

Q1

I

Application Layer

II

~~Layer~~ Network Access Layer

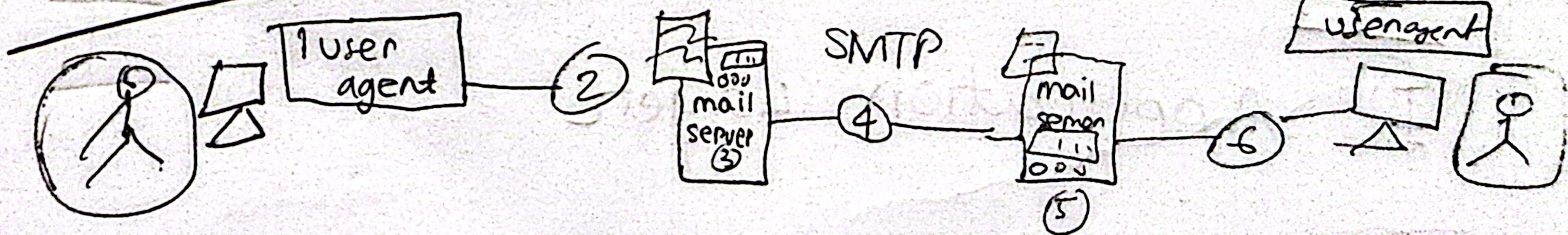
III

Network access layer

Q2

- Google ~~not~~ chrome ~~share~~ share and Internet explorer does not share some cookie ~~store~~ store
- When I open same website using internet explorer it cannot access the cookies that were stored by google chrome.

Q3



Q4

type = A

- Name is host name
- value is IP address ie 200.10.20.8
- (gamingforall.com, 200.10.20.8, A)

type = NS

- Name is domain
- value is hostname of authoritative name server for this domain
- (gamingforall.com, dns.gamingforall.com, ns)

Q5

Port number 60001 is well known port

Q5

Port number 60001 is private and dynamic ports. UDP of transport layer is used for live streaming.

Source = 60001

Destination = 80

Source = 60001

Destination = 80

server keeps them separate by the socket IP address port

= 45 ms.

⑥ I IN non persistent HTTP

- 1 RTT for TCP connection
- 1 RTT for HTTP request response

$$\begin{aligned}\text{Total RTT per object} &= 35 + 30 \\ &= 65\end{aligned}$$

$$\begin{aligned}\text{Total RTT for all object} &= 35(35 + 3) \\ &= 2275 \text{ ms}\end{aligned}$$

6 II obj no = 35

size = 4 mega byte
= 32 megabit

Spced = 69 mbps

$$\therefore \text{Transmission time} = \frac{32}{64} = 0.5 \text{ s}$$
$$= 500 \text{ ms}$$

$$\text{for } 35 \text{ objects, transmission time} = 2500 \times 35$$
$$= 17,500 \text{ ms}$$
$$= 17.5 \text{ s}$$

∴ Total file transmission time = 17.5 s

Q7 (I) Average response time

$$\text{is } = (0.4 \times 15) + (0.3)(15+30) + 0.3(15+30 + 100 + 200)$$
$$= 123 \text{ ms}$$

(II) Exact response time, $= 15\text{ms} + 30\text{ms}$
 $\approx 45\text{ms}$.

