

MNC project 1

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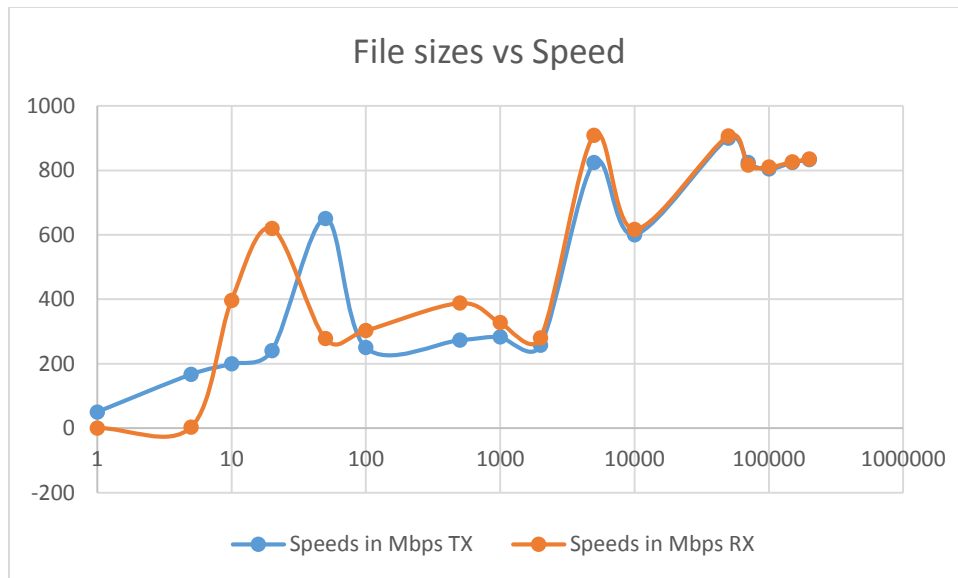
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Analysis part 1:

As the file size varies the speed of transfer first goes up and then peaks out, There are one or two abrupt speed changes but, generally speed is low for lower files, may be due to small resolution of the timer or other reasons. And as file size goes up the speed peaks out as can be seen from the curve.

Below are the observation:

File Sizes in KB	Speeds in Mbps	
	TX	RX
1	50.4	0.58772
5	167	3.09
10	200	396.58
20	241	620
50	651	278
100	250	303
500	273	388
1000	283	328
2000	257	280
5000	824	909
10000	600	617
50000	900	907
70000	824	816
100000	804	810
150000	824	826
200000	833	835

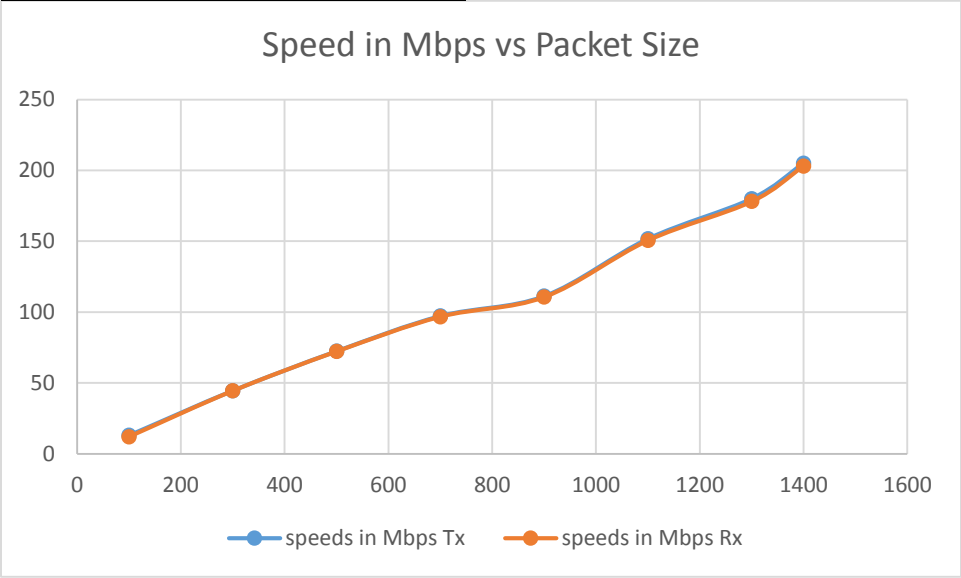


Analysis Part 2: Data Rates vs. Packet Size:

