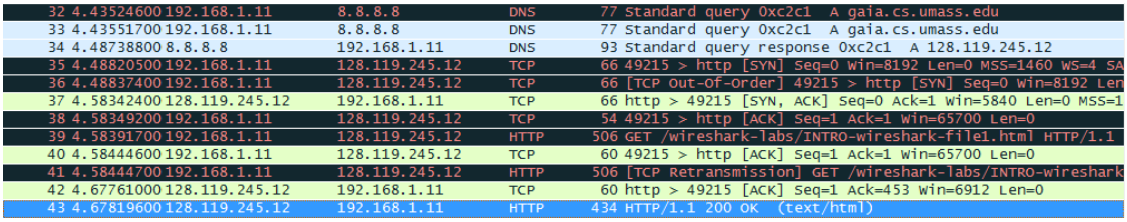
Home Page: http://www.public.asu.edu/~bhao2

Lab 1

1. **List 3 different protocols that appear in the protocol column in the unfiltered packet-listing window in step 7 above.**

Answer

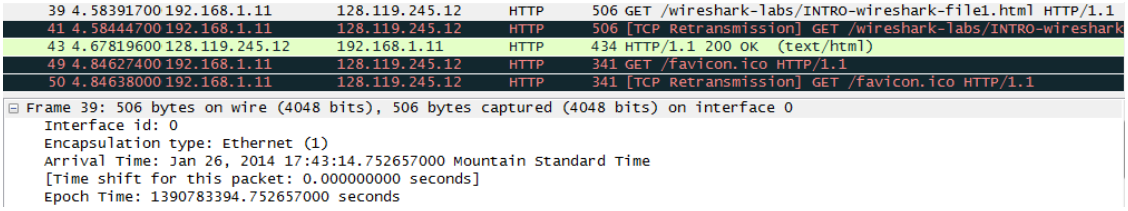


According to above screenshot, for this webpage downloading process, at first, the DNS protocol was used to translate the URL to IP address, and then the TCP (transport layer) connection was established between the client and the server. Finally, the HTTP (application layer) connection was established based on the TCP connection which established in step 2.

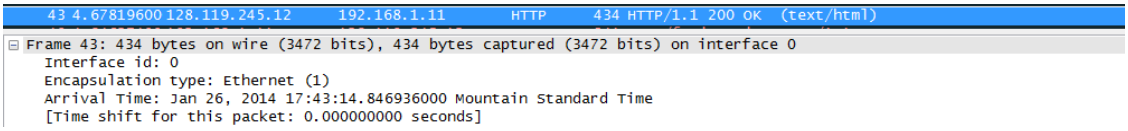
Thus, the 3 different protocols could be DNS, TCP and HTTP.

2. **How long did it take from when the HTTP GET message was sent until the HTTP OK reply was received? (By default, the value of the Time column in the packet listing window is the amount of time, in seconds, since Wireshark tracing began. To display the Time field in time-of-day format, select the Wireshark View pull down menu, then select Time Display Format, then select Time-of-day.)**

Answer



According to above screenshot, the GET request was arrived at Jan 26, 2014 17:43:14.752657000.

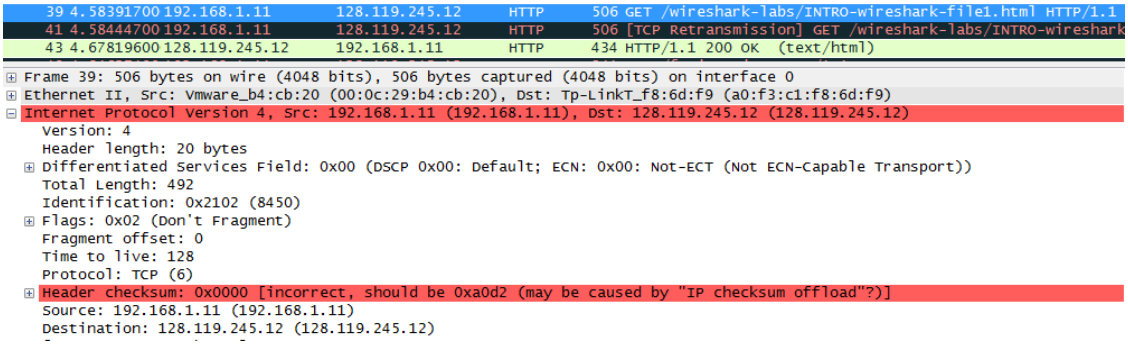


According to above screenshot, the HTTP OK is arrived at Jan 26, 2014 17:43:14.846936000

Therefore, the time took from HTTP GET to HTTP OK is .846936000 - .75265700 0= 0.094279 seconds

3. **What is the Internet address of the gaia.cs.umass.edu (also known as wwwnet.cs.umass.edu)? What is the Internet address of your computer?**

Answer



Above screenshot is the HTTP GET. This datagram is supposed to be sent form my computer to the web server. Thus, my computer's IP address is 192.168.1.11, the web server's IP address is 128.119.245.12 (gaia.cs.umass.edu).

