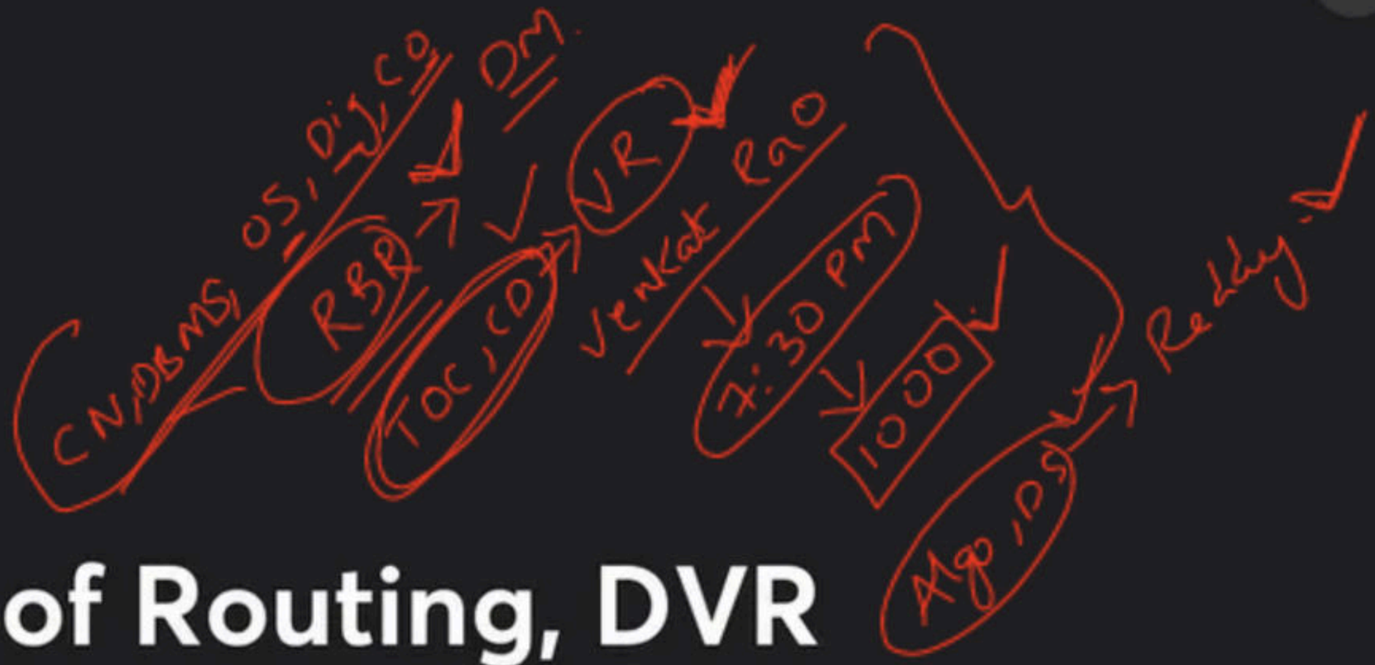


Types of Routing, DVR

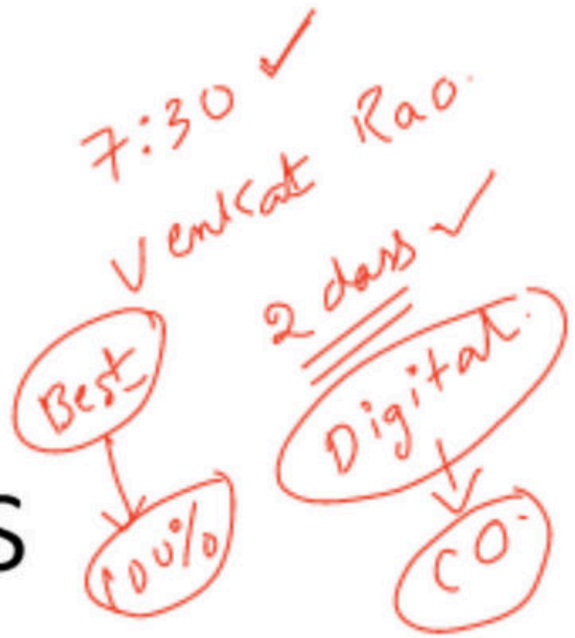
Complete Course on Computer Networks - Part III

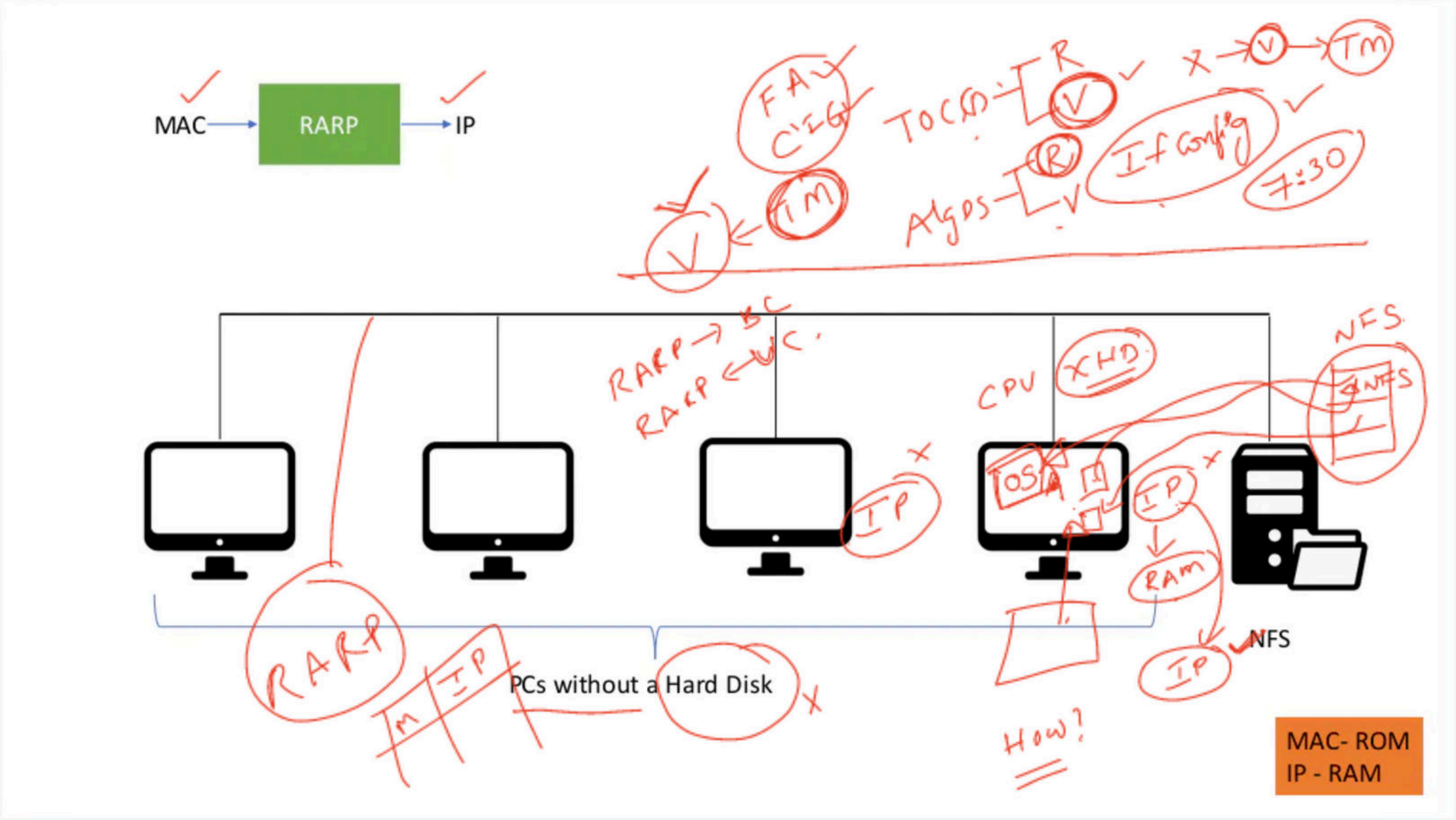
Ravindrababu Ravula • Lesson 8 • Mar 31, 2021

