Daniel Lara - ID: 49651280
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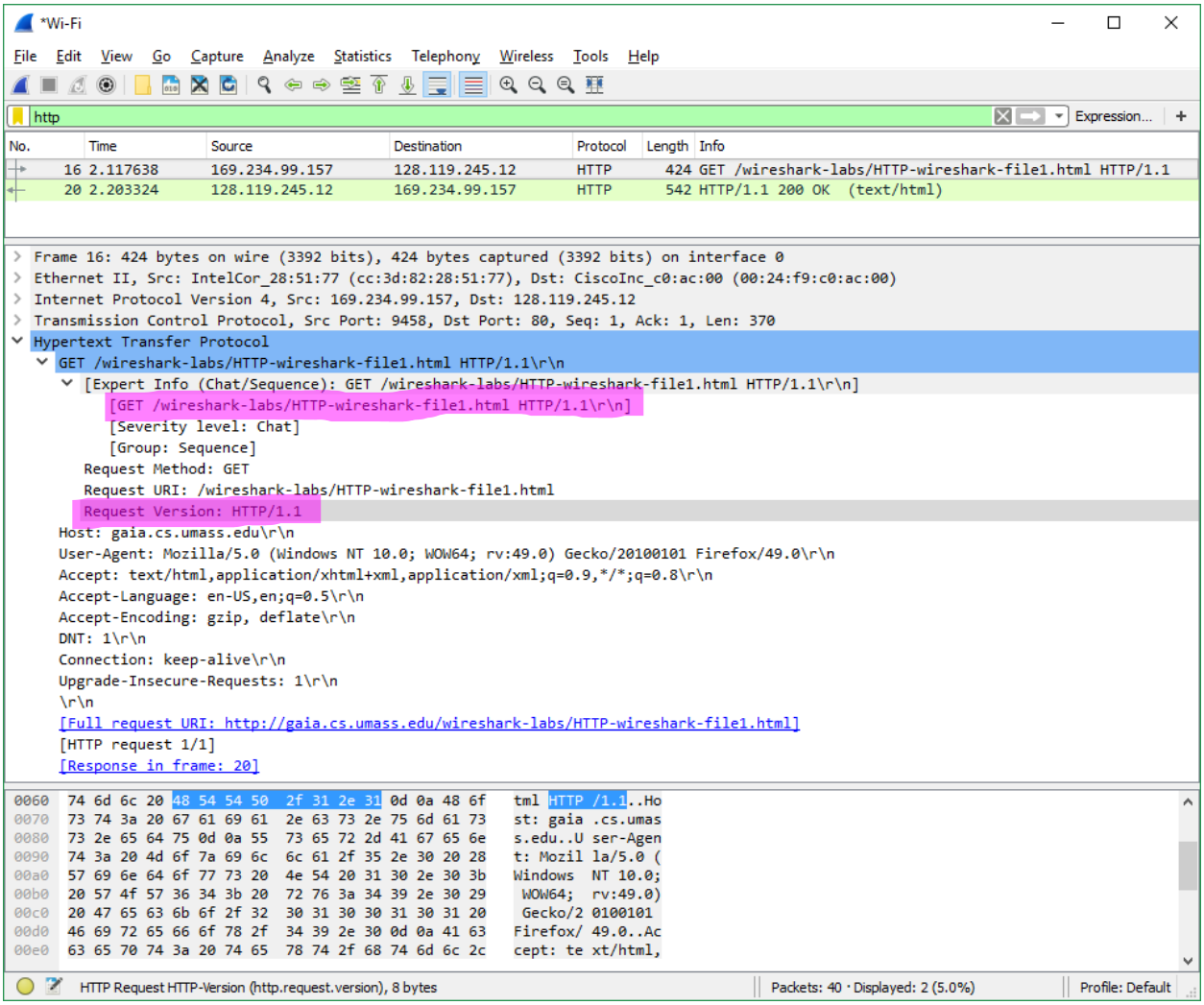
CS 132

HW 2: Wireshark Labs

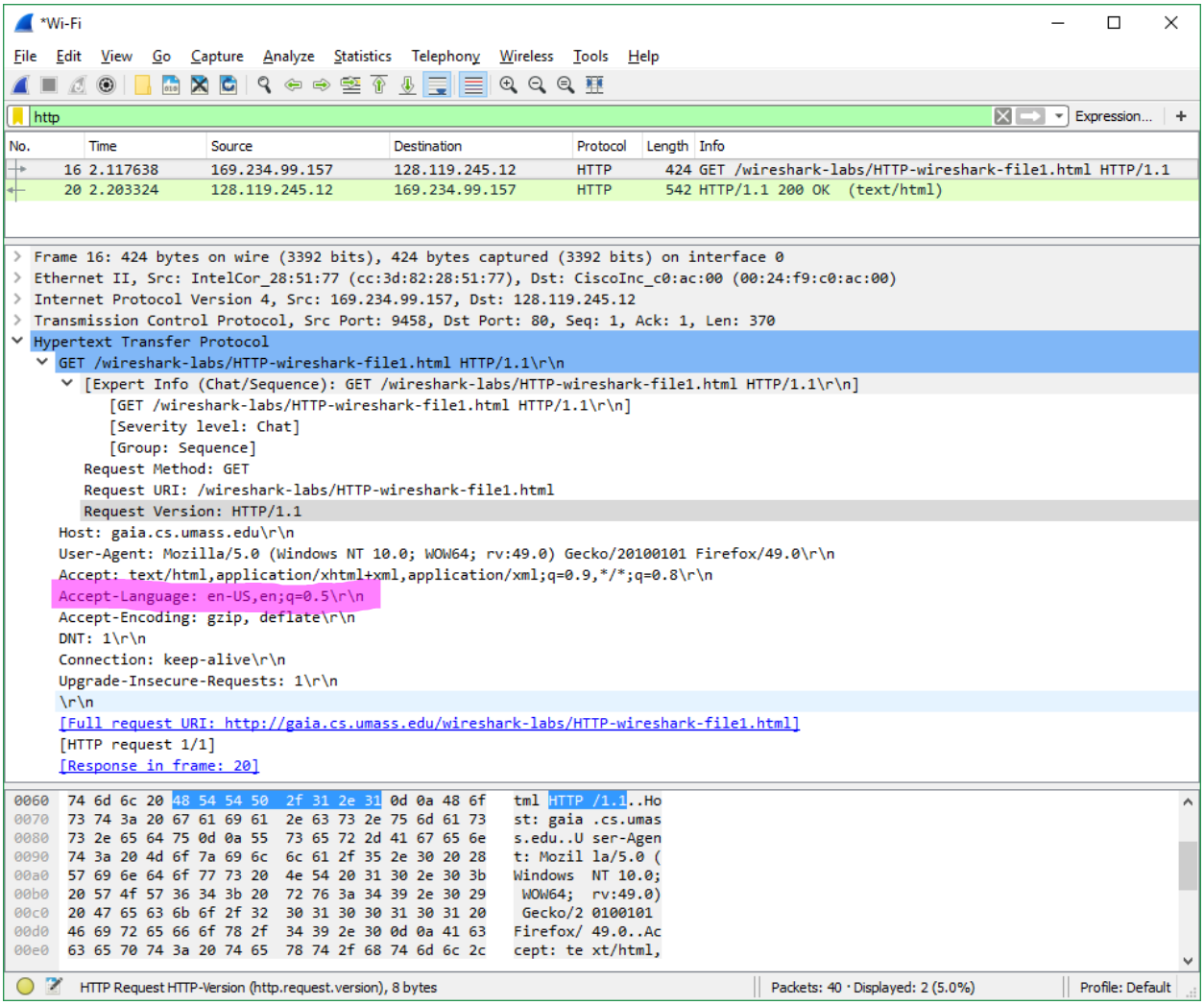
Question 2: Wireshark Labs

HTTP:

