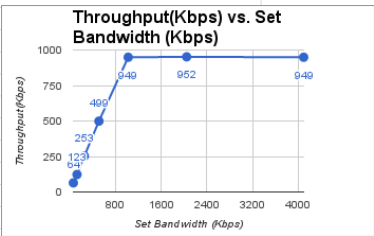


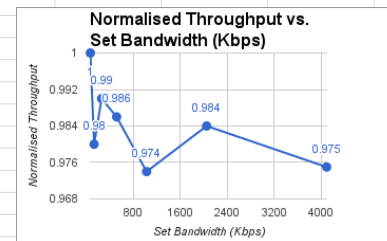
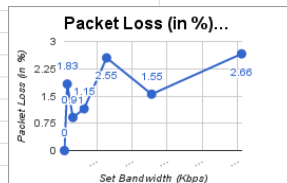
Part 1									
TCP									
		Set Bandwidth (Kbps)	Throughput(Kbps)		Set Bandwidth (Kbps)	Normalised Throughput			
		default	949		default				
		Set Bandwidth (Kbps)	Packet Loss						
		default							
UDP									
		Set Bandwidth (Kbps)	Throughput(Kbps)		Set Bandwidth (Kbps)	Normalised Throughput			
	1	64	64		64	1			
	2	128	123		128	0.98			
	3	256	253		256	0.99			
	4	512	499		512	0.986			
	5	1024	949		1024	0.974			
	6	2048	952		2048	0.984			
	7	4096	949		4096	0.975			

Normalised Throughput vs. Set Bandwidth (Kbps)

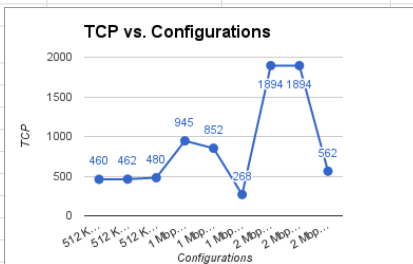
Set Bandwidth (Kbps)	Normalised Throughput
64	1
128	0.98
256	0.99
512	0.986
1024	0.974
2048	0.984
4096	0.975



Set Bandwidth (Kbps)	Packet Loss (in %)
64	0
128	1.83
256	0.91
512	1.15
1024	2.55
2048	1.55
4096	2.66

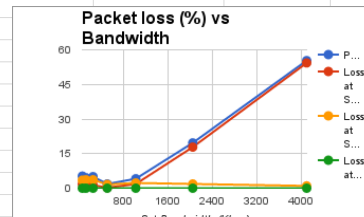
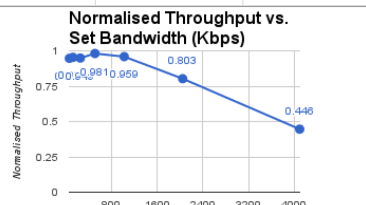
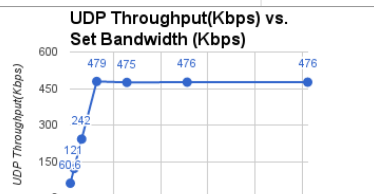


Part 2		Configurations	TCP
		512 Kbps, 1ms	460
		512 Kbps, 10ms	462
		512 Kbps, 100ms	480
		1 Mbps, 1ms	945
		1 Mbps, 10ms	852
		1 Mbps, 100ms	268
		2 Mbps, 1ms	1894
		2 Mbps, 10ms	1894
		2 Mbps, 100ms	562

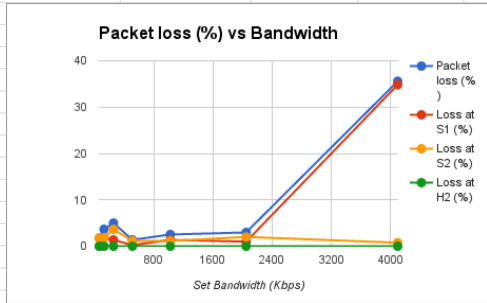
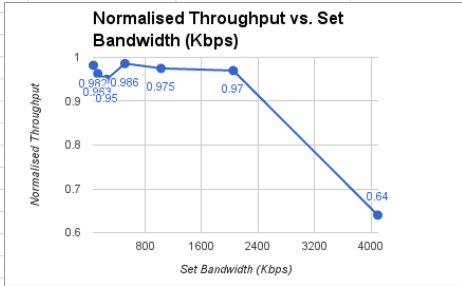
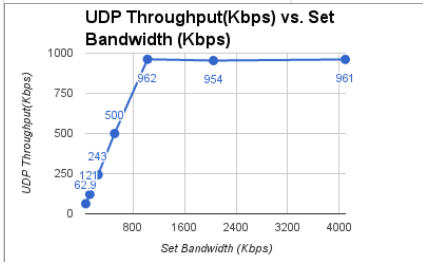