31-03-2021 Classes by Ravindrababu Ravula	
Lecture Name	**Time**
Examples on Candidate Key - Candidate key for Sub Relation - Examples | DBMS	**6.:00 AM**
Types of Routing, DVR	**7:00 AM**
ER and Relational Model Practice Questions | DBMS	**8:05 AM**
Process Management Part-2 Practice Questions | OS	**5:00PM**
Learn OOPS Concepts in Java in 37 min|L:9 |Classes and Objects | Real world examples	**6:00PM**
Linux file structure and file management | L:3 | Linux Course for Engg and UGC-NET	**7:00PM**
Installing Microsoft Visual Studio 2019 | L:3 | Web Technologies Course for Engg and UGC-NET	**8:00PM**

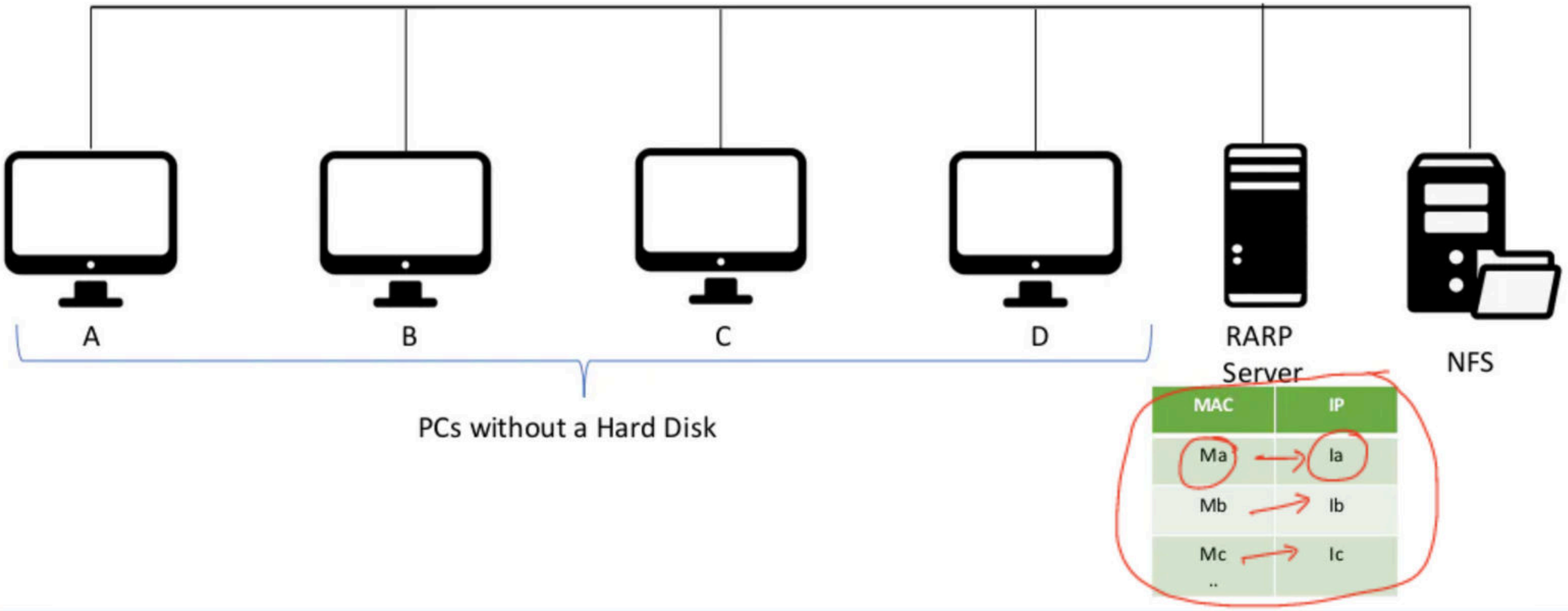
Computer Networks

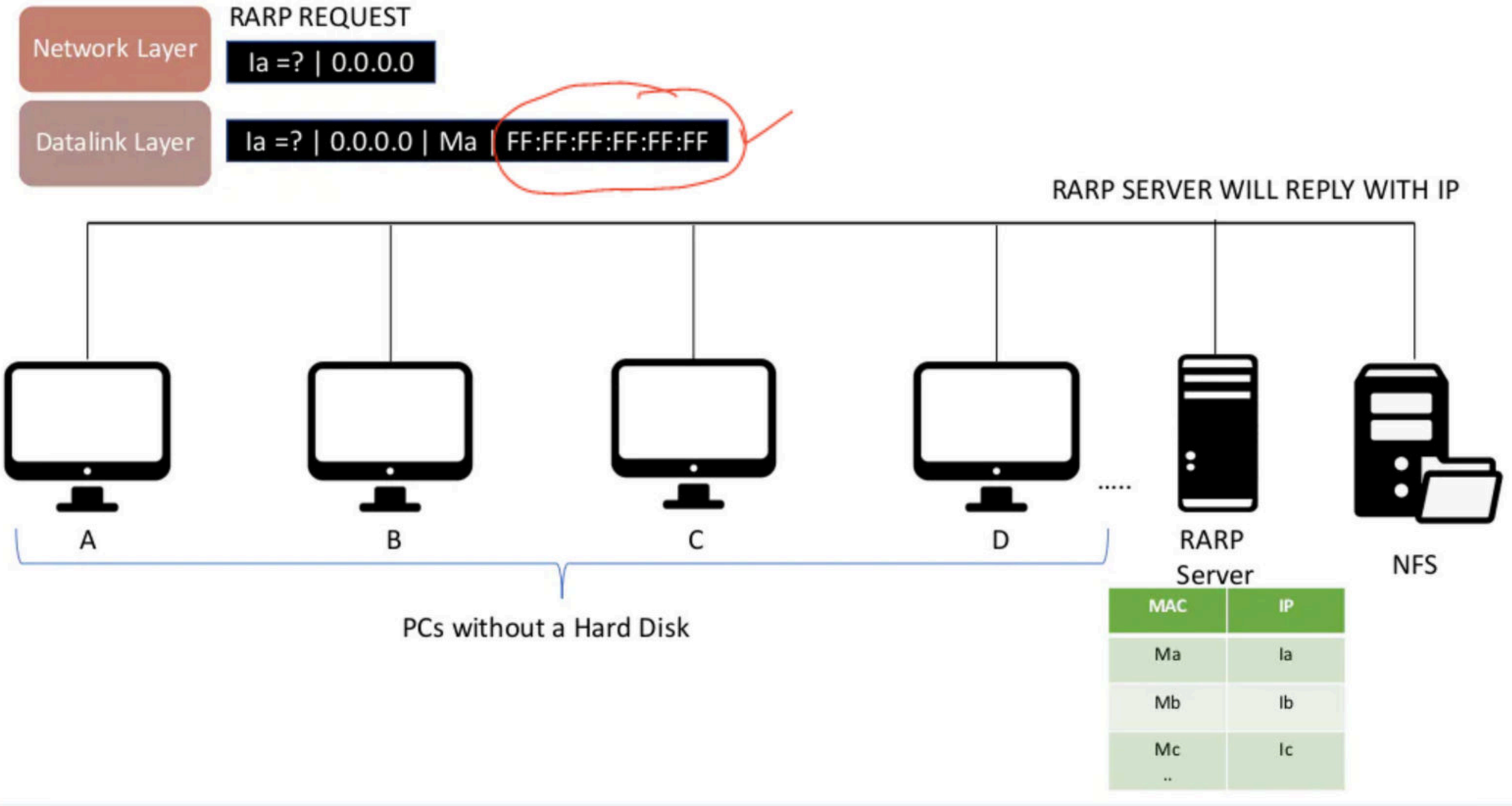
RARP




MAC
RARP
IP
PCs without a Hard Disk
MAC- ROM
IP - RAM

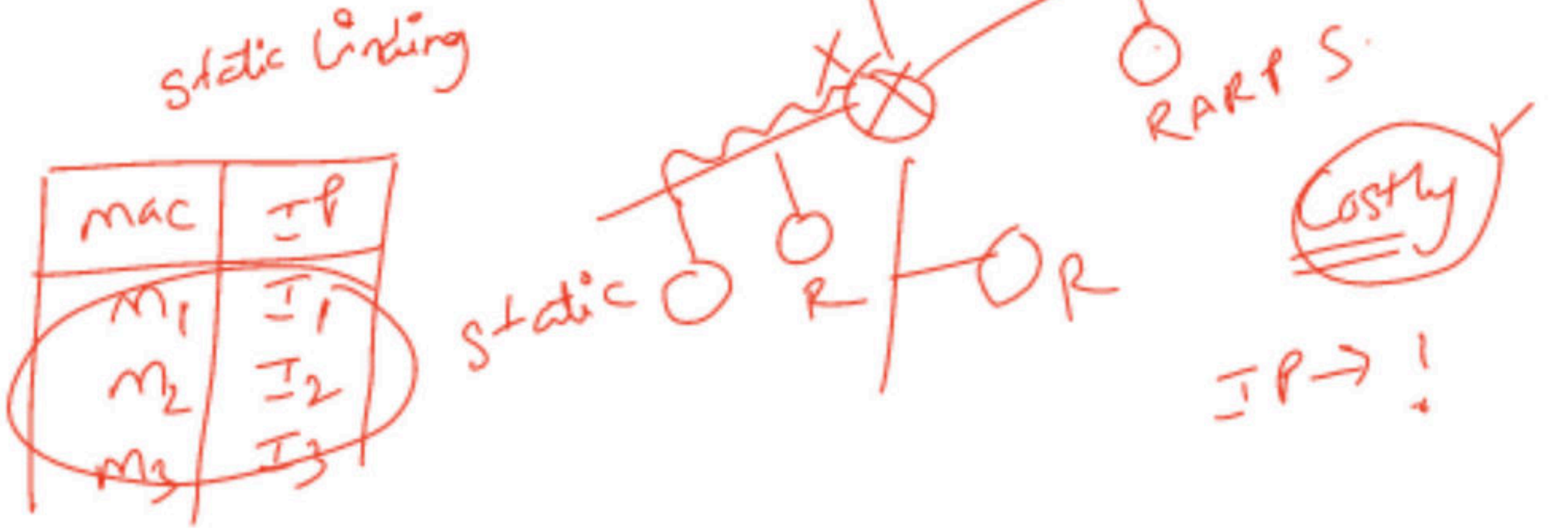

MAC
RARP
IP


A
B
C
D
RARP Server
NFS
PCs without a Hard Disk
MAC
IP
Ma
Ia
Mb
Ib
Mc
Ic
..


Network Layer
RARP REQUEST
Ia =? | 0.0.0.0
Datalink Layer
Ia =? | 0.0.0.0 | Ma | FF:FF:FF:FF:FF:FF
RARP SERVER WILL REPLY WITH IP
A
B
C
D
.....
RARP Server
NFS
PCs without a Hard Disk
MAC
IP
Ma
Ia
Mb
Ib
Mc
Ic
..