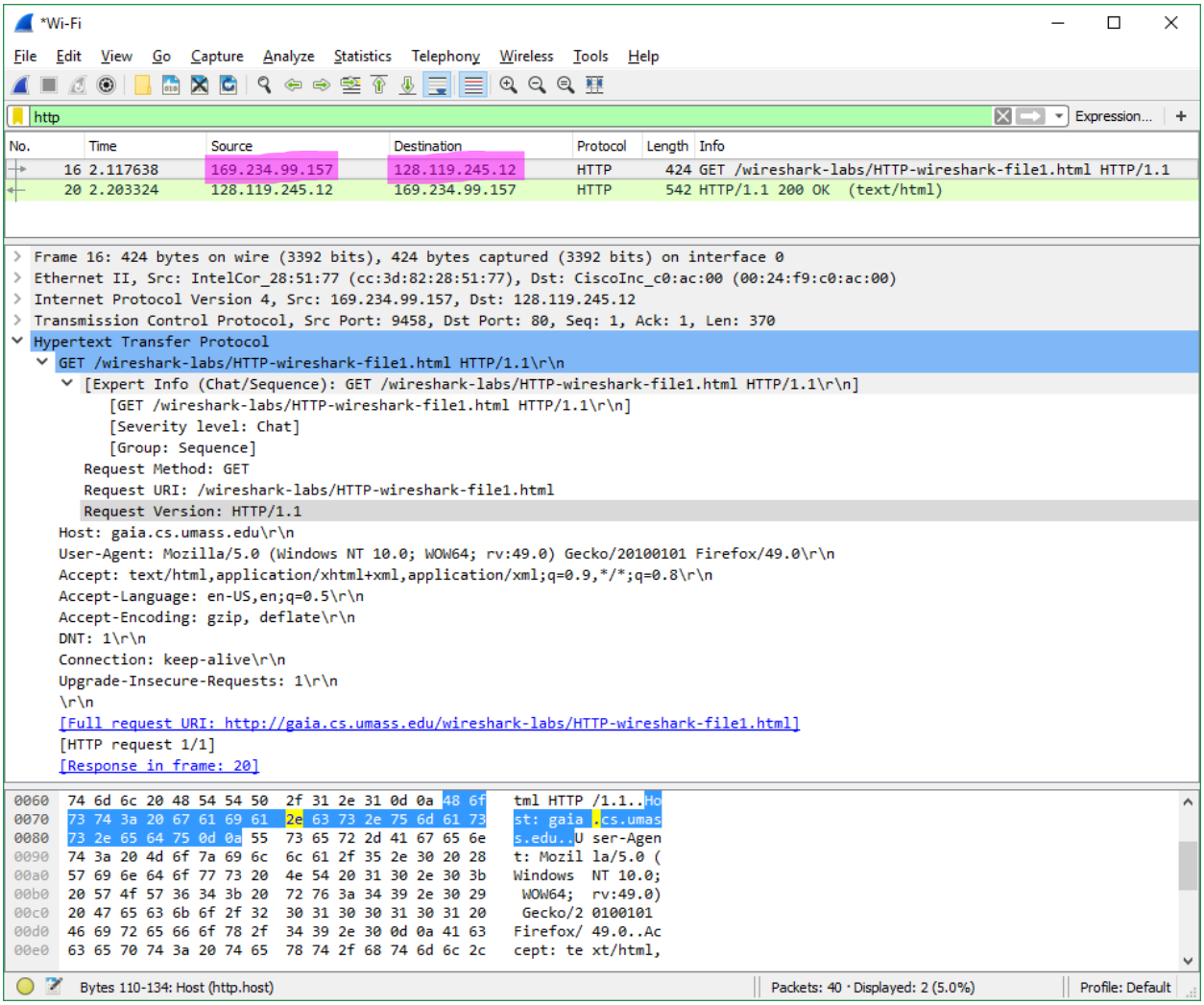
1. Is your browser running HTTP version 1.0 or 1.1? What version of HTTP is the server running?
   Answer: Both the browser and the server are using version 1.1.



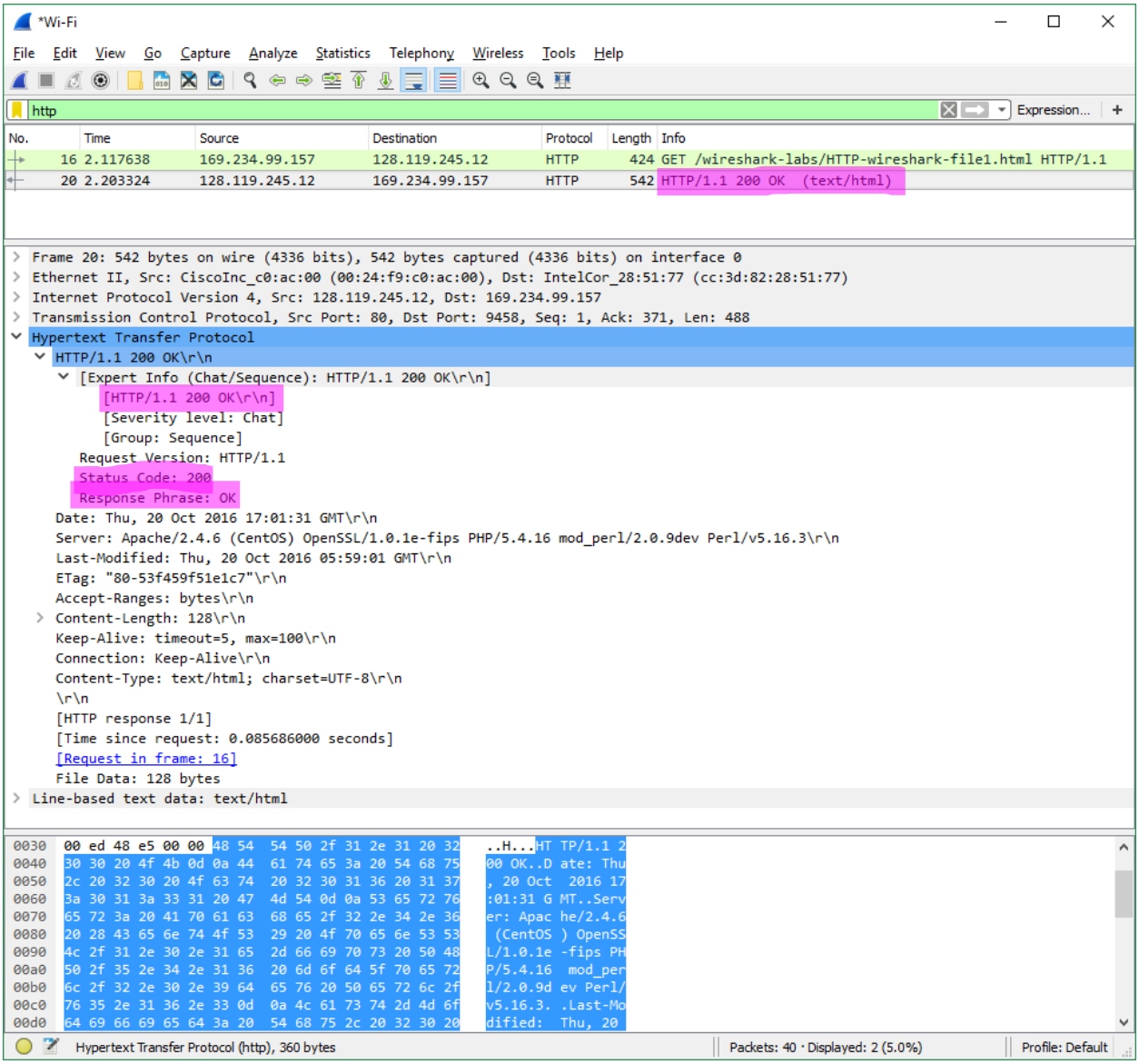
2. What languages (if any) does your browser indicate that it can accept to the server?
   Answer: en-US, en



