Bookmark

Section 4 Question 1

(1/2 points)

Suppose you direct your browser to a hypothetical page http://www.ece.ust.hk/test.html (note that this page does not actually exist). Suppose that in response, your browser displays some text, which was contained in the test.html file, and three images.

Assuming no HTTP requests/responses are lost, how many GET requests will be sent by your browser application?

- 1
- 2
- 3
- 4 ✔
- more than 4

▸ Topic 7: The Application Layer

▸ Topic 8: Course Review

▾ Final Exam

Final Exam
Final Exam due Feb 22, 2016 at 15:30 UTC

▸ MATLAB download and tutorials

Suppose that the web designer decides to improve the visual quality of the page and increases the size of one of the images by 500KB. What happens to the size of the test.html file?

- (•) It increases by 500KB. ✖
- ( ) It increases by more than 500KB.
- ( ) It remains the same. ✔
- ( ) It decreases by 500KB.

You have used 1 of 1 submissions

Section 4 Question 2

(2/2 points)

Web browsers often use caching to reduce the amount of data that needs to be retrieved from the server. One way it reduces the data sent over the network is by issuing a conditional GET request in HTTP, where the web browser attaches an "IF-MODIFIED-SINCE:" header to the GET request.

How does the conditional GET request reduce the amount of data sent over the network?

- The server sends a smaller file back to the browser that tells the broswer what the changes in the file were since the browser last downloaded it.
- The server assumes that the client already has a copy of the requested resource, and only sends the complete resource if it has been modified since the last time the client downloaded the resource. ✔
- The browser checks its internal cache, and only sends the GET request to the server if it does not have a copy of the requested resource.
- The browser generates a confirmation popup window asking the user if s/he is sure that s/he wants the file, and only downloads the file if the user confirms.

You have used 1 of 1 submissions

Section 4 Question 3

(2/2 points)

What is meant when we refer to the internet hourglass?

- Packets flow through the internet layers in only one direction, much in the same way sand flows only from top to bottom in an hourglass.

As the internet continues to expand, its capacity is being further and further stressed, and there is only a limited amount of time in the internet hourglass before full capacity is reached.

Routers in the internet determine the delays of links to their nearest neighbors using the internet hourglass.

The internet supports a wide variety of different applications at the top (application) layer, which communicate over a wide range of physical media at the bottom (physical layer), through only a few protocols at the middle (transport and network) layers. ✔

You have used 1 of 1 submissions

In this part of the course, we have learned that information travels through the internet via packets. These packets travel through many different links and nodes, which are controlled by various independent parties, on their way to their final destination. We usually have no direct control over the exact path taken by the packets to and from our computers. In lab 4, we learned that packet sniffing software, like Wireshark, running at a node in the network can capture the packets travelling through it without interrupting the flow of the packets. This introduces a potential security risk when communicating over the internet.

The last question of this exam is embedded into an image, which is stored on a web server and is password protected:

http://hkustx-elec1200.ust.hk/final/3x_s4_q3.png.

In order to view this image, you will need to enter a user name and password. However, we will not tell you the user name and password explicitly.

Fortunately for you, the packets containing the user name and passwords being sent by users logging into this web server are not encrypted. In addition, some hackers have installed packet sniffer software that is capturing the packets to and from the web server. The contents of these packets are being dumped periodically to a publically accessible file:

http://elec1200x.ece.ust.hk/login.txt

The contents of this file are very similar to the information displayed by Wireshark in the packet-header details window and the packet-contents windows. Your task here is to observe the record of packets, and figure out a valid username and password pair. With these, you will be able to login to the password protected website and see the last question.

Please enter your answer to that question into the blank below.

Section 4 Question 4

(2/2 points)

Please enter the numerical answer to the question on the password protected website as a decimal integer.

3 ✔

3

You have used 1 of 1 submissions