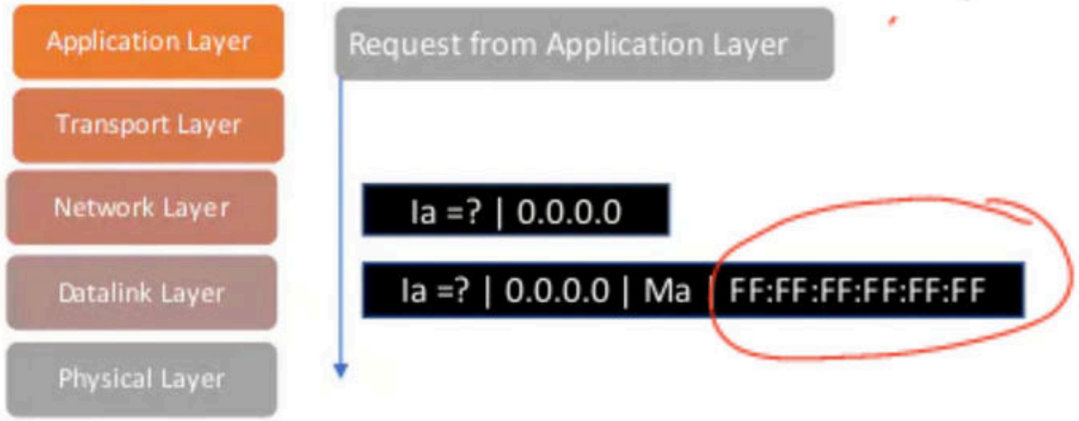
Computer Networks

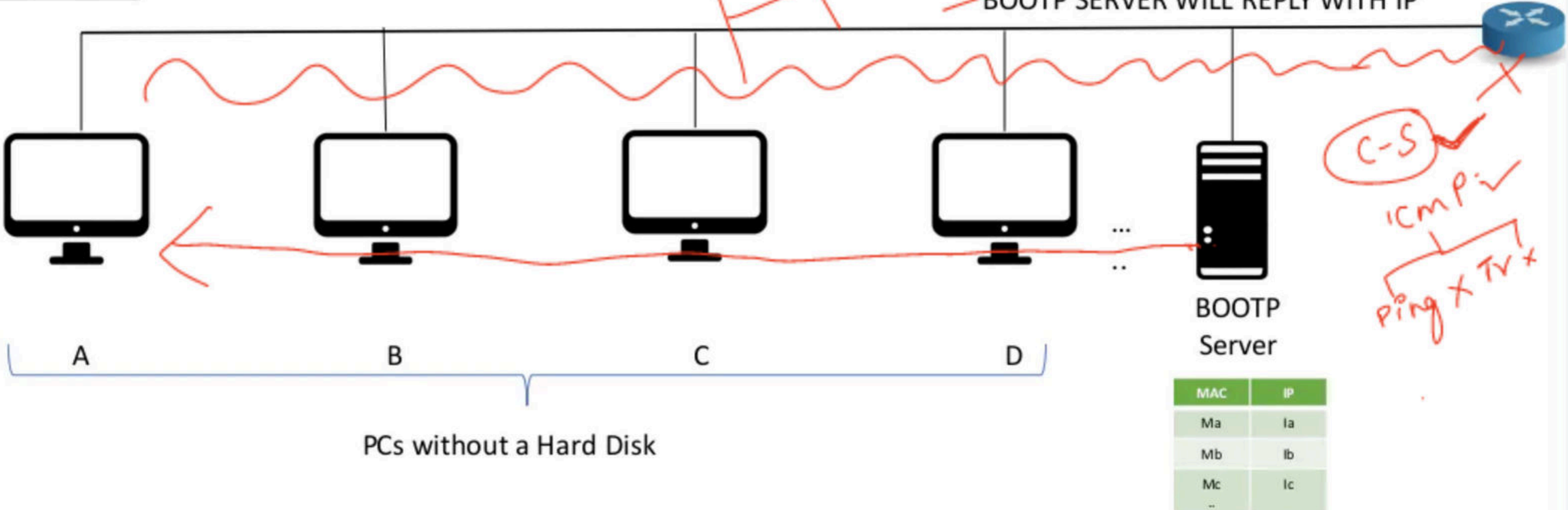
BOOTP AND DHCP



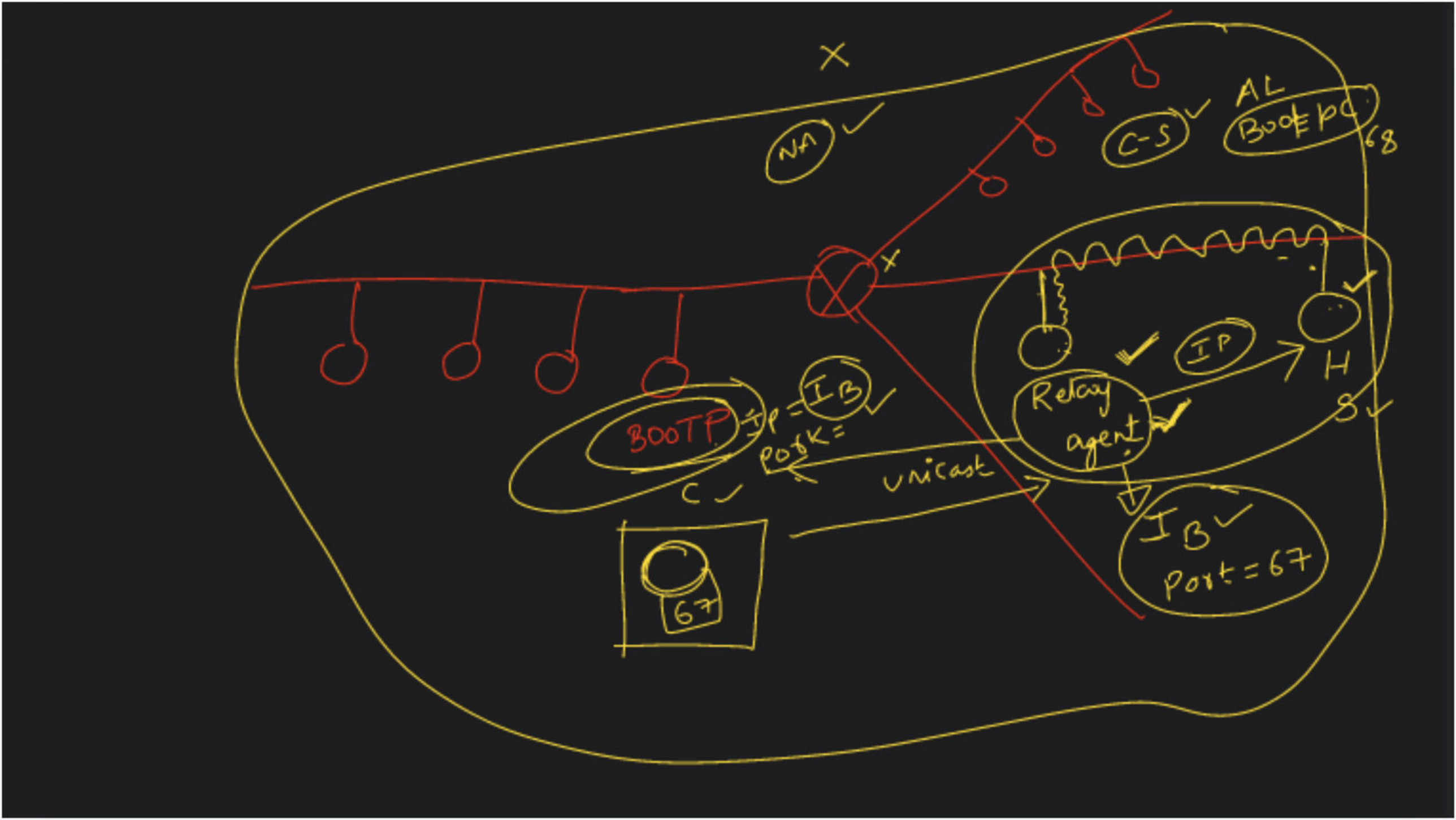
BOOTP stands for Bootstrap Protocol.

