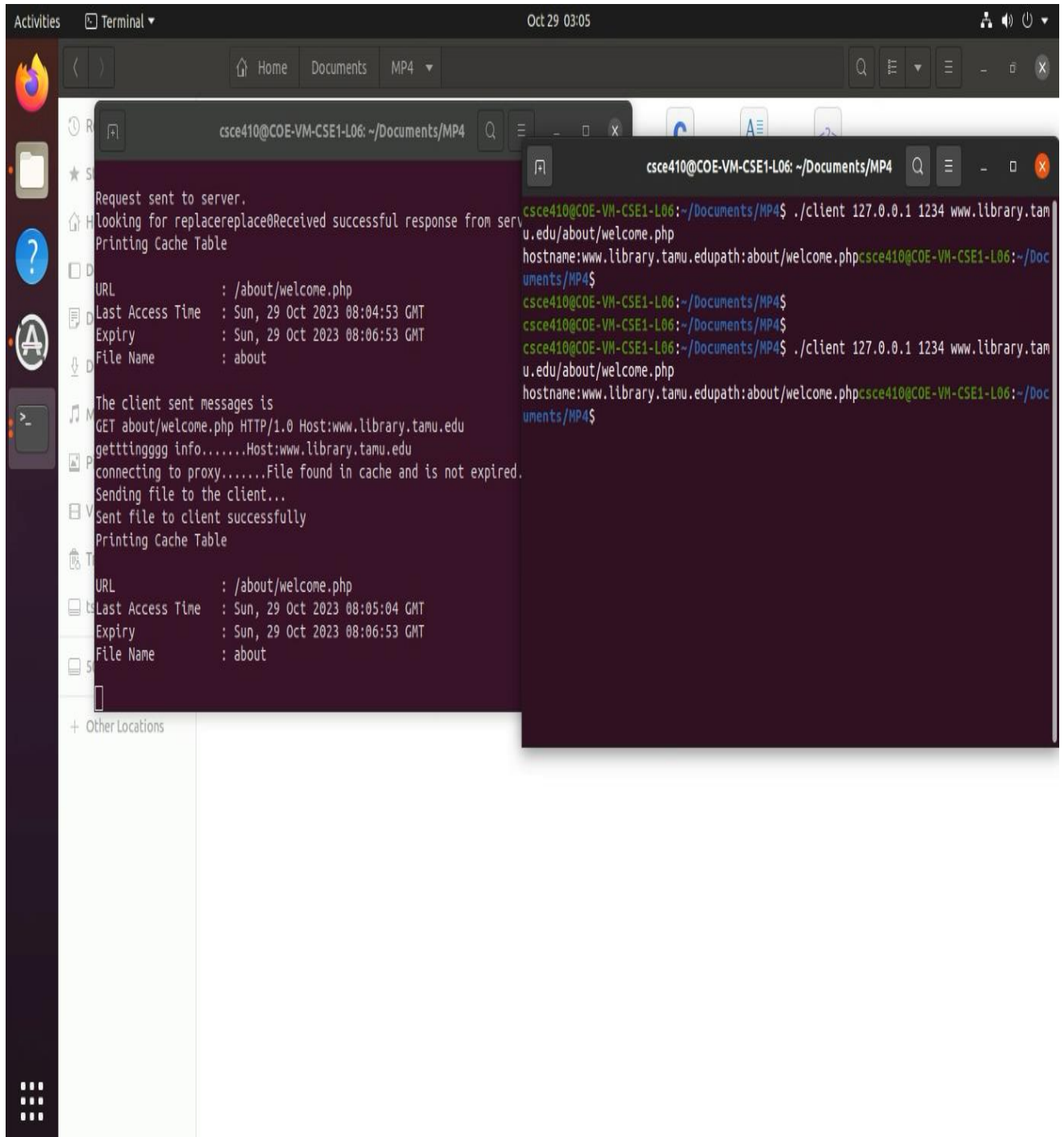


## TESTCASE REPORT

**Testcase 1:** A cache hit returns the saved data to the requester



```
csce410@COE-VM-CSE1-L06: ~/Documents/MP4
Request sent to server.
Looking for replace0Received successful response from serv
Printing Cache Table

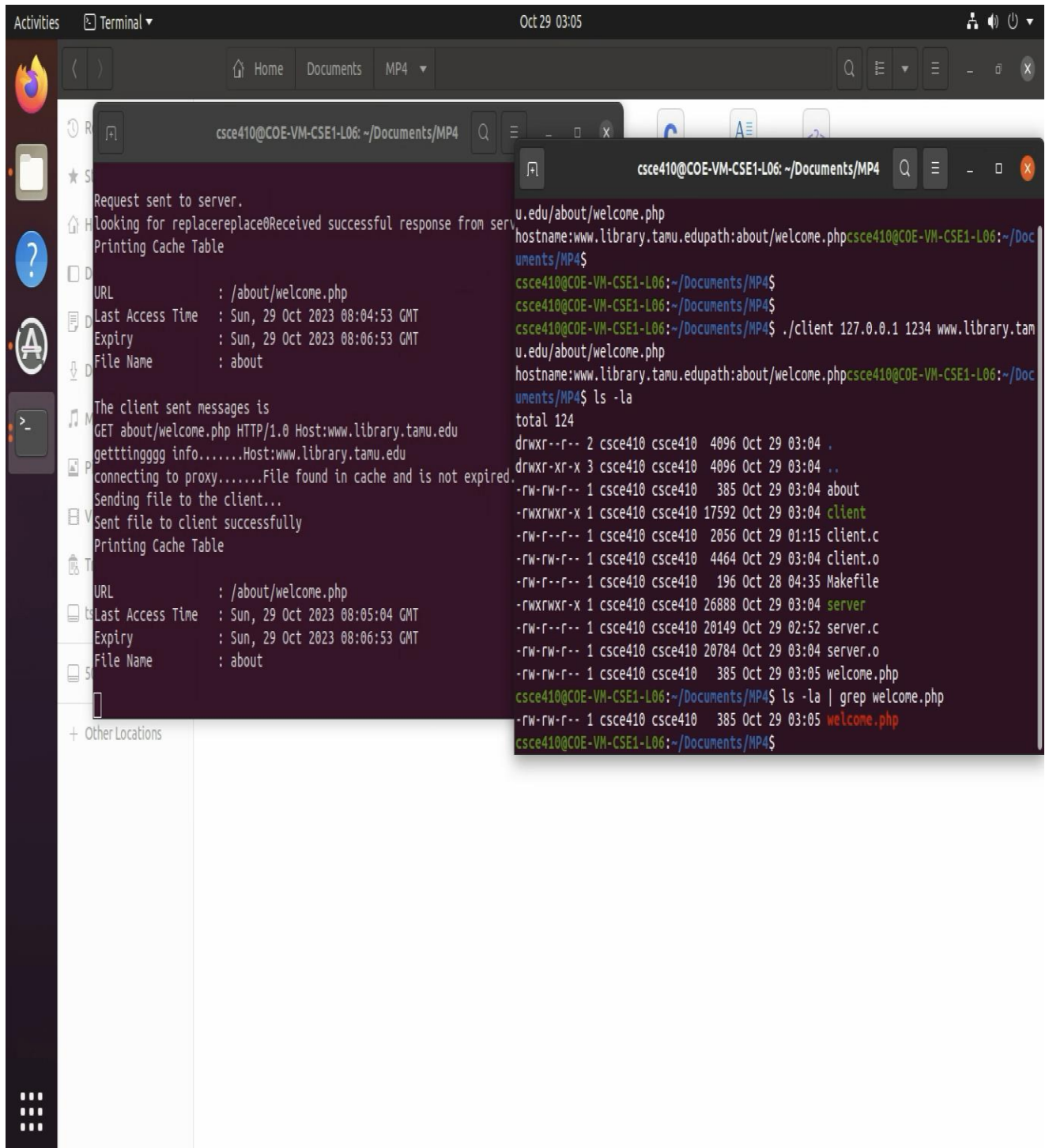
URL      : /about/welcome.php
Last Access Time : Sun, 29 Oct 2023 08:04:53 GMT
Expiry    : Sun, 29 Oct 2023 08:06:53 GMT
File Name : about

The client sent messages is
GET about/welcome.php HTTP/1.0 Host:www.library.tamu.edu
gettttggg info.....Host:www.library.tamu.edu
connecting to proxy.....File found in cache and is not expired.
Sending file to the client...
Sent file to client successfully
Printing Cache Table

URL      : /about/welcome.php
Last Access Time : Sun, 29 Oct 2023 08:05:04 GMT
Expiry    : Sun, 29 Oct 2023 08:06:53 GMT
File Name : about

+ Other Locations
```