CSE421

I CO2

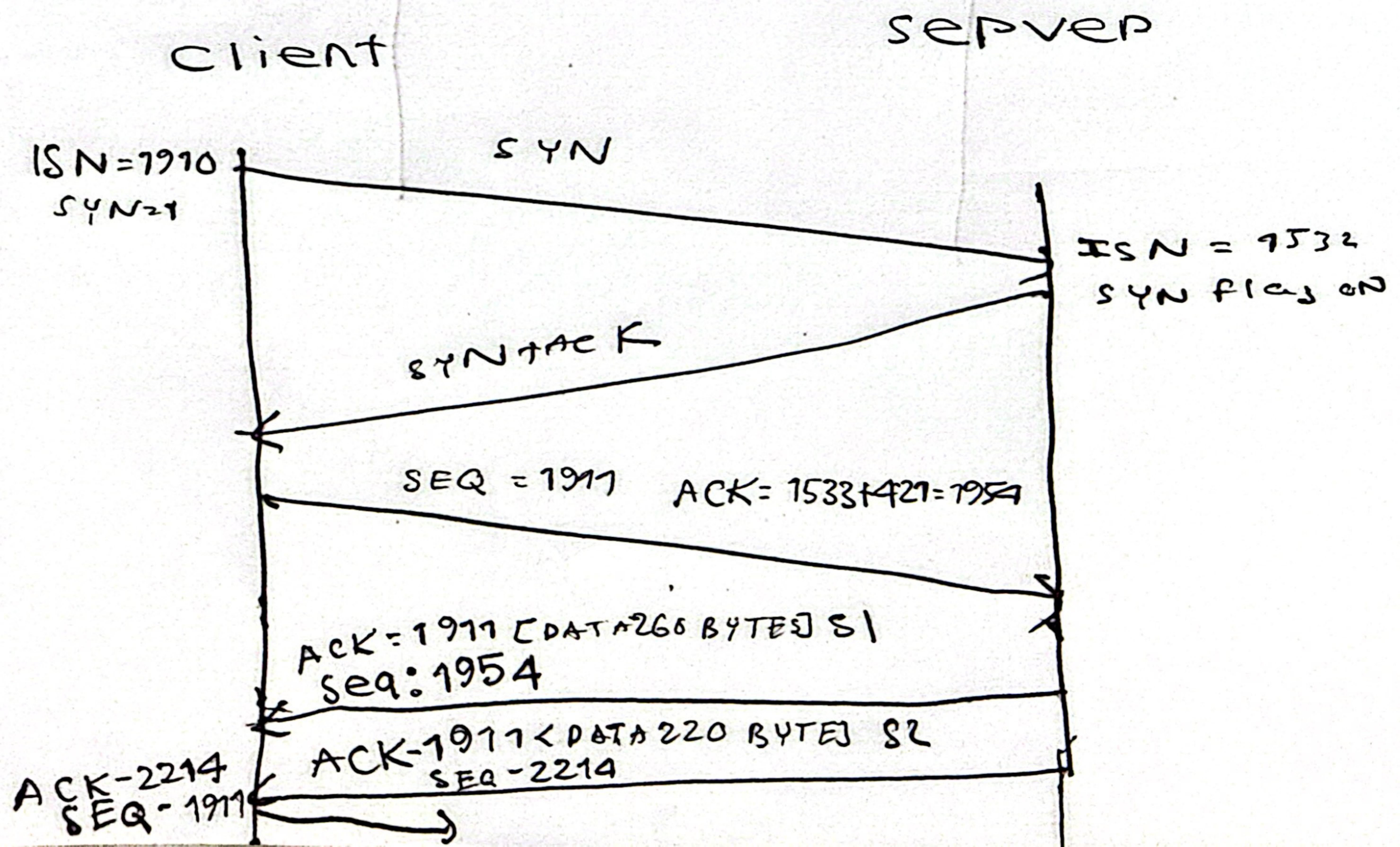
Q. Server retransmits SI because it did not receive a valid acknowledgement before its timer end

In selective repeat protocol, client as receiver keep track out of order segments, client will tell server i have received $(y-1)$ now send me (y) in the next RTT timer.