BOOTP is similar to RARP except that BOOTP works at Application Layer





MAC	IP
Ma	Ia
Mb	Ib
Mc	Ic


X
NA
C-S
AL
BootPC
68
X
IP
H
Relay agent
BOOTP
IP =
IB
Port=
C
UNICast
67
IB
Port=67

Advantage: Only one BOOTP sever is required
Disadvantage: Mapping Table is Static

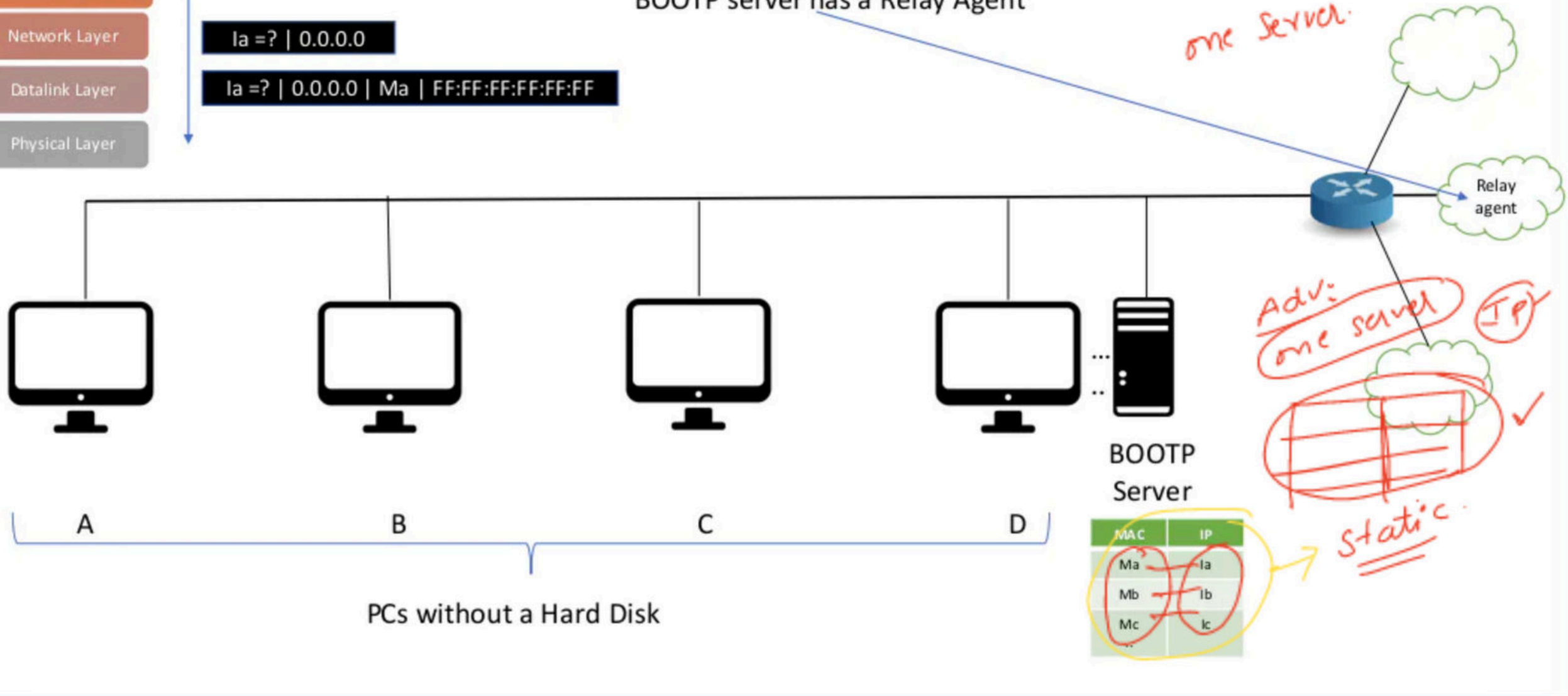
Application Layer
Transport Layer
Network Layer
Datalink Layer
Physical Layer

