Izmir Ibrahimovic
izmib840

TNM031 Lab 1

1. The Basic HTTP GET/response interaction

Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?

In the GET message under "Hypertext Transfer Protocol" we can see that the requested HTTP version by the browser is 1.1. The server responds with an ok and sends the response as HTTP 1.1.

What languages (if any) does your browser indicate that it can accept to the server?

Under "Accept-Language" it says "en-US" in my case. This is expected since I run an English operating system and browser.

What is the IP address of your computer? Of the gaia.cs.umass.edu server?

In the GET message the source is 192.168.1.4 which is my computers ip on my internal network. Destination is 128.119.245.12 which is the gaia.cs.umass.edu server.

What is the status code returned from the server to your browser?

The status code is 200.

When was the HTML file that you are retrieving last modified at the server?

In the response message it says "Last-Modified: Wed, 02 Sep 2015 05:59:01 GMT\r\n".

How many bytes of content are being returned to your browser?

540 bytes.

2. The HTTP CONDITIONAL GET/response interaction

Inspect the contents of the first HTTP GET request from your browser to the server. Do you see an "IF-MODIFIED-SINCE" line in the HTTP GET?

No, this is expected since the cache was cleared.

Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

Yes, the server returned 786 bytes. In the second GET message only 296 bytes were returned since it was cached the first time we loaded it.

Now inspect the contents of the second HTTP GET request from your browser to the server. Do you see an "IF-MODIFIED-SINCE:" line in the HTTP GET? If so, what information follows the "IF-MODIFIED-SINCE:" header?

Yes it says "If-Modified-Since: Wed, 02 Sep 2015 05:59:01 GMT\r\n".

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What is the HTTP status code and phrase returned from the server in response to this second HTTP GET? Did the server explicitly return the contents of the file? Explain.

The status code was 304 and the response phrase was "not modified". Server did not return the file but only 296 bytes of information.

3. Retrieving Long Documents

How many HTTP GET request messages were sent by your browser?

Ignoring the ones for favicon, only one.

How many data-containing TCP segments were needed to carry the single HTTP response?

Three TCP segments, each being 1514 bytes.

What is the status code and phrase associated with the response to the HTTP GET request?

The status code is 200 and the response is "Ok".

4. HTML Documents with Embedded Objects

How many HTTP GET request messages were sent by your browser? To which Internet addresses were these GET requests sent?

Three

/~piede/courses/HTTP-ethereal-file4.html

/mall06/grafik/header/default_header/default_big_header.gif

/sites/files/oxford/pi.jpg

Can you tell whether your browser downloaded the two images serially, or whether they were downloaded from the two web sites in parallel? Explain.

Parallel, since the browser made two requests at once and the server responded to both immediately.

```
444 GET /mall06/grafik/header/default_header/default_big_header.gif HTTP/1.1
413 GET /sites/files/oxford/pi.jpg HTTP/1.1
854 HTTP/1.1 200 OK  (GIF89a)
921 HTTP/1.1 200 OK  (image/jpeg)
```

5. HTTP Authentication

What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?

The server returns a 401 status with phrase "Authorization Required".

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When your browser's sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?

Under "Authorization Basic" we can find the credentials. Both username and password are displayed as plain text.

```
Authorization: Basic aWNlOmNyZWFt\r\n
    Credentials: ice:cream
```