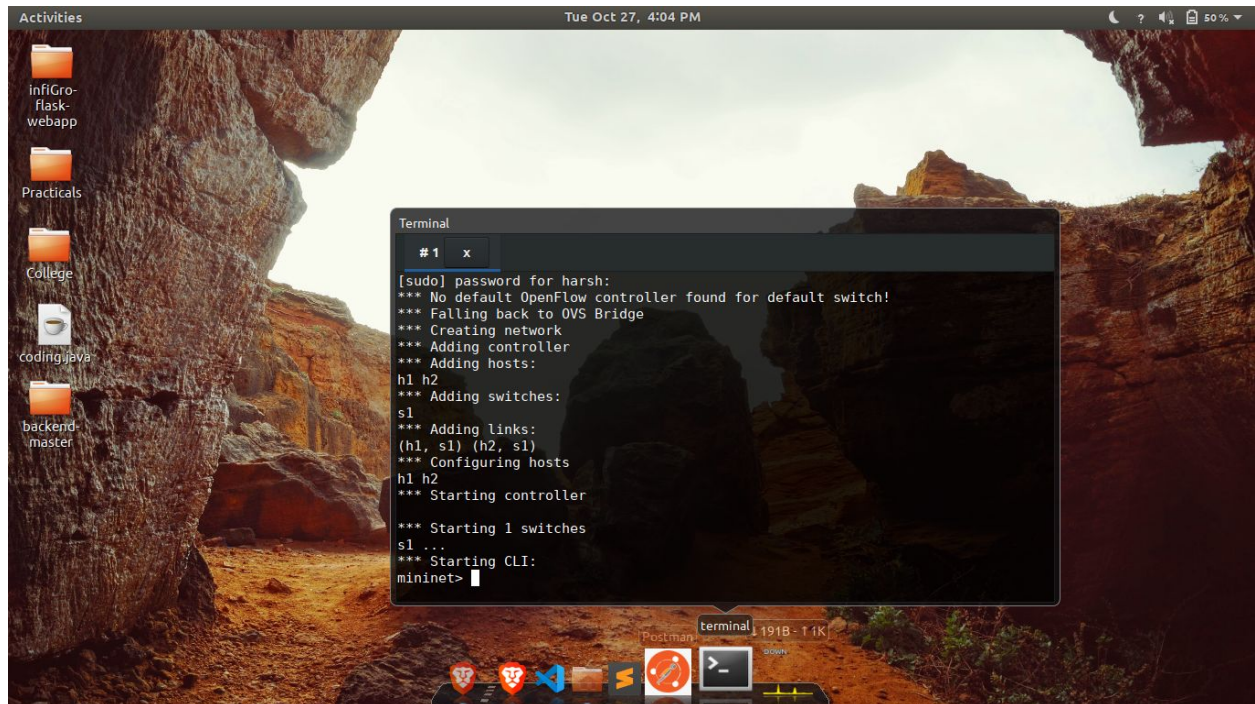
Learning:

Open the terminal and run the mininet command:

```
$ sudo mn
```

Then your terminal will be mininet terminal. Now see all the switches, controllers and hosts on mininet.

```
mininet> nodes
```

Your output terminal would be:

Then start the xterm terminal for hosts h1 and h2 by running the following command:

```
mininet> xterm h1 h2
```