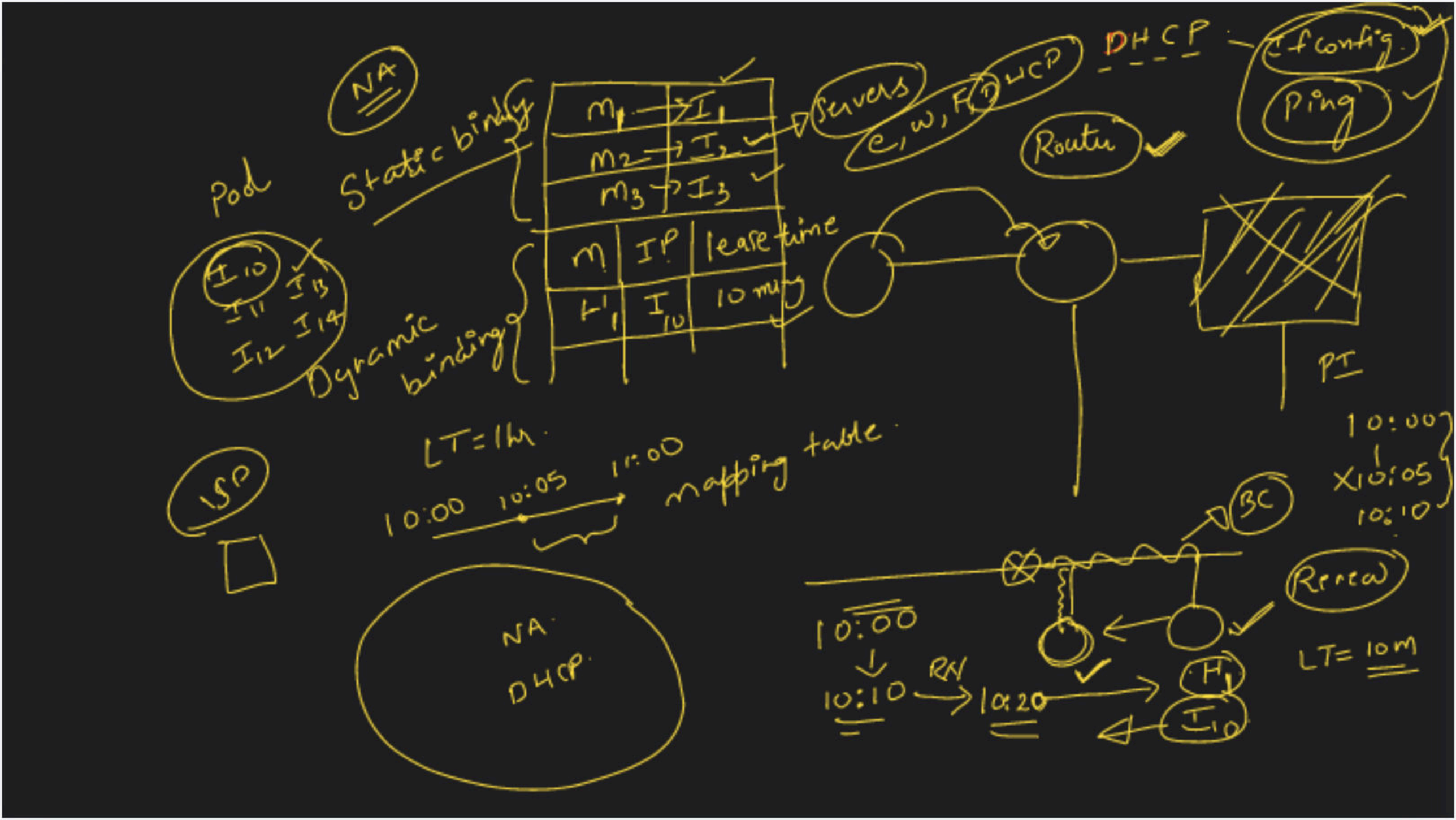
Request from Application Layer

Ia =? | 0.0.0.0

Ia =? | 0.0.0.0 | Ma | FF:FF:FF:FF:FF:FF

Network which does not have a BOOTP server has a Relay Agent

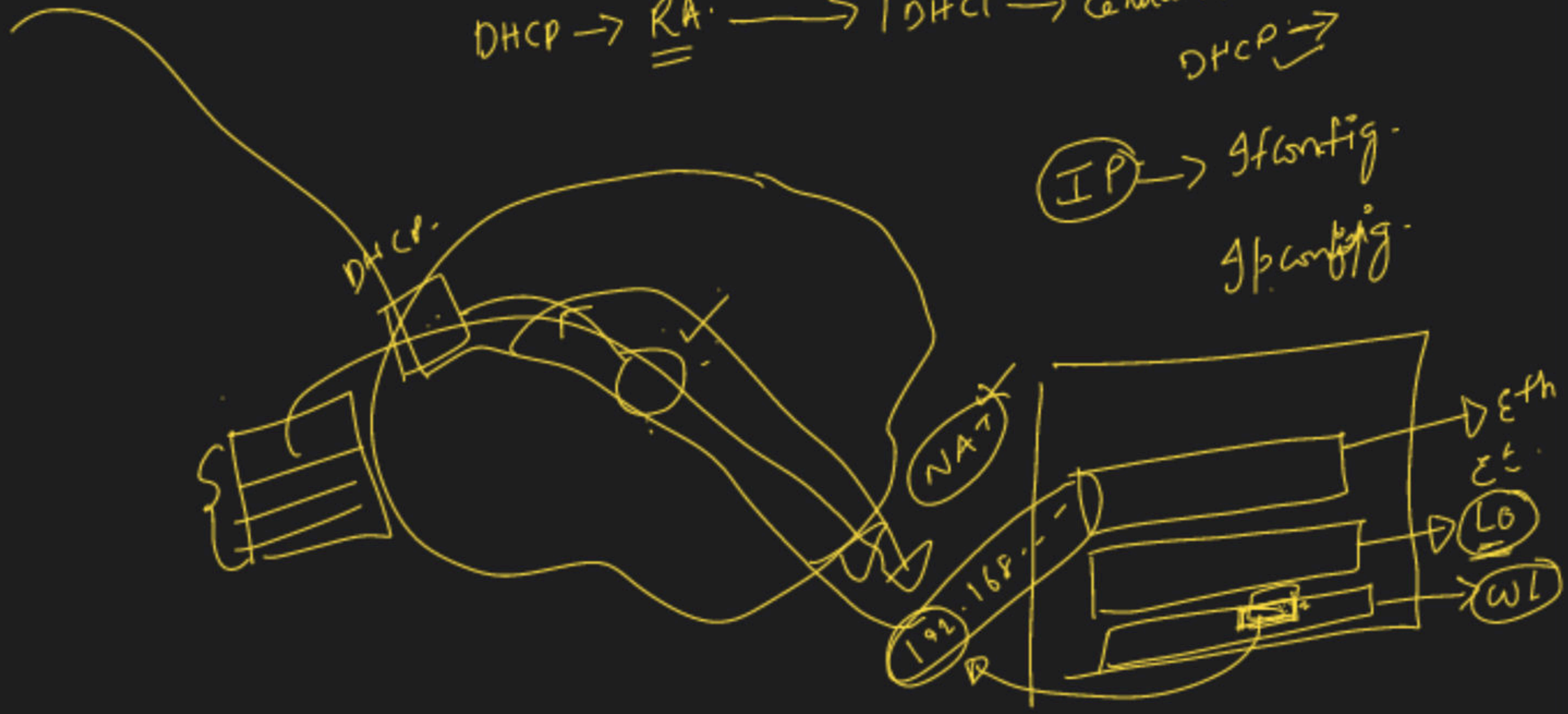


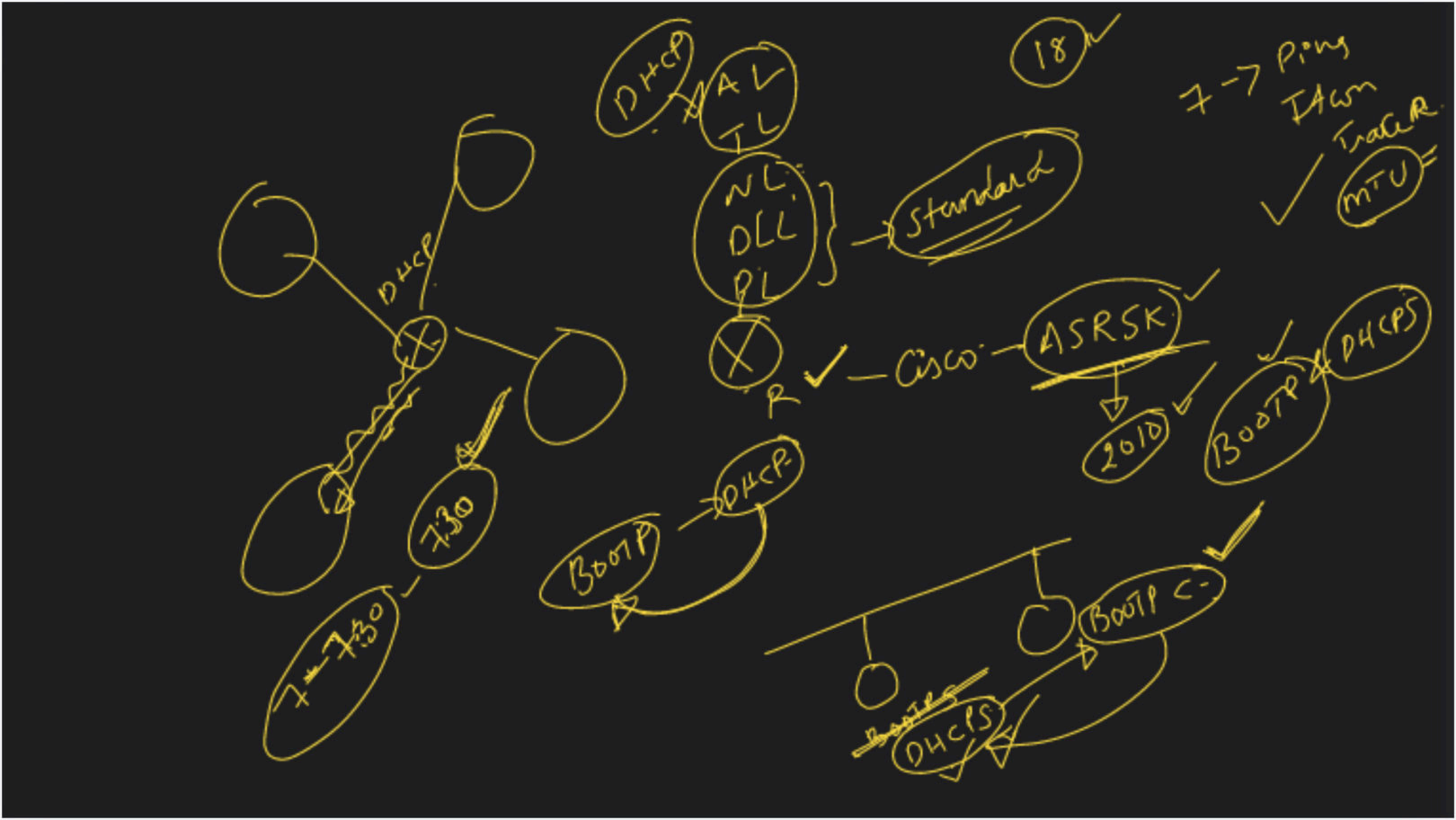

NA
Static binding
Pod
Dynamic binding
Servers
DHCP
ifconfig
Ping
Routin
PI
LT=1h
10:00
10:05
11:00
mapping table
ISP
NA
DHCP
10:00
10:05
10:10
BC
Renew
10:00
10:10
RN
10:20
LT= 10m

1004 → only 50 online → IPs in BOOTP → 100.