1.Bandwidth = 512 Kbps, Delay = 1 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)	Set Bandwidth (Kbps)	Normalised Throughput	Set Bandwidth (Kbps)	Packet loss (%)	Loss at S1 (%)	Loss at S2 (%)	Loss at H2 (%)
64	60.6	64	0.947	64	5.263	1.75	3.5	0
128	121	128	0.954	128	4.54	0.91	3.63	0
256	242	256	0.949	256	5.02	1.37	3.65	0
512	479	512	0.981	512	1.826	0.228	1.598	0
1024	475	1024	0.959	1024	4.1	1.82	2.28	0
2048	476	2048	0.803	2048	19.65	17.82	1.84	0
4096	476	4096	0.446	4096	55.34	54.32	1.01	0

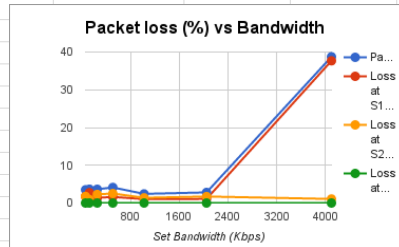
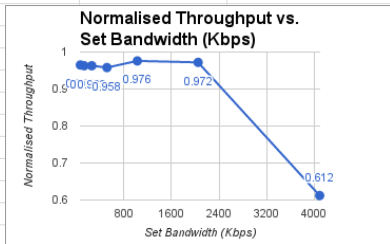
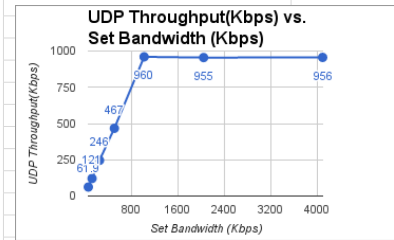


128	121	128	0.963	128	3.67	1.83	1.83	0
256	243	256	0.95	256	5	1.363	3.636	0
512	500	512	0.986	512	1.38	0.23	1.15	0
1024	962	1024	0.975	1024	2.53	1.38	1.15	0
2048	954	2048	0.97	2048	2.97	0.974	2	0
4096	961	4096	0.64	4096	35.58	34.81	0.76	0



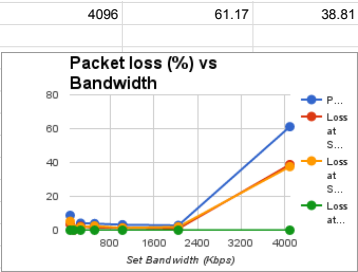
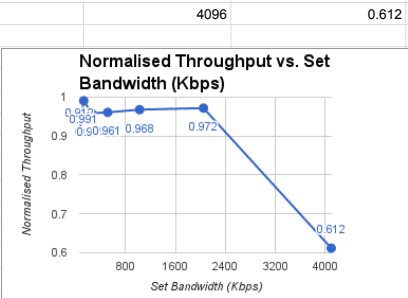
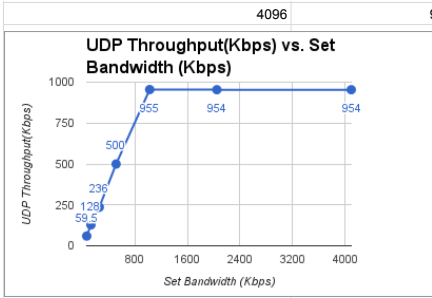
5.Bandwidth = 1 Mbps, Delay = 10 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)	Set Bandwidth (Kbps)	Normalised Throughput	Set Bandwidth (Kbps)	Packet loss (%)	Loss at S1 (%)	Loss at S2 (%)	Loss at H2 (%)
64	61.9	64	0.965	64	3.51	1.754	1.754	0
128	121	128	0.963	128	3.67	2.75	0.92	0
256	246	256	0.963	256	3.65	1.37	2.28	0
512	467	512	0.958	512	4.13	1.61	2.52	0
1024	960	1024	0.976	1024	2.42	1.04	1.38	0
2048	955	2048	0.972	2048	2.81	1.09	1.72	0
4096	956	4096	0.612	4096	38.74	37.67	1.07	0



