

Assignment 2 Report

Introduction:

The purpose of this project is to develop a server and client application to allow client to request from server and download it. It will use pthread to break the file into different chunks to improve speed. This program uses TCP protocol and three way handshake to get connected to the server.

Implementation:

The Client will create a socket that allows IPv4 communication, then it will send a request to the server to connect. Once it is connected, the client will be able to send request to the server, so it can download the requested files.

The server uses the same TCP protocol and three way handshake to establish connection. It take uses of bind(), listen() and accept() to receive any connection from client. The client request the file from the server. It will respond with a filesize. If it doesn't have the file then it will move on to other servers to see if they have the file. If they all don't have it, then client will close connection. If one of the server do have the file, then it will send the file size back to client and the client will process that information and get the offset and chunk size. It will then send those information to the server. Once the server receives those info, then it will use it to download the files in chunks. Once it is all downloaded then, it will send it to the client and the client will assemble the files together into one.

Run the Program:

Procedure to run the server and client program:

Step 1 : Type `"../bin/server 1234", "../bin/server 2345" , "../bin/server 3456"` in three terminal to open server connection.

Step 2 : Open a new terminal and type `"../bin/client server-info.text 3 hello.text"` to multiple connect to the server.

Then, this program will produce a file called test4.text and it will contain all the downloaded content.

Conclusion/Problems:

Overall, my program runs great on my own computer, but it won't run on unix timeshare. This is a pretty fun program because I get to learn how multi-threading work.