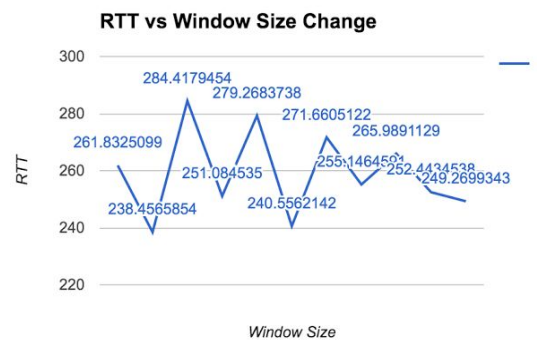# Project 2 Report

Go-back-n

The server and client code was run on two different VCL machines.

The traceroute value between these machines == 1 hop


```
    traceroute
0 upgraded, 1 newly installed, 0 to remove and 349 not upgraded.
Need to get 45.0 kB of archives.
After this operation, 176 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu/ trusty-updates/universe traceroute amd64 1:2.0.20-0ub
untu0.1 [45.0 kB]
Fetched 45.0 kB in 0s (426 kB/s)
Selecting previously unselected package traceroute.
(Reading database ... 245762 files and directories currently installed.)
Preparing to unpack .../traceroute_1%3a2.0.20-0ubuntu0.1_amd64.deb ...
Unpacking traceroute (1:2.0.20-0ubuntu0.1) ...
Processing triggers for man-db (2.6.7.1-1ubuntu1) ...
Setting up traceroute (1:2.0.20-0ubuntu0.1) ...
update-alternatives: using /usr/bin/traceroute.db to provide /usr/bin/traceroute (traceroute) in
 auto mode
update-alternatives: using /usr/bin/lft.db to provide /usr/bin/lft (lft) in auto mode
update-alternatives: using /usr/bin/traceproto.db to provide /usr/bin/traceproto (traceproto) in
 auto mode
update-alternatives: using /usr/sbin/tcptraceroute.db to provide /usr/sbin/tcptraceroute (tcptra
ceroute) in auto mode
[apatwar@bn19-88:~$ traceroute 152.46.20.210
traceroute to 152.46.20.210 (152.46.20.210), 30 hops max, 60 byte packets
 1  bn20-210.dcs.mcnc.org (152.46.20.210)  0.198 ms  0.176 ms  0.167 ms
apatwar@bn19-88:~$
```
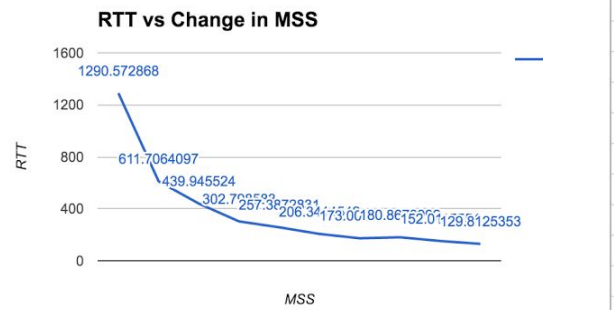
1) Task 1 - Effect of Window size N

WINDOW SIZE	RTT1	RTT2	RTT3	RTT4	RTT5	AVG
1	275.862093	223.8985891	267.7641079	269.7143074	271.9234519	261.832509
2	227.186882	231.1661649	249.1825452	240.431952	244.3153829	238.4565854
4	279.2237742	247.2378221	307.2562962	291.2185381	297.1532965	284.4179454
8	237.191766	259.223943	249.1984718	252.6721954	257.1362986	251.084535
16	231.2090521	313.256952	281.2267368	271.417592	299.2315361	279.2683738
32	265.2925088	207.1830161	255.3051999	233.8370512	241.163295	240.5562142
64	265.3286941	267.3031209	283.307843	273.0528458	269.3100574	271.6605122
128	275.4160721	237.3537509	267.4137971	244.5135007	251.0351746	255.1464591
256	283.3947108	271.443728	245.4168229	249.8036723	279.8866304	265.9891129
512	227.360286	283.366828	237.530509	236.551491	277.4081548	252.4434538
1024	269.46804	257.5599768	219.4915149	238.4157309	261.414409	249.2699343

RTT vs Window Size Change

2) Task 2 - Effect of MSS

MSS	RTT1	RTT2	RTT3	RTT4	RTT5	AVG
100	1312.892488	1266.960068	1277.0108	1307.590041	1288.410944	1290.572868
200	610.608073	598.5769598	628.6603189	603.4833092	617.2033877	611.7064097
300	403.9385769	467.837249	445.900367	428.5375134	453.5139136	439.945524
400	279.466049	327.5251729	311.506624	304.1359352	291.359134	302.798583
500	237.22367	299.277564	239.2661569	267.1397124	244.0293124	257.3872831
600	193.0791311	237.1377819	199.1359098	204.8983243	197.456124	206.3414542
700	181.0093279	169.0040951	168.9736249	171.4581302	174.5699134	173.0030183
800	162.9329431	204.985322	164.9374928	182.1349509	189.3487871	180.8678992
900	146.849308	178.8887491	126.83495	158.8723602	148.6124099	152.0115554
1000	100.8053119	144.831331	144.8414371	137.6903214	120.894275	129.8125353

RTT vs Change in MSS

3) Task 3 - Effect of Loss Probability p

EXPT NO 3						
Prob	RTT1	RTT2	RTT3	RTT4	RTT5	AVG
0.01	47.15116	39.264539	57.20635891	44.1249807	51.1203982	47.77348736
0.02	117.2007699	89.24129891	77.16428208	89.1349001	98.1231439	94.17287898
0.03	155.2422361	175.2048659	149.1866078	148.0293411	166.1350813	158.7596264
0.04	199.2305489	217.2827361	221.314347	207.8012355	220.1240592	213.1505853
0.05	271.3108151	237.2447731	313.341892	278.1932235	288.1290923	277.6439592
0.06	315.3731098	321.3640759	311.3167541	316.7713402	319.093249	316.7837058
0.07	391.3853221	389.33498	341.338171	362.7124097	378.1513892	372.5844544
0.08	391.414772	373.362627	459.385649	400.1240962	419.5023403	408.7578969
0.09	479.4426939	519.451998	455.4108481	491.4245108	488.1982473	486.7856596
0.1	607.5765929	533.4125831	497.444478	538.3258072	588.3249828	553.0168888

RTT vs Change in Probability