Department Of Computer Science & Engineering
University Of Dhaka

CSE 3111: Computer Networking Lab
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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:IP Address: 103.21.124.133

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

Ans:DNS Server IP Address:127.0.0.53

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:dns1.iitb.ac.in.

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nslookup dns1.iitb.ac.in
```

This command will return the IP address of dns1.iitb.ac.in.

5. Locate the first DNS query message resolving the name gaia.cs.umass.edu. What is the packet number 6 in the trace for the DNS query message? Is this query message sent over UDP or TCP?
Ans:**Packet number:** 15 → This is the **first DNS query** for gaia.cs.umass.edu.

- **Protocol:** DNS over **UDP** (by default, unless otherwise indicated).

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:**Packet number:** 17

Transport protocol: 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 = 58350

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

Ans:**The DNS query is sent to IP address:**

Destination Address:75.75.75.75

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

Ans:Questions = 1

Answer RRs = 0

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:Questions = 1

Answer RRs = 1

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/
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:
What is the packet
number in the trace of the received DNS response? What is the packet number in
the trace for the HTTP GET request for the image object
http://gaia.cs.umass.edu/kurose_ross/header_graphic_book_8E2.jpg? What is the
packet number in the DNS query made to resolve gaia.cs.umass.edu so that this
second HTTP request can be sent to the gaia.cs.umass.edu IP address? Discuss
how DNS caching affects the answer to this last question.

Ans:

Action	Packet Number	Notes
DNS query (base page)	15	Resolves gaia.cs.umass.edu
DNS response (base page)	17	IP 128.119.245.12 returned
HTTP GET (base page)	22	GET /kurose_ross/
DNS query (image)	–	Cached IP used, no query
DNS response (image)	–	Cached IP used, no response
HTTP GET (image)	205	GET /kurose_ross/header_graphic_book_8E_2.jpg

12. What is the destination port for the DNS query message? What is the source port
of the DNS response message?
Ans: Source Port:57837ans:

Destination POrt:53

13. 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

14. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?
aNS:IPv4(0x0080)
Answers RRs :0

15. Examine the DNS response message to the query message. How many “questions” does this DNS response message contain? How many “answers”?
Ans:Question :1
Answer RRs : 1

16. 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

17. Examine the DNS query message. How many questions does the query have?

Does the query message contain any “answers”?

Ans:Questions : 1

Answer RRs : 0

18. Examine the DNS response message (in particular the DNS response message that has type “NS”). How many answers does the response have? What information is contained in the answers? How many additional resource records are returned?

Ans:Answers RRs : 3

Answers:ns1.umass.edu,ns2.umass.edu,ns3.umass.edu