COMPUTER NETWORKS LABORATORY

WEEK #3

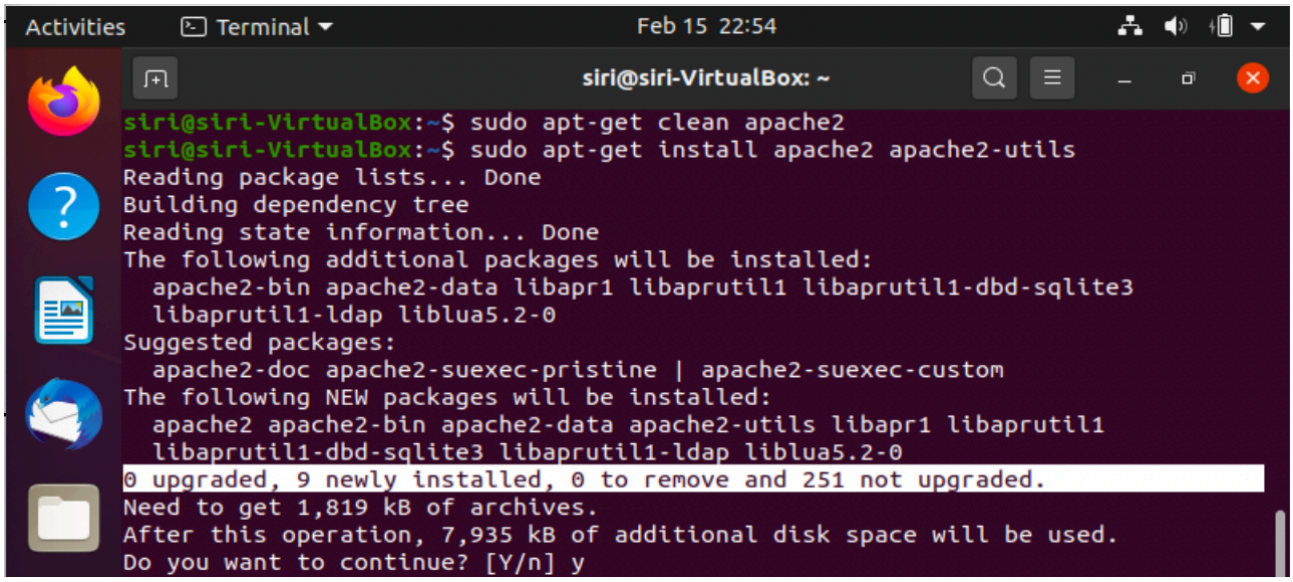
NAME : SIRI S

SEMESTER : 4

SECTION :H

SRN : PES1UG19CS485

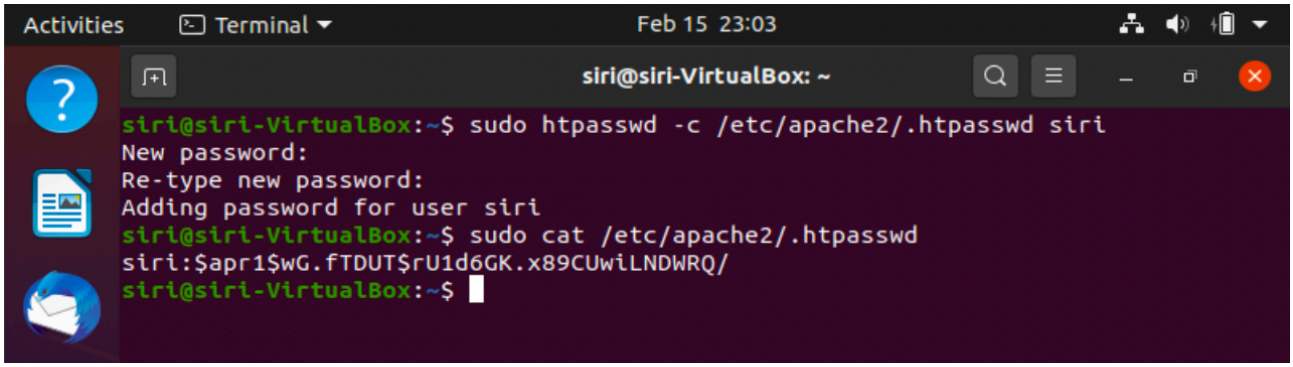
INSTALLATIONS:



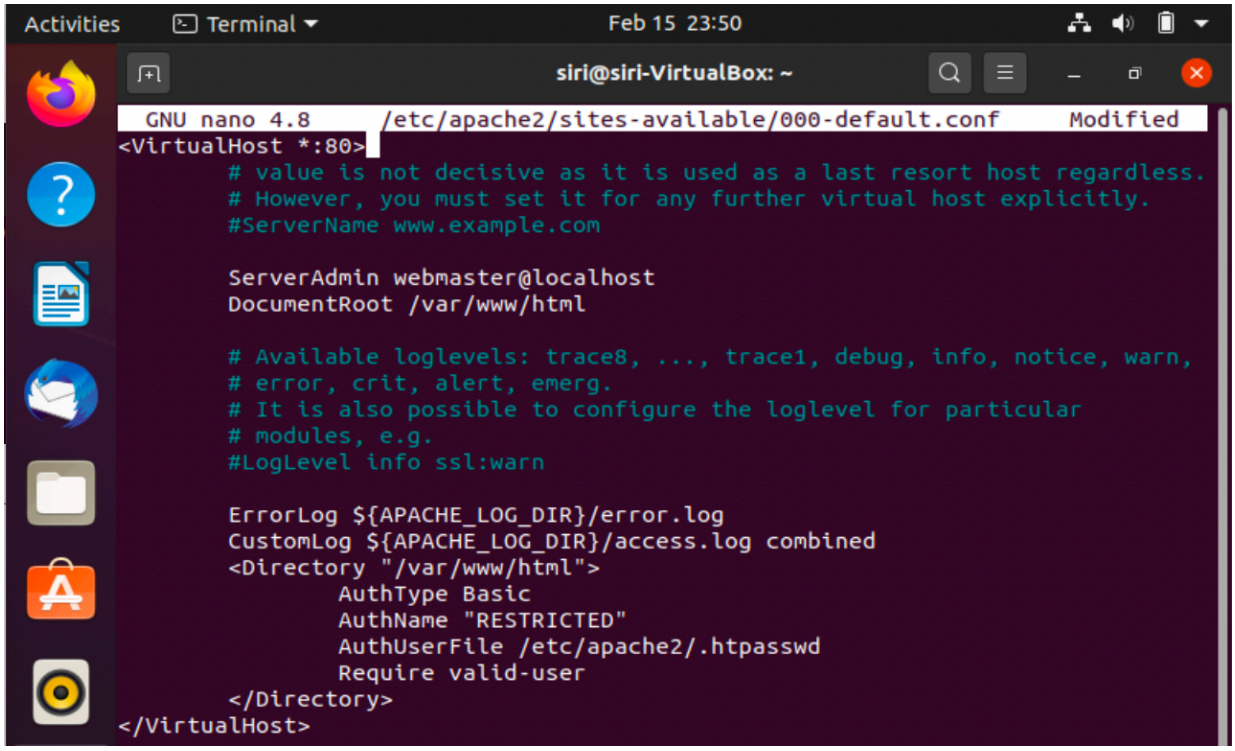
1. PASSWORD AUTHENTICATION:

- PASSWORD GENERATION:

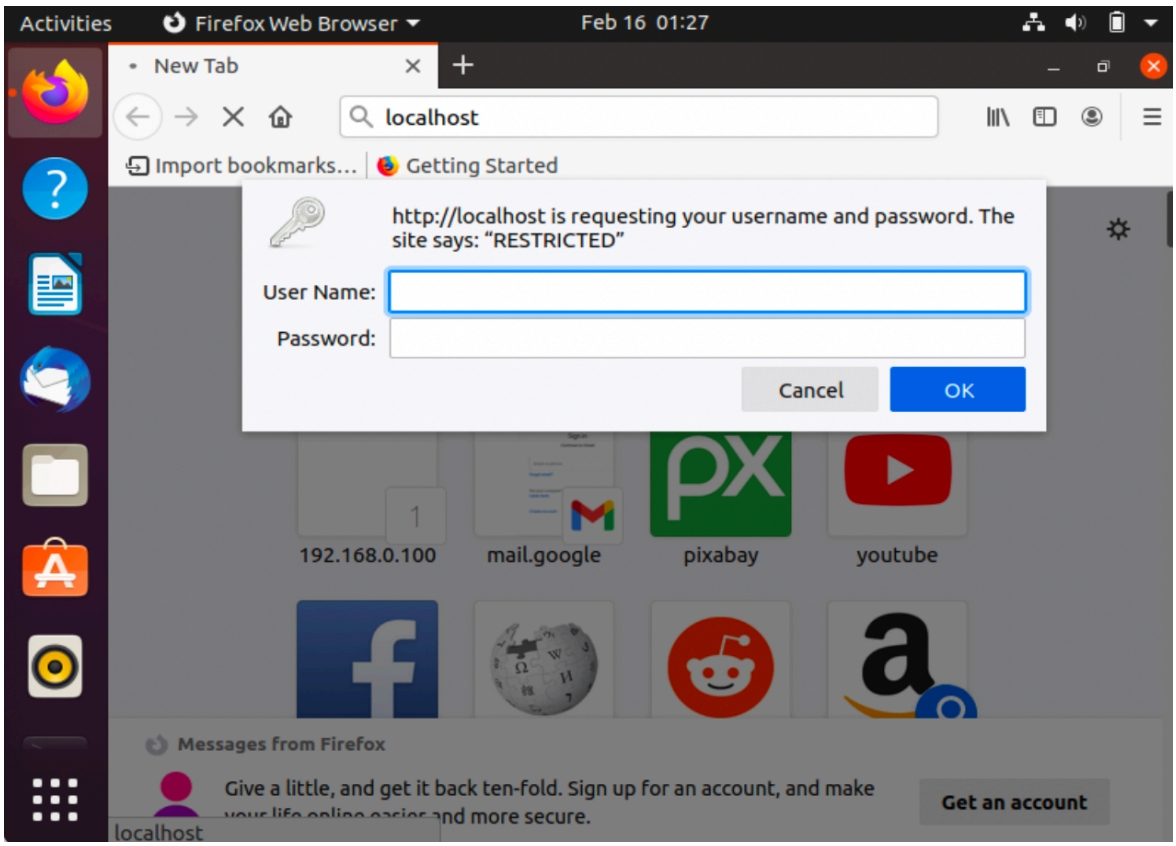
- We are setting a password for the said username.
- The cat command can be used to view the authentication.



- SERVER AUTHENTICATION SETUP:
- Modifying the Apache configuration file to enable password authentication.
- Password authentication is added to **/var/www/html** directory.
- The server is restarted to activate the authentication.