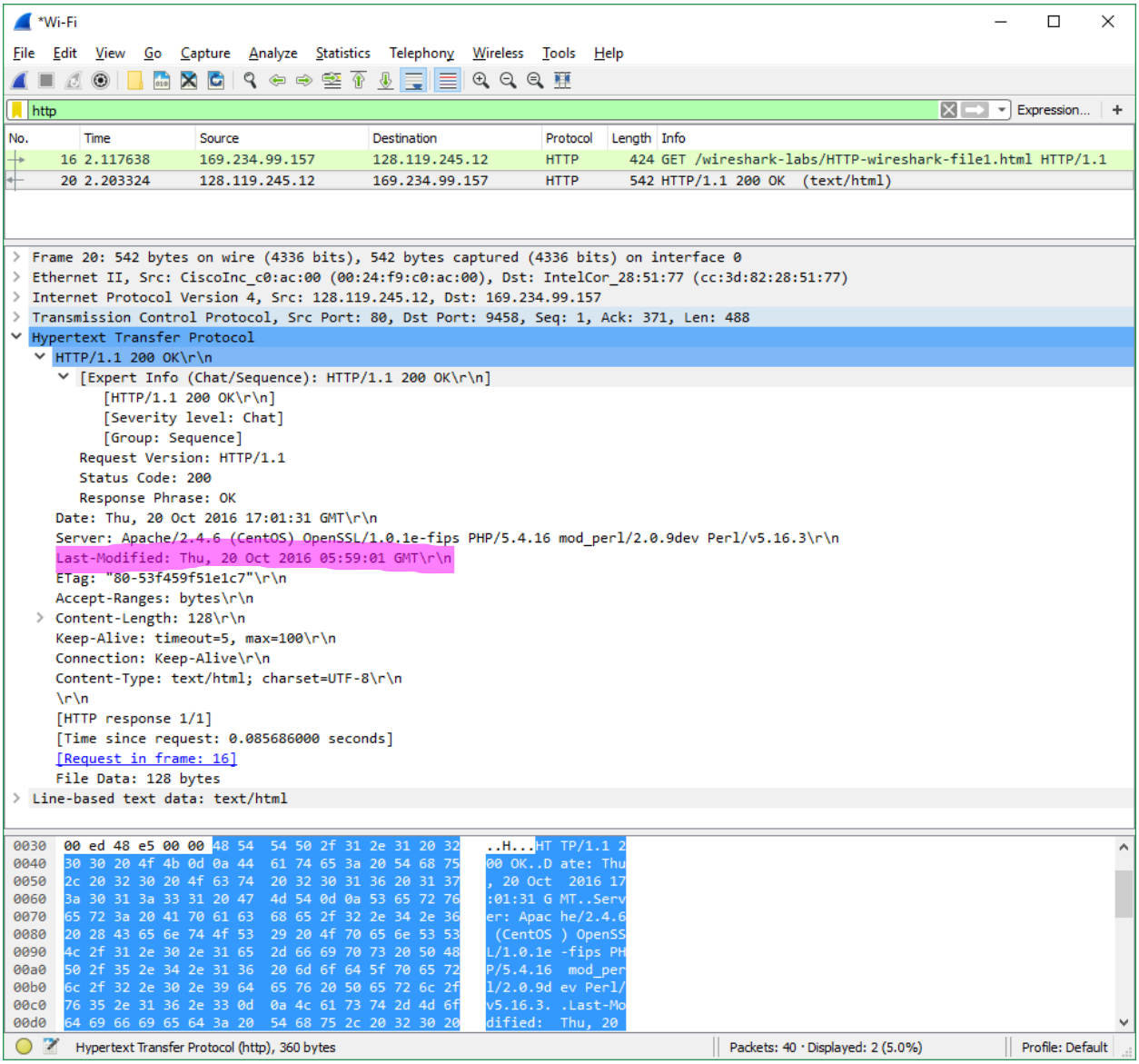
3. What is the IP address of your computer? Of the gaia.cs.umass.edu server?
   Answer: My IP = 169.234.99.157 Edu IP = 128.119.245.12



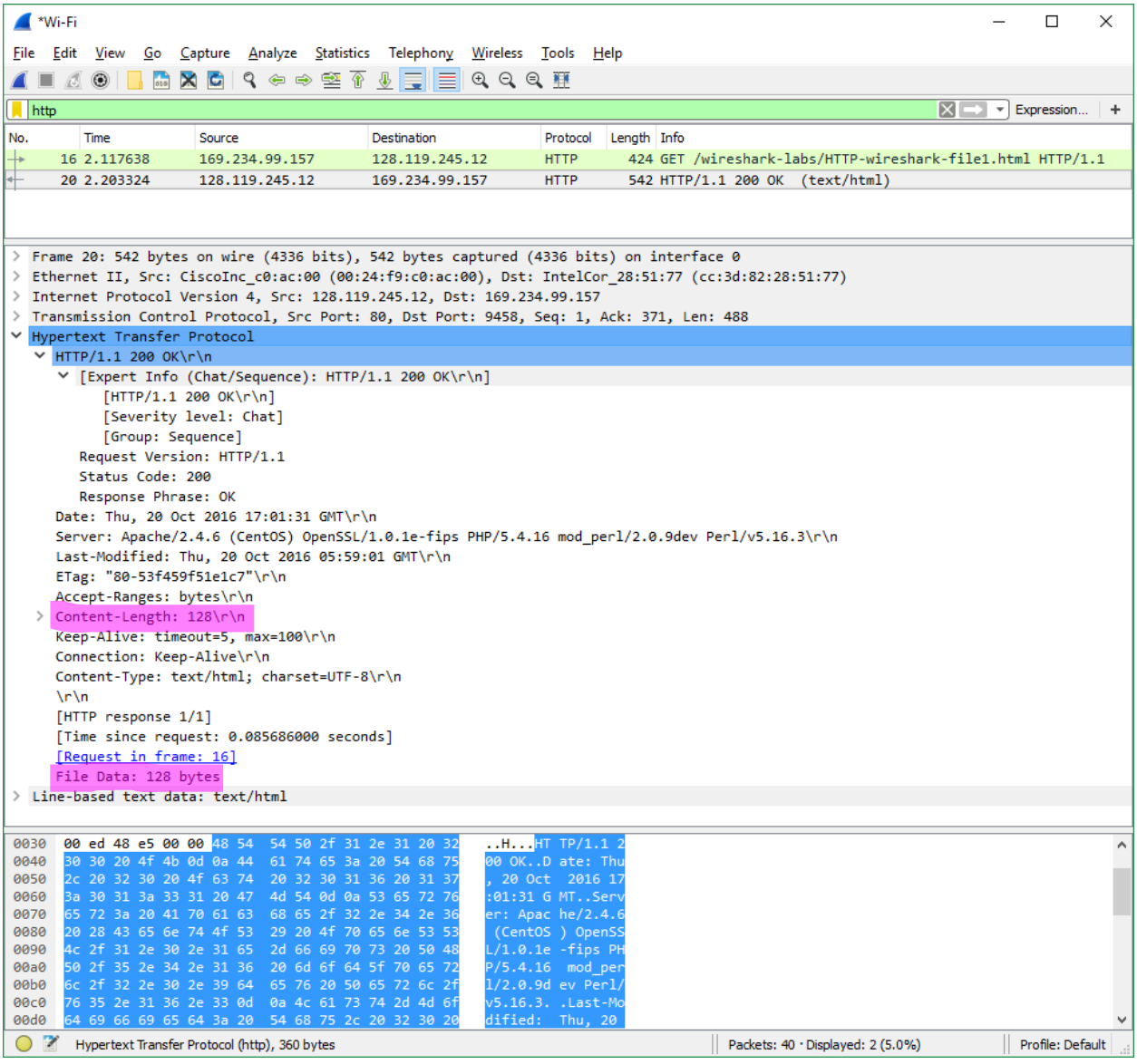
4. What is the status code returned from the server to your browser?
Answer: HTTP/1.1 200 OK (Status Code: 200, Response Phrase: OK)