**Testcase 2:** A request that is not in the cache is proxied, saved in the cache, and returned to the requester;



```
csce410@COE-VM-CSE1-L06: ~/Documents/MP4
Request sent to server.
Looking for replace@Received successful response from serv
Printing Cache Table
URL          : /about/welcome.php
Last Access Time : Sun, 29 Oct 2023 08:04:53 GMT
Expiry       : Sun, 29 Oct 2023 08:06:53 GMT
File Name    : about

The client sent messages is
GET about/welcome.php HTTP/1.0 Host:www.library.tamu.edu
gettttgggg info.....Host:www.library.tamu.edu
connecting to proxy.....File found in cache and is not expired.
Sending file to the client...
Sent file to client successfully
Printing Cache Table
URL          : /about/welcome.php
Last Access Time : Sun, 29 Oct 2023 08:05:04 GMT
Expiry       : Sun, 29 Oct 2023 08:06:53 GMT
File Name    : about

csce410@COE-VM-CSE1-L06: ~/Documents/MP4$ ls -la
total 124
drwxr--r-- 2 csce410 csce410 4096 Oct 29 03:04 .
drwxr-xr-x 3 csce410 csce410 4096 Oct 29 03:04 ..
-rw-rw-r-- 1 csce410 csce410 385 Oct 29 03:04 about
-rwxrwxr-x 1 csce410 csce410 17592 Oct 29 03:04 client
-rw-r--r-- 1 csce410 csce410 2056 Oct 29 01:15 client.c
-rw-rw-r-- 1 csce410 csce410 4464 Oct 29 03:04 client.o
-rw-r--r-- 1 csce410 csce410 196 Oct 28 04:35 Makefile
-rwxrwxr-x 1 csce410 csce410 26888 Oct 29 03:04 server
-rw-r--r-- 1 csce410 csce410 20149 Oct 29 02:52 server.c
-rw-rw-r-- 1 csce410 csce410 20784 Oct 29 03:04 server.o
-rw-rw-r-- 1 csce410 csce410 385 Oct 29 03:05 welcome.php
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ls -la | grep welcome.php
-rw-rw-r-- 1 csce410 csce410 385 Oct 29 03:05 welcome.php
csce410@COE-VM-CSE1-L06:~/Documents/MP4$
```

