Question & Answers:

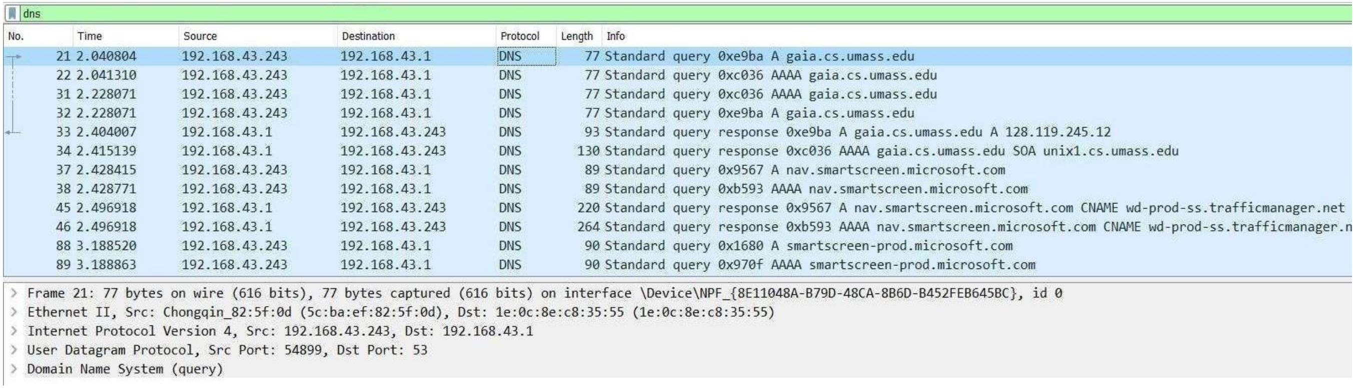
1. Run nslookup to obtain the IP address of the web server for the Indian Institute of Technology in Bombay, India: www.iitb.ac.in. What is the IP address of www.iitb.ac.in Ans.: 103.21.124.10

2. What is the IP address of the DNS server that provided the answer to your nslookup command in question 1 above? Ans: 75.75.75.75#53

3. Did the answer to your nslookup command in question 1 above come from an authoritative or non-authoritative server? Ans: Non-authoritative server

4. Use the nslookup command to determine the name of the authoritative name server for the iit.ac.in domain. What is that name? (If there are more than one authoritative servers, what is the name of the first authoritative server returned by nslookup)? If you had to find the IP address of that authoritative name server, how would you do so?

Ans: Couldn't find Authoritative name Server by doing -type=NS.



dns

No.	Time	Source	Destination	Protocol	Length	Info
21	2.040804	192.168.43.243	192.168.43.1	DNS	77	Standard query 0xe9ba A gaia.cs.umass.edu
22	2.041310	192.168.43.243	192.168.43.1	DNS	77	Standard query 0xc036 AAAA gaia.cs.umass.edu
31	2.228071	192.168.43.243	192.168.43.1	DNS	77	Standard query 0xc036 AAAA gaia.cs.umass.edu
32	2.228071	192.168.43.243	192.168.43.1	DNS	77	Standard query 0xe9ba A gaia.cs.umass.edu
33	2.404007	192.168.43.1	192.168.43.243	DNS	93	Standard query response 0xe9ba A gaia.cs.umass.edu A 128.119.245.12
34	2.415139	192.168.43.1	192.168.43.243	DNS	130	Standard query response 0xc036 AAAA gaia.cs.umass.edu SOA unix1.cs.umass.edu
37	2.428415	192.168.43.243	192.168.43.1	DNS	89	Standard query 0x9567 A nav.smartscreen.microsoft.com
38	2.428771	192.168.43.243	192.168.43.1	DNS	89	Standard query 0xb593 AAAA nav.smartscreen.microsoft.com
45	2.496918	192.168.43.1	192.168.43.243	DNS	220	Standard query response 0x9567 A nav.smartscreen.microsoft.com CNAME wd-prod-ss.trafficmanager.net
46	2.496918	192.168.43.1	192.168.43.243	DNS	264	Standard query response 0xb593 AAAA nav.smartscreen.microsoft.com CNAME wd-prod-ss.trafficmanager.n
88	3.188520	192.168.43.243	192.168.43.1	DNS	90	Standard query 0x1680 A smartscreen-prod.microsoft.com
89	3.188863	192.168.43.243	192.168.43.1	DNS	90	Standard query 0x970f AAAA smartscreen-prod.microsoft.com

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> Frame 21: 77 bytes on wire (616 bits), 77 bytes captured (616 bits) on interface \Device\NPF_{8E11048A-B79D-48CA-8B6D-B452FEB645BC}, id 0
> Ethernet II, Src: Chongqin_82:5f:0d (5c:ba:ef:82:5f:0d), Dst: 1e:0c:8e:c8:35:55 (1e:0c:8e:c8:35:55)
> Internet Protocol Version 4, Src: 192.168.43.243, Dst: 192.168.43.1
> User Datagram Protocol, Src Port: 54899, Dst Port: 53
> Domain Name System (query)
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5. Locate the first DNS query message resolving the name gaia.cs.umass.edu. What is the packet number[1] in the trace for the DNS query message? Is this query message sent over UDP or TCP?