DHCP → 50.

DHCP → RA. ⟶ 1 DHCP → centralised.
"
DHCP →

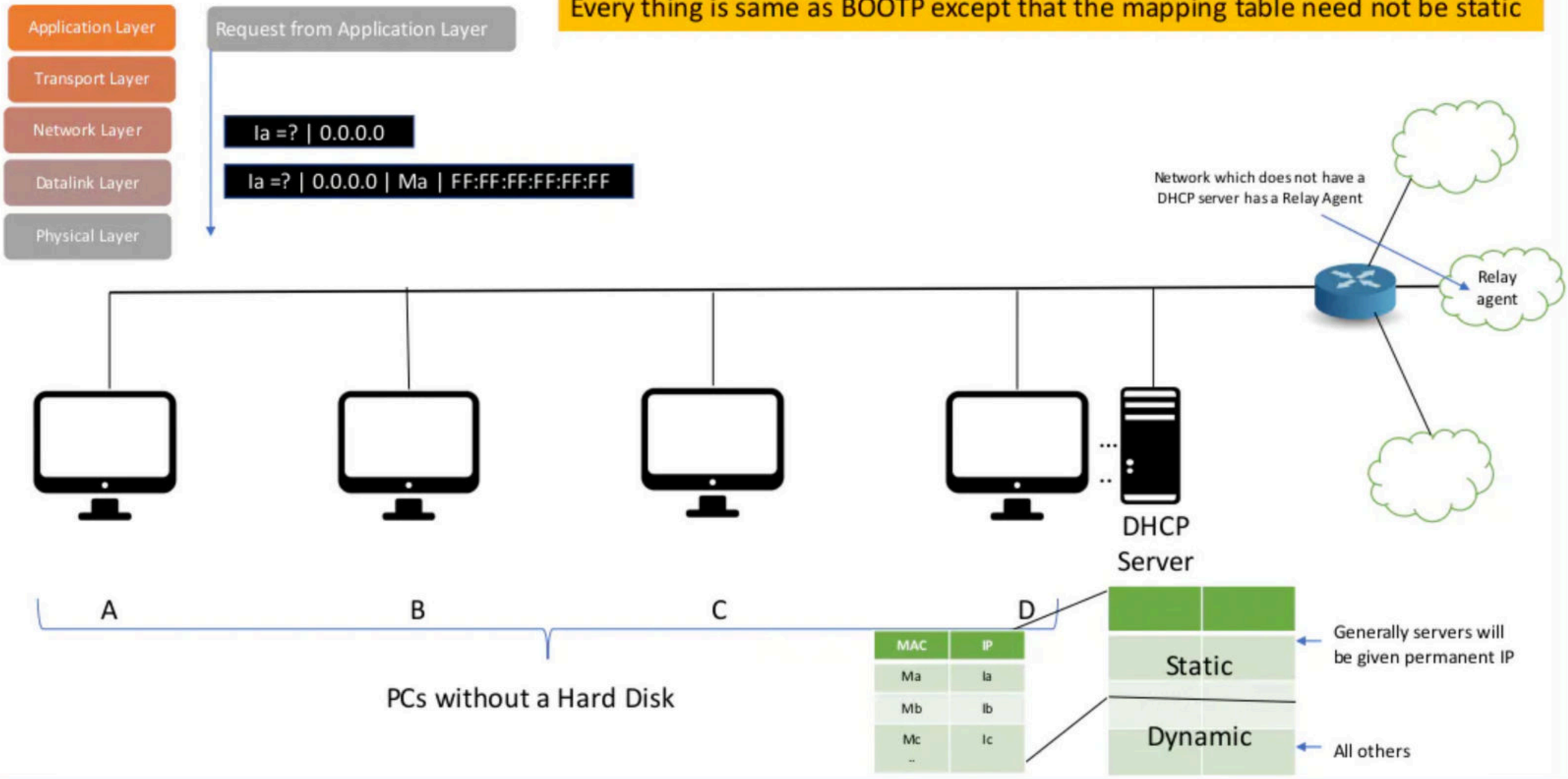
IP → ifconfig.
ip config.




DHCP
ALL
NL
DLL
PL
Standard
R
Cisco
ASRSK
2610
7-7 Ping
IACK
TRACER
MTU
BOOTP
DHCPS
7.30
7-7.30
BOOTP
DHCP
BOOTP
DHCPS

DHCP – Dynamic Host Configuration Protocol

Every thing is same as BOOTP except that the mapping table need not be static



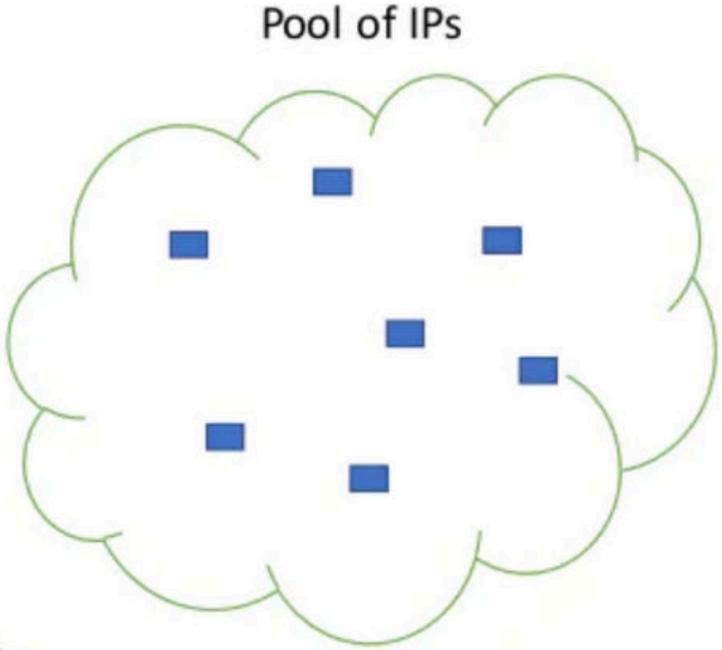
DHCP MAPPING TABLE

Static

MAC	IP
Ma	Ia
Mb	Ib
Mc	Ic
Md	Id
....	...