5. When was the HTML file that you are retrieving last modified at the server?
Answer: Thu, 20 Oct 2016 05:59:01 GMT



6. How many bytes of content are being returned to your browser?
   Answer: Content-Length: 128 (128 bytes)

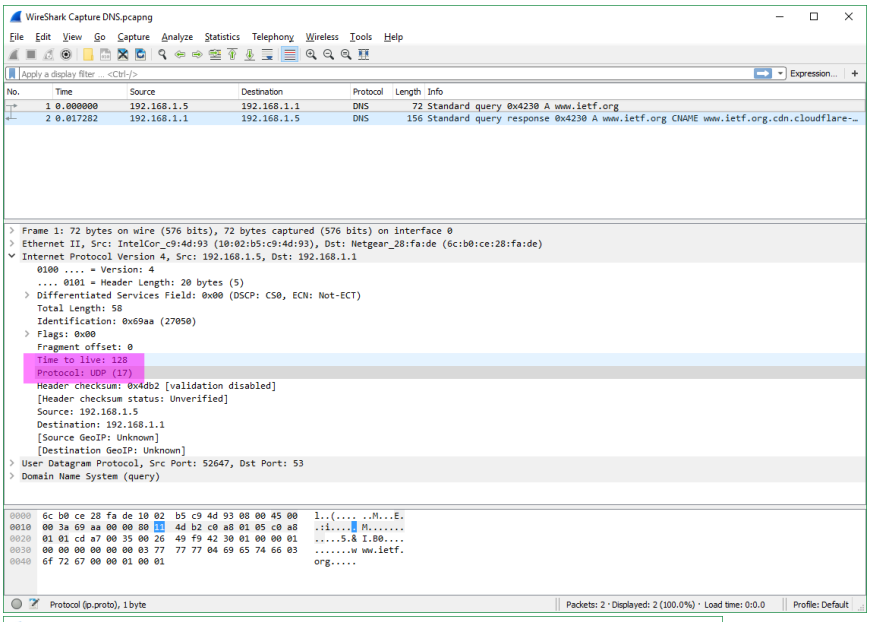


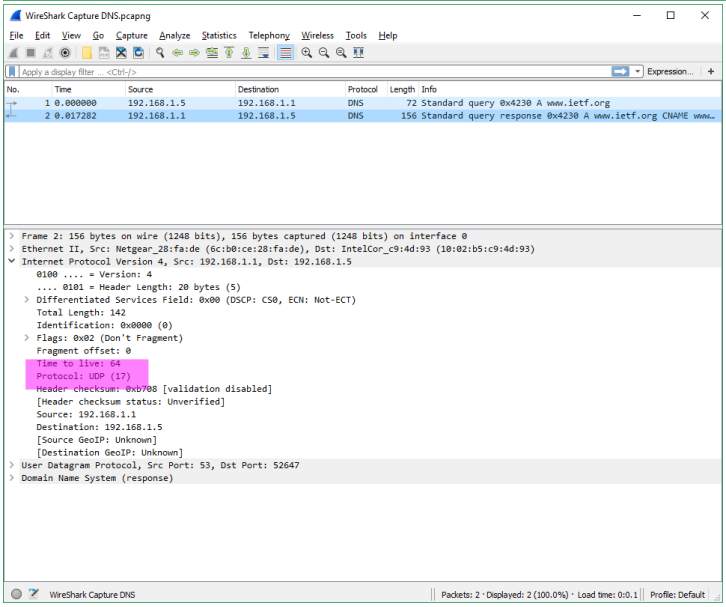
7. By inspecting the raw data in the packet content window, do you see any headers within the data that are not displayed in the packet-listing window? If so, name one.
   Answer: No. All the headers are accounted for in the raw data.

Question 2: Wireshark Labs

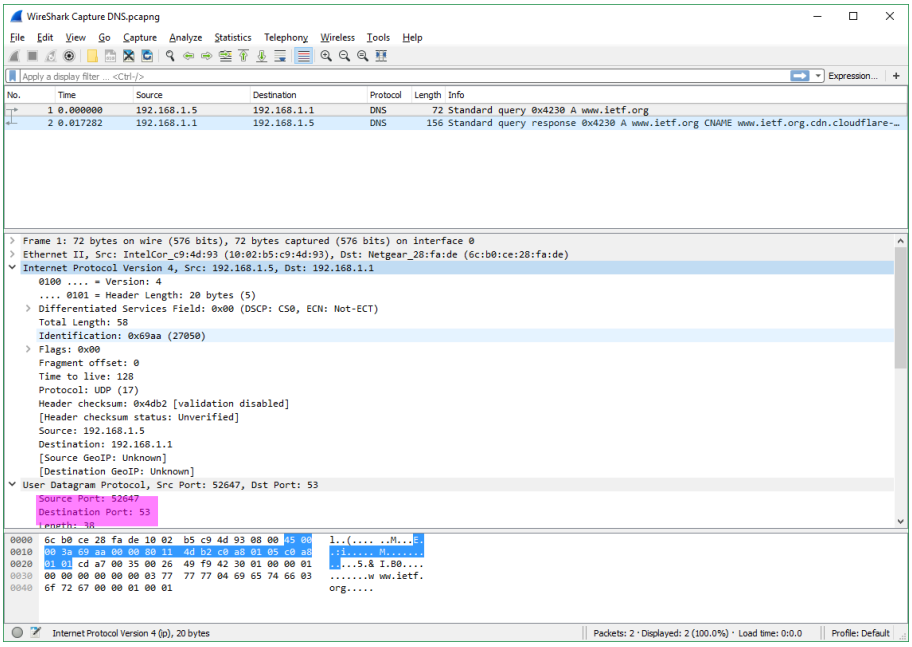
DNS:

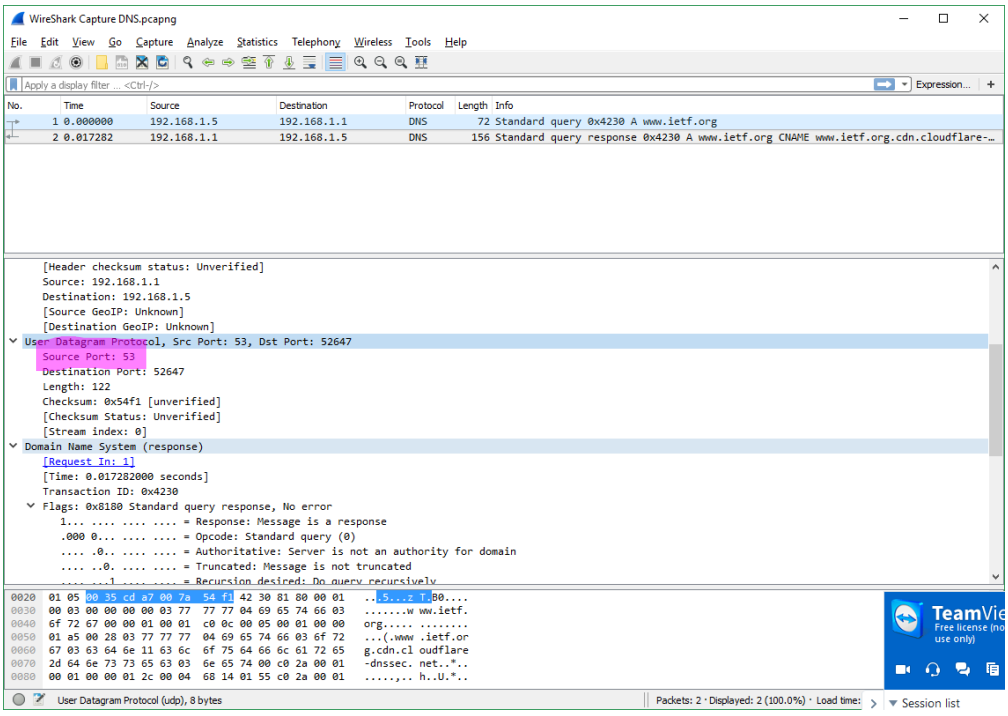
4. Locate the DNS query and response messages. Are then sent over UDP or TCP?
   Answer: Both the query and the query response use UDP



