

CSE - 421

ASSIGNMENT 01

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Sec: 23

Spring - 24(B)

Q1: (a)

Source IP: 0

Source MAC: ~~19~~ C

Destination IP: 14

Destination MAC: T

Source port : Between 49152 to 65535

Destination port : ~~0 to~~ Between 0 to 1023

(b)

Destination port type is well-known.

Q(2):

To troubleshoot a website that is not loading properly, you can look at the http response status code in the response message. For checking communication between the client & web server the head method is useful. As it retrieves only the headers, allowing you to see status code and other information without downloading.

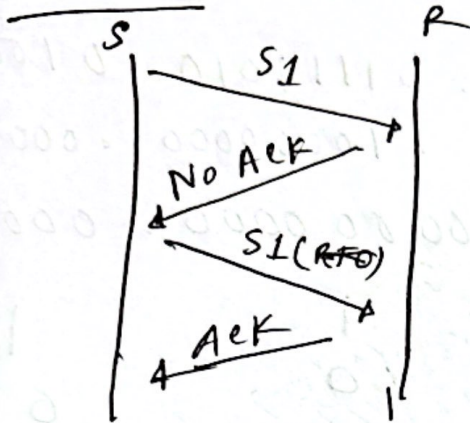
Q3):

An interactive DNS lookup can be faster than a recursive DNS lookup because in iterative the client queries each DNS server step by step and can cache the response locally. In a recursive lookup, the client relies entirely on a single DNS server to resolve and that server must query multiple servers on client's behalf which can add extra network delays.

Q4):

SMTP and HTTPS are often used together in web based email services. For example, when I access my email through a web browser, the browser communicates securely with email service using ~~SMTP~~ HTTPS to send and receive messages through the web interface. Meanwhile, SMTP is used in the background by the server to send outgoing emails to other mail servers.

Q5:



Steps:

sender sends segment 1
 & start the RTO timer (70ms)
 segment lost, receiver
 never receive it & send
 ACK. RTO timer expires
 sender retransmitted S1

receiver, receive the retransmitted
 segment and sends an ACK. Sender
 receive ACK stops timer and continues
 with the next segment.

Q6:

subnet: 255.255.128.0 — 00000000
 1111 1111 1000 0000

11111111.11111111.10000000.00000000

Prefix mask — 255.255.128.0/17.

IP: 175.172.122.75 — 01001011
 10101111 10101000 01111010

IP AND MASK:

10101111 . 10101100 . 01111010 . 01001011
11111111 . 11111111 . 10000000 . 00000000
→ 10101111 . 10101100 . 00000000 . 00000000
175 172 0 0

Network Address = 175.172.0.0

Broadcast Address: 175.172.127.255

Q(7)

server speed = 80 mbps, each object = 10

∴ 80 mb

transmission time = $\frac{80 \text{ mb}}{80 \text{ mbps}}$

$$a) \text{ Num of obj} = \frac{\text{total RTT}}{\text{RTT per obj}} = 48$$

Q(7):

(a) RTT per object = $2 \times 15 = 30$

total RTT = 0.48 m

∴ num of obj = 8

Q(7):

(b) Total RTT = 480 ms = 0.48 s

total time = 8 s

\therefore transmission time = $7.52 \div 8$

$= 0.94 \text{ s} \checkmark$

\therefore 8 object = 8 sec.

Q(8)

a) S1: seq - 2024 size 350 \rightarrow next seq = 2374

S2: seq - 2374 size ~~350~~ - next seq = 2501

S3: seq - 2501 size 412 ~~350~~ - next seq = 2913

\therefore S4: seq = 2913

Ack for S4:

~~442 + 250 = 442~~

\therefore ~~5044 + 442 = 5486~~

S2 seq = 5044, size = 250

\therefore $5044 + 250 = 5294$.

S4: seq = 2913, ACK = 5294.

$$(b) \text{ SI size} = 350, \text{ seq} = 2024$$

$$\therefore 2024 + 350 = 2374$$

$$\therefore \text{ACK} - 2 = 2374.$$

$$(c) 2024 + 350 + 127 = 2501.$$

$$\therefore \text{ACK} - 3 = 2501.$$