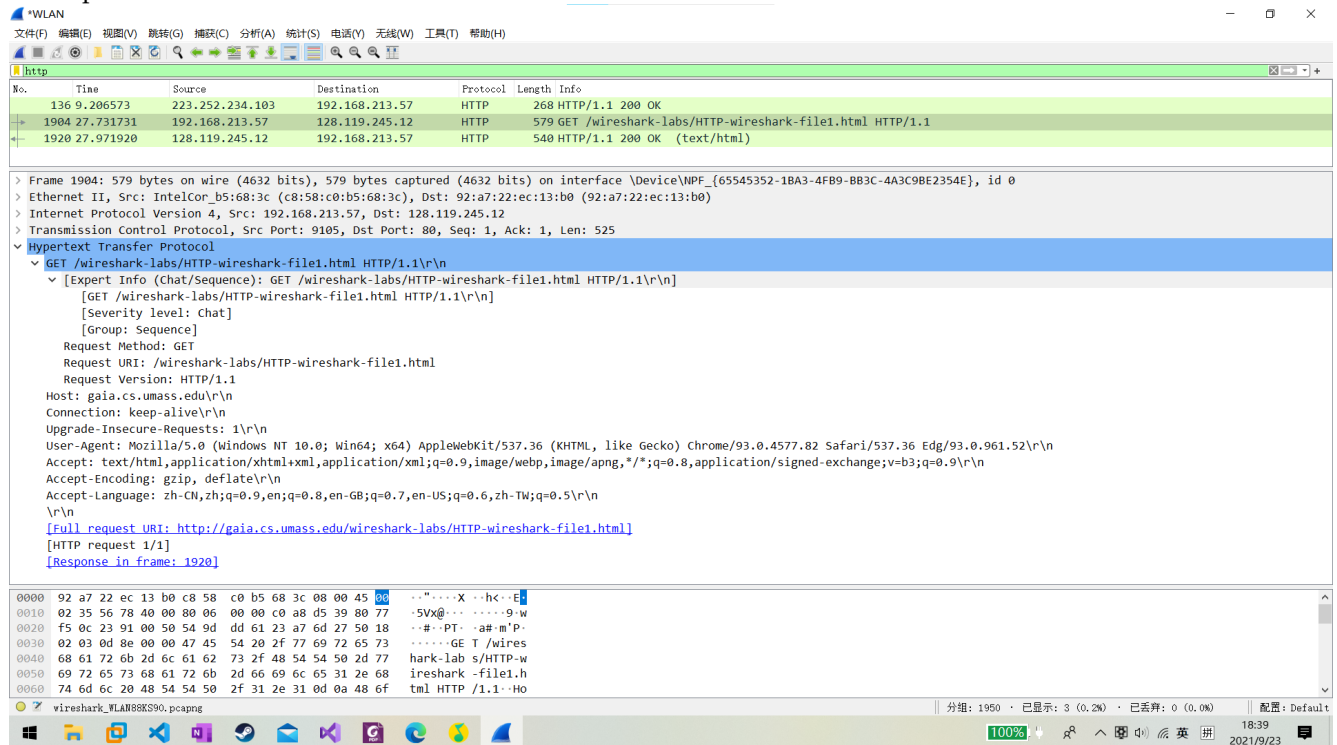# Computer Network Study Lab 2

- Author:PB19000362 钟书锐
- Time:2021.9.23

1. The Basic HTTP GET/response interaction

- The picture of the wireshark.

- The picture of the http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html

Congratulations. You've downloaded the file http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html!

Q1 Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?

Both are HTTP 1.1

Q2. What languages (if any) does your browser indicate that it can accept to the server?

Accept-Language:

zh-CN,zh;q=0.9,en;q=0.8,en-GB;q=0.7,en-US;q=0.6,zh-TW;q=0.5

Q3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?

- `IP address of my computer:192.168.213.57`
- `IP address of the server:128.119.245.12`

Q4. What is the status code returned from the server to your browser?

`200`

Q5. When was the HTML file that you are retrieving last modified at the server?