**Testcase 3:** A cache miss with 10 items already in the cache is proxied, saved in the LRU location in cache, and the data is returned to the requester;

```
Activities Terminal Oct 29 03:38 csce410@COE-VM-CSE1-L06: ~/Documents/MP4
connecting to proxy.....File not found in cache..www.library.tamu.edu
Sending HTTP query to web server
GET /about/welcome.php HTTP/1.0
Host: www.library.tamu.edu

Request sent to server.
looking for replaceReceived successful response from server.
Printing Cache Table

URL      : /about/welcome.php:www.library.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:37:47 GMT
Expiry    : Sun, 29 Oct 2023 08:39:47 GMT
File Name : about

URL      : /sports:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 08:35:10 GMT
Expiry    : Sun, 29 Oct 2023 08:37:10 GMT
File Name : sports

URL      : /world:www.foxnews.com
Last Access Time : Sun, 29 Oct 2023 08:35:19 GMT
Expiry    : Sun, 29 Oct 2023 08:37:19 GMT
File Name : world

URL      : /sport:www.bbc.com
Last Access Time : Sun, 29 Oct 2023 08:35:31 GMT
Expiry    : Sun, 29 Oct 2023 08:37:31 GMT
File Name : sport

URL      : /about/departments.html:www.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:37:47 GMT
Expiry    : Sun, 29 Oct 2023 08:37:47 GMT
File Name : about

URL      : /academics/index.html:www.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:36:06 GMT
Expiry    : Sun, 29 Oct 2023 08:38:06 GMT
