

## part c:

```
danielbes@Ubunto:~/Desktop$ ./TCP_Receiver -p 1024 -algo cubic
Received EXIT message
Run #1 Data: Time = 13794.81 ms; Speed = 1.58 MB/s
```

Statistics:

- Average time = 13794.81 ms
- Average bandwidth = 1.58 MB/s

Sender disconnected. Waiting for new connection...

```
danielbes@Ubunto:~/Desktop$ ./TCP_Receiver -p 1024 -algo reno
Received EXIT message
Run #1 Data: Time = 18624.06 ms; Speed = 1.17 MB/s
```

Statistics:

- Average time = 18624.06 ms
- Average bandwidth = 1.17 MB/s

Sender disconnected. Waiting for new connection...

```
danielbes@Ubunto:~/Desktop/CS/second_year/Netrotk/Q3$ ./RUDP_Receiver -p 1024
Socket created and bound successfully.
Waiting for data...
```

Statistics:

- Average time = 53330.47 ms
- Average bandwidth = 0.41 MB/s

Statistics:

- Average time = 28606.77 ms
- Average bandwidth = 0.38 MB/s

Statistics:

- Average time = 19508.45 ms
- Average bandwidth = 0.37 MB/s

Statistics:

- Average time = 14827.50 ms
- Average bandwidth = 0.37 MB/s

Statistics:

- Average time = 12305.49 ms
- Average bandwidth = 0.35 MB/s

### With 2% loss

```
double loss_probability = 0.02;
```

```
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk$ ./TCP_Receiver -p 1025 -algo
cubic
Received EXIT message
Run #1 Data: Time = 20085.78 ms; Speed = 1.06 MB/s

Statistics:
- Average time = 20085.78 ms
- Average bandwidth = 1.06 MB/s
Sender disconnected. Waiting for new connection...
```

```
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk$ ./TCP_Receiver -p 1025 -algo
reno
Received EXIT message
Run #1 Data: Time = 22094.73 ms; Speed = 0.96 MB/s

Statistics:
- Average time = 22094.73 ms
- Average bandwidth = 0.96 MB/s
Sender disconnected. Waiting for new connection...
```

```
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk/Q3$ ./RUDP_Receiver -p 1024
Socket created and bound successfully.

Statistics:
- Average time = 0.42 ms
- Average bandwidth = 299.33 MB/s

Statistics:
- Average time = 1252.82 ms
- Average bandwidth = 0.05 MB/s

Statistics:
- Average time = 1000.47 ms
- Average bandwidth = 0.04 MB/s

Statistics:
- Average time = 1098.43 ms
- Average bandwidth = 0.03 MB/s

Statistics:
- Average time = 1195.62 ms
- Average bandwidth = 0.02 MB/s
```

### With 5% loss

```
double loss_probability = 0.05;
```

```
Run #2 Data: Time = 16140.88 ms; Speed = 1.28 MB/s

Statistics:
- Average time = 16140.88 ms
- Average bandwidth = 1.28 MB/s
Sender disconnected. Waiting for new connection...
```

```
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk$ ./TCP_Receiver -p 1025 -algo
cubic
Received EXIT message
Run #1 Data: Time = 12011.23 ms; Speed = 1.72 MB/s

Statistics:
- Average time = 12011.23 ms
- Average bandwidth = 1.72 MB/s
Sender disconnected. Waiting for new connection...
```

```
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk/Q3$ ./RUDP_Receiver -p 1024
Socket created and bound successfully.
```

```
Statistics:
- Average time = 0.22 ms
- Average bandwidth = 103.27 MB/s
```

```
Statistics:
- Average time = 1288.92 ms
- Average bandwidth = 0.01 MB/s
```

```
Statistics:
- Average time = 1683.29 ms
- Average bandwidth = 0.00 MB/s
```

```
Statistics:
- Average time = 1954.44 ms
- Average bandwidth = 0.00 MB/s
```

```
Statistics:
- Average time = 2179.54 ms
- Average bandwidth = 0.00 MB/s
```

### With 10% loss

```
double loss_probability = 0.10;
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk$ ./TCP_Receiver -p 1025 -algo
cubic
Received EXIT message
Run #1 Data: Time = 12453.57 ms; Speed = 1.57 MB/s

Statistics:
- Average time = 12453.57 ms
- Average bandwidth = 1.57 MB/s
Sender disconnected. Waiting for new connection...
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk$ ./TCP_Receiver -p 1025 -algo
reno
Received EXIT message
Run #1 Data: Time = 13363.36 ms; Speed = 1.46 MB/s

Statistics:
- Average time = 13363.36 ms
- Average bandwidth = 1.46 MB/s
Sender disconnected. Waiting for new connection...
danielbes@Ubuntu:~/Desktop/CS/second_year/Netrotk/Q3$ ./RUDP_Receiver -p 1024
Socket created and bound successfully.

Statistics:
- Average time = 0.06 ms
- Average bandwidth = 137.65 MB/s

Statistics:
- Average time = 1214.20 ms
- Average bandwidth = 0.00 MB/s

Statistics:
- Average time = 1051.50 ms
- Average bandwidth = 0.00 MB/s

Statistics:
- Average time = 952.94 ms
- Average bandwidth = 0.00 MB/s

Statistics:
- Average time = 1231.05 ms
- Average bandwidth = 0.00 MB/s
```