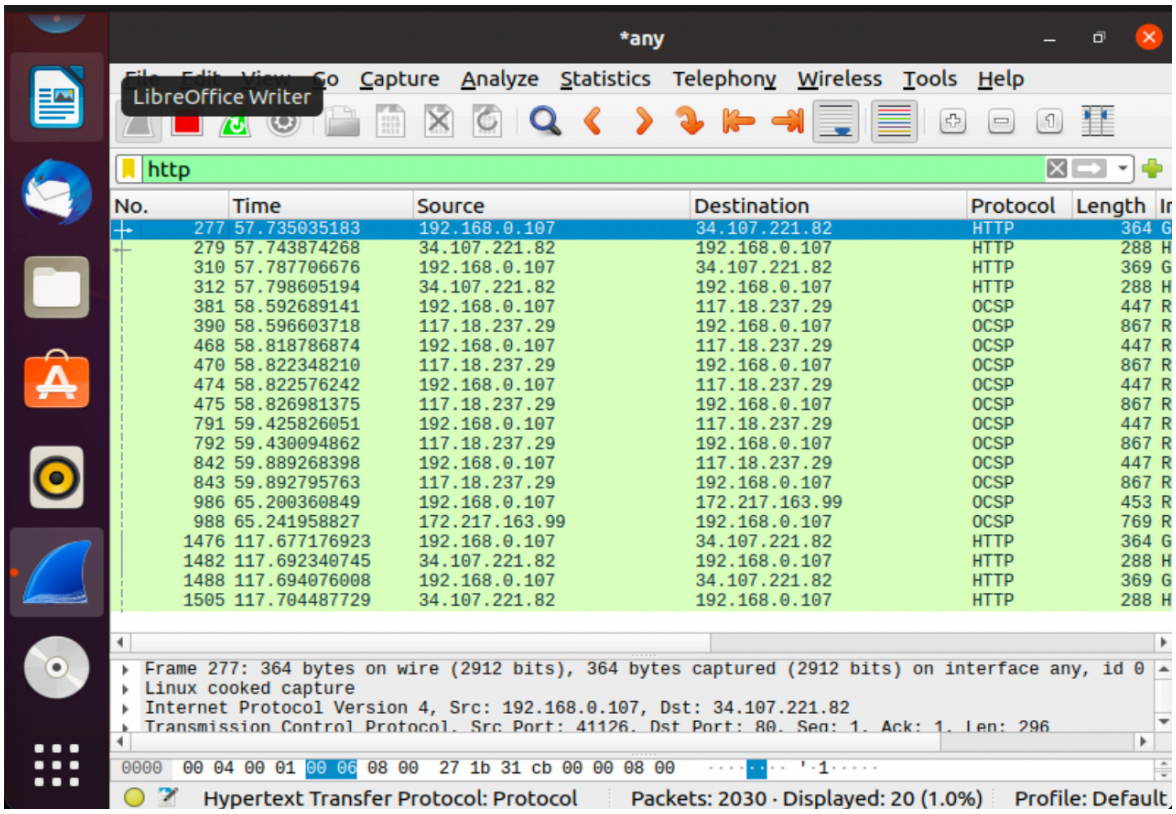


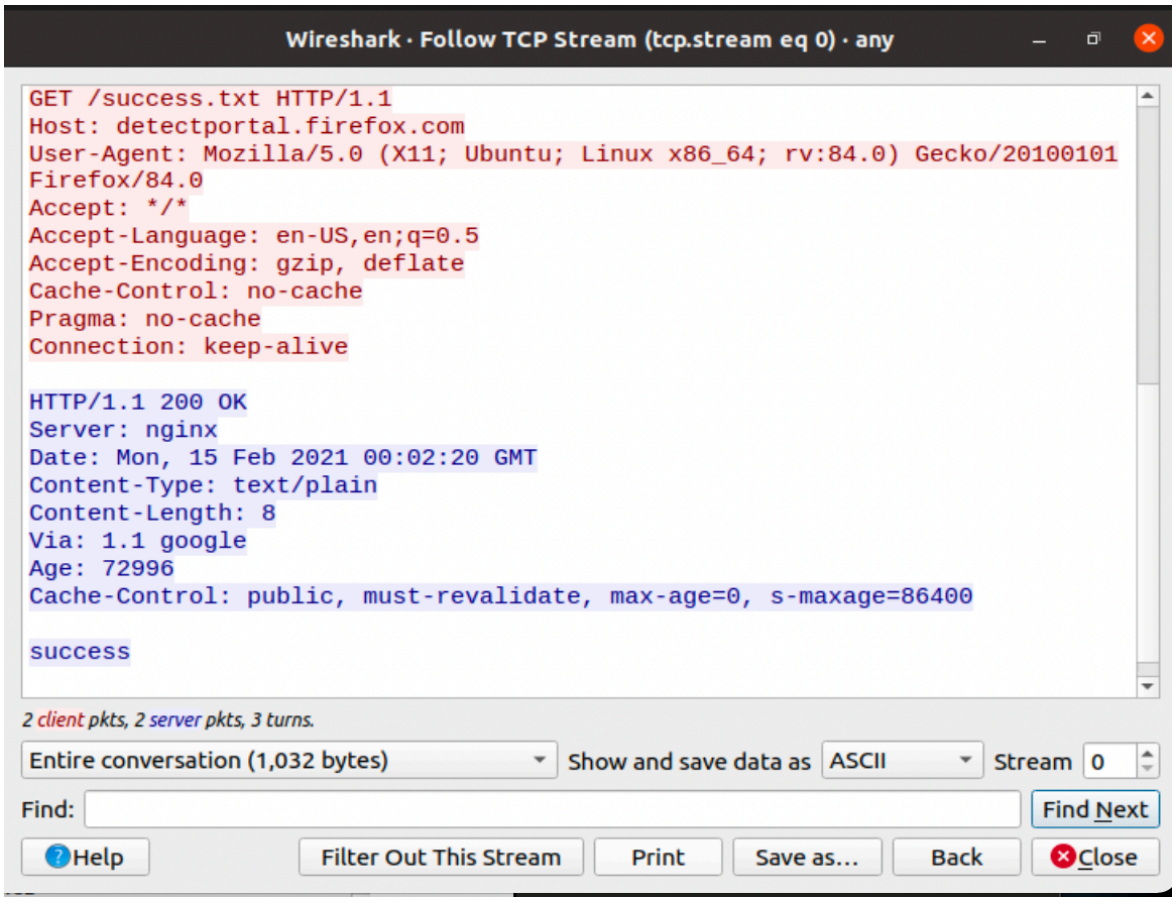
- ACCESSING LOCALHOST:
- Local host can be accessed only by entering username and password set in previous steps.



- WIRESHARK PACKET CAPTURE:

Wireshark is used to capture packets sent on the network. The first GET request which corresponds to the HTML file is analysed and its TCP Stream is expanded and parameters explained.





2. SETTING COOKIES:

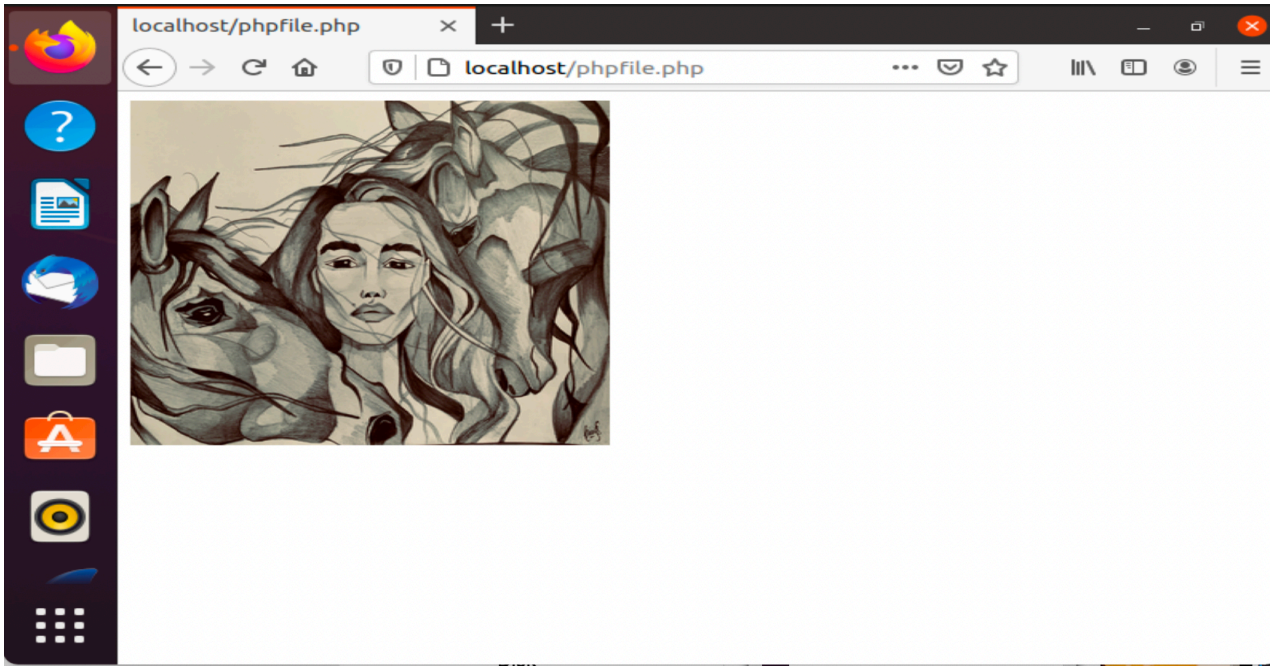
- PHP:

- We are setting cookies with PHP script.
- When this file is requested by the browser, a cookie will be set.

