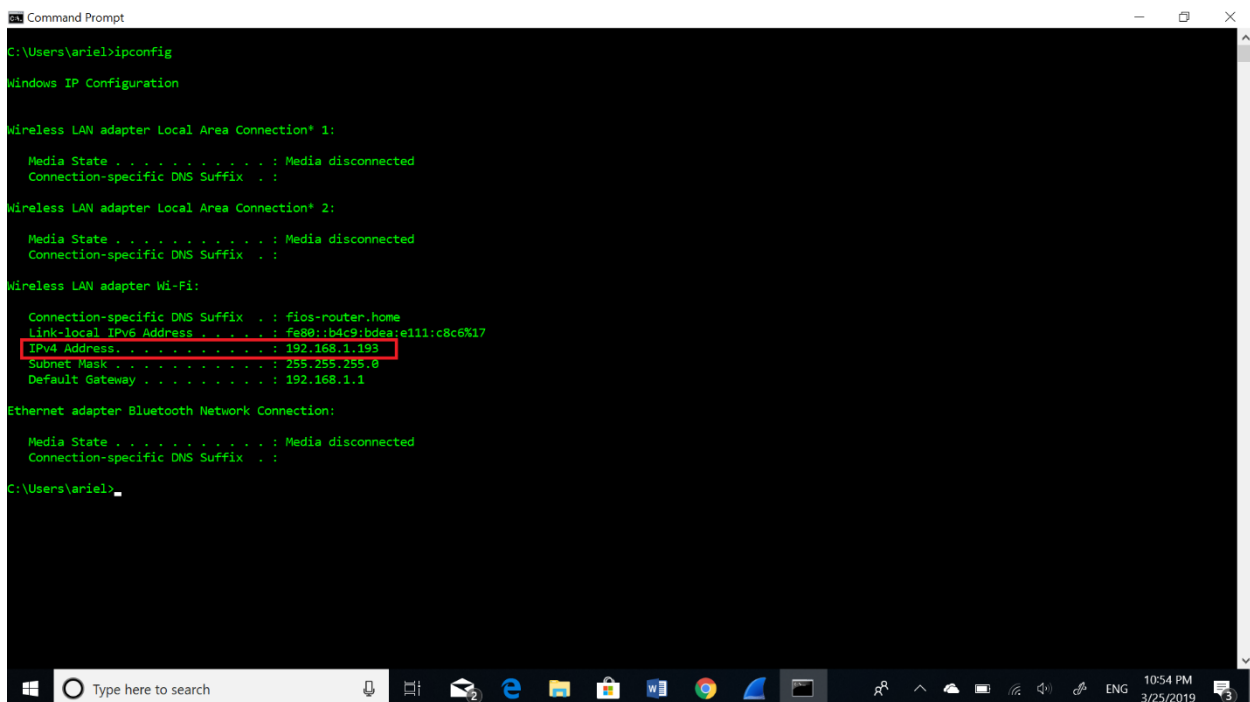


Instructions:

- Clear your browser history, and visit: <http://gaia.cs.umass.edu/wireshark-labs/HTTPethereal-labfile3.html> (your browser should display the US Bill of Rights)
- Using Wireshark, capture the packets. Remember to start, then visit webpage, and then stop. • We are going to analyze Ethernet frames.
- (For each of these questions, take a screenshot of Wireshark, and attach it to your answer) - Questions without Full Screenshot will not be graded. A lab submission template is available on canvas. Your screenshot should indicate the time and date on your computer.
- Include a terminal screenshot showing your computer IP address on the front page before Question 1, and a full PRINT of the HTTP OK message as the last page. Lab will NOT be graded if either of these two is missing.

Questions:

