LAB 04

Setup
The client and server are connected through a router via ethernet cables.

Disk Bandwidth
The server has a disk read speed of about 53 MB/s which we calculated by running the disk command and using iostat. This gives us about 26.5 requests/sec for our 2MB files.

Network Bandwidth
Used iperf -c <Server-IP> on client and iperf -s on server to find network bandwidth. The network bandwidth in our setup is about 94.2 Mbps, which is justifiable because we are connected using Ethernet.
This roughly translates to 5.71 requests/sec for file size of 2MB.

Exercise 1:

The throughput saturates for N = 1 threads.

We plotted number of threads in the client (N) against the throughput and average response time for N = 1 to 10. We observe that we achieve the maximum throughput for N = 3. The throughput saturates at about 5.78 requests/sec.
At saturation the bottleneck resource is network bandwidth. The throughput observed by experiment (5.78 req/sec)is approximately equal to the limiting bandwidth of the network.