

Internet Computing Project 1

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Implement a proxy server with the following requirements:

- The **proxy** command accepts a service port number, remote host name, remote port, and an optional string.
- The proxy should report the IP of the connecting client, and the size of each message exchanged. For example, when the client sends a message of 789 bytes followed by 123 bytes, and then the server responds with a message, the output should be “client sent 912 bytes”. Note that you should determine the request or response message size from the turn-taking client-server interactions and not by the proxy’s read operations alone.
- The proxy handles multiple clients concurrently using a thread pool with 10 threads and a request queue of size 100.
- The proxy closes the client-server connections whenever it detects the command-line string (when provided) in either one of the client or one of the server messages.
- Add I/O timeouts, so that the proxy closes the client-server connections after 100 seconds have past without any client/server activity. Note: use select with non-blocking sockets.
- Add a SIGPIPE handler to ignore “broken pipe”.

Use the code from the lecture notes as examples.

You can test the proxy with a Web browser. Start the proxy on port 8080 (or 18000 if that port is already taken) and use remote host `www.cs.fsu.edu` port 80. Start a browser. Go to `http://127.0.0.1:8080`. Note: the results may not be exactly what you expect.

Also test the proxy with a small buffer size to verify the string matching capabilities and to check the proxy’s message size reports.