File Name : academics
```

```
Activities Terminal Oct 29 03:38 csce410@COE-VM-CSE1-L06: ~/Documents/MP4
looking for replaceReceived successful response from server.
Printing Cache Table

URL      : /world:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 08:34:52 GMT
Expiry    : Sun, 29 Oct 2023 08:36:52 GMT
File Name : world

URL      : /sports:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 08:35:10 GMT
Expiry    : Sun, 29 Oct 2023 08:37:10 GMT
File Name : sports

URL      : /world:www.foxnews.com
Last Access Time : Sun, 29 Oct 2023 08:35:19 GMT
Expiry    : Sun, 29 Oct 2023 08:37:19 GMT
File Name : world

URL      : /sport:www.bbc.com
Last Access Time : Sun, 29 Oct 2023 08:35:31 GMT
Expiry    : Sun, 29 Oct 2023 08:37:31 GMT
File Name : sport

URL      : /about/departments.html:www.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:35:47 GMT
Expiry    : Sun, 29 Oct 2023 08:37:47 GMT
File Name : about

URL      : /academics/index.html:www.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:36:06 GMT
Expiry    : Sun, 29 Oct 2023 08:38:06 GMT
File Name : academics

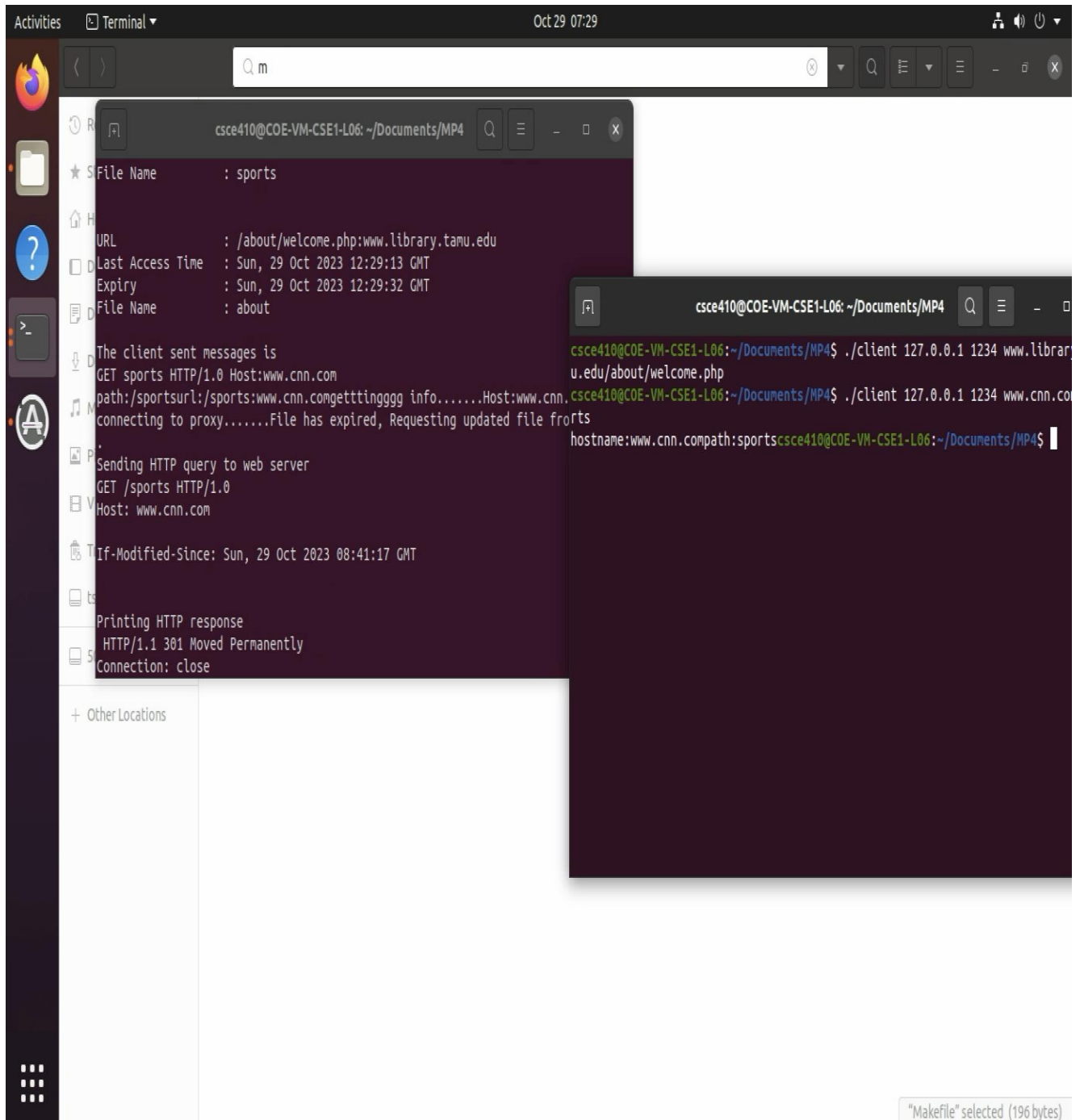
URL      : /current-students/index.html:www.tamu.edu
Last Access Time : Sun, 29 Oct 2023 08:36:20 GMT
Expiry    : Sun, 29 Oct 2023 08:38:20 GMT
File Name : current-students/sports:www.foxnews.com

URL      : /sports:www.foxnews.com
```

