**NS Script:**

*# This is a simple ns script. Comments start with #.*

*set ns [new Simulator]*

*source tb\_compat.tcl*

*set nodeA [$ns node]*

*set nodeB [$ns node]*

*set link0 [$ns duplex-link $nodeB $nodeA 1Mb 12.5ms DropTail]*

*tb-set-link-loss $link0 0.01*

*# Set the OS on a couple.*

*tb-set-node-os $nodeA FBSD62-STD*

*tb-set-node-os $nodeB FBSD62-STD*

*$ns rtproto Static*

*# Go!*

*$ns run*

PING output to show that the RTT is 25ms.

Practically Average RTT comes out to be 25.59ms.

UDP with Bandwidth=1Mbps.

Maximum bandwidth achieved is 972 Kbps.

TCP with 1 Mbps:

Maximum throughput achieved is 955Kbps.

After changing bandwidth to 10Mbps:

UDP with 10Mbps:

Average bandwidth is 9.72 Mbps.

TCP with 10Mbps:

Average throughput is 8.89Mbps.

After changing the link speed to 100Mbps:

UDP with 100 Mbps

Average bandwidth = 95.7Mbps.

TCP with 100Mbps:

When tried with 100Mbps for TCP the throughput did not turn out to be correct. On using different window sizes as mentioned 64Kilobytes,128kilobytes and 256kilobytes, the answers were about 10Mbps which were not correct.

So the maximum window size in the kernel was set to 2Mbytes using the command :

*sudo sysctl -w kern.ipc.maxsockbuf=2097152*

Changing the window size now to 64Kbytes, 128Kbytes and 256Kbytes, throughput changes to 20Mbps, 40Mbps and 77.9Mbps respectively.

**Part two:**

**1)**

On pinging to node B from node A, the Average RTT was found out to be 0.175ms.

2)