Transferring 100MB dat file

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| --- | --- | --- |
| Buffer Size | Buffer (MB) | Time (s) |
| 1KB | 0.000976563 | 4.386956 |
| 10KB | 0.009765625 | 0.54719 |
| 100KB | 0.09765625 | 0.077827 |
| 1MB | 1 | 0.046198 |
| 10MB | 10 | 0.049587 |

|  |  |
| --- | --- |
|  | Time(s) |
| 1k data transfer | 5.572978 |
| Entire file | 0.06126 |

When we transferring a 100MB dat file and compare with the different buffer size, increasing the buffer capacity will decrease the time it takes to finished transfer a file. Since whenever we request to transfer certain buffer size of the file, it needs to first separate to blocks and grabs the data. If the buffer size is small enough, it would have a huge delay time to grab that small piece of data from multiple blocks. Increasing the size of the buffer would make fewer blocks and reduce the latency of transferring a file.

Design:

In this project, we need to implement a client-server communication system that sends the request from the client-side and processes it in the server, and returns it back to the client again once it is complete. The FIFORequestChannel serves as a tunnel that connects the server and client which handle both sending and receiving the request from both sides.