`Last-Modified: Thu, 23 Sep 2021 05:59:02 GMT`

## Q6. How many bytes of content are being returned to your browser?

`128`

Q7. By inspecting the raw data in the packet content window, do you see any headerswithin the data that are not displayed in the packet-listing window? If so, name one.

`No, all of the headers can be found in the raw data.`

2. The HTTP CONDITIONAL GET/response interaction

- `The picture of the wireshark.`

- The picture of the http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file2.html
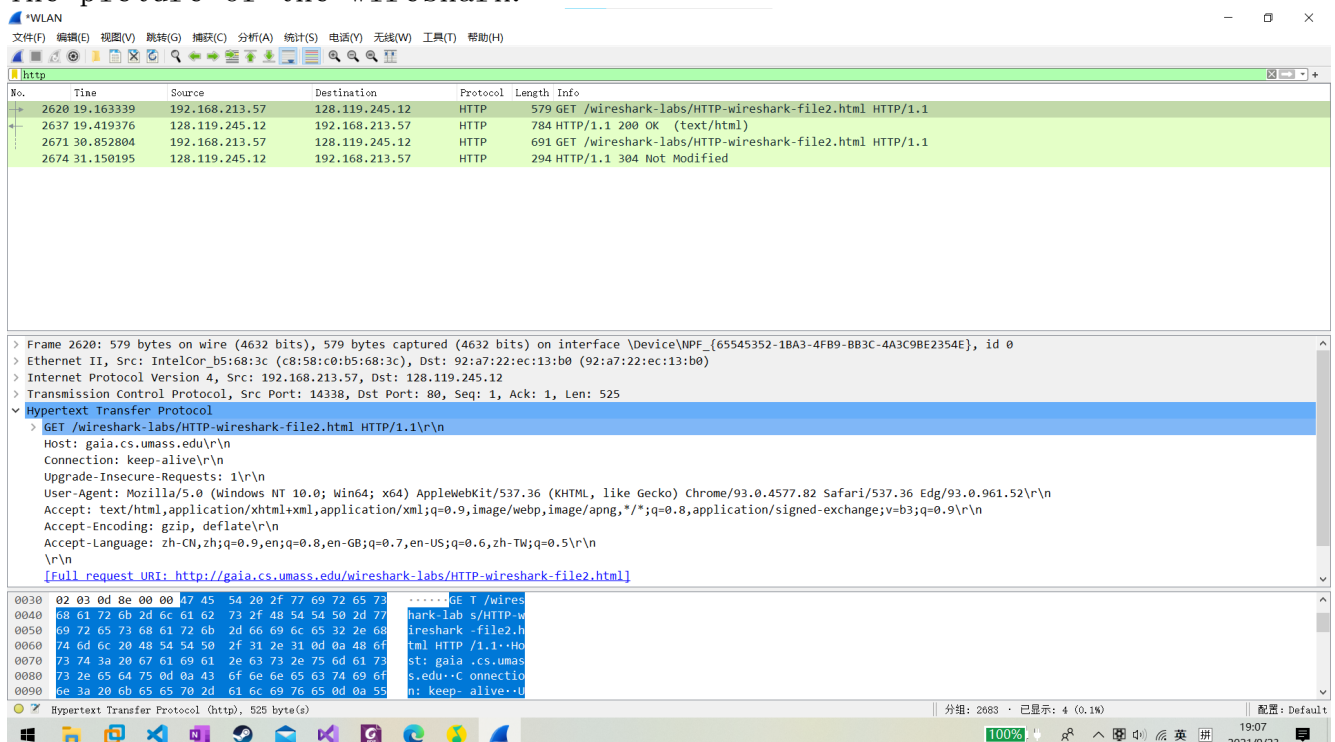
  Congratulations again! Now you've downloaded the file lab2-2.html.
  This file's last modification date will not change.

  Thus if you download this multiple times on your browser, a complete copy
  will only be sent once by the server due to the inclusion of the IN-MODIFIED-SINCE
  field in your browser's HTTP GET request to the server.

Q8. 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.