I CO3

Client

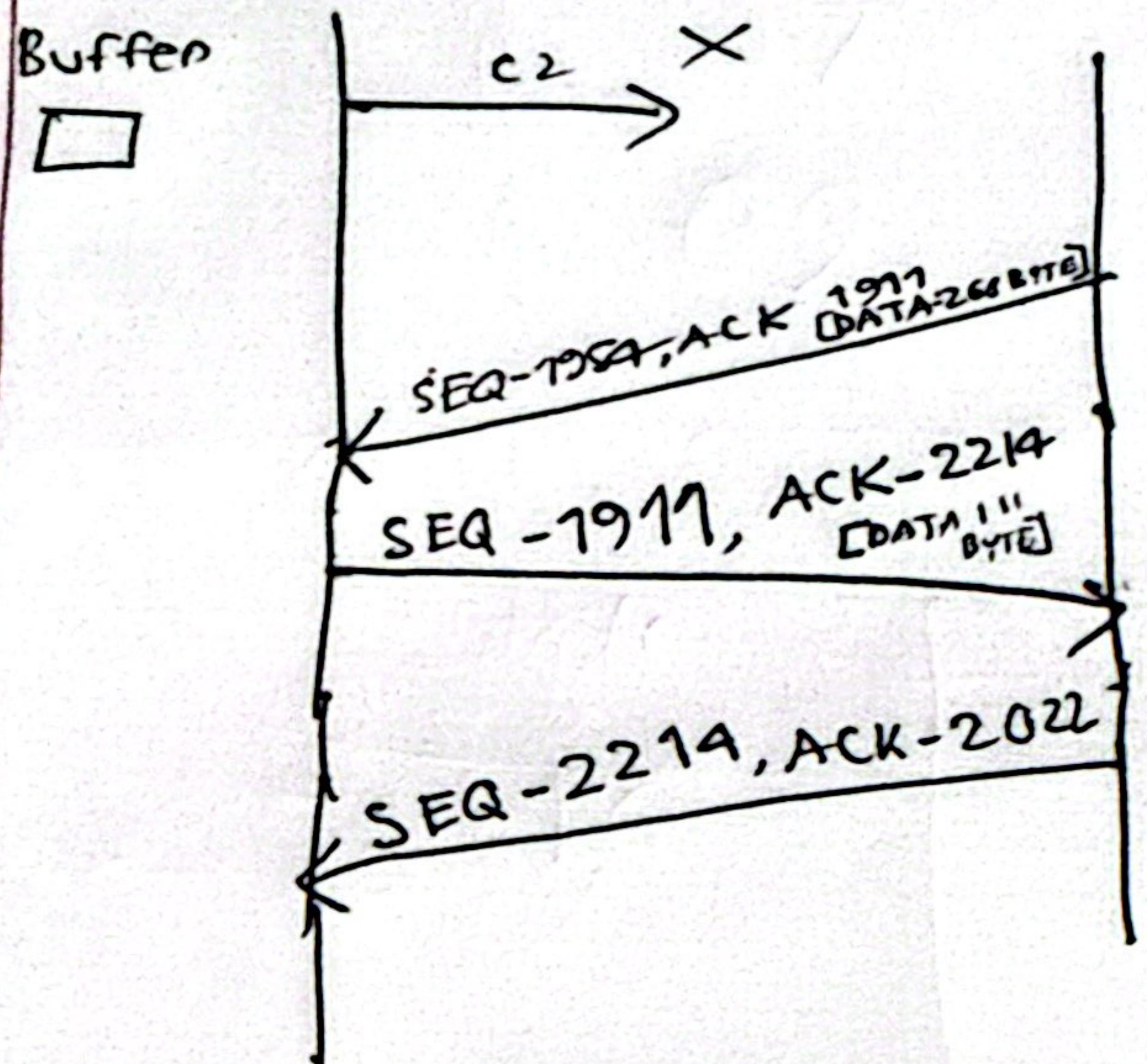
Server



ACK - 221.4

SEQ - 1919

8 II CO3



$$RWND = 12,000$$

$$\text{Available space} = 12000 - S1 \quad (\text{for selective repeat})$$

$$= 12000 - 260$$

$$= 11,740$$