Computer IP: 192.168.1.193



```
Command Prompt
C:\Users\ariel>ipconfig

Windows IP Configuration

Wireless LAN adapter Local Area Connection* 1:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Local Area Connection* 2:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

Wireless LAN adapter Wi-Fi:

    Connection-specific DNS Suffix  . : fios-router.home
    Link-local IPv6 Address . . . . . : fe80::b4c9:bdea:e111:c8c6%17
    IPv4 Address. . . . . : 192.168.1.193
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.1.1

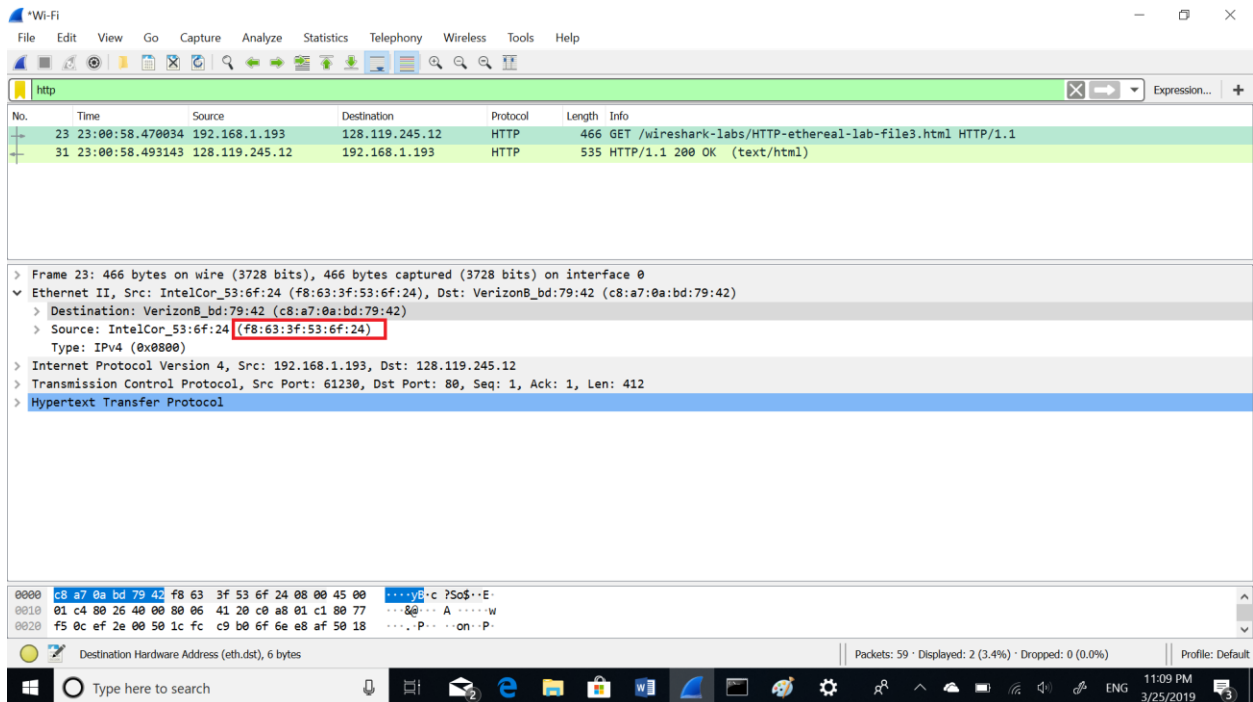
Ethernet adapter Bluetooth Network Connection:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . :

C:\Users\ariel>
```

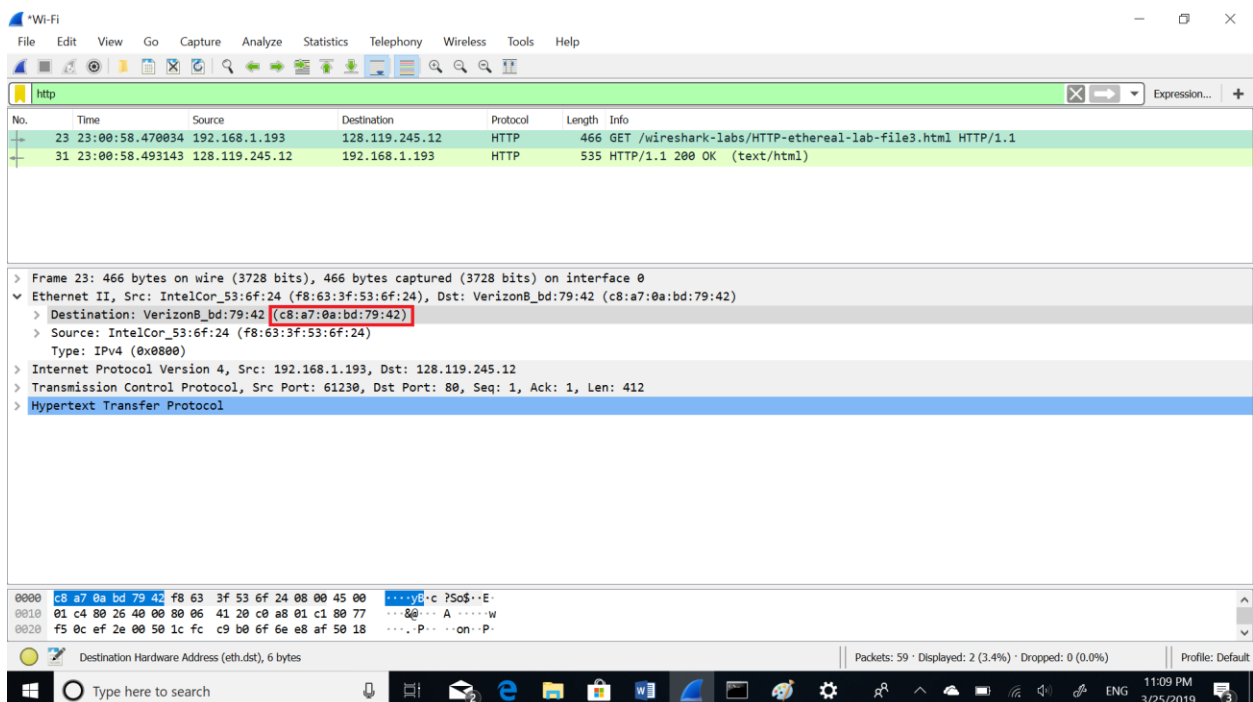
1. What is the MAC address from your computer?