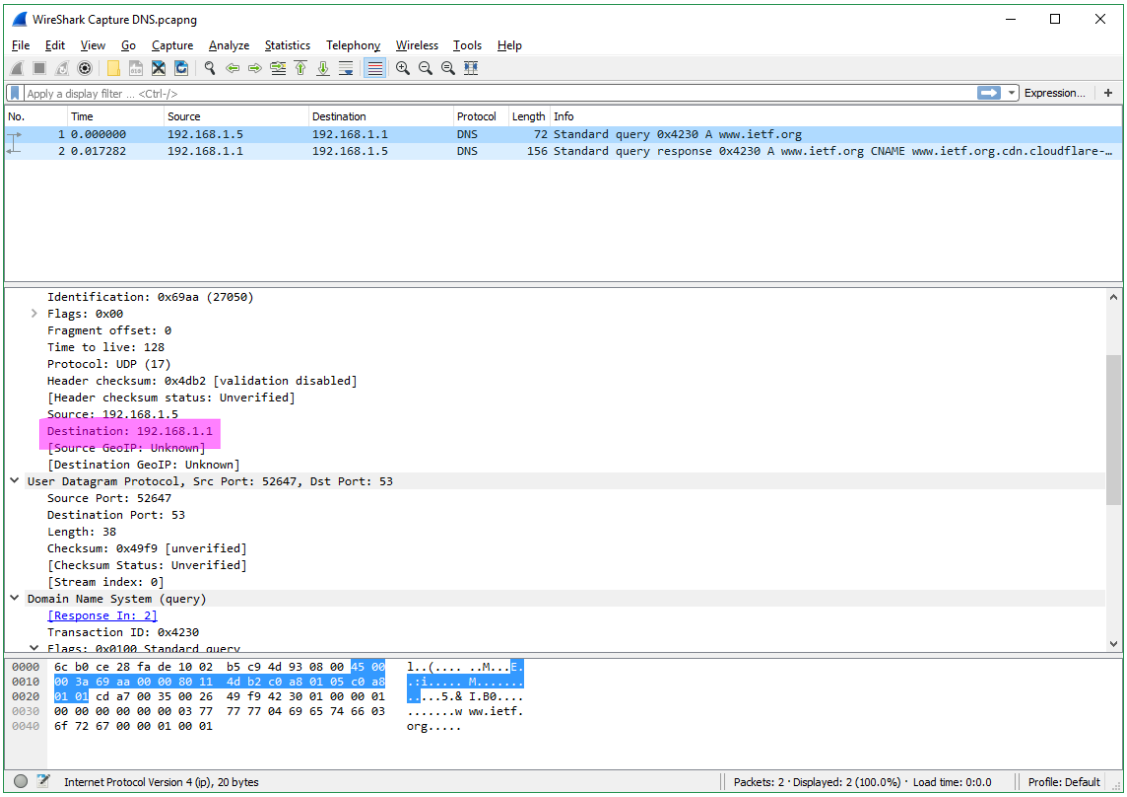


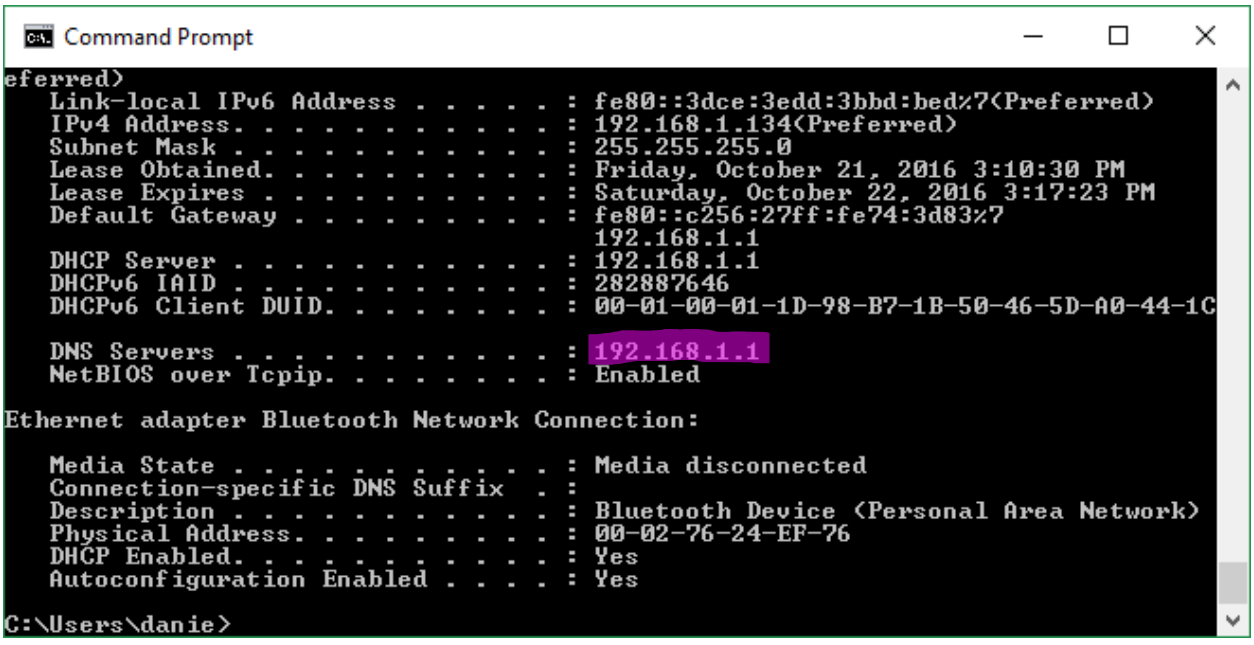
5. What is the destination port for the DNS query message? What is the source port of DNS response message?
   Answer: Destination Port = 53 and Source Port = 53