Q9. Inspect the contents of the server response. Did the server explicitly return the contents of the file? How can you tell?

Yes,we can see the contents in the Line-based text data field,and the content-Length is 371.

Q10. 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.
- If-Modified-Since: Thu, 23 Sep 2021 05:59:02 GMT\r\n
- This is the date of the last modification of the file from the previous get request.

Q11. 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.

- 304 Not Modified
- No, The server didn't return the contents of the file since the browser loaded it from its cache. Return the contents will just waste time.

3. Retrieving Long Documents

- The picture of the wireshark.

- The picture of the http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html
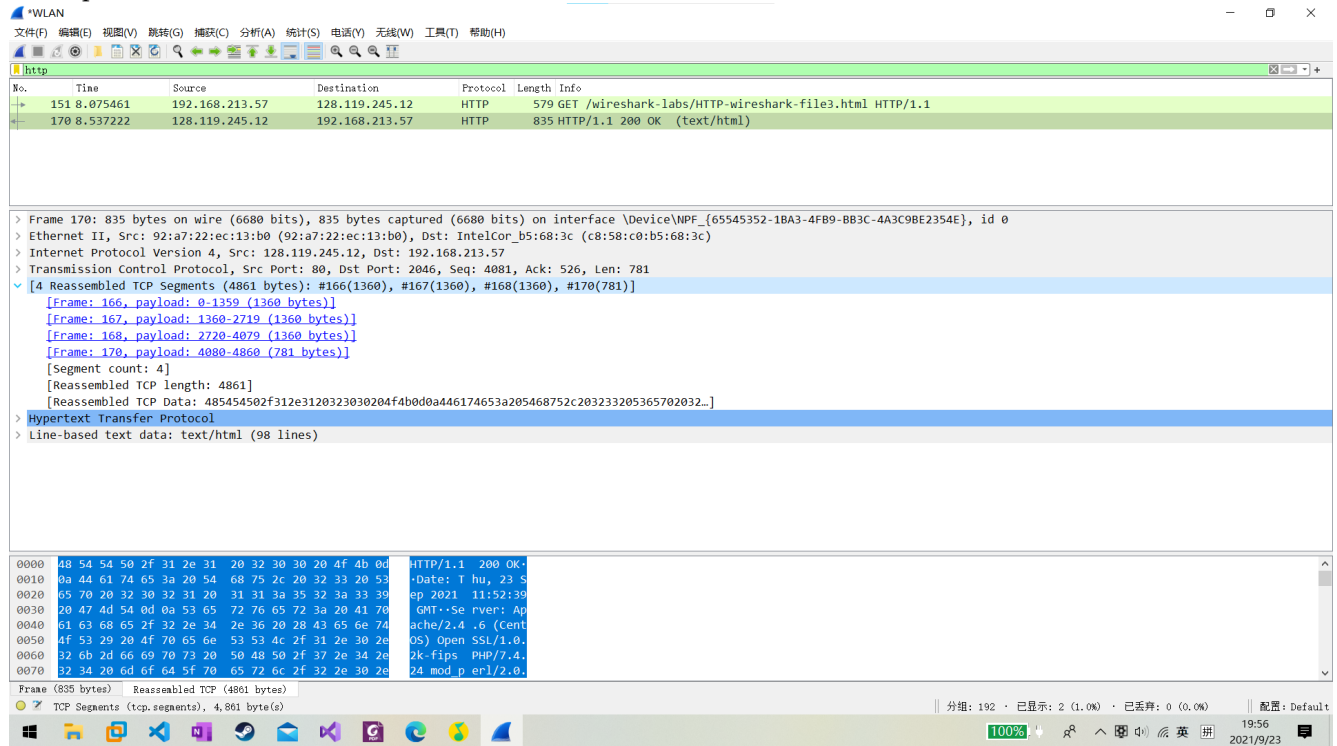
THE BILL OF RIGHTS
Amendments 1-10 of the Constitution

The Conventions of a number of the States having, at the time of adopting the Constitution, expressed a desire, in order to prevent misconstruction or abuse of its powers, that further declaratory and restrictive clauses should be added, and as extending the ground of public confidence in the Government will best insure the beneficent ends of its institution;

Resolved, by the Senate and House of Representatives of the United States of America, in Congress assembled, two-thirds of both Houses concurring, that the following articles be proposed to the Legislatures of the several States, as amendments to the Constitution of the United States; all or any of which articles, when ratified by three-fourths of the said Legislatures, to be valid to all intents and purposes as part of the said Constitution, namely:

Amendment I

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances.