Open — phpfile.php — /var/www/html — Save

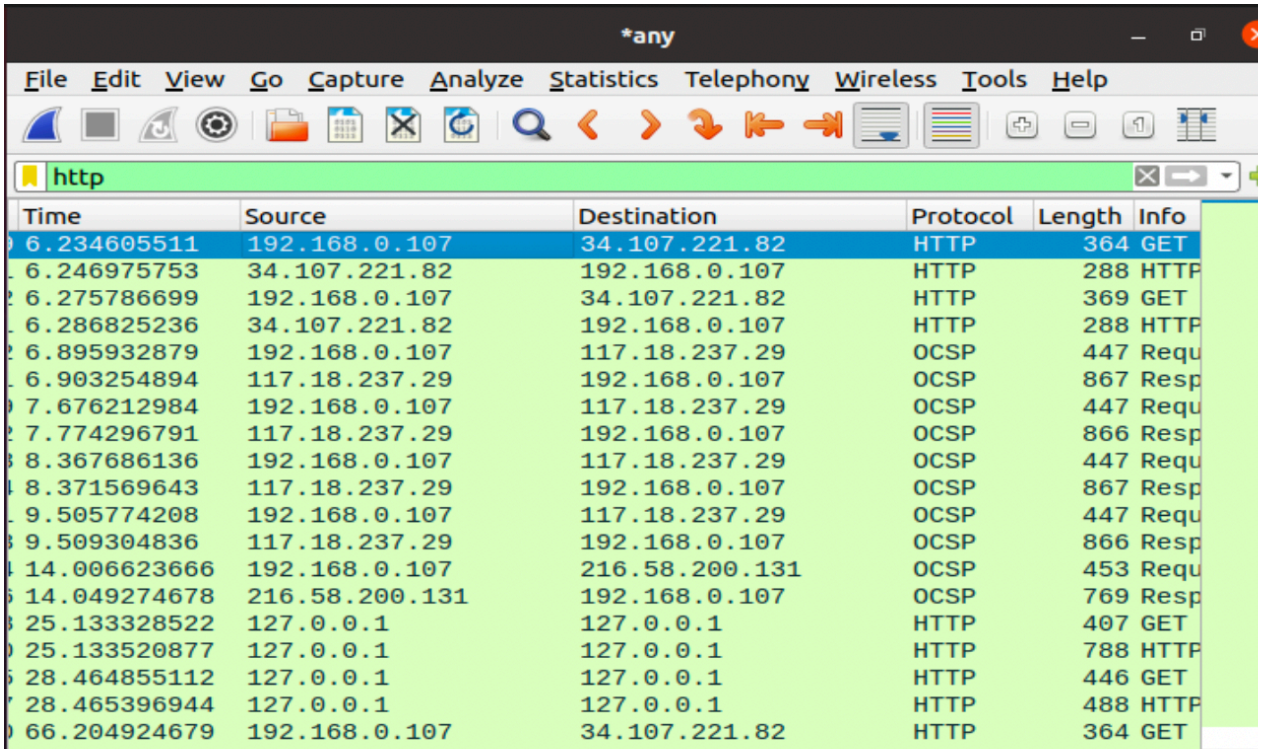
```
1 <html>
2 <?php
3 setcookie("namecookie","netqwerty",time()+123);
4 setcookie("nickname","work");
5 ?>
6 <img src="8.jpg" title="Horses"/>
7 </html>
8
```

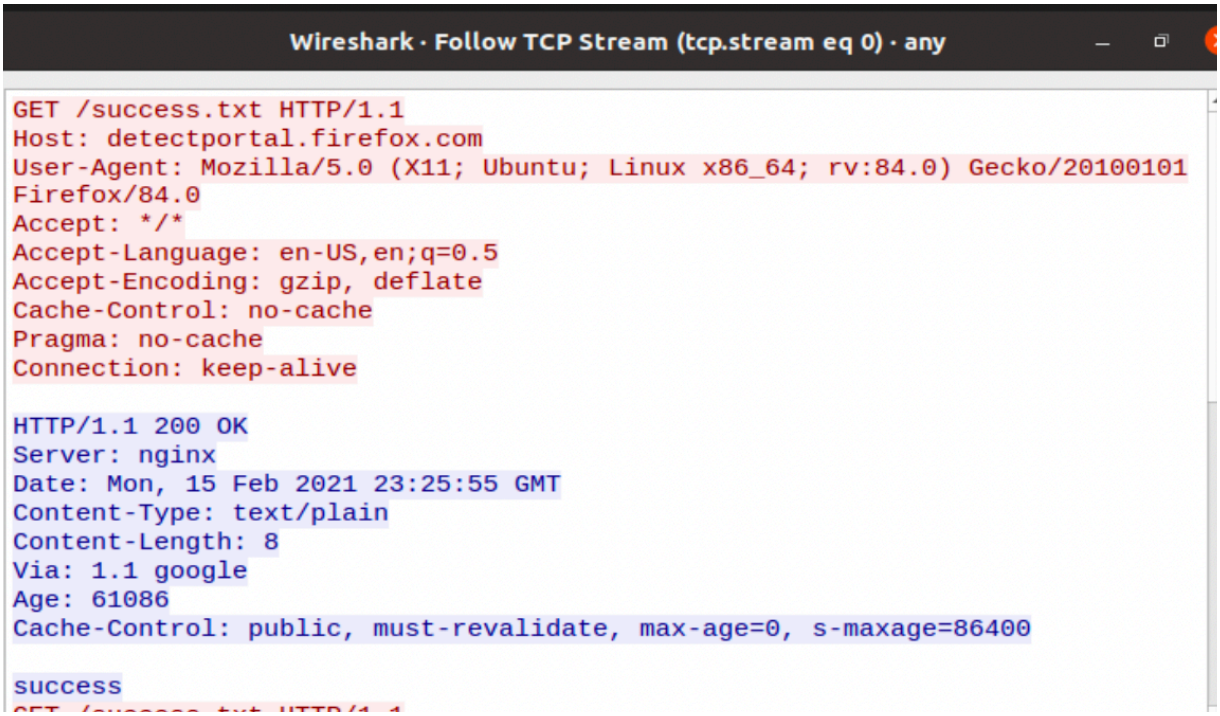
Localhost:



- WIRESHARK CAPTURE:

- The first GET request corresponding to the PHP file is analysed and its TCP Stream is expanded and examined.
- We can find out the value, name and expiry time of the set cookie, if it hasn't already expired.