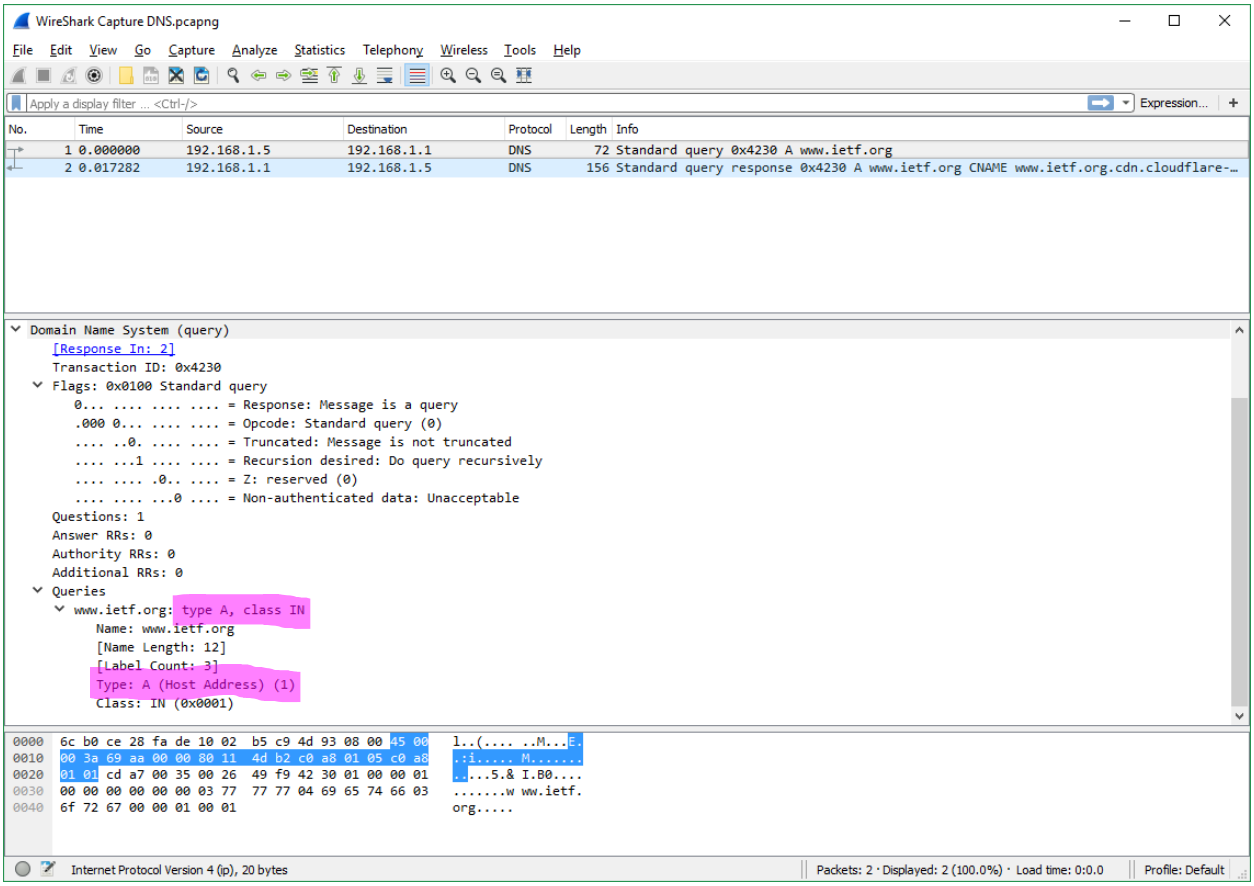


6. To what IP address is the DNS query message sent? Use ipconfig to determine the IP address of your local DNS server. Are these two IP addresses the same?
Answer: IP Address = 192.168.1.1 | Local DNS server IP Address = 192.168.1.1 (Local DNS was found using the command "ipconfig /all"

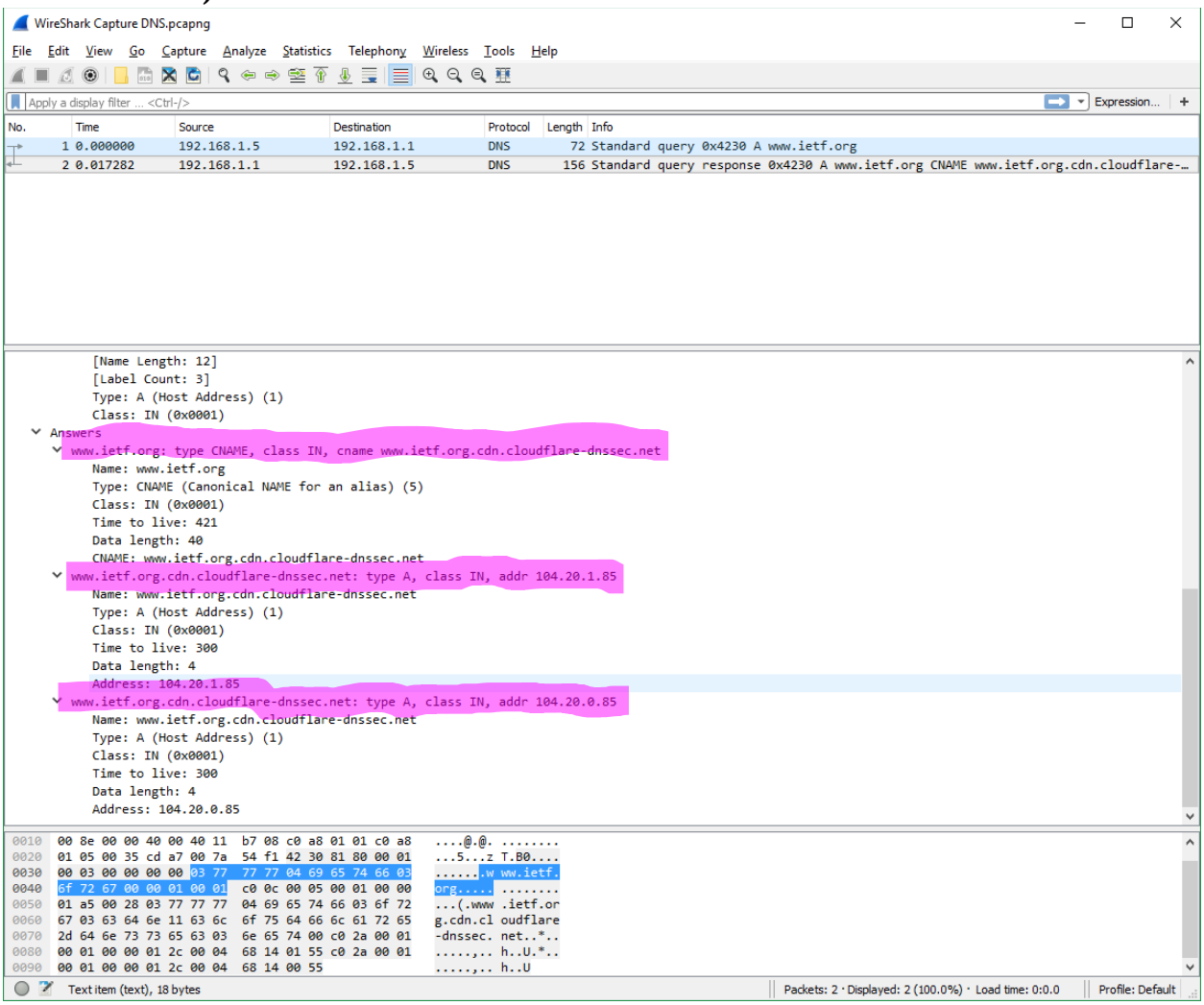




7. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?
Answer: Type-A, class IN. The Query message does not have any answers associated with it.



8. Examine the DNS response message. How many "answers" are provided? What do each of these answers contain?
   Answer: There were 3 answers provided. All of the answers have the following: Name, Type, Class, Time to live, and Data length. The first answer is of type "CName" and its value is www.ietf.org.cdn.cloudflare-dnssec.net. The other two responses are of type A and have addresses associated with them. (2nd: 104.20.1.85, 3rd: 104.20.0.85)



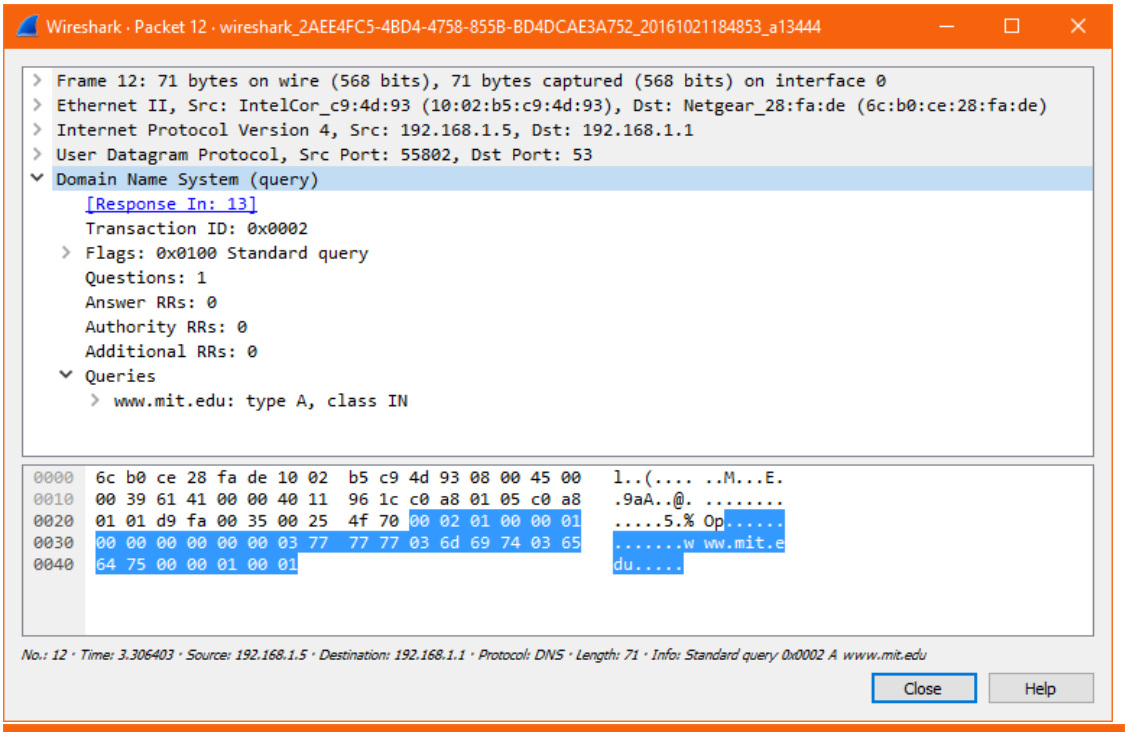
11. What is the destination port for the DNS query message? What is the source port of DNS response message?
    Answer: The destination port in the query message is 53. The source port of the response message is 53