Now we will start a TCP server on host h2 and h1 will be the client sending the requests. To start the server on host h2, run the following command:
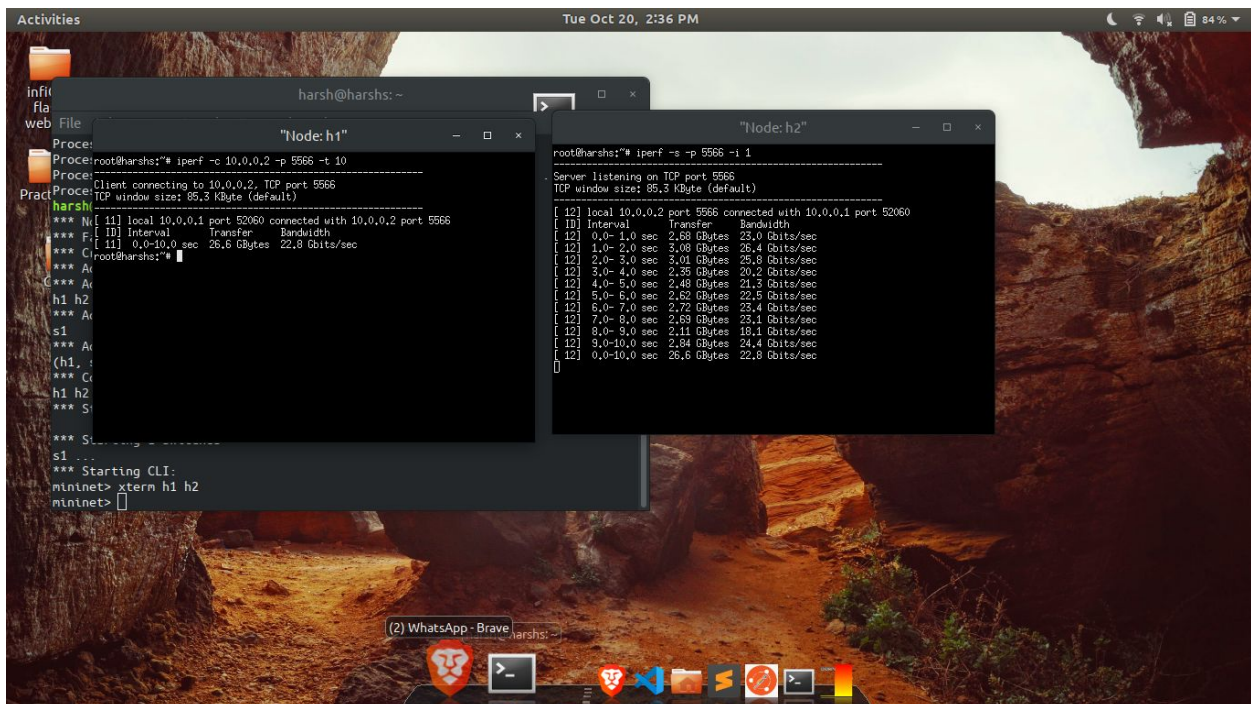
h2:
```
$ iperf -s -p 5566 -i 1
```

h1:

```
$ iperf -c 10.0.0.2 -p 5566 -t 15
```

This will create a TCP server and client on hosts h2 and h1 respectively and the output will be:

We will perform the above process again but this time we will store the output in "result" file using the command:

h2:

```
$ iperf -s -p 5566 -i 1 > result
```

h1:

```
$ iperf -c 10.0.0.2 -p 5566 -t 15
```
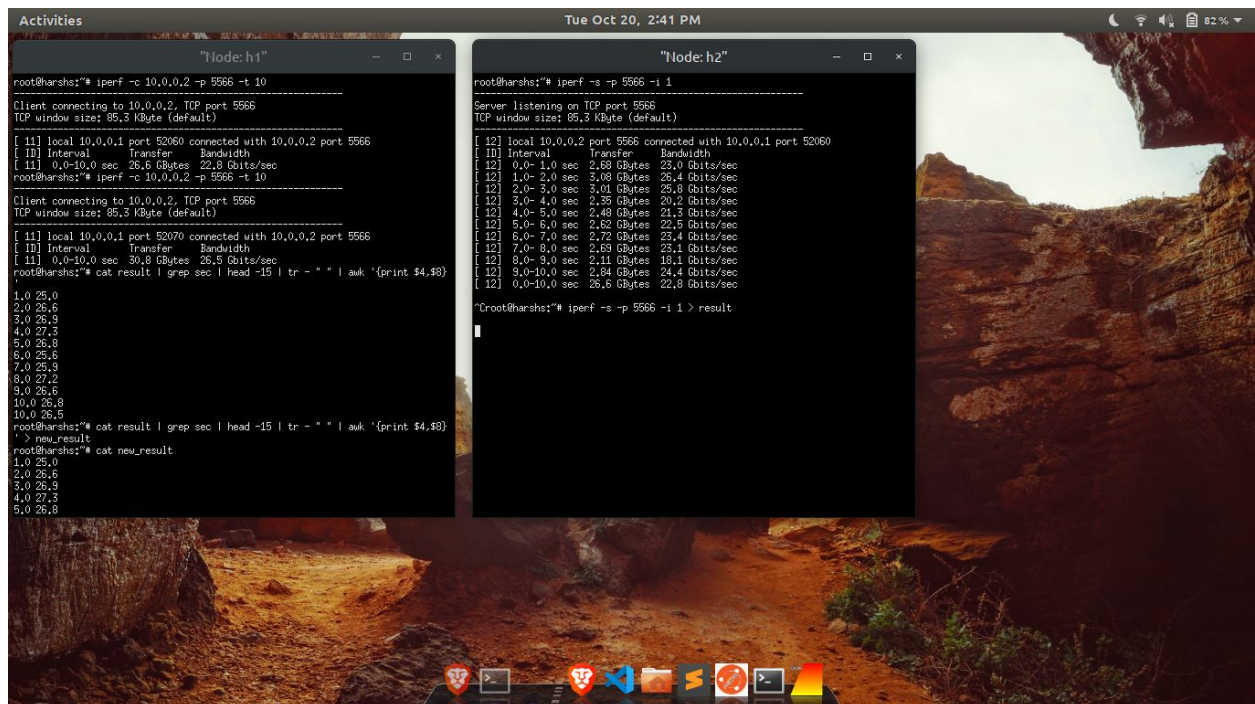
Then we will print the output in the terminal