Ans: 21, UDP

6. Now locate the corresponding DNS response to the initial DNS query. What is the packet number in the trace for the DNS response message? Is this response message received via UDP or TCP?

Ans: 33, UDP

7. What is the destination port for the DNS query message? What is the source port of the DNS response message?

Ans: Destination port: 53, Source port: 53

8. To what IP address is the DNS query message sent? Ans: 192.168.43.1

9. Examine the DNS query message. How many “questions” does this DNS message contain? How many “answers” answers does it contain?

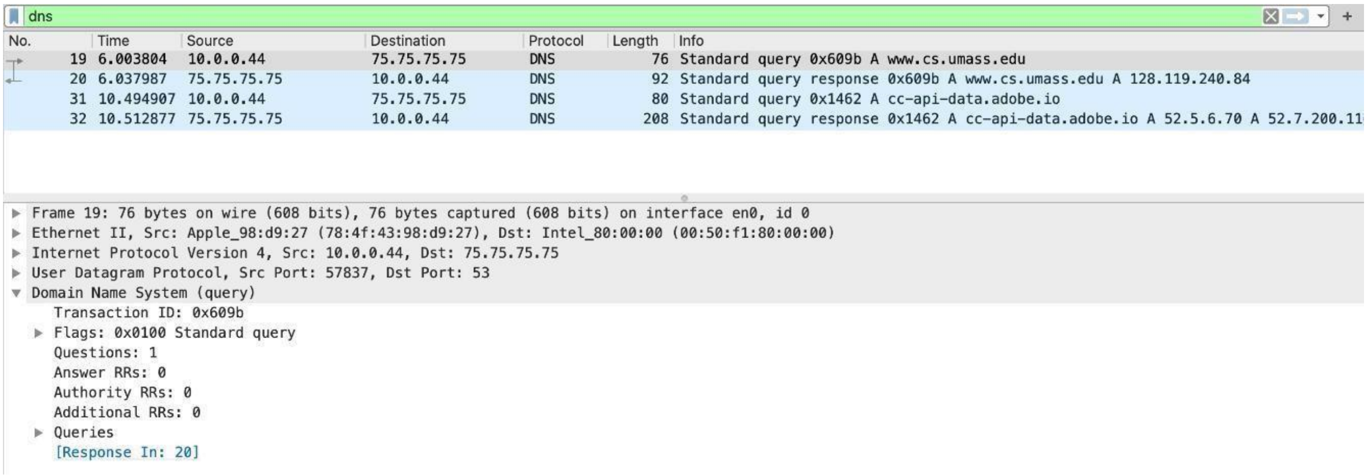
Ans: 1 Question in DNS query Message but it does not contain any answer.

10. Examine the DNS response message to the initial query message. How many “questions” does this DNS message contain? How many “answers” answers does it contain? Ans: It contains 1 Question and 2 Answers

11. The web page for the base file http://gaia.cs.umass.edu/kurose_ross/ references the image object http://gaia.cs.umass.edu/kurose_ross/header_graphic_book_8E_2.jpg , which, like the base webpage, is on gaia.cs.umass.edu. What is the packet number in the trace for the initial HTTP GET request for the base file http://gaia.cs.umass.edu/kurose_ross/? Ans: 123

12. What is the packet number in the trace of the DNS query made to resolve gaia.cs.umass.edu so that this initial HTTP request can be sent to the gaia.cs.umass.edu IP address? Ans: 33

13. What is the packet number in the trace of the received DNS response? Ans: 34



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dns
No.      Time       Source        Destination   Protocol  Length  Info
     19  6.003804   10.0.0.44     75.75.75.75   DNS           76  Standard query 0x609b A www.cs.umass.edu
     20  6.037987   75.75.75.75   10.0.0.44     DNS           92  Standard query response 0x609b A www.cs.umass.edu A 128.119.240.84
     31  10.494907  10.0.0.44     75.75.75.75   DNS           80  Standard query 0x1462 A cc-api-data.adobe.io
     32  10.512877  75.75.75.75   10.0.0.44     DNS          208  Standard query response 0x1462 A cc-api-data.adobe.io A 52.5.6.70 A 52.7.200.11

▶ Frame 19: 76 bytes on wire (608 bits), 76 bytes captured (608 bits) on interface en0, id 0
▶ Ethernet II, Src: Apple_98:d9:27 (78:4f:43:98:d9:27), Dst: Intel_80:00:00 (00:50:f1:80:00:00)
▶ Internet Protocol Version 4, Src: 10.0.0.44, Dst: 75.75.75.75
▶ User Datagram Protocol, Src Port: 57837, Dst Port: 53
▼ Domain Name System (query)
    Transaction ID: 0x609b
  ▶ Flags: 0x0100 Standard query
    Questions: 1
    Answer RRs: 0
    Authority RRs: 0
    Additional RRs: 0
  ▶ Queries
    [Response In: 20]
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14. What is the destination port for the DNS query message? What is the source port of the DNS response message?

Ans: Destination Port: 53, Source Port: 53 (both are same)

15. To what IP address is the DNS query message sent? Is this the IP address of your default local DNS server? Ans: 75.75.75.75, Yes

16. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?

Ans: Standard Query, No it does not contain any answer.

17. Examine the DNS response message to the query message. How many “questions” does this DNS response message contain? How many “answers”?

Ans: 1 Question, 2 Answers