#### Testcase 4 & 6:

A stale Expires header in the cache is accessed, the cache entry is replaced with a fresh copy, and the fresh data is delivered to the requester;

A cache entry without an Expires header that has been previously accessed from the Web server in the last 24 hours and was last modified more than one month ago is returned to the requester;



```
csce410@COE-VM-CSE1-L06: ~/Documents/MP4
File Name      : sports
URL            : /about/welcome.php:www.library.tamu.edu
Last Access Time : Sun, 29 Oct 2023 12:29:13 GMT
Expiry         : Sun, 29 Oct 2023 12:29:32 GMT
File Name      : about

The client sent messages is
GET sports HTTP/1.0 Host:www.cnn.com
path:/sportsurl:/sports:www.cnn.comgettttgggg info.....Host:www.cnn.
connecting to proxy.....File has expired, Requesting updated file forrts
'
Sending HTTP query to web server
GET /sports HTTP/1.0
Host: www.cnn.com

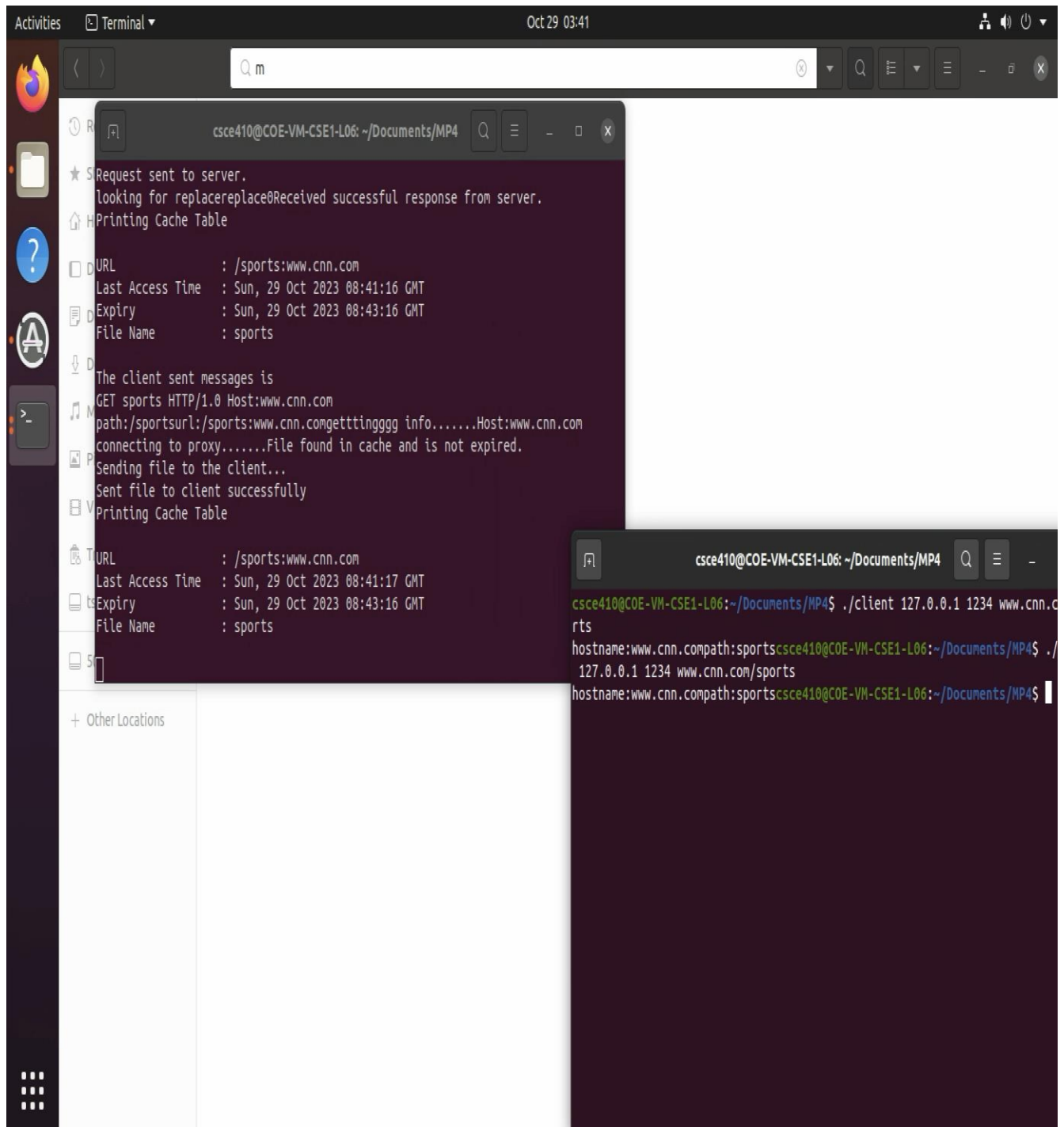
If-Modified-Since: Sun, 29 Oct 2023 08:41:17 GMT

Printing HTTP response
HTTP/1.1 301 Moved Permanently
Connection: close

csce410@COE-VM-CSE1-L06: ~/Documents/MP4
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ./client 127.0.0.1 1234 www.library
u.edu/about/welcome.php
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ./client 127.0.0.1 1234 www.cnn.co
hostname:www.cnn.compath:sportscsce410@COE-VM-CSE1-L06:~/Documents/MP4$
```

"Makefile" selected (196 bytes)