Amendment II

A well regulated militia, being necessary to the security of a free state, the right of the people to keep and bear arms, shall not be infringed.

Amendment III

No soldier shall, in time of peace be quartered in any house, without the consent of the owner, nor in time of war, but in a manner to be prescribed by law.

Amendment IV

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue, but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

Amendment V

No person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.

Q12. How many HTTP GET request messages did your browser send? Which packet number in the trace contains the GET message for the Bill or Rights?

- My browser send 1 HTTP GET request message.
- All the 4 packets contains the GET message for the Bill or Rights. (166,167,168,170)

Q13. Which packet number in the trace contains the status code and phrase associated with the response to the HTTP GET request?

The first packet(166).

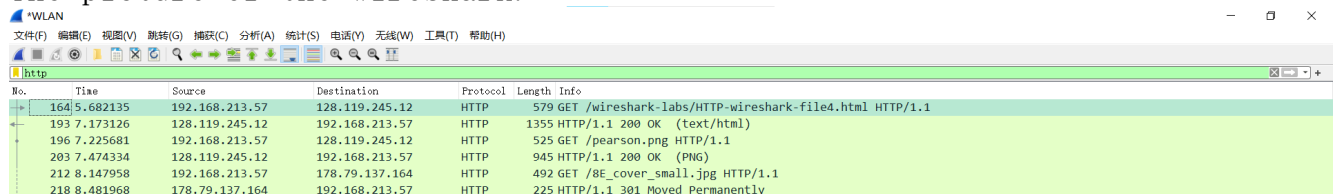## Q14. What is the status code and phrase in the response?

200 OK

Q15. How many data-containing TCP segments were needed to carry the single HTTP response and the text of the Bill of Rights?
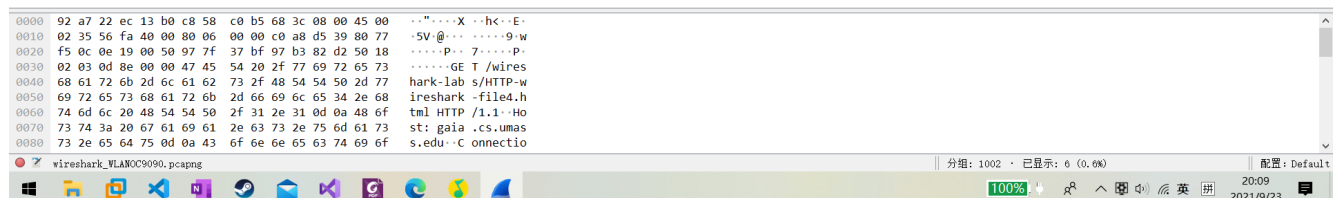
4

4.HTML Documents with Embedded Objects

- The picture of the wireshark.

- The picture of the http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file3.html

This little HTML file is being served by gaia.cs.umass.edu. It contains two embedded images. The image above, also served from the gaia.cs.umass.edu web site, is the logo of our publisher, Pearson. The image of our 8th edition book cover below is stored at, and served from, a WWW server kurose.cslash.net in France:
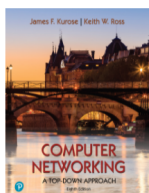
And while we have your attention, you might want to take time to check out the available open resources for this book at http://gaia.cs.umass.edu/kurose_ross.

Q16. How many HTTP GET request messages did your browser send? To which Internet addresses were these GET requests sent?