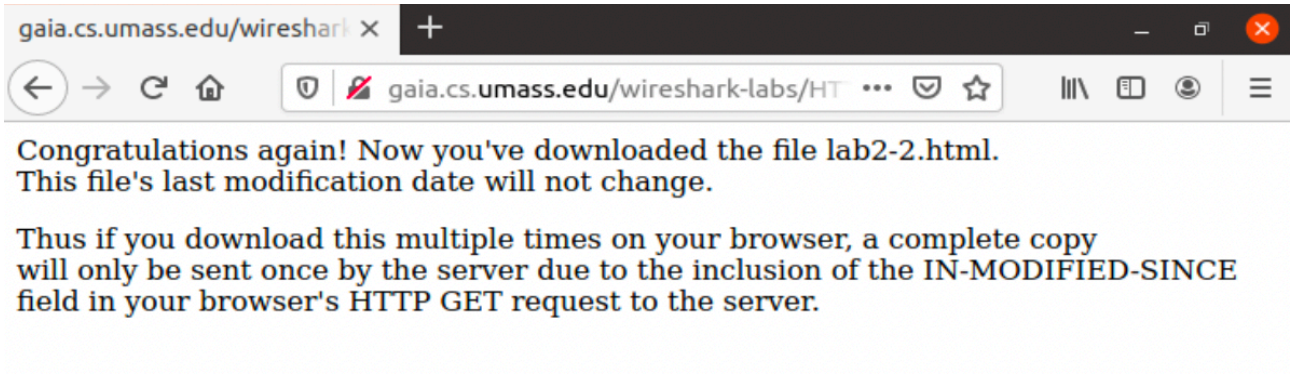


3. CONDITIONAL GET:

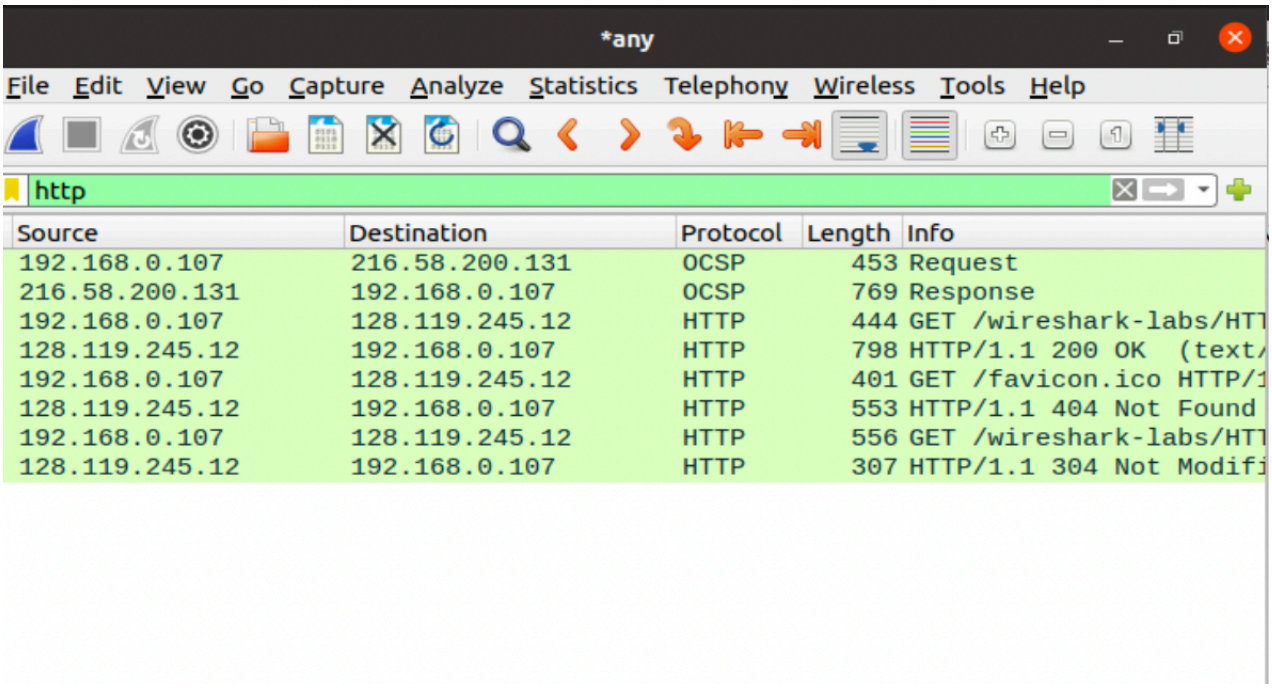
OBSERVATION:

The HTTP header If-Modified-Since is One way to implement Conditional Get.

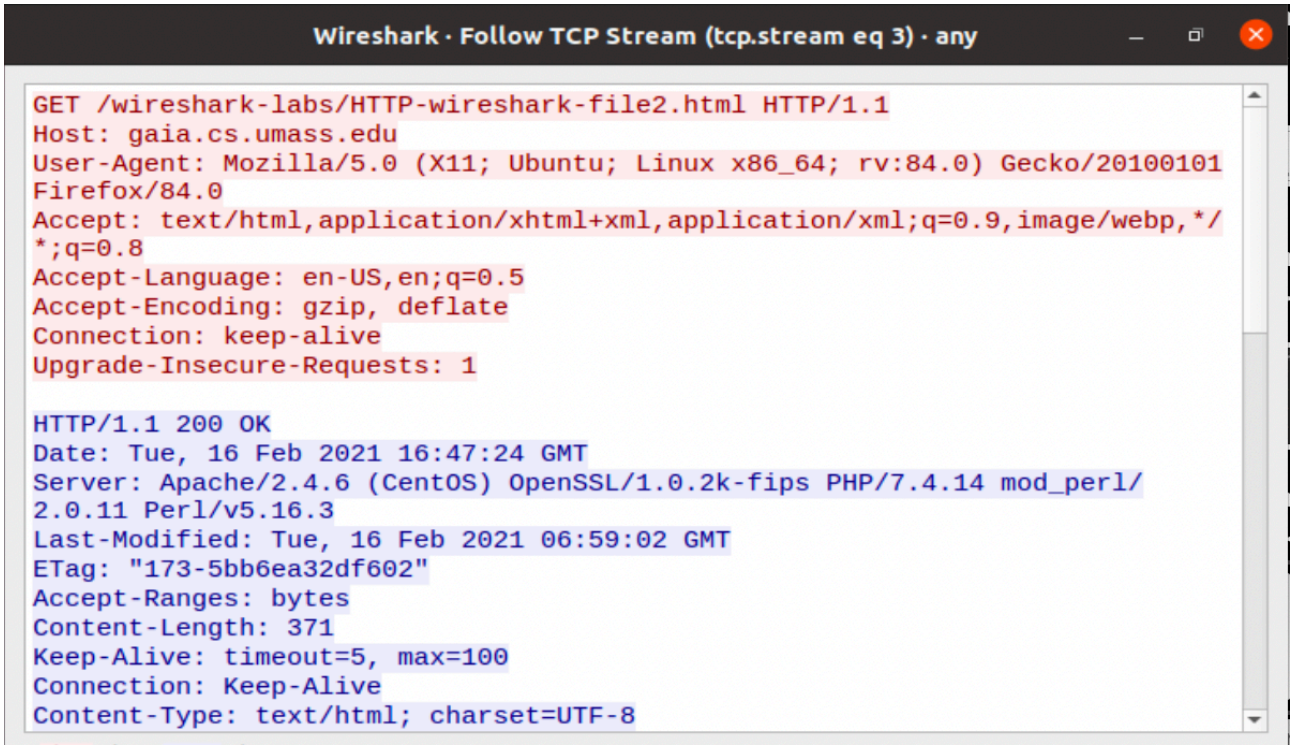
On running the given URL in Firefox:

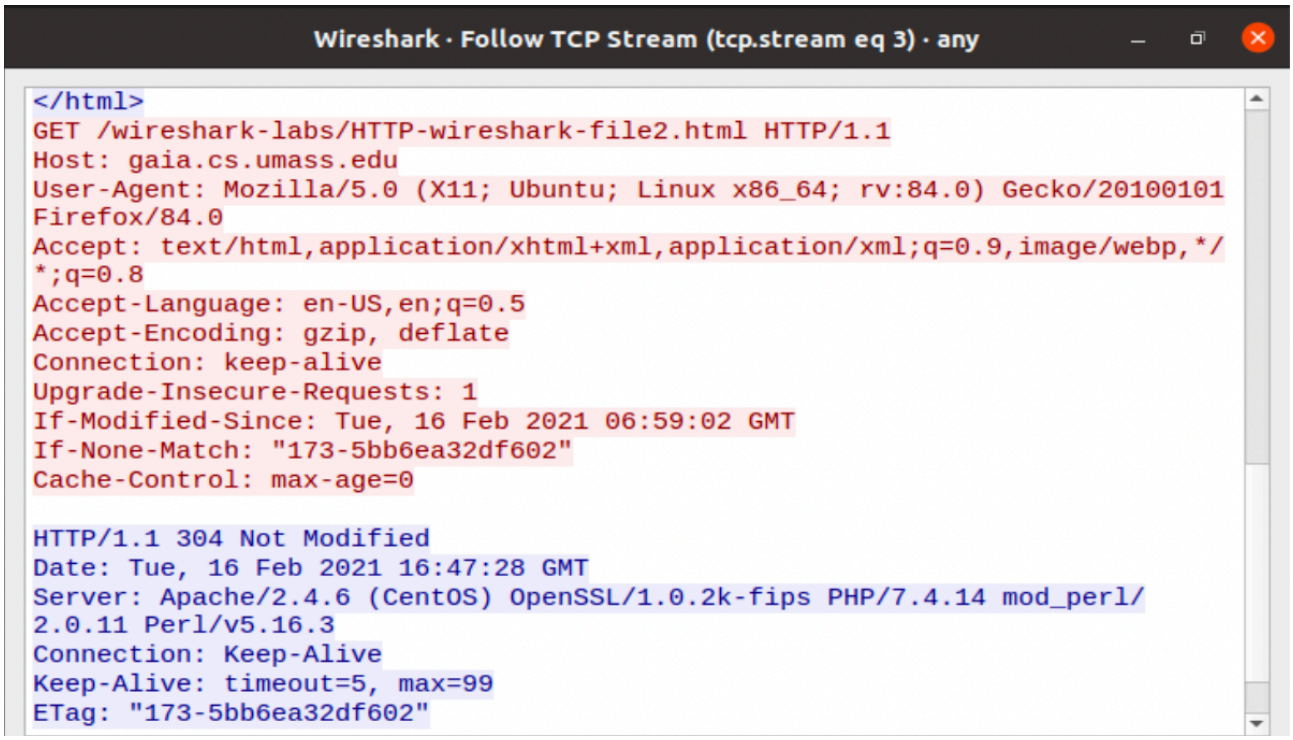


WIRESHARK PACKETS CAPTURED:



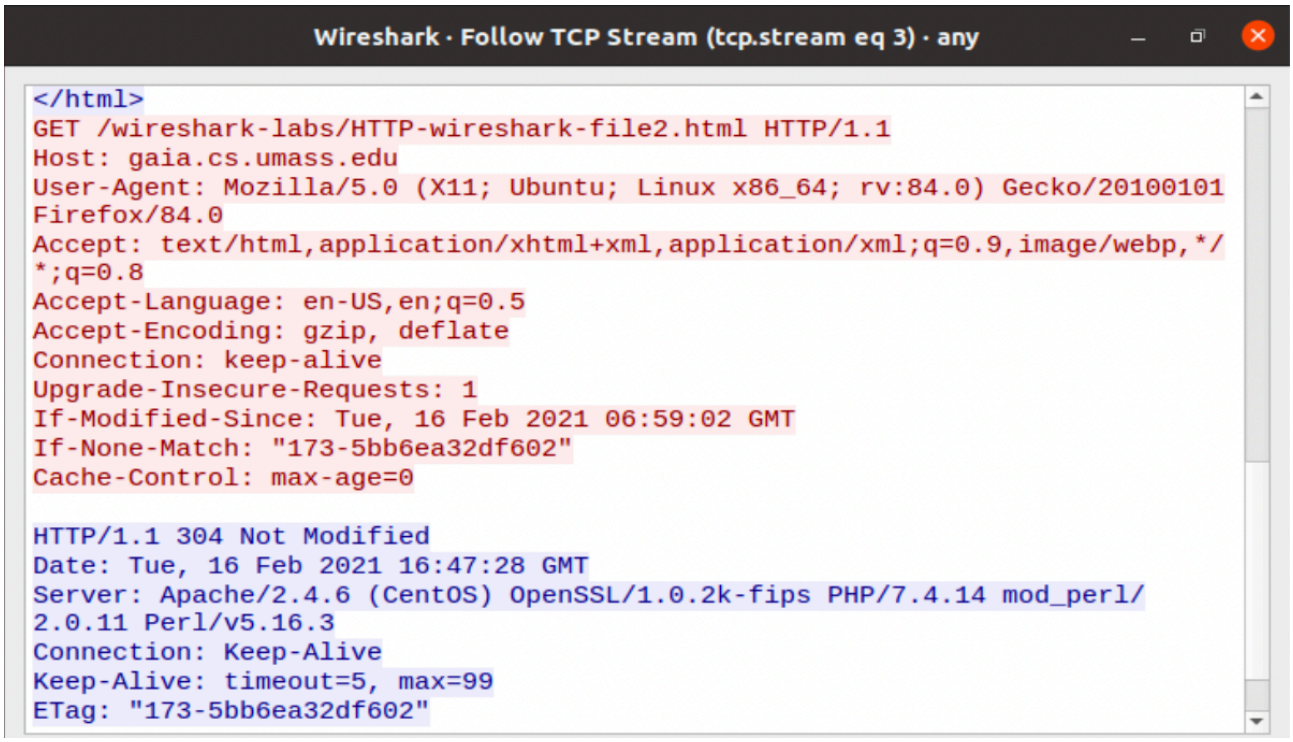
First HTTP GET Request:





The server has returned the contents of the file. We know this because the HTML File is obtained along with a 200 OK response status.