After varying the packet size for the transferring file of size of 200MB, I found that upload and download rates for the file sizes varied drastically. Quite clearly, for smaller packet sizes the upload and download rates are very low, given that actual data content of such packets is small portion of total packet size. As the packet size gets larger the Tx and Rx rate stabilize and highest rate is achieved at 1400 Bytes packet size, clearly as the fraction of data content goes higher efficiency of the system improves and so do Tx and Rx rates.

Below are the observations:

packet_sizes	speeds in Mbps	
	Tx	Rx
100	12.96	11.91
300	44.51	44.31
500	72.37	72.11
700	97.16	96.67
900	111.17	110.52
1100	151.68	150.5
1300	180	178
1400	205	203



Analysis part 3:

Data rates vs. Load variations

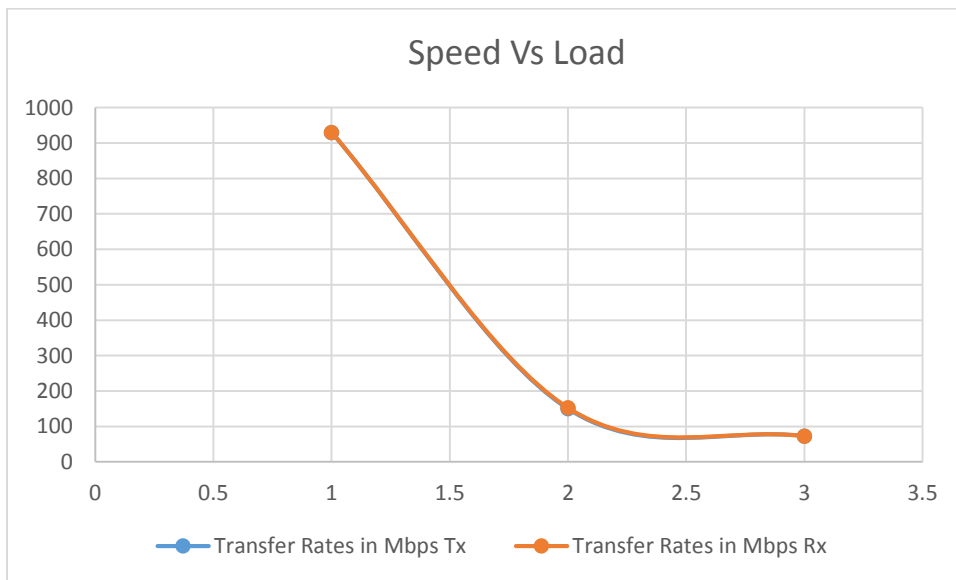
I ran application for 1,2,3 simultaneous file transfers.

e.g. for 3 file transfers on one client (underground) I ran the command –

download 2 70M.dat 3 70M.dat 4 70M.dat, i.e. asked for file 70M.dat from different clients and the

Tx and Rx rates were 100Mbps on all of the transfers, as per my implementation it is possible to download from different clients in parallel, thus bandwidth was equally divided between all the transfers.

number of transfers	Transfer Rates in Mbps	
	Tx	Rx
1	230	232
2	150	153
3	73	73



Analysis part 4:

I ran Iperf on 3 clients

- 1) The bandwidth was around 930Mbps for single client.
- 2) For two clients it was not equally divided, it was 600Mbps and 200Mbps (May be due to the fact that I couldn't press enter on all the machines is short time.)
- 3) For 3 clients again it was unequally divided it was, 471Mbps, 421Mbps, 271 Mbps.