Browser send 3 request 128.119.245.12 128.119.245.12 178.79.137.164

Q17. Can you tell whether your browser downloaded the two images serially, orwhether they were downloaded from the two web sites in parallel?Explain

- Serially, see the time.
- The first image (send request at 7.225681,and receive at 7.474334)
- The second image (send request at 8.147958,and receive at 8.481968)

5.HTTP Authentication

- The picture of the wireshark.
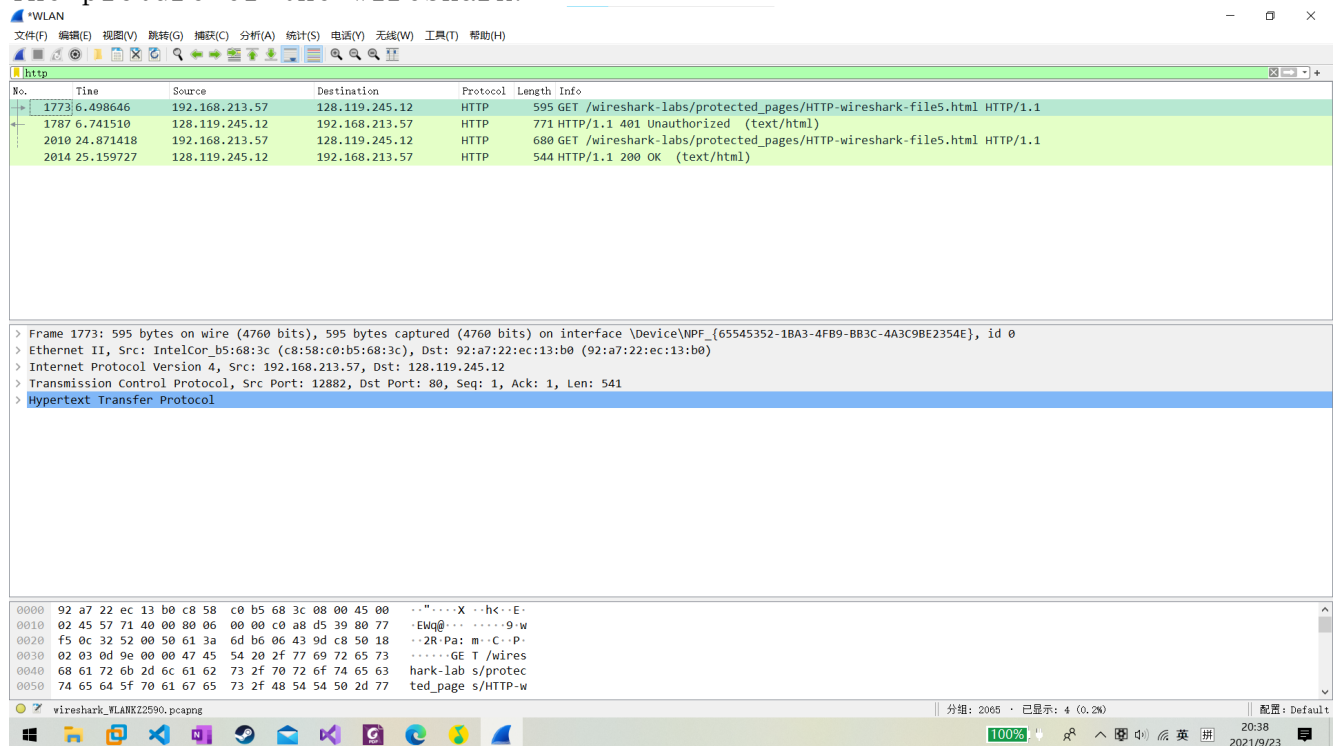
- The picture before enter the web.

- The picture of the http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file5.html

This page is password protected! If you're seeing this, you've downloaded the page correctly Congratulations!

Q18. What is the server's response (status code and phrase) in response to the initial HTTP GET message from your browser?

`401 Unauthorized`

Q19. When your browser's sends the HTTP GET message for the second time, what new field is included in the HTTP GET message?

`Authorization: Basic d21yZXNoYXJrLXN0dWRlbnRzOm51dHdvcms=\r\n`