ANALYSIS

1. Data Rates vs. File Size

Data Rates vs. File Size

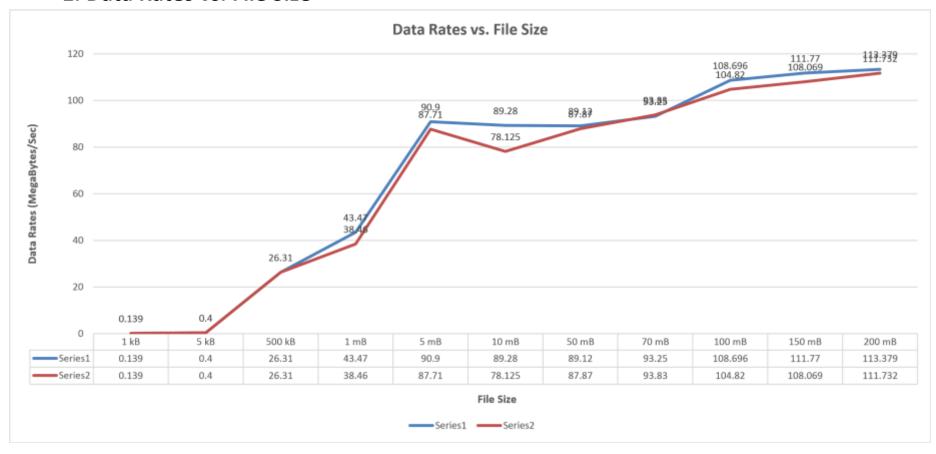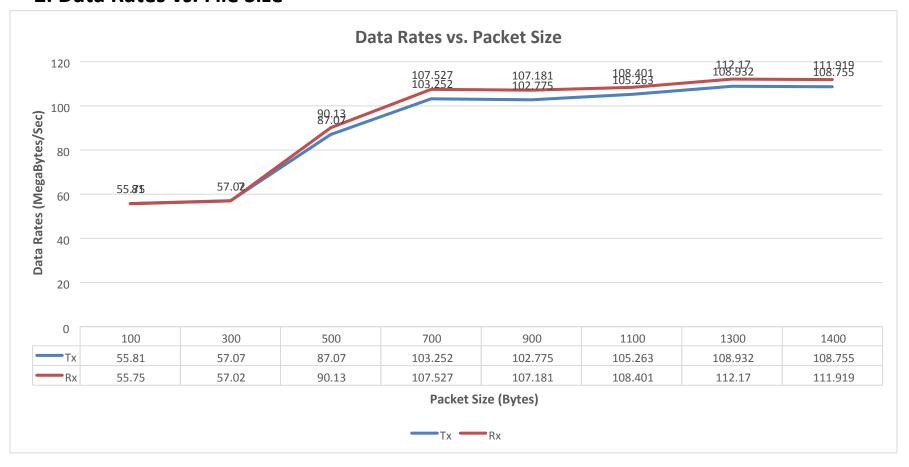| File Size	1 kB	5 kB	500 kB	1 mB	5 mB	10 mB	50 mB	70 mB	100 mB	150 mB	200 mB
Series1	0.139	0.4	26.31	43.47	90.9	89.28	89.12	93.25	108.696	111.77	113.379
Series2	0.139	0.4	26.31	38.46	87.71	78.125	87.87	93.83	104.82	108.069	111.732

The data rate increases with file size on both Tx and Rx and then stabilizes as the peak data transfer rate of the network nears. The receiving rate is always slightly lower that the transmission rate, this may be because of delay incurred in the network.

2. Data Rates vs. File Size

Data Rates vs. Packet Size

Packet Size (Bytes)	100	300	500	700	900	1100	1300	1400
Tx	55.81	57.07	87.07	103.252	102.775	105.263	108.932	108.755
Rx	55.75	57.02	90.13	107.527	107.181	108.401	112.17	111.919

Data Rates (MegaBytes/Sec)

Tx   Rx

The data rate rises steadily with the packet size and peak transfer rate nears as the packet size reaches 700 bytes.

3. Data Rates vs. Load Variations

Number of Parallel Downloads	File Size	Data Rate
1	1. 70 MB	1. 98.3 MB/Sec
2	1. 70 MB 2. 70 MB	1. 39.2 MB/Sec 2. 56.5 MB/Sec
3	1. 70 MB 2. 70 MB 3. 70MB	1. 32.6 MB/Sec 2. 35.4 MB/Sec 3. 39.5 MB/Sec

The available transfer bandwidth is divided when multiple data transfers are initiated.

4. iperf and Measure Network Bandwidth

Server	Client	Data Rate
Underground	1. Embankment	1. 118 MB/Sec
Underground	1. Embankment 2. Euston	1. 46.20 MB/Sec 2. 76.25 MB/Sec
Underground	1. Embankment 2. Euston 3. Highgate	1. 37.50 MB/Sec 2. 67.25 MB/Sec 3. 24.50 MB/Sec

With iPerf the peak bandwidth measured for a single data transfer was 118 MB/Sec. We can see that the application was able to achieve data rates comparable to this figure for single as well as parallel transfers.