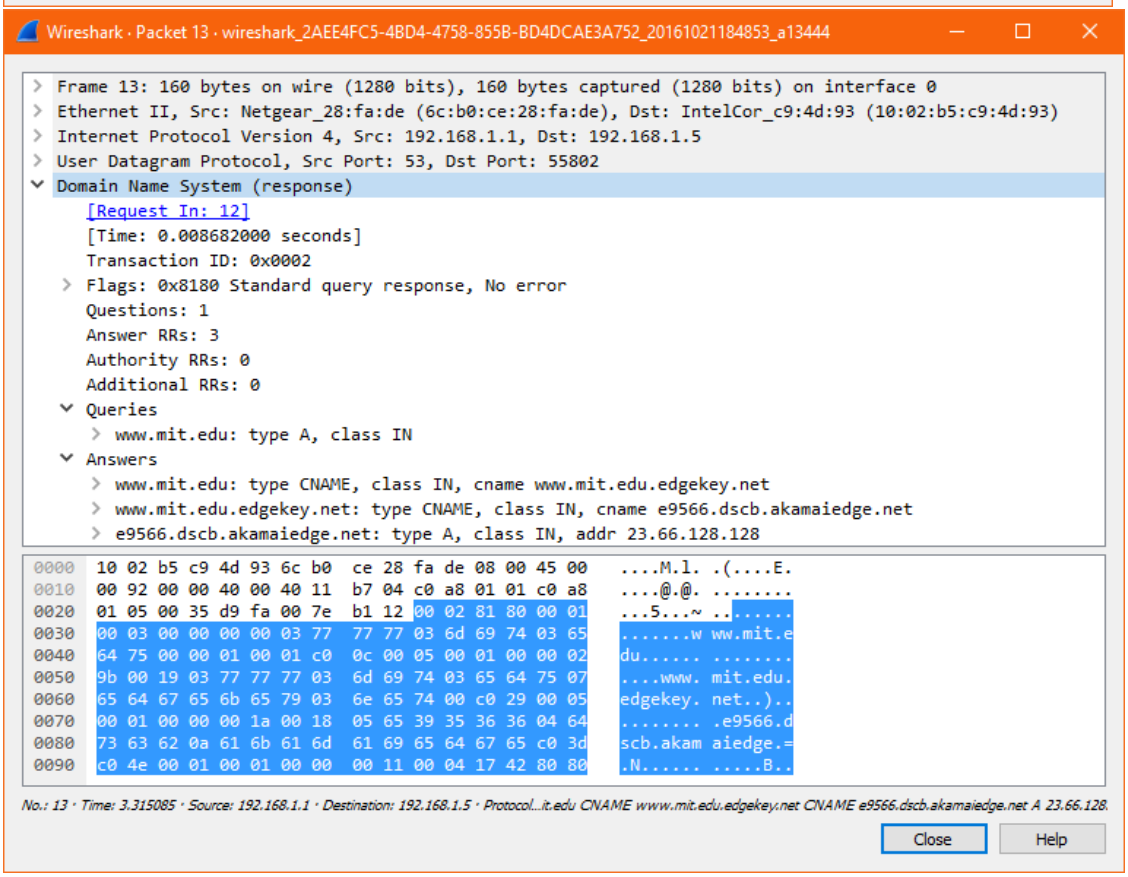
12. To what IP address is the DNS query message sent? Is this the IP address of your default local DNS server?
    Answer: The IP address is 192.168.1.1. This is the same address as the local DNS server (found by using ipconfig /all).

13. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?
    Answer: The DNS query message is type A, it does not contain any answers.

14. Examine the DNS response message. How many “answers” are provided? What do each of these answers contain?
    Answer: The response message contains 3 answers. Each answer contains a name, a type, a class, time to live, data length, and either an address (if type A) or a CNAME (if type CNAME).

15. Provide a screenshot.





16. To what IP address is the DNS query message sent? Is this the IP address of your default local DNS server?
    Answer: The IP address is 192.168.1.1. This is the same address as the local DNS server (found by using ipconfig /all).

17. Examine the DNS query message. What "Type" of DNS query is it? Does the query message contain any "answers"?
    Answer: The query is of NS and contains no answers.

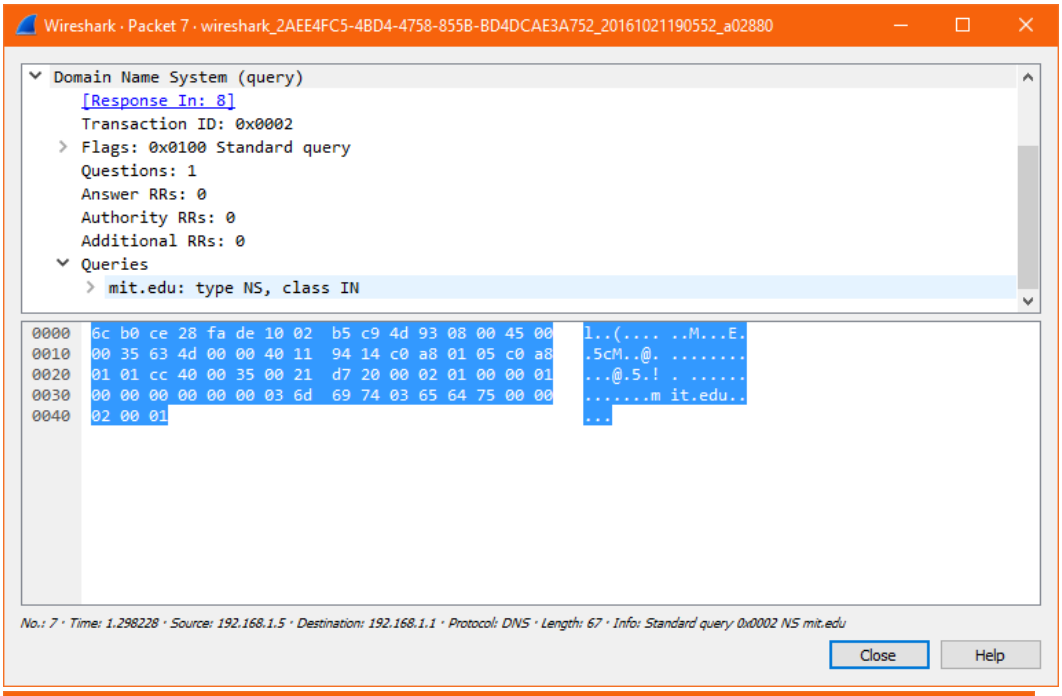
18. Examine the DNS response message. What MIT nameservers does the response message provide? Does this response message also provide the IP addresses of the MIT nameservers?
    Answer: The nameservers provided are as follows:

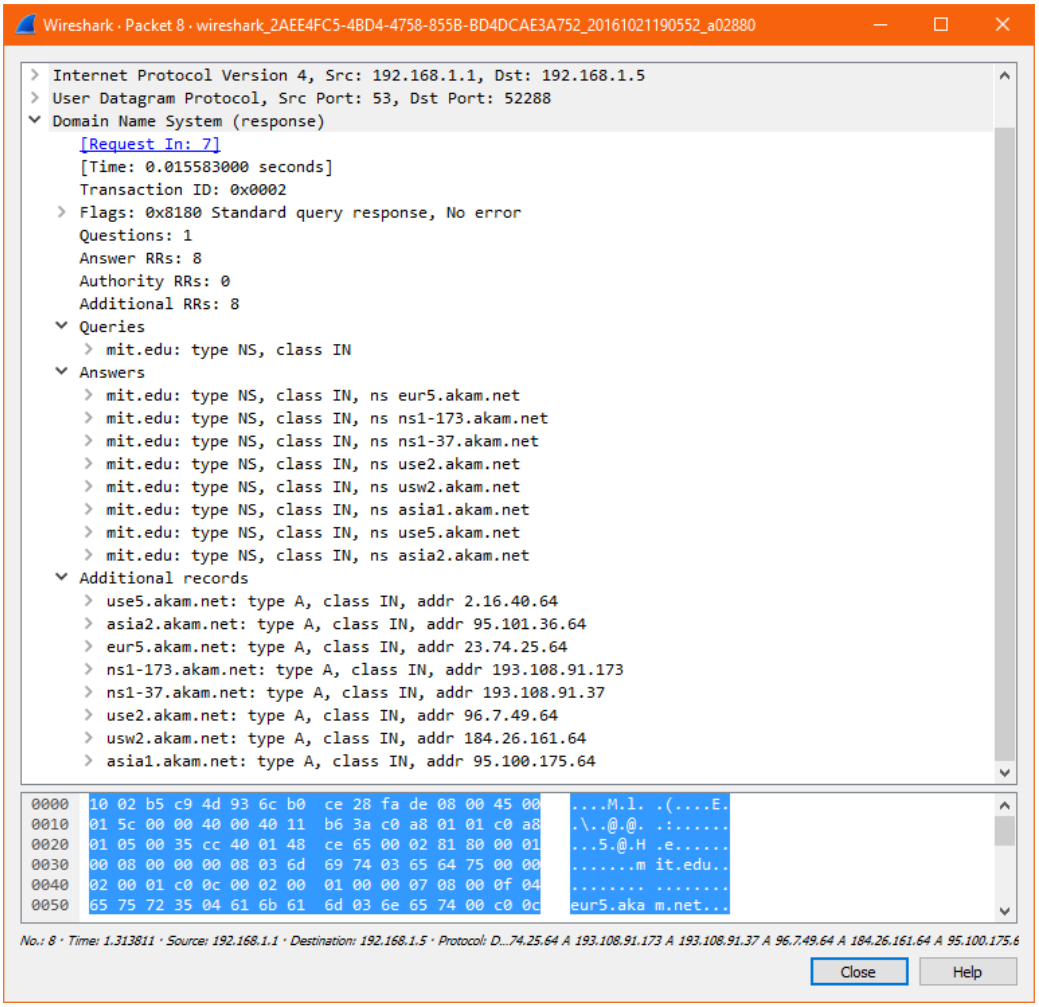
```
mit.edu: type NS, class IN, ns eur5.akam.net
mit.edu: type NS, class IN, ns ns1-173.akam.net
mit.edu: type NS, class IN, ns ns1-37.akam.net
mit.edu: type NS, class IN, ns use2.akam.net
mit.edu: type NS, class IN, ns usw2.akam.net
mit.edu: type NS, class IN, ns asia1.akam.net
mit.edu: type NS, class IN, ns use5.akam.net
mit.edu: type NS, class IN, ns asia2.akam.net
```

    In addition, the IP addresses of the nameservers are also provided:

```
Additional records
  use5.akam.net: type A, class IN, addr 2.16.40.64
  asia2.akam.net: type A, class IN, addr 95.101.36.64
  eur5.akam.net: type A, class IN, addr 23.74.25.64
  ns1-173.akam.net: type A, class IN, addr 193.108.91.173
  ns1-37.akam.net: type A, class IN, addr 193.108.91.37
  use2.akam.net: type A, class IN, addr 96.7.49.64
  usw2.akam.net: type A, class IN, addr 184.26.161.64
  asia1.akam.net: type A, class IN, addr 95.100.175.64
```

19. Provide a screenshot.





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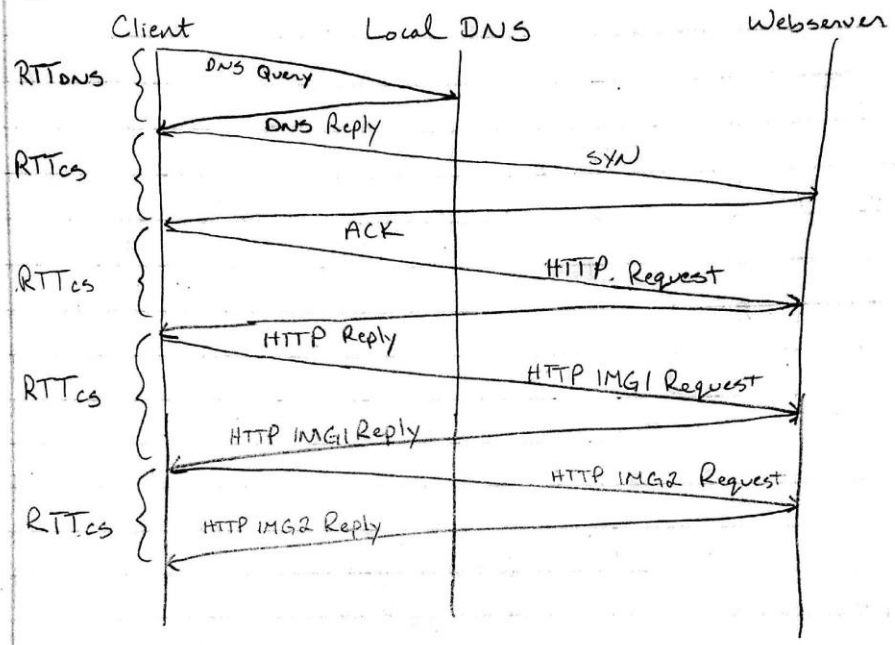
CS 132

Homework #2

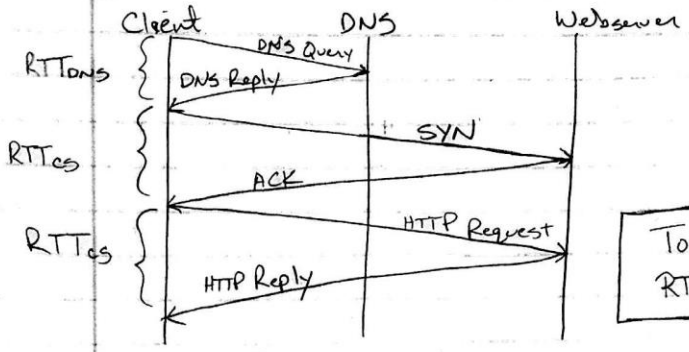
Question 3

(a)



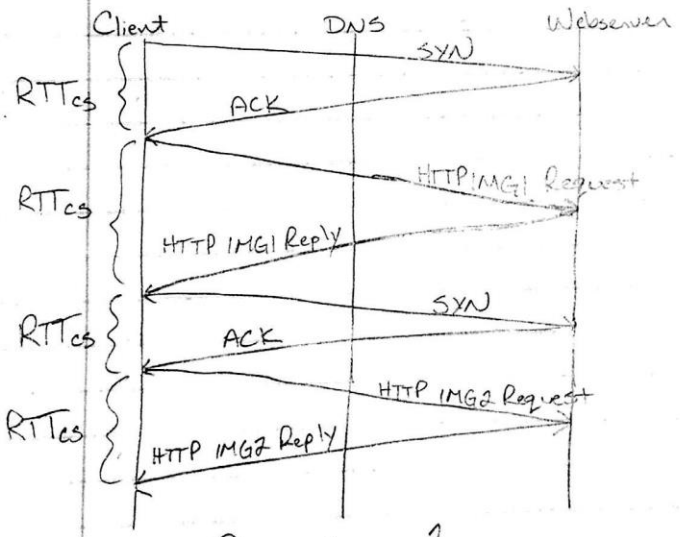
Total: $RTT_{DNS} + 4 * RTT_{CS}$

(b)



Total:
$RTT_{DNS} + 6 * RTT_{CS}$

Connection 1



Connection 2