



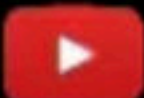





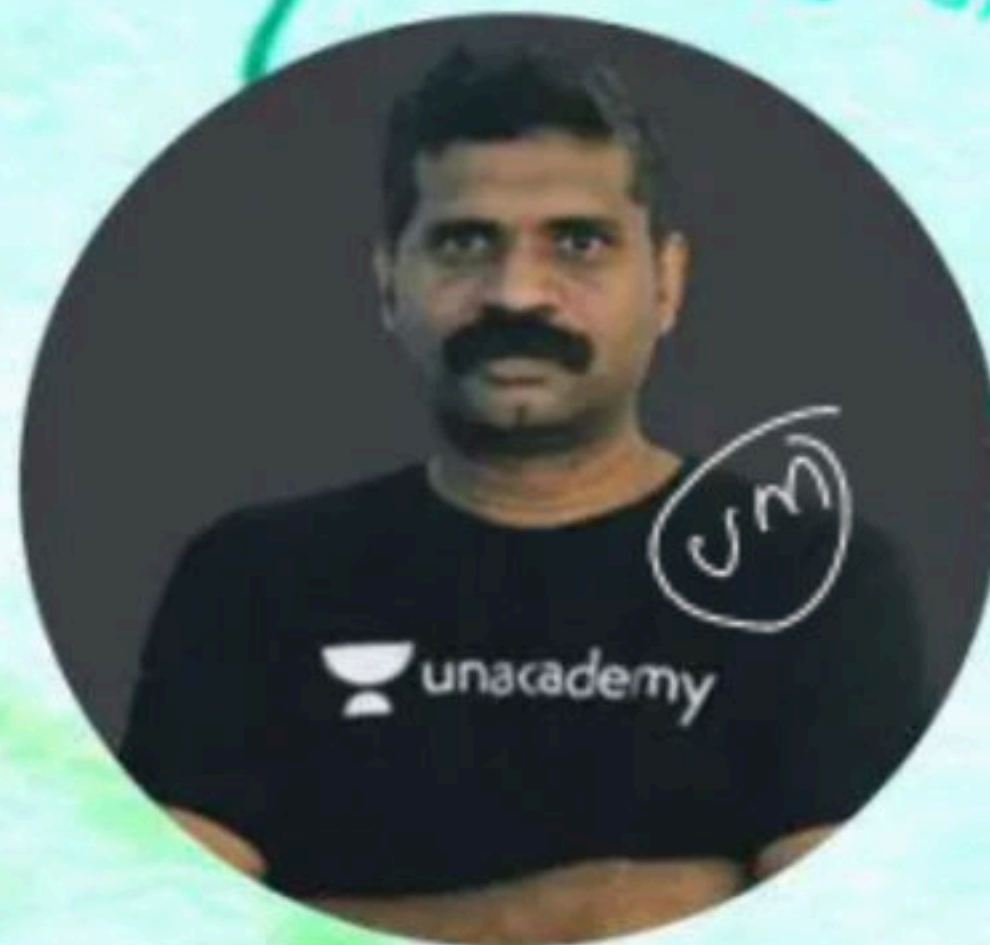
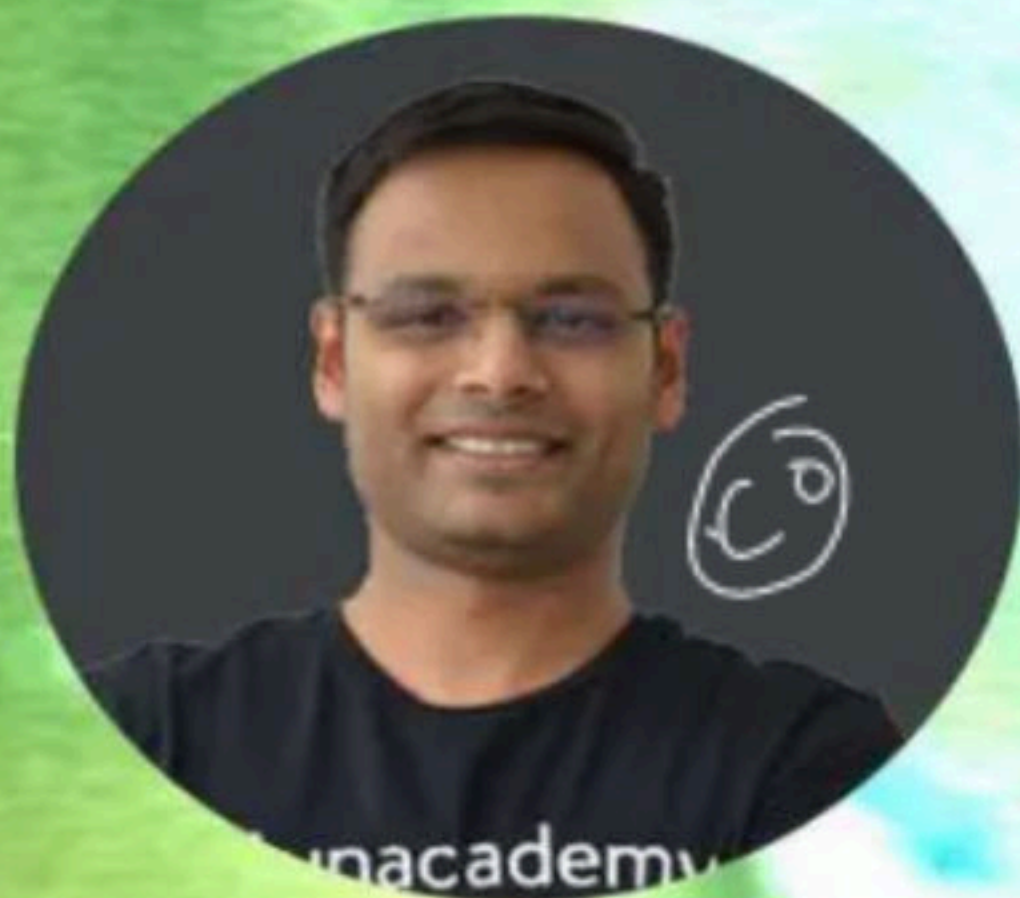
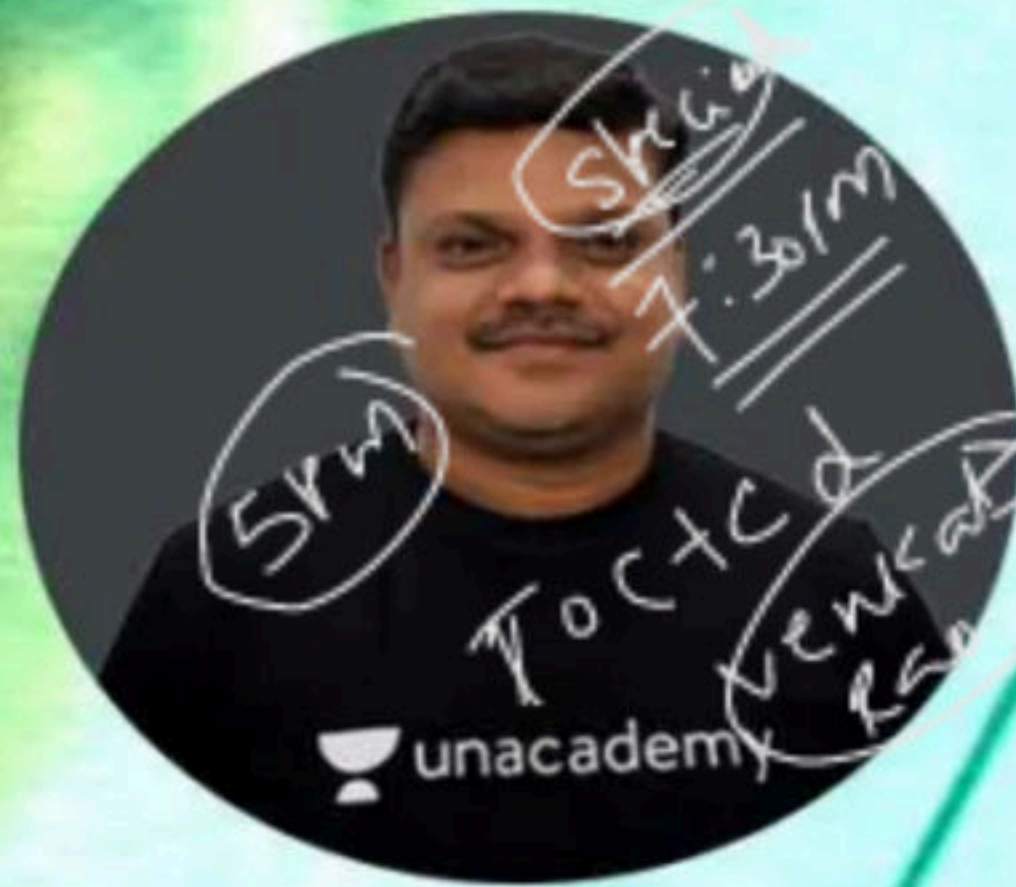
TCP Header Part 2, Retransmission in TCP