4. **Print the two HTTP messages (GET and OK) referred to in question 2 above. To do so, select Print from the Wireshark File command menu, and select the "Selected Packet Only" and "Print as displayed" radial buttons, and then click OK.**

Answer

The answer could be found in following pages.

```
No.     Time           Source                Destination           Protocol Length Info
     39 4.583917000    192.168.1.11          128.119.245.12        HTTP     506    GET /wireshark-l

Frame 39: 506 bytes on wire (4048 bits), 506 bytes captured (4048 bits) on interface 0
Ethernet II, Src: Vmware_b4:cb:20 (00:0c:29:b4:cb:20), Dst: Tp-LinkT_f8:6d:f9 (a0:f3:c1:f8:6d:f9)
Internet Protocol Version 4, Src: 192.168.1.11 (192.168.1.11), Dst: 128.119.245.12 (128.119.245.12)
    Version: 4
    Header length: 20 bytes
    Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-Capable Tr
    Total Length: 492
    Identification: 0x2102 (8450)
    Flags: 0x02 (Don't Fragment)
    Fragment offset: 0
    Time to live: 128
    Protocol: TCP (6)
    Header checksum: 0x0000 [incorrect, should be 0xa0d2 (may be caused by "IP checksum offload"?)]
    Source: 192.168.1.11 (192.168.1.11)
    Destination: 128.119.245.12 (128.119.245.12)
    [Source GeoIP: Unknown]
    [Destination GeoIP: Unknown]
Transmission Control Protocol, Src Port: 49215 (49215), Dst Port: http (80), Seq: 1, Ack: 1, Len: 4
Hypertext Transfer Protocol
    GET /wireshark-labs/INTRO-wireshark-file1.html HTTP/1.1\r\n
    Accept: image/jpeg, application/x-ms-application, image/gif, application/xaml+xml, image/pjpeg,
    Accept-Language: en-US\r\n
    User-Agent: Mozilla/4.0 (compatible; MSIE 8.0; Windows NT 6.1; Trident/4.0; SLCC2; .NET CLR 2.0
    Accept-Encoding: gzip, deflate\r\n
    Host: gaia.cs.umass.edu\r\n
    Connection: Keep-Alive\r\n
    \r\n
    [Full request URI: http://gaia.cs.umass.edu/wireshark-labs/INTRO-wireshark-file1.html]
    [HTTP request 1/2]
    [Next request in frame: 41]
```

```
No.     Time           Source                Destination           Protocol Length Info
     43 4.678196000    128.119.245.12        192.168.1.11          HTTP     434    HTTP/1.1 200 OK

Frame 43: 434 bytes on wire (3472 bits), 434 bytes captured (3472 bits) on interface 0
Ethernet II, Src: Tp-LinkT_f8:6d:f9 (a0:f3:c1:f8:6d:f9), Dst: Vmware_b4:cb:20 (00:0c:29:b4:cb:20)
Internet Protocol Version 4, Src: 128.119.245.12 (128.119.245.12), Dst: 192.168.1.11 (192.168.1.11)
    Version: 4
    Header length: 20 bytes
    Differentiated Services Field: 0x00 (DSCP 0x00: Default; ECN: 0x00: Not-ECT (Not ECN-Capable Tr
    Total Length: 420
    Identification: 0xe0ab (57515)
    Flags: 0x02 (Don't Fragment)
    Fragment offset: 0
    Time to live: 50
    Protocol: TCP (6)
    Header checksum: 0x2f71 [correct]
    Source: 128.119.245.12 (128.119.245.12)
    Destination: 192.168.1.11 (192.168.1.11)
    [Source GeoIP: Unknown]
    [Destination GeoIP: Unknown]
Transmission Control Protocol, Src Port: http (80), Dst Port: 49215 (49215), Seq: 1, Ack: 453, Len:
Hypertext Transfer Protocol
    HTTP/1.1 200 OK\r\n
    Date: Mon, 27 Jan 2014 00:43:20 GMT\r\n
    Server: Apache/2.2.3 (CentOS)\r\n
    Last-Modified: Mon, 27 Jan 2014 00:43:01 GMT\r\n
    ETag: "8734b-51-fd624f40"\r\n
    Accept-Ranges: bytes\r\n
    Content-Length: 81\r\n
    Keep-Alive: timeout=10, max=100\r\n
    Connection: Keep-Alive\r\n
    Content-Type: text/html; charset=UTF-8\r\n
    \r\n
    [HTTP response 2/2]
    [Time since request: 0.093749000 seconds]
    [Prev request in frame: 39]
    [Request in frame: 41]
Line-based text data: text/html
    <html>\n
    Congratulations!  You've downloaded the first Wireshark lab file!\n
    </html>\n
```