**Testcase 5:** A stale entry in the cache without an Expires header is determined based on the last Web server access time and last modification time, the stale cache entry is replaced with fresh data, and the fresh data is delivered to the requester;



```
csce410@COE-VM-CSE1-L06: ~/Documents/MP4
Request sent to server.
Looking for replacementReceived successful response from server.
Printing Cache Table
URL      : /sports:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 08:41:16 GMT
Expiry    : Sun, 29 Oct 2023 08:43:16 GMT
File Name : sports
The client sent messages is
GET sports HTTP/1.0 Host:www.cnn.com
path:/sportsurl:/sports:www.cnn.comgettttgggg info.....Host:www.cnn.com
connecting to proxy.....File found in cache and is not expired.
Sending file to the client...
Sent file to client successfully
Printing Cache Table
URL      : /sports:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 08:41:17 GMT
Expiry    : Sun, 29 Oct 2023 08:43:16 GMT
File Name : sports
csce410@COE-VM-CSE1-L06: ~/Documents/MP4
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ./client 127.0.0.1 1234 www.cnn.c
rts
hostname:www.cnn.compath:sportscsce410@COE-VM-CSE1-L06:~/Documents/MP4$ ./
127.0.0.1 1234 www.cnn.com/sports
hostname:www.cnn.compath:sportscsce410@COE-VM-CSE1-L06:~/Documents/MP4$
```



**Testcase 7:** Three clients can simultaneously access the proxy server and get the correct data

The screenshot shows a Linux desktop environment with three terminal windows open, demonstrating simultaneous access to a proxy server. The desktop background is dark, and the terminal windows have a dark theme.

**Terminal 1 (Top Left):** Shows the output of a command that lists file details for a proxy server. The output includes:

```
Last Access Time : Sun, 29 Oct 2023 08:41:17 GMT
Expiry           : Sun, 29 Oct 2023 12:31:06 GMT
File Name        : sports
URL              : /about/welcome.php:www.library.tamu.edu
Last Access Time : Sun, 29 Oct 2023 12:29:13 GMT
Expiry           : Sun, 29 Oct 2023 12:29:32 GMT
File Name        : about
URL              : /world:www.cnn.com
Last Access Time : Sun, 29 Oct 2023 12:31:31 GMT
Expiry           : Sun, 29 Oct 2023 12:33:31 GMT
File Name        : world
URL              : /world:www.foxnews.com
Last Access Time : Sun, 29 Oct 2023 12:31:50 GMT
Expiry           : Sun, 29 Oct 2023 12:31:50 GMT
```

**Terminal 2 (Top Right):** Shows the output of a command that lists files in the directory `~/Documents/MP4` and filters the results for files containing the word "welcome". The output is:

```
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ls -la | grep welc
-rw-rw-r-- 1 csce410 csce410 385 Oct 29 07:29 welcome.php
csce410@COE-VM-CSE1-L06:~/Documents/MP4$
```

**Terminal 3 (Bottom Left):** Shows the output of a command that lists files in the directory `~/Documents/MP4` and filters the results for files containing the word "world". The output is:

```
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ./client 127.0.0.1 1234 www.foxnews.com
/world
csce410@COE-VM-CSE1-L06:~/Documents/MP4$ ls -la | grep world
-rw-rw-r-- 1 csce410 csce410 422 Oct 29 07:31 world
csce410@COE-VM-CSE1-L06:~/Documents/MP4$
```

**Terminal 4 (Bottom Right):** Shows the output of a command that lists files in the directory `~/Documents/MP4` and filters the results for files containing the word "world". The output is:

```
ts/MP4$ ./client 127.0.0.1 1234 www.cnn.com/wor
ts/MP4$ ls -la | grep wold
ts/MP4$ ls -la | grep worl
2 Oct 29 07:31 world
ts/MP4$
```

The bottom right corner of the image shows a small text label: "elected (196 bytes)".

**Testcase 8 (Bonus):**

```
The client sent messages is
GET sports HTTP/1.0 Host:www.cnn.com
path:/sportsurl:/sports:www.cnn.comgettttingggg info.....Host:www.c
connecting to proxy.....File has expired, Requesting updated file
.
Sending HTTP query to web server
GET /sports HTTP/1.0
Host: www.cnn.com

If-Modified-Since: Sun, 29 Oct 2023 08:41:17 GMT
```