Complete Course on Computer Networks - Part III



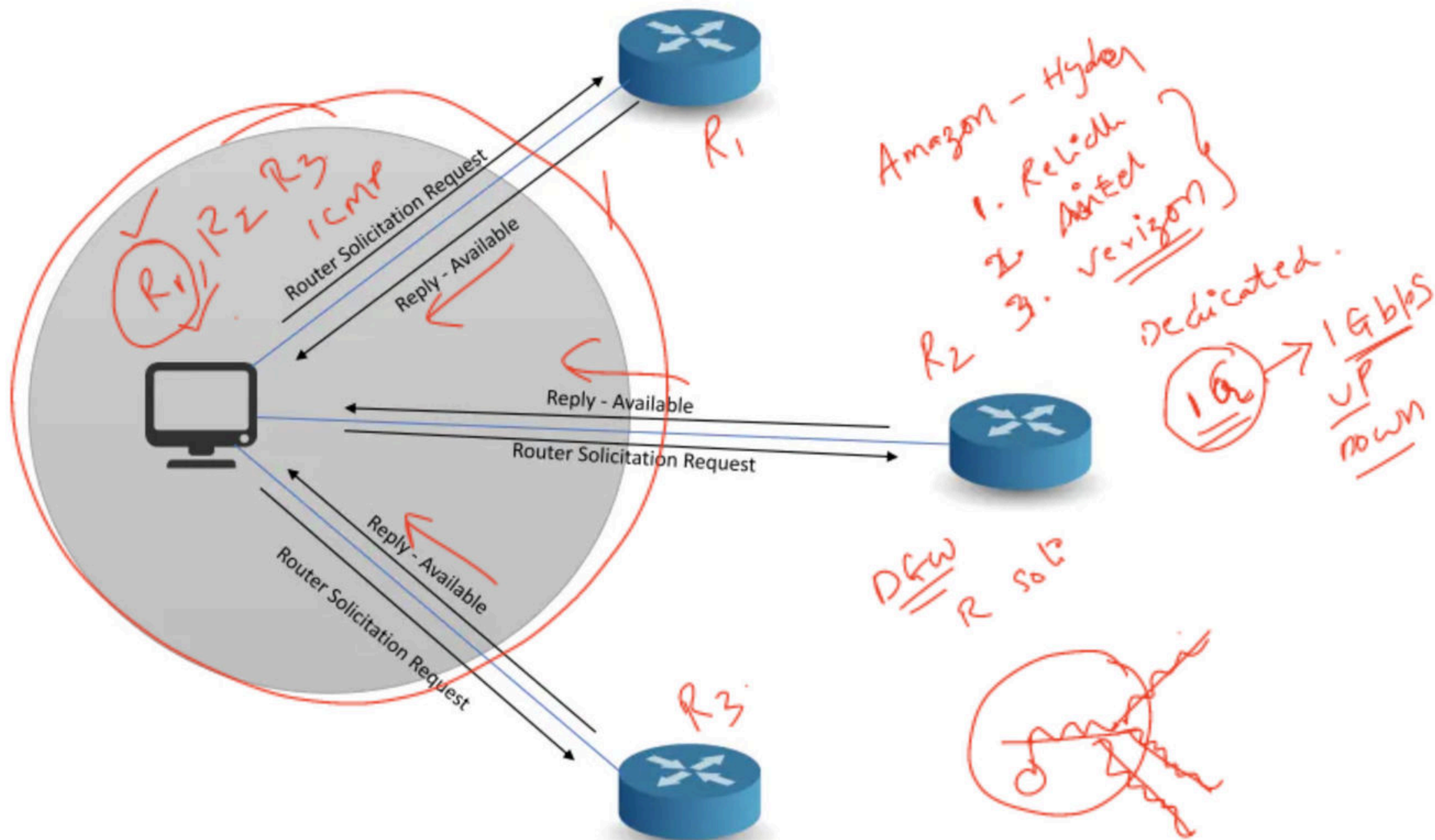
03-04-2021 Classes by RavindrababuRavula