Second HTTP GET Request:

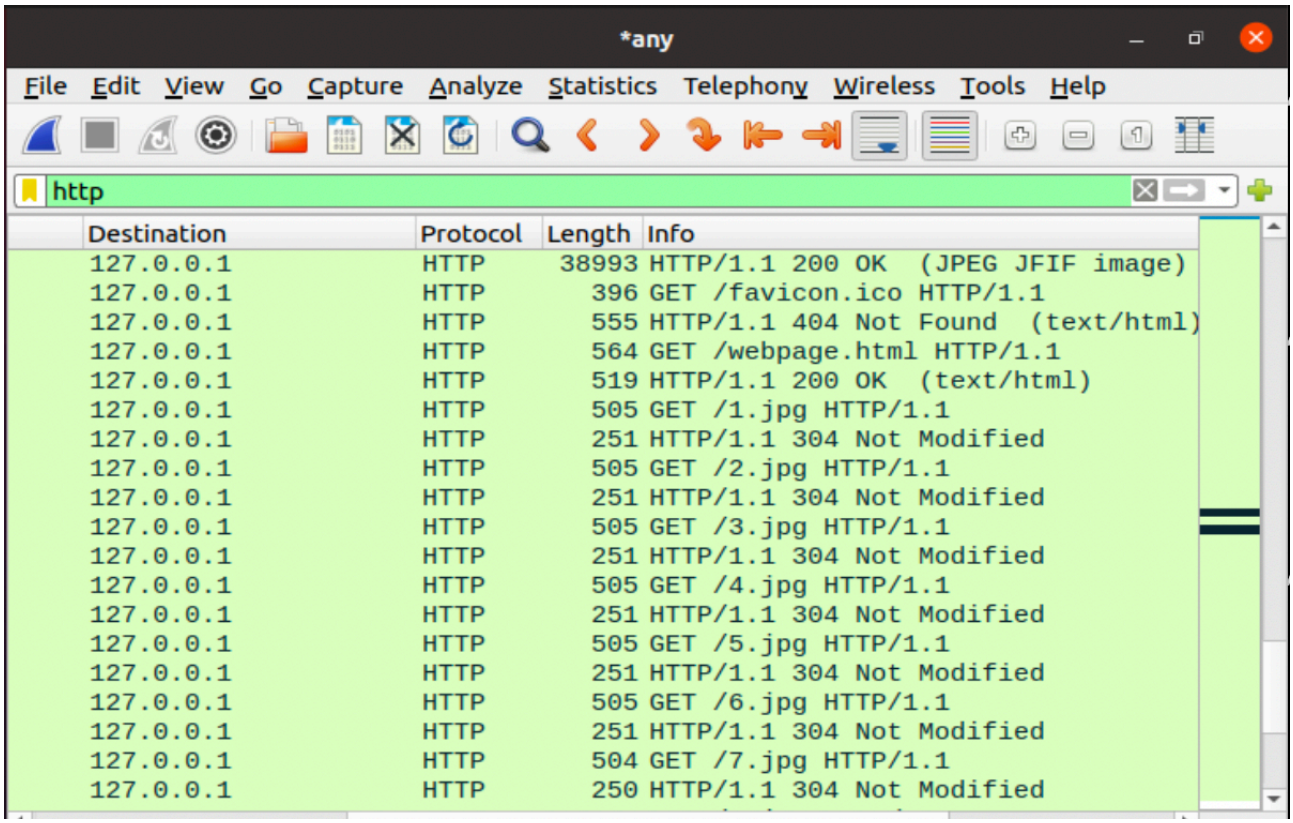


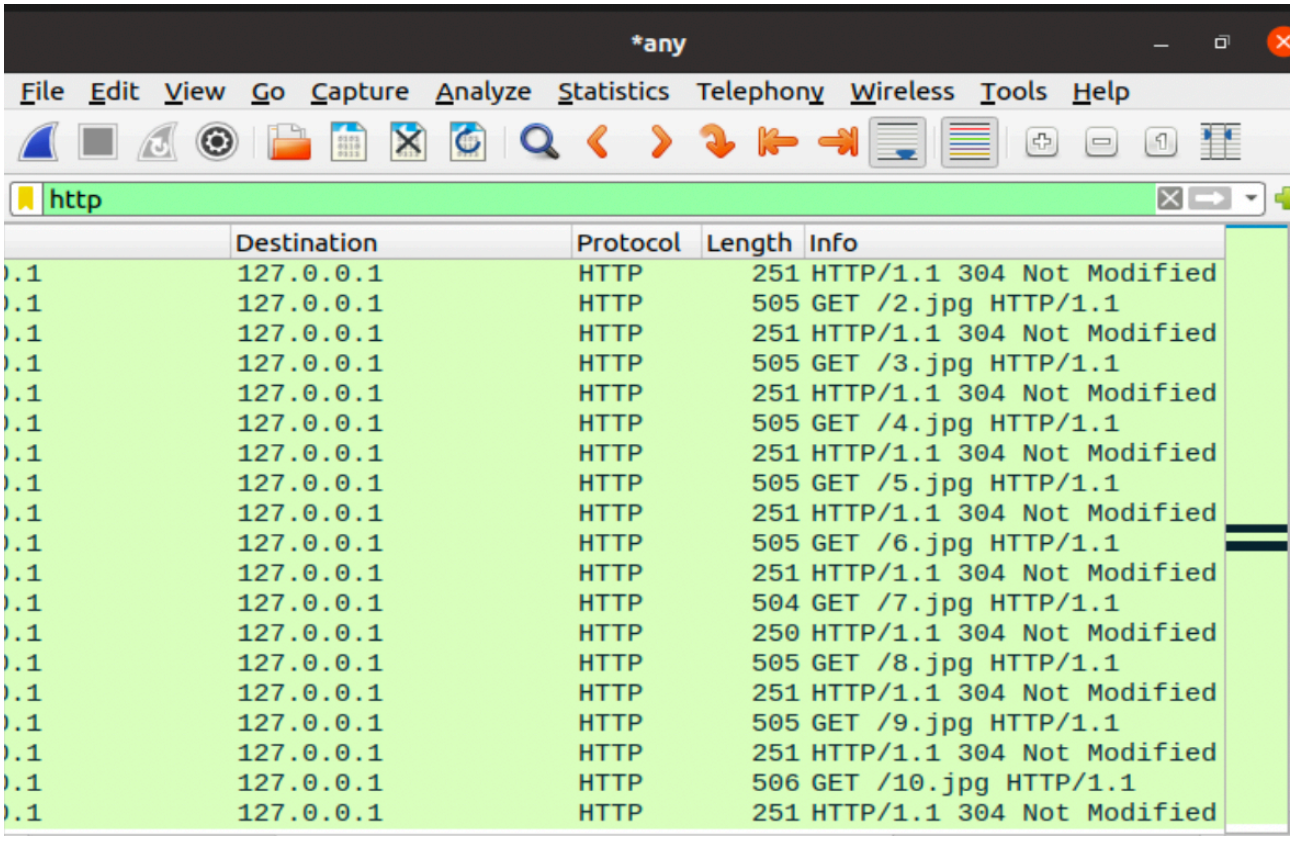
There is an “IF-MODIFIED-SINCE:” line in the HTTP GET. The information that follows this header is the date and time at which the response was captured.