The MAC address from my computer is: f8:63:3f:53:6f:24



2. What is the destination MAC address?

The destination MAC address is: c8:a7:0a:bd:79:42



3. What device has the MAC address shown in the destination?

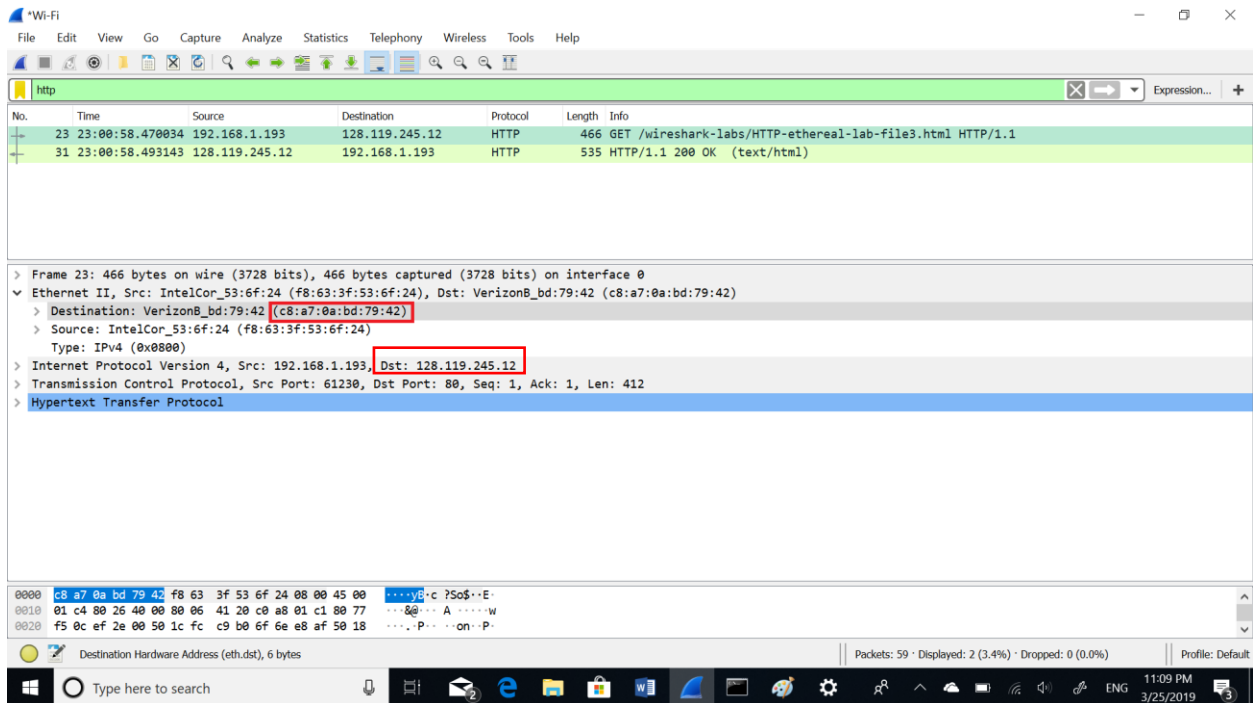
The device that has the MAC address shown in the destination is the router/switch that connects the internal network (house) with the external network (Internet). In this case, this device has been provided by the Internet service provider, Verizon.

The screenshot shows a Wireshark packet capture of an HTTP GET request. The packet list shows two packets: packet 23 (GET /wiresnark-labs/HTTP-ethereal-lab-file3.html) and packet 31 (HTTP/1.1 200 OK). The packet details for packet 31 show the Ethernet II frame with source IntelCor_53:6f:24 and destination VerizonB_bd:79:42 (c8:a7:0a:bd:79:42). The IP layer shows source 192.168.1.193 and destination 128.119.245.12. The HTTP layer shows a 200 OK response. The packet bytes pane shows the raw data of the packet, with the destination MAC address c8:a7:0a:bd:79:42 highlighted in blue.