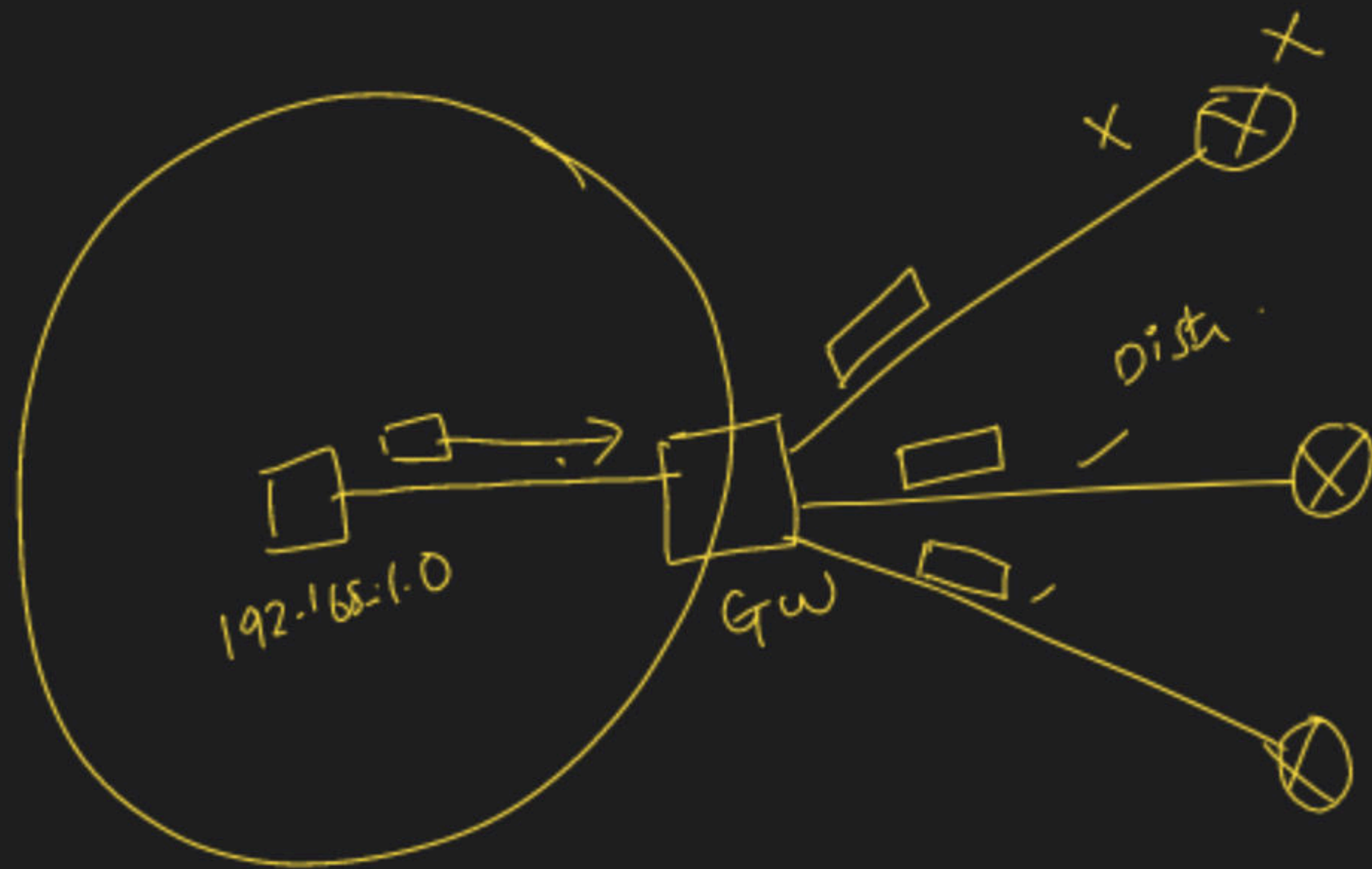
Lecture Name	Time
Minimal Cover with Examples, Lossless Decomposition, FD Preserving and Decomposition Examples DBMS	 6:00 - 7:00AM
TCP Header Part-2, Retransmission in TCP CN	 07:00 - 08:00 AM
Asymptotic time and space complexity Part-1 Practice Questions Algorithms	  5:00- 6:00 PM
Java Class	 6:00 - 7:00PM
Linux Course	 7:00 - 8:00PM
Web Technologies	 8:00 - 9:00 PM
C++ Classes	 9:00 - 11:00 PM



