Assignment 3: Remote Files

The program comprises of two files, netfileserver.c and libnetfiles.c. Netfileserver.c contains the server initialization as well as client thread creation. Libnetfiles.c contains network calls netopen(), netread(), netwrite(), netclose(), and netserverinit(). The client may call these net calls to interact with the server. Netserverinit is used to determine whether a given hostname exists and assigns a file mode (unrestricted, exclusive, transaction) to the client-server connection to set certain restrictions for reads and writes on certain files. This is accomplished by keeping track of each files associated file descriptors and filepaths, including flags for each file mode. Netopen uses this information to either allow or deny a client to make its desired connection to a specified file. The client chooses which net calls to make, starting with netopen(). Netopen takes in a path name and a file mode, aforementioned. The path name must be a valid file path to an existing file and the file mode must be one of the three.

//explain netopen

Netread() takes in a file descriptor (provided as the output returned by netopen()), a buffer and desired amount of bytes to read to said buffer.

//explain netread()

Netwrite() takes in a file descriptor, a buffer that is what is to be written to the file and the amount of bytes desired to be written.

//explain netwrite()

Netclose() takes in a file descriptor provided by a netopen() to close this connection.

//explain netclose()

All errors are accounted for regarding different issues associated with read, write, open, close, send, receive and hostname errors, and respectively sent to the client by the server when they occur.