h2:

```
$ cat result | grep sec | head -15 | tr - " " | awl '{print
$4,$8}'
```

This will show the result file with time and bandwidth at that time.

Now we will store this in "new_result" file.

h2:

```
$ cat result | grep sec | head -15 | tr - " " | awl '{print
$4,$8}' > new_result
```

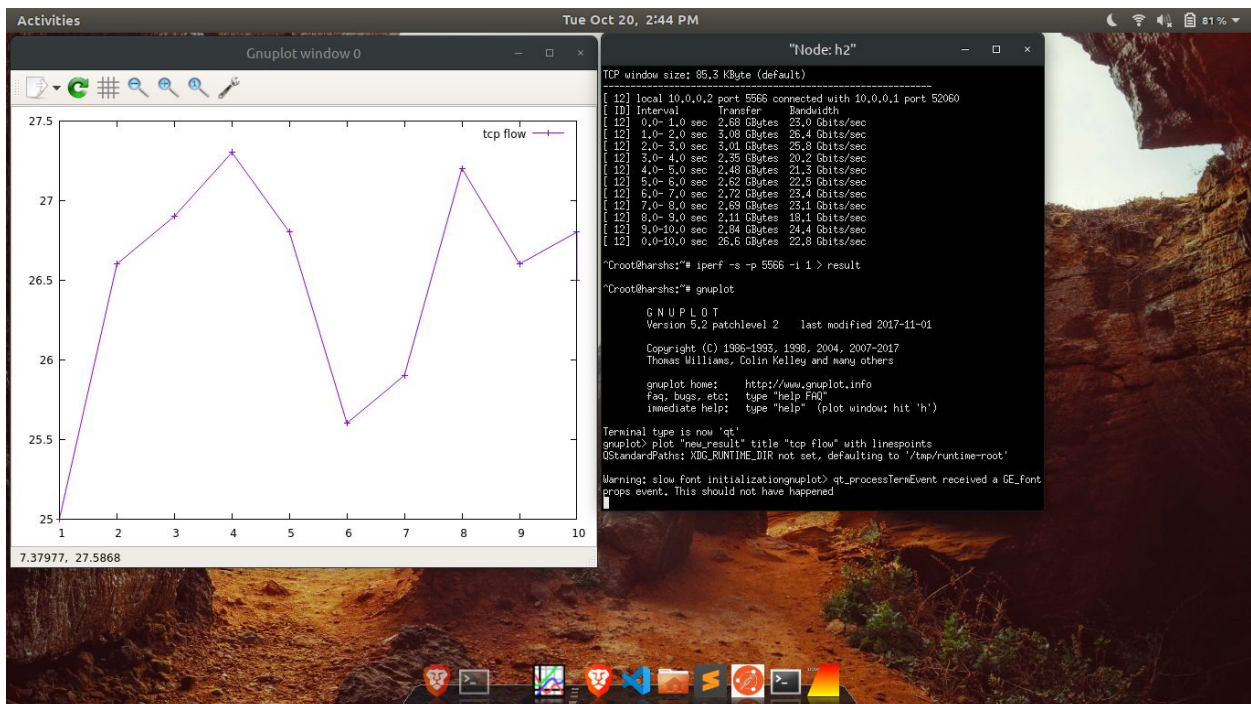Then we will run the command Gnuplot (ensure that Gnuplot is installed (sudo apt-get install gnuplot)).

h2:

```
$ gnuplot
```

Now our terminal will be gnuplot terminal. Now we will first set the terminal to xterm and the plot the time vs bandwidth graph.

```
gnuplot> set terminal xterm
gnuplot> plot "new_result" title "tcp flow" with
linespoints
```

The output would be like:

Conclusion:

We have learnt to create a local server and client and ping them using mininet. We also observed the time vs bandwidth trends.