LEARN FROM TOP EDUCATORS

Router Solicitation



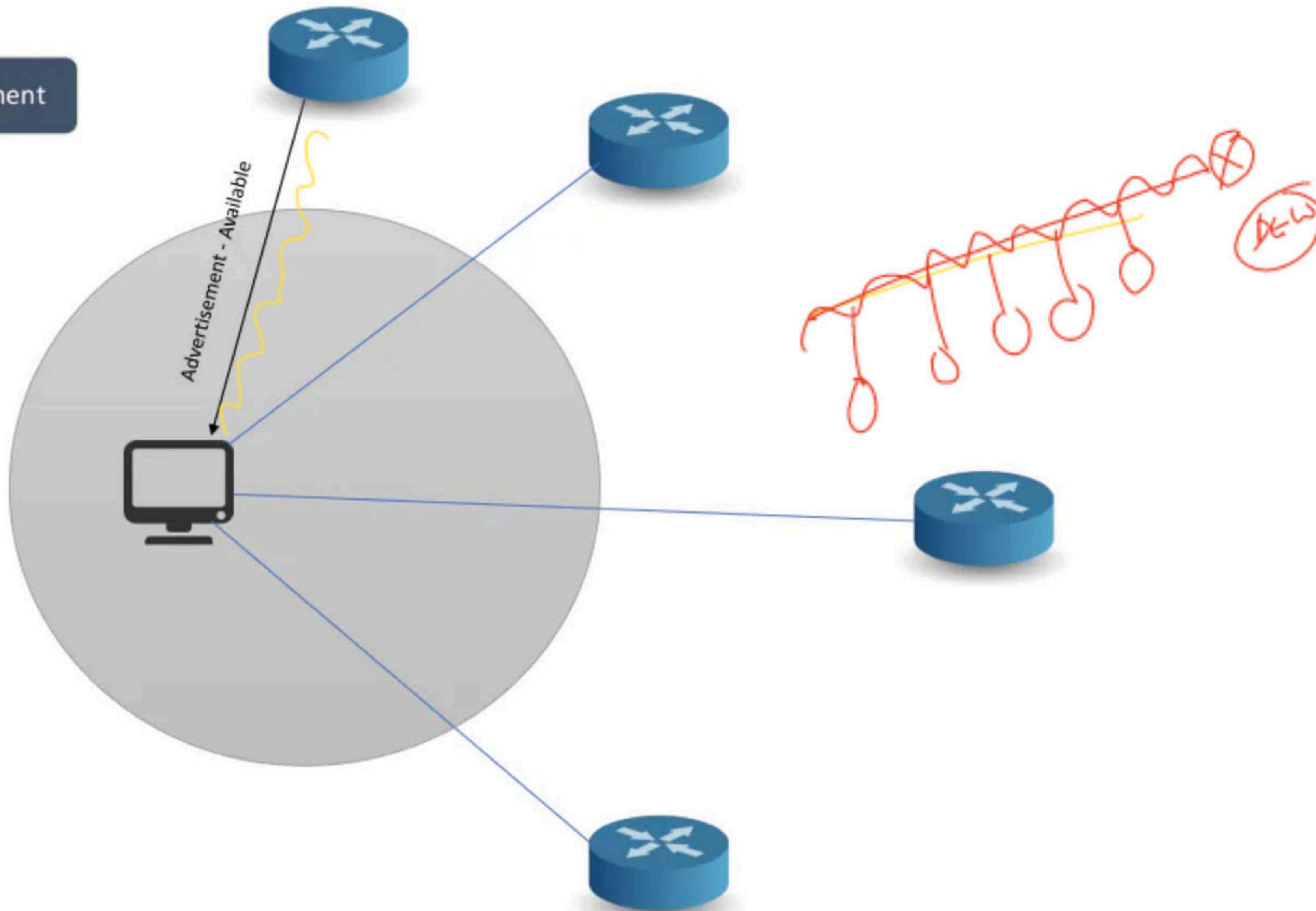


2 min

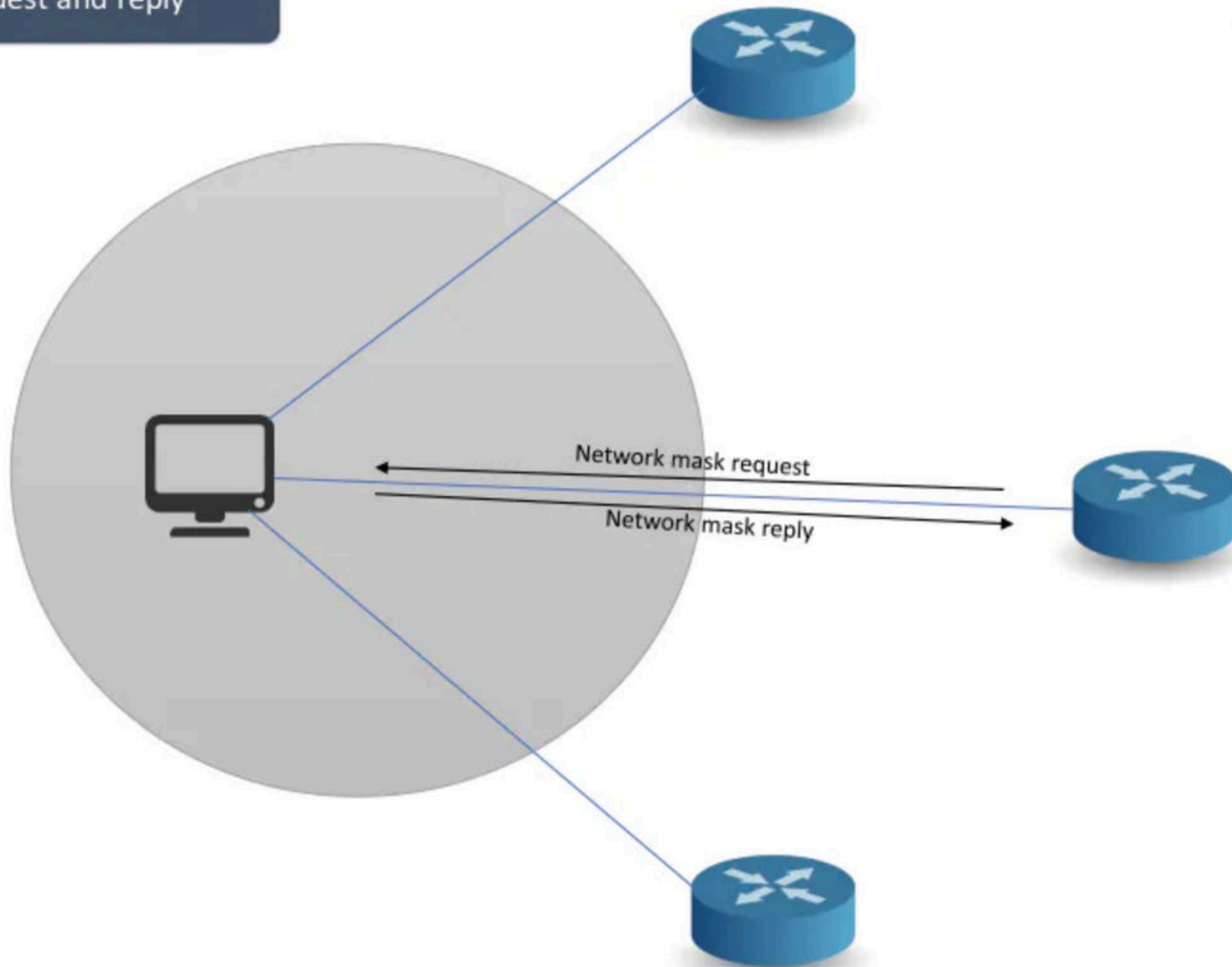
Google

Reliability ✓
Cost ✗

Router Advertisement

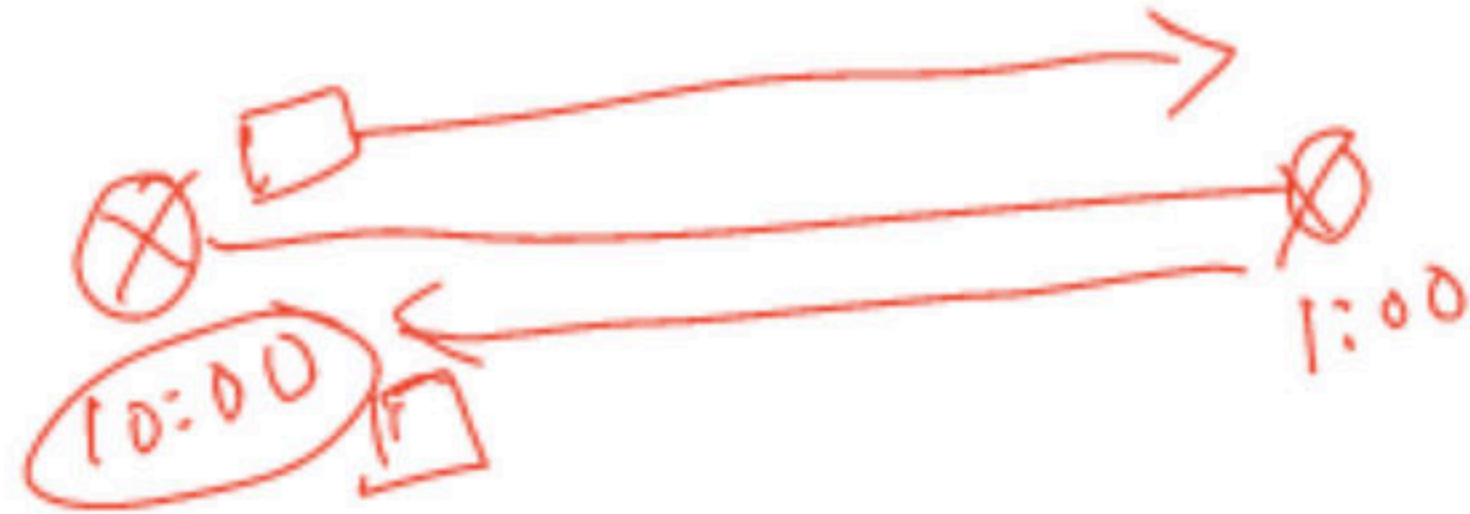


Network mask request and reply

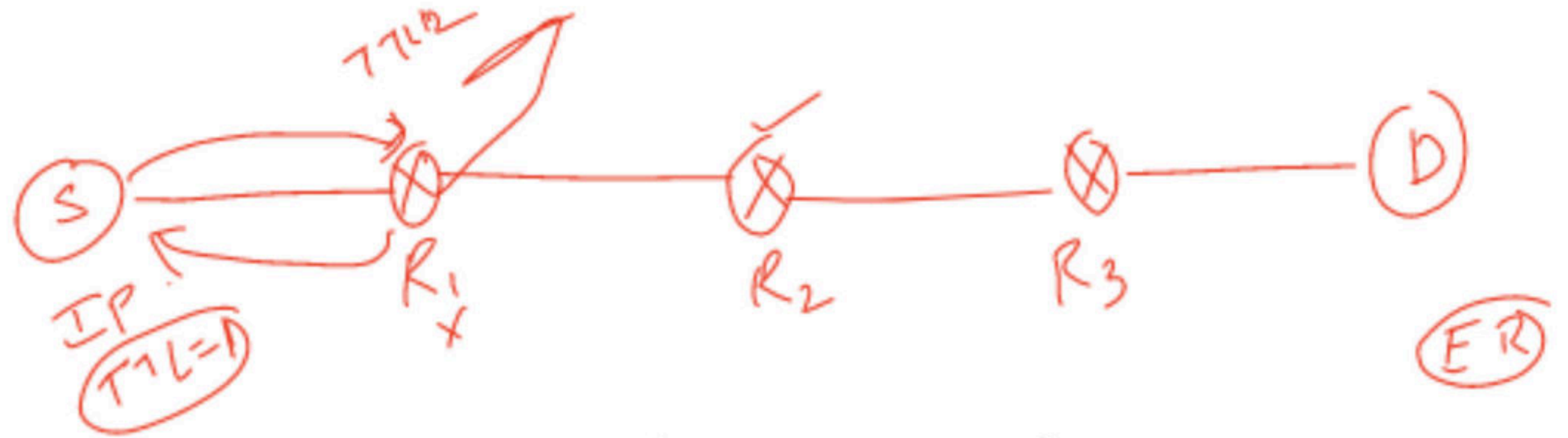


IP \rightarrow DHCP.
DGW \rightarrow ICMP
NM \rightarrow ICMP
ARP.
IP \rightarrow MAC.
DHCP
MAC \rightarrow IP

Timestamp request and reply



- ICMP Timestamp Request and Timestamp Reply messages are used by network routers to synchronize their system clocks for time and date.
- When a router needs to synchronize its system time, it sends an ICMP Timestamp Request message to the other router.
- Once the ICMP Timestamp Request message is received by the other router, it will respond back with an ICMP Timestamp Reply message.
- Timestamp Reply message contains other router's date and time.
- ICMP Timestamp Request and Timestamp Reply messages are not used much these days, because there an entire protocol itself is dedicated for network device time synchronization.



