CS 4480: PA1 Final Report

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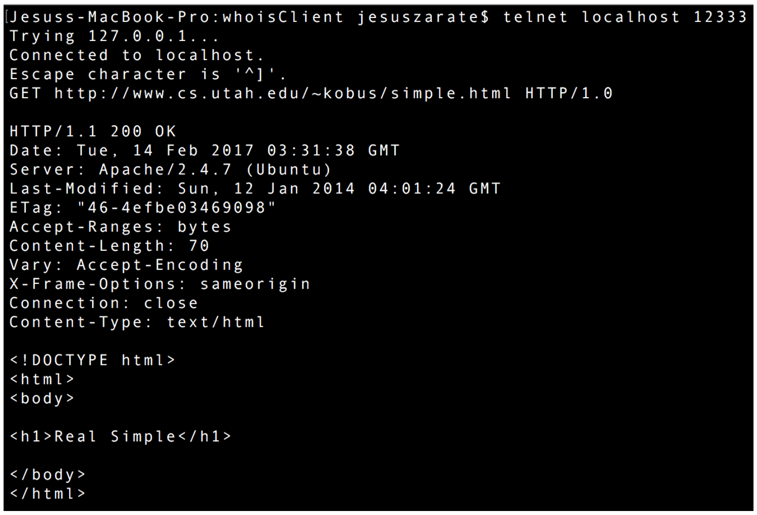
The way I designed this was to have a socket listening for a connection. Once it received a connetion and the handshake was successful then a new thread would start in order to listen for requests. I went with this approach because I didn't want to deploy a new thread, and waste resources if the handshake wasn't successful. Once we start communicating the server will recognize when the user wants to execute a GET request and only a GET request. This server is able to take a relative URL as well as an absolute URL. After the URL has been specified the program will keep on listening for the headers, and once the user is done entering they can press enter once more to execute the command. A decision I made for my server was to close the connection once a request had been made. This made it easy to know if the request was successful or it was not. If the user wants to make another request they need to fire another socket.

If the behaviour above conflicts with TA grading please let me know, and I can easily fix this in order to make the gradind easier, or if it's just not the behaviour you were looking for.

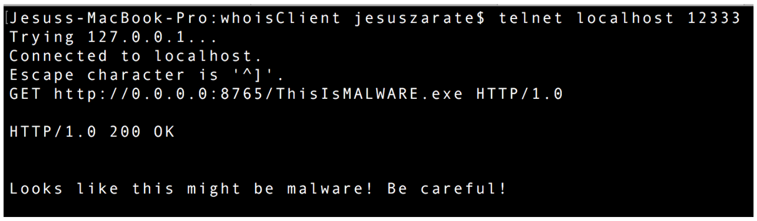
The way I tested this proxy was first to test it on other websites like the 'real simple' site, and other websites like Google in order to check that the output was still good (the hash of the content). Then I created a simple HTTP server with a known piece of malware. I checked the hash of that malware through team cymru and indeed they say it was malware, then when I tried making a get request to my server with the URL pointing to the Malware it gives me back a 200 response, and a warning saying that what I'm trying to access might contain Malware. Then I did the same, but with a pdf file, and the response is a 200 response with the pdf.

Using the proxy making a request to http://www.cs.utah.edu/ kobus/simple.html we get a 200 response



```
[Jesuss-MacBook-Pro:whoisClient jesuszarate$ telnet localhost 12333
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
GET http://www.cs.utah.edu/~kobus/simple.html HTTP/1.0

HTTP/1.1 200 OK
Date: Tue, 14 Feb 2017 03:31:38 GMT
Server: Apache/2.4.7 (Ubuntu)
Last-Modified: Sun, 12 Jan 2014 04:01:24 GMT
ETag: "46-4efbe03469098"
Accept-Ranges: bytes
Content-Length: 70
Vary: Accept-Encoding
X-Frame-Options: sameorigin
Connection: close
Content-Type: text/html

<!DOCTYPE html>
<html>
<body>

<h1>Real Simple</h1>

</body>
</html>
```

Now using the proxy making arequest to a local http server that contains a piece of malware



```
[Jesuss-MacBook-Pro:whoisClient jesuszarate$ telnet localhost 12333
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
GET http://0.0.0.0:8765/ThisIsMALWARE.exe HTTP/1.0

HTTP/1.0 200 OK


Looks like this might be malware! Be careful!
```