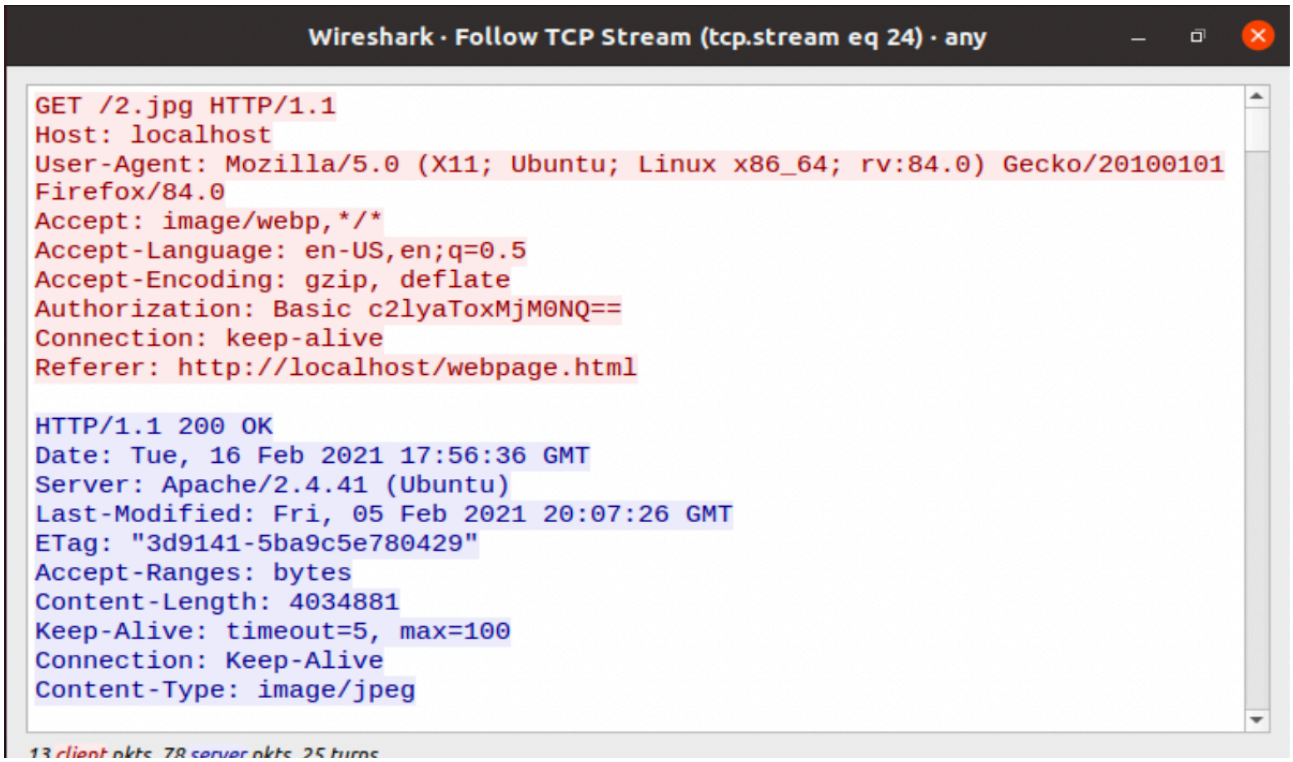
The second Response from the server is obtained as 304 Not Modified.

4. REPEATING CONDITIONAL GET WITH IMAGES:

- A HTML file containing 10 images is accessed through localhost from Firefox.
- This receives a 200 OK response and the images are sent to the server.
- When the images are sent again, 304 Not Modified status code is sent and images are not sent back.


*any
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
http
Destination Protocol Length Info
127.0.0.1 HTTP 38993 HTTP/1.1 200 OK (JPEG JFIF image)
127.0.0.1 HTTP 396 GET /favicon.ico HTTP/1.1
127.0.0.1 HTTP 555 HTTP/1.1 404 Not Found (text/html)
127.0.0.1 HTTP 564 GET /webpage.html HTTP/1.1
127.0.0.1 HTTP 519 HTTP/1.1 200 OK (text/html)
127.0.0.1 HTTP 505 GET /1.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 505 GET /2.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 505 GET /3.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 505 GET /4.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 505 GET /5.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 505 GET /6.jpg HTTP/1.1
127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
127.0.0.1 HTTP 504 GET /7.jpg HTTP/1.1
127.0.0.1 HTTP 250 HTTP/1.1 304 Not Modified


*any
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
http
Destination Protocol Length Info
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /2.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /3.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /4.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /5.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /6.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 504 GET /7.jpg HTTP/1.1
.1 127.0.0.1 HTTP 250 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /8.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 505 GET /9.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified
.1 127.0.0.1 HTTP 506 GET /10.jpg HTTP/1.1
.1 127.0.0.1 HTTP 251 HTTP/1.1 304 Not Modified


Wireshark · Follow TCP Stream (tcp.stream eq 24) · any
GET /2.jpg HTTP/1.1
Host: localhost
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:84.0) Gecko/20100101
Firefox/84.0
Accept: image/webp,*/*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Authorization: Basic c2lyaToxMjM0NQ==
Connection: keep-alive
Referer: http://localhost/webpage.html
HTTP/1.1 200 OK
Date: Tue, 16 Feb 2021 17:56:36 GMT
Server: Apache/2.4.41 (Ubuntu)
Last-Modified: Fri, 05 Feb 2021 20:07:26 GMT
ETag: "3d9141-5ba9c5e780429"
Accept-Ranges: bytes
Content-Length: 4034881
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: image/jpeg