Computer Network

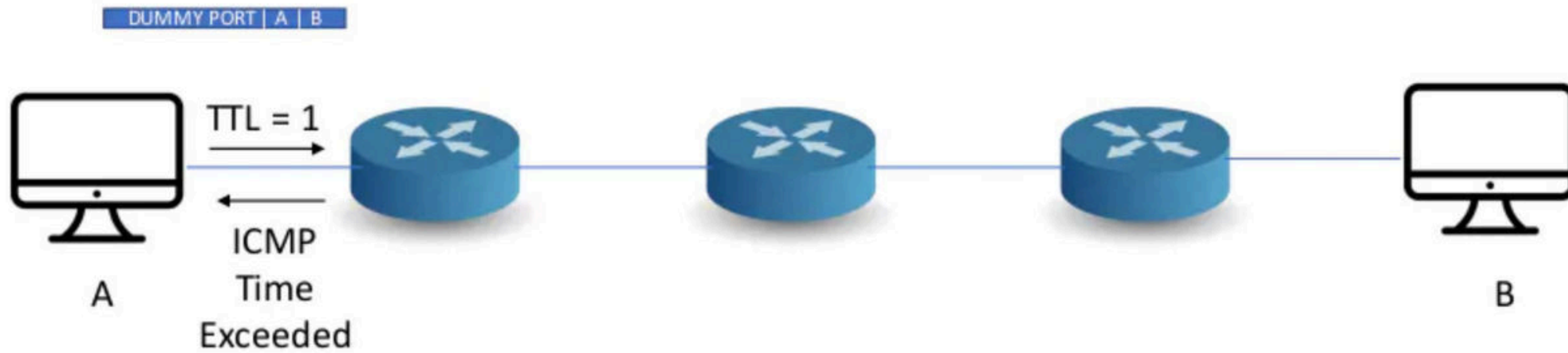
Trace route

R_1 R_2 R_3 D
 $=$ $=$ $=$

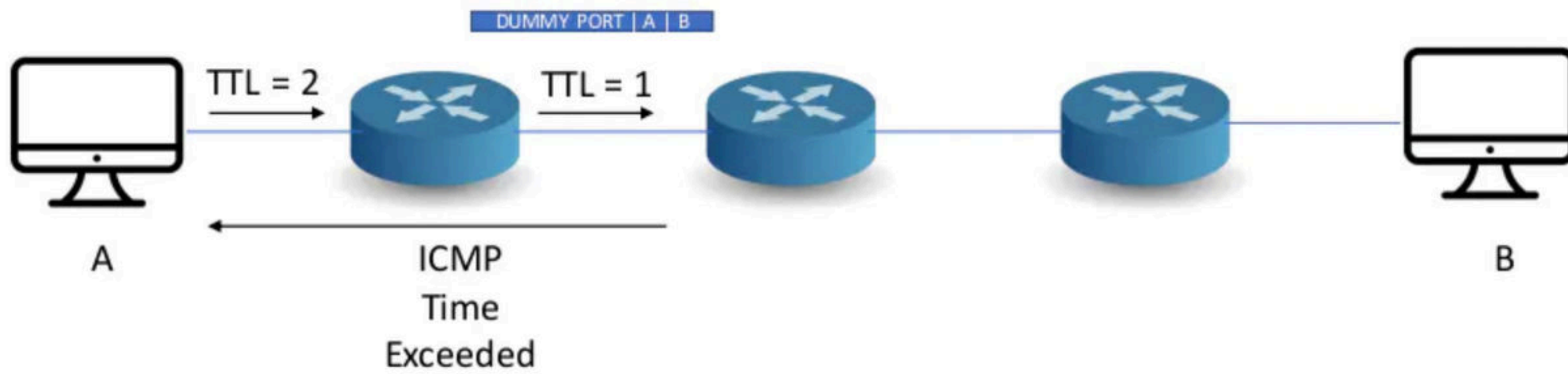
Trace route

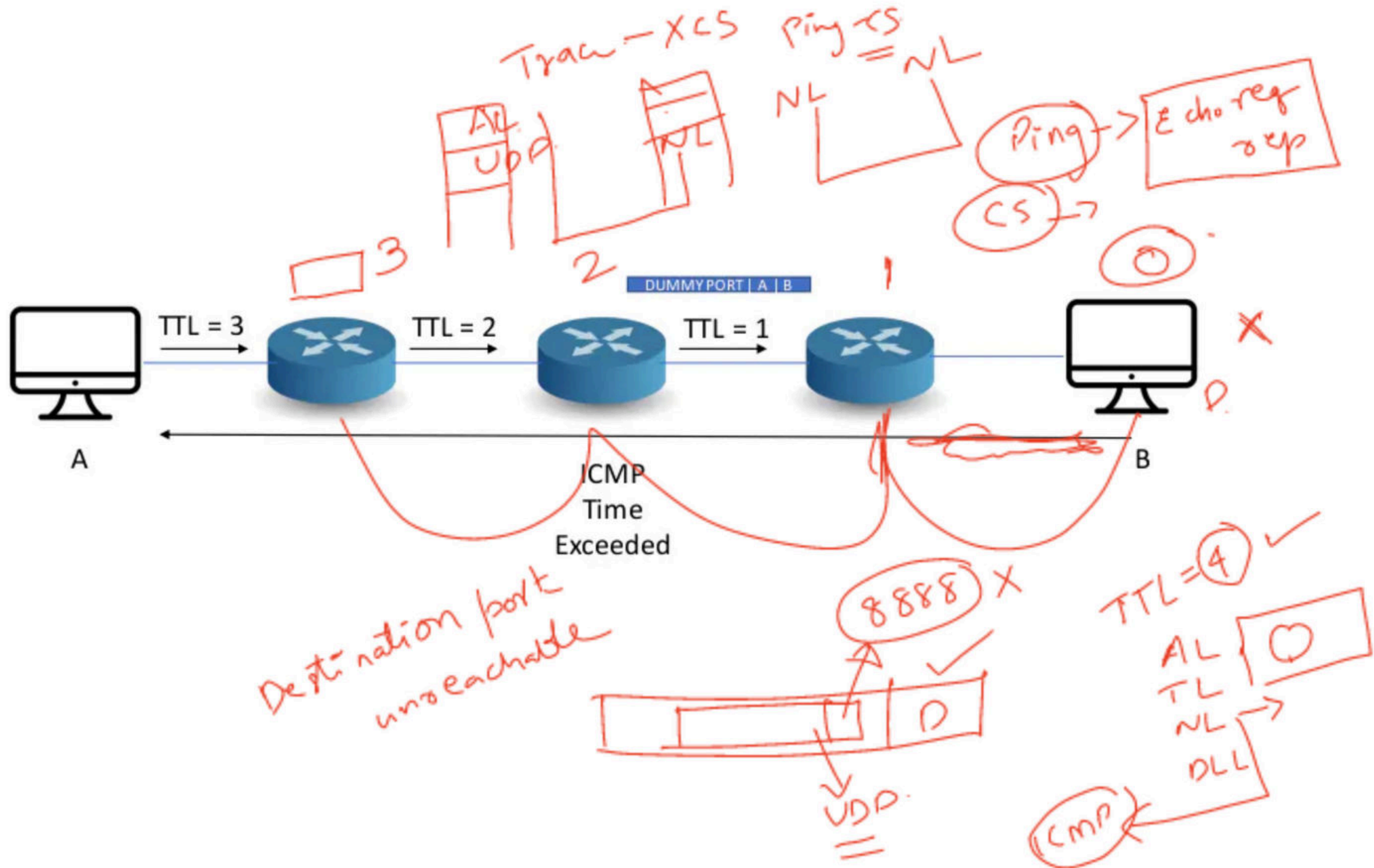
Command on Linux

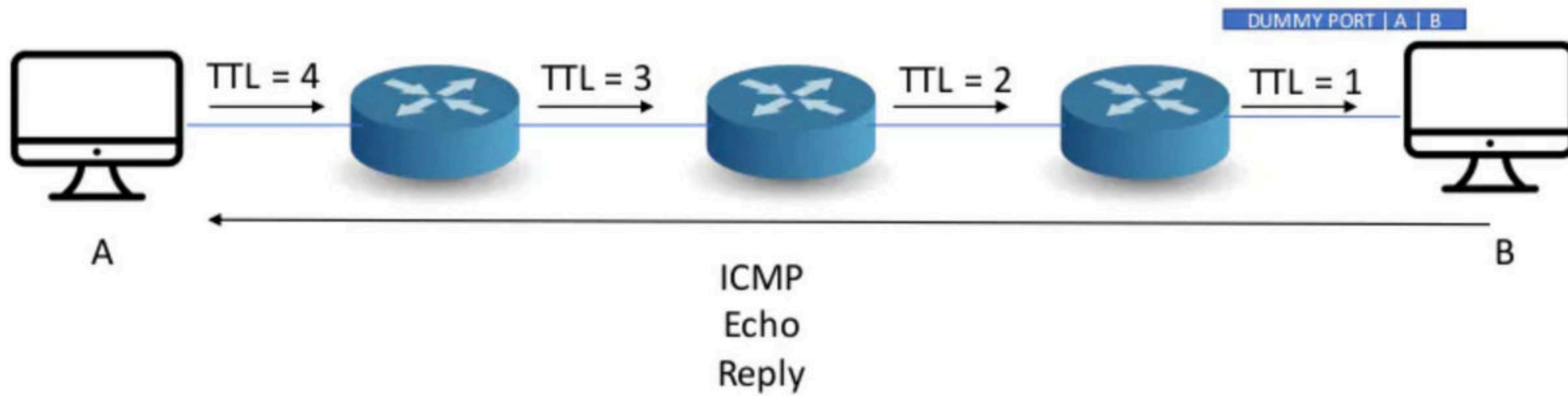
tracert domain

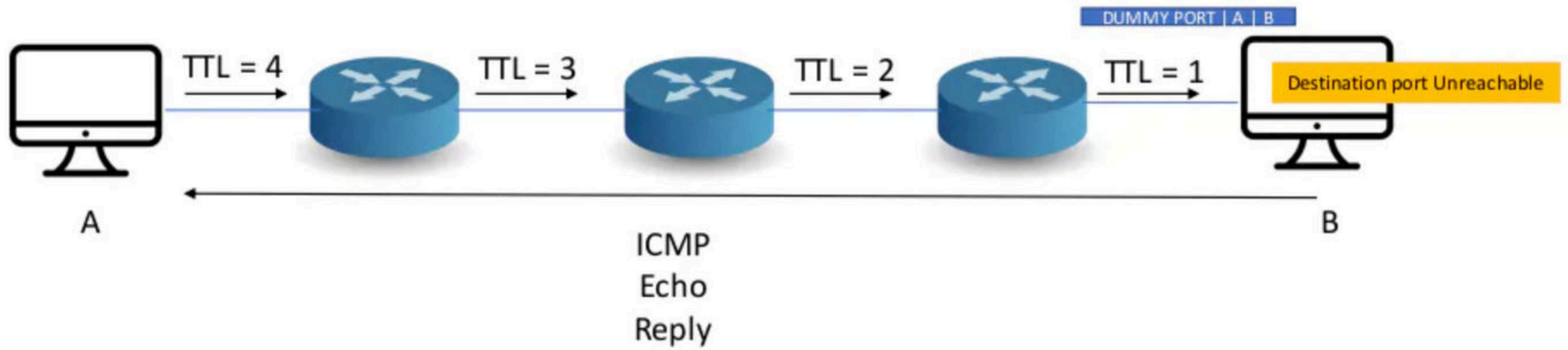


PDF
PPT
A7









MY ROUTE HAS
BEEN TRACED !