6.Bandwidth = 1 Mbps, Delay = 100 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)	Set Bandwidth (Kbps)	Normalised Throughput	Set Bandwidth (Kbps)	Packet loss (%)	Loss at S1 (%)	Loss at S2 (%)	Loss at H2 (%)
64	59.5	64	0.912	64	8.77	3.5	5.26	0
128	128	128	0.991	128	0.9	0	0.9	0
256	236	256	0.959	256	4.13	2.29	1.83	0
512	500	512	0.961	512	3.9	1.38	2.53	0
1024	955	1024	0.968	1024	3.24	1.39	1.38	0
2048	954	2048	0.972	2048	2.83	0.87	1.96	0

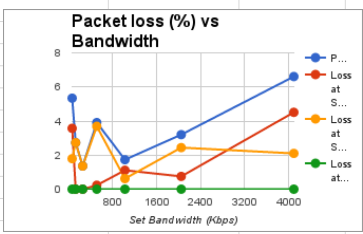
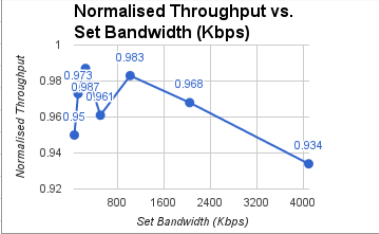
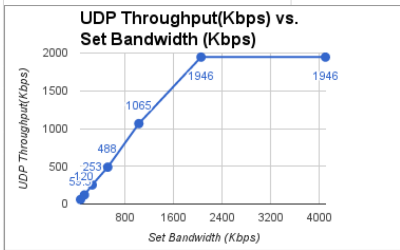


7. Bandwidth = 2 Mbps, Delay = 1 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)
64	59.5
128	120
256	253
512	488
1024	1065
2048	1946
4096	1946

Set Bandwidth (Kbps)	Normalised Throughput
64	0.95
128	0.973
256	0.987
512	0.961
1024	0.983
2048	0.968
4096	0.934

Set Bandwidth (Kbps)	Packet loss (%)	Loss at S1 (%)	Loss at S2 (%)	Loss at H2 (%)
64	5.34	3.57	1.79	0
128	2.73	0	2.73	0
256	1.36	0	1.36	0
512	3.91	0.23	3.69	0
1024	1.73	1.11	0.62	0
2048	3.2	0.75	2.44	0
4096	6.61	4.51	2.1	0

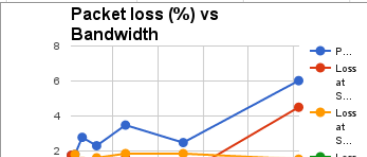
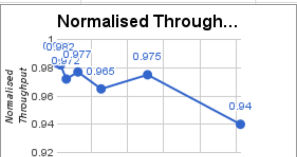
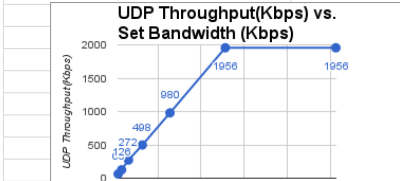


8. Bandwidth = 2 Mbps, Delay = 10 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)
64	63
128	126
256	272
512	498
1024	980
2048	1956
4096	1956

Set Bandwidth (Kbps)	Normalised Throughput
64	0.983
128	0.982
256	0.972
512	0.977
1024	0.965
2048	0.975
4096	0.94

Set Bandwidth (Kbps)	Packet loss (%)	Loss at S1 (%)	Loss at S2 (%)	Loss at H2 (%)
64	1.75	1.75	0	0
128	1.8	0	1.8	0
256	2.78	1.39	1.39	0
512	2.3	0.69	1.61	0
1024	3.48	1.6	1.85	0
2048	2.48	0.64	1.85	0
4096	6.02	4.5	1.53	0





9.Bandwidth = 2 Mbps, Delay = 100 ms

Set Bandwidth (Kbps)	UDP Throughput(Kbps)
64	64.2
128	128
256	248
512	495
1024	1024
2048	1956
4096	1956



Set Bandwidth (Kbps)	Normalised Throughput
64	1
128	0.981
256	0.981
512	0.96
1024	0.969
2048	0.975
4096	0.93