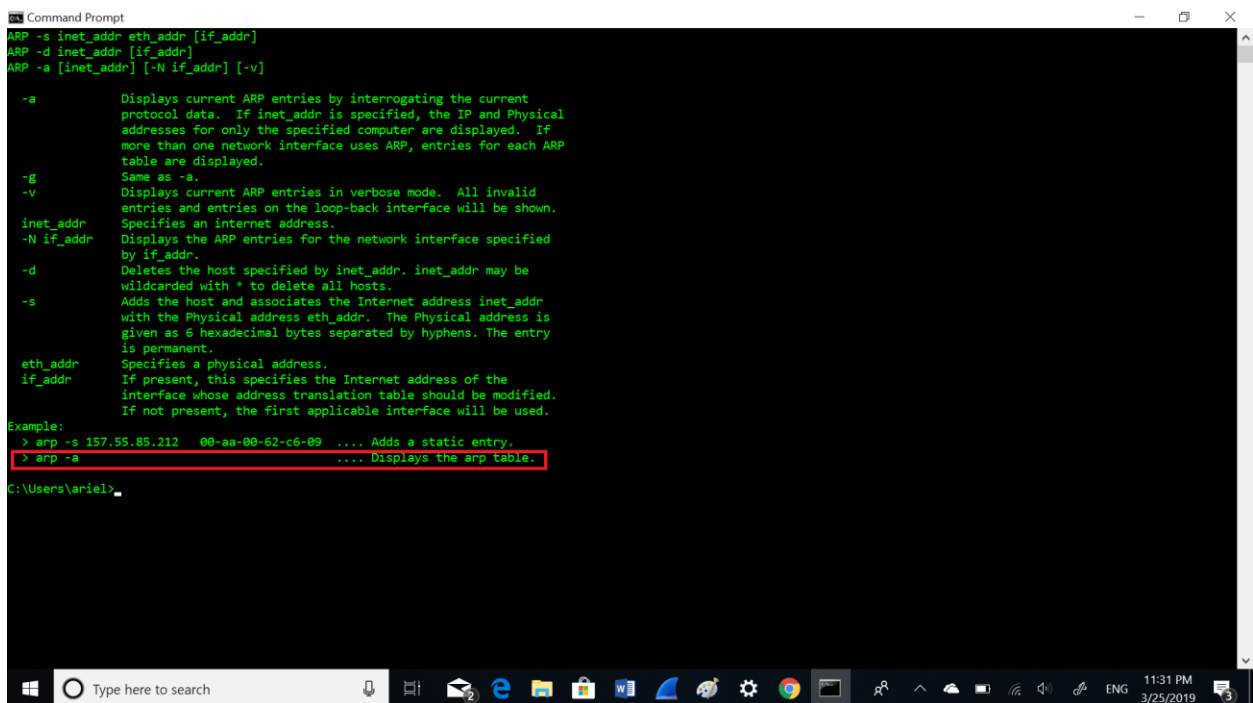
4. Explain the relationship between the destination MAC address and the destination IP address.

The destination IP address is used to transport data from the source to the destination using TCP/IP protocol. The destination MAC address is used to deliver the data to the right device on the network.

In other words, my router has a unique IP address assigned by my Internet Service Provider. The devices connected to my router have a unique MAC address. The IP address gets the data to my router and then my router forwards it to the right device.



5. Using the terminal (cmd in Windows, Terminal in mac), run a command to display your full ARP list table. (Find out what the command is, and print a full screen shot of your result.)



```
Command Prompt
Microsoft Windows [Version 10.0.17763.379]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\ariel>arp -a

Interface: 192.168.1.193 --- 0x11
Internet Address      Physical Address      Type
192.168.1.1           c8-a7-0a-bd-79-42     dynamic
192.168.1.152         b8-53-ac-32-31-e1     dynamic
192.168.1.164         6c-ad-f8-61-ae-ad     dynamic
192.168.1.179         f4-f5-e8-1a-7d-7e     dynamic
192.168.1.255         ff-ff-ff-ff-ff-ff     static
224.0.0.2             01-00-5e-00-00-02     static
224.0.0.22            01-00-5e-00-00-16     static
224.0.0.251           01-00-5e-00-00-fb     static
224.0.0.252           01-00-5e-00-00-fc     static
239.255.255.250       01-00-5e-7f-ff-fa     static
255.255.255.255       ff-ff-ff-ff-ff-ff     static

C:\Users\ariel>
```