A

TTL = 4



TTL = 3



TTL = 2

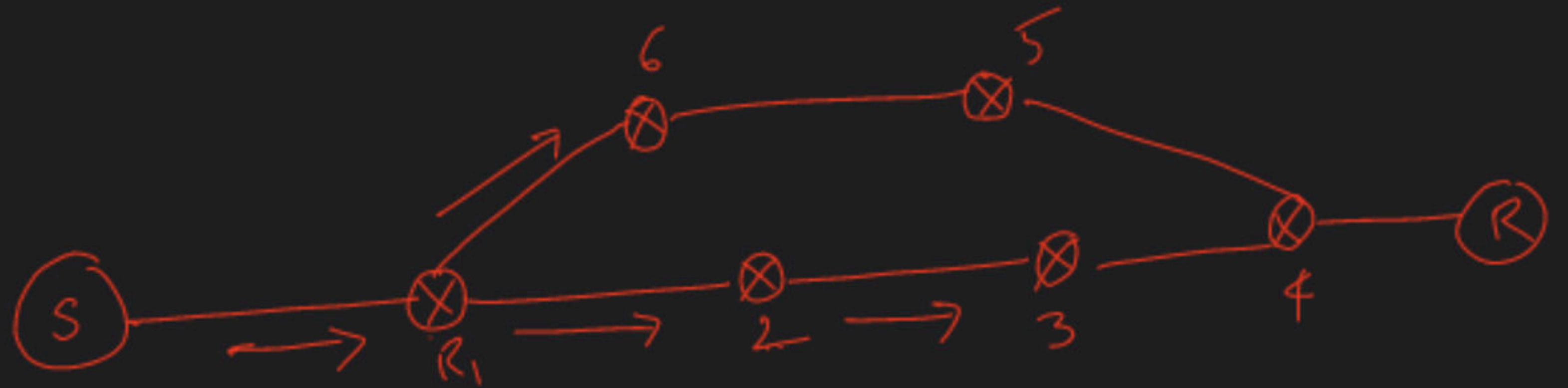


TTL = 1



B

DUMMY PORT | A | B

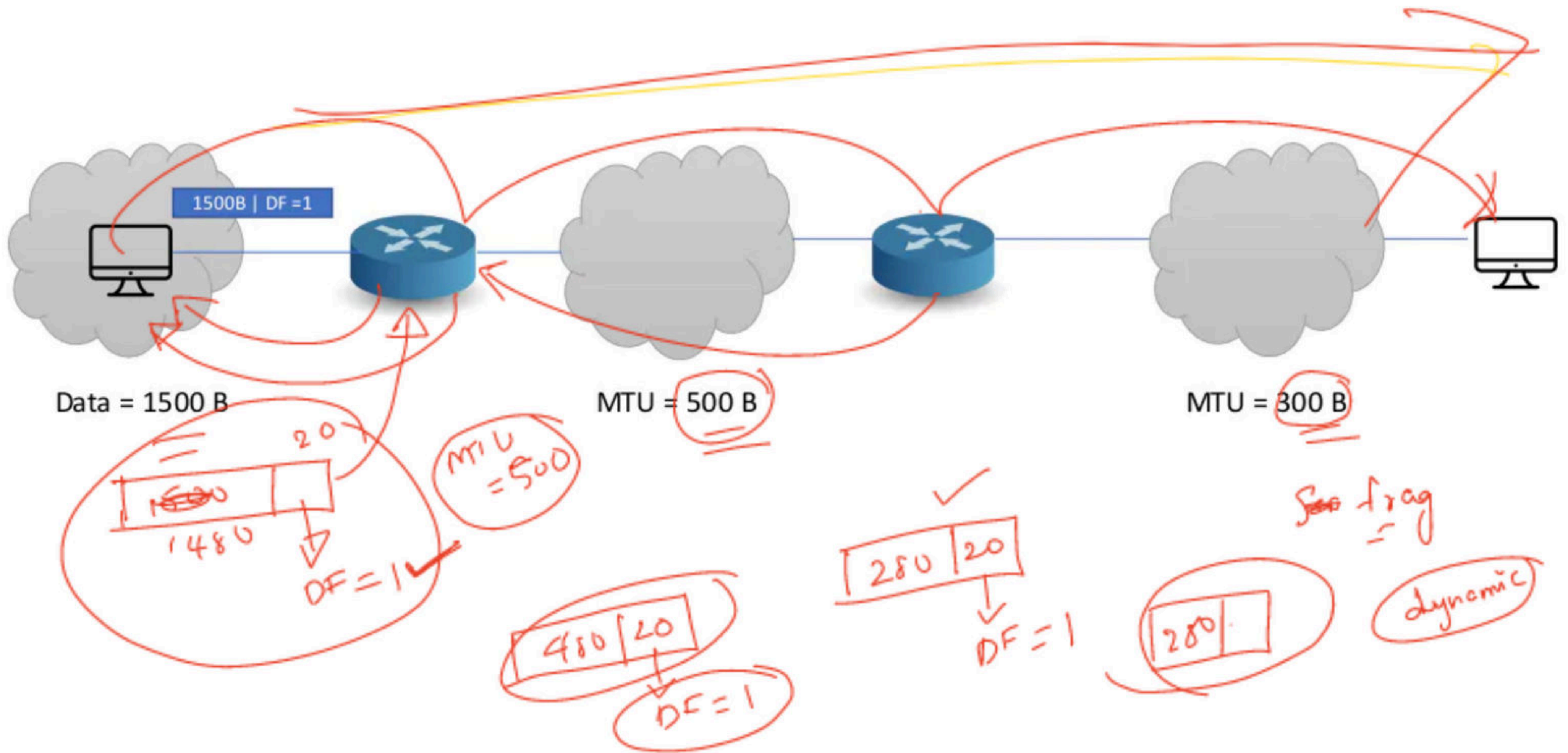


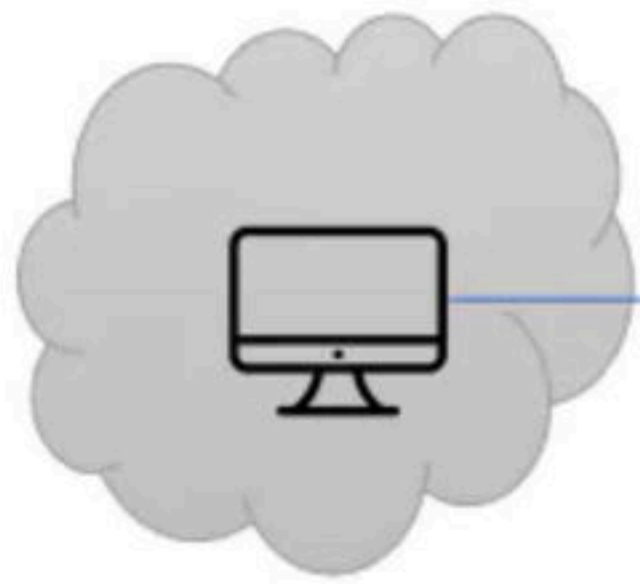
R₁ R₂ R₆ R₃ R₄ ✓ → ICMP ✗

trace route.
 1)
 2)
 3)
 4)
 trace ✗
 ✓

Computer Networks

Path MTU Discovery





Data = 1500 B

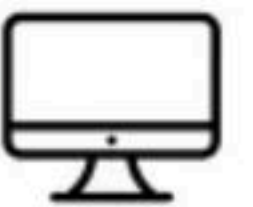


