Networks Lab - CS349
Assignment 2 - HTTP Proxy Server
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Overview

A **HTTP Proxy** server is a server that acts as an intermediary for http requests from clients seeking resources from other web servers. A client connects to the proxy server, requesting some service, such as a file, connection, web page, or other resource available from a different server and the proxy server connects to the destination server on behalf of the client.

How it works

The proxy server binds and listens on a given port (lets say 9000) on a given IP address. The clients are configured to use the given proxy server. When the client connects to the server, a client socket connection is opened at the server. The server reads the request from the client through the socket file descriptor. Then it parses the request and sets up a connection to the remote server to request the file on behalf of the client. After setting up the connection, the proxy server forwards the request to the remote server. The remote server then replies back on the same socket to the proxy server. The proxy server reads the reply and forwards it to the client which is waiting for the reply. After the remote server closes its socket as an indication of completion of message, the proxy server also closes it socket with the client.

The current program is single threaded proxy server. It can handle only one request at a time. It doesn't support all the features of HTTP (Only GET method is implemented a/c to the assignment).
The timeout value is set to 120 seconds to drop any unclosed socket from the client. This is done to make sure that a client doesn't keep blocking the server

How to compile and run

The Makefile is in the folder.

$ make
to compile the code.

To run the code
$ ./main <port no>

eg - $ ./main 9000

Sample Request

After running the proxy server at the given port (say 9000), open a new terminal and type

$ telnet 127.0.0.1 9000
to connect to proxy server
then type in the following sample request

GET /cseintranet/ HTTP/1.0
Host: jatinga.iitg.ernet.in

(two enters to end the request)

You will see the output in the terminal only.

Configuring a Web Browser to Use the Proxy:

Firefox:

Select Tools->Options (or Edit->Preferences) from the menu.
Click on the 'Advanced' icon in the Options dialog.
Select the 'Network' tab, and click on 'Settings' in the 'Connections' area.
Select 'Manual Proxy Configuration' from the options available. In the boxes, enter the hostname and port where proxy program is running. (eg hostname: 127.0.0.1 port: 9000)

Configuring Firefox to use HTTP/1.0

Because Firefox defaults to using HTTP/1.1 and your proxy speaks HTTP/1.0, there are a couple of minor changes that need to be made to Firefox's configuration. Fortunately, Firefox is smart enough to know when it is connecting through a proxy, and has a few special configuration keys that can be used to tweak the browser's behavior.
Type 'about:config' in the title bar.
In the search/filter bar, type 'network.http.proxy'
You should see three keys: network.http.proxy.keepalive, network.http.proxy.pipelining, and network.http.proxy.version.
Set keepalive to false. Set version to 1.0. Make sure that pipelining is set to false.

After the configuring the browser, one can use the proxy to browse all the internal http websites. External websites and https is not supported.

Contact: Harshil Lodhi +918876858859 (incase of problem in compiling or running the code).