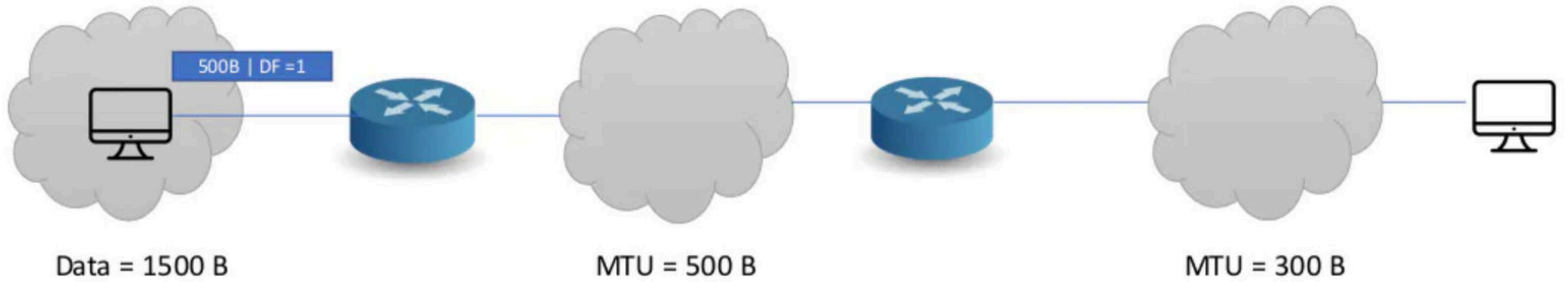
MTU = 500 B

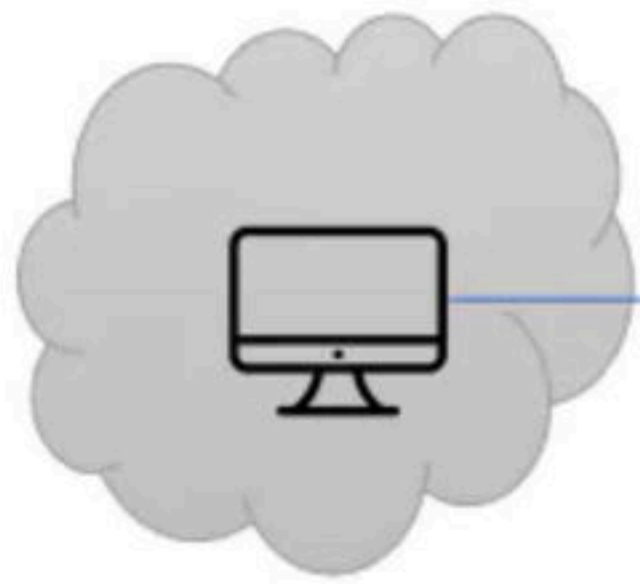
ICMP – DESTINATION
UNREACHABLE, FRAGMENTATION,
DF = 1
MTU = 500B



MTU = 300 B



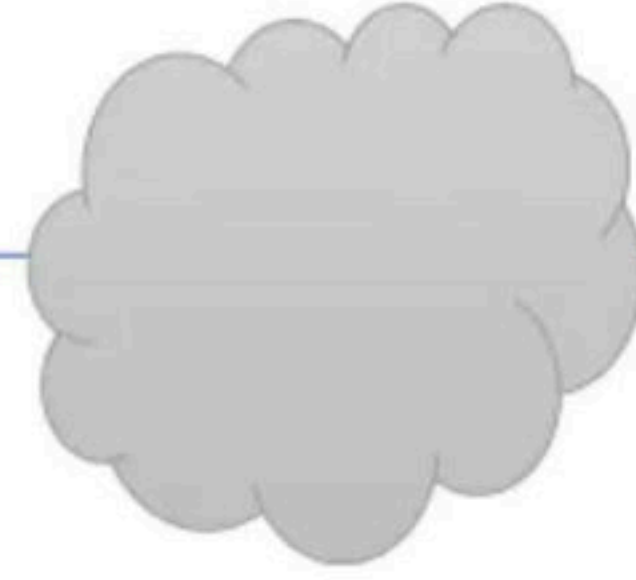




Data = 1500 B



MTU = 500 B



MTU = 300 B



ICMP – DESTINATION
UNREACHABLE, FRAGMENTATION,
DF = 1
MTU = 300B