Dynamic

MAC	IP	Least Time
Ms	Is	10 mins



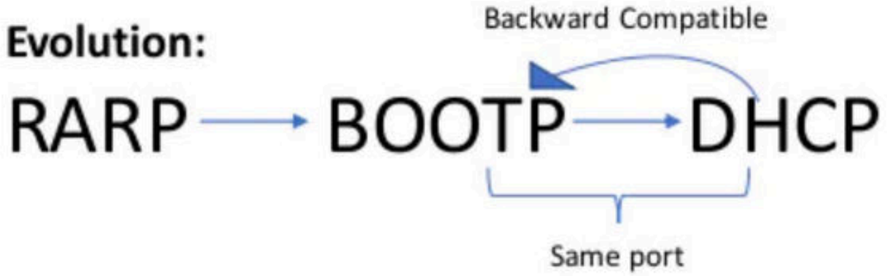
Picking from the pool of IPs

Note : If renew requests is not sent the IP is pulled and added back to the pool

Advantage and points to remember:

- Only One DHCP server is enough.
- Dynamic Table

Evolution:

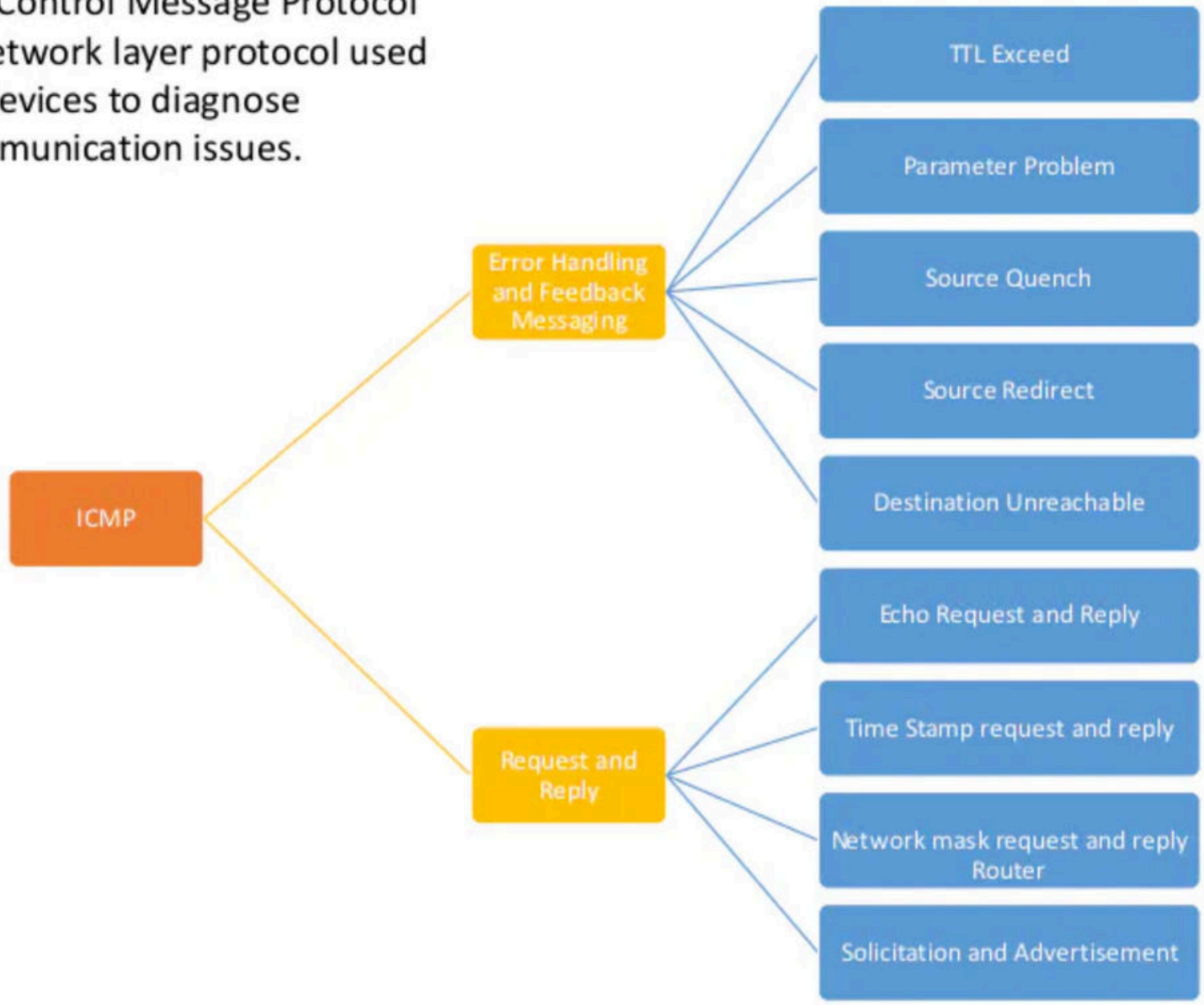


Computer Networks

ICMP

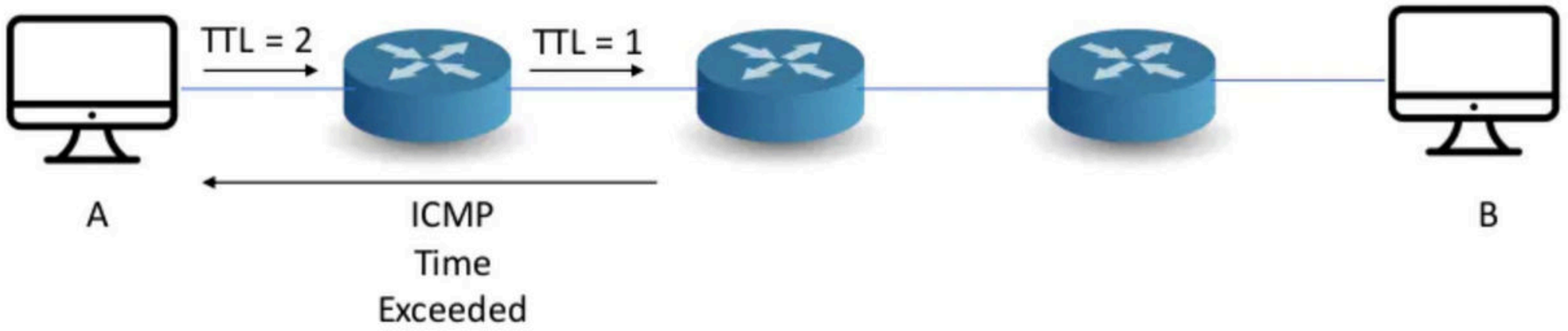
Internet Control Message Protocol (ICMP)

The Internet Control Message Protocol (ICMP) is a network layer protocol used by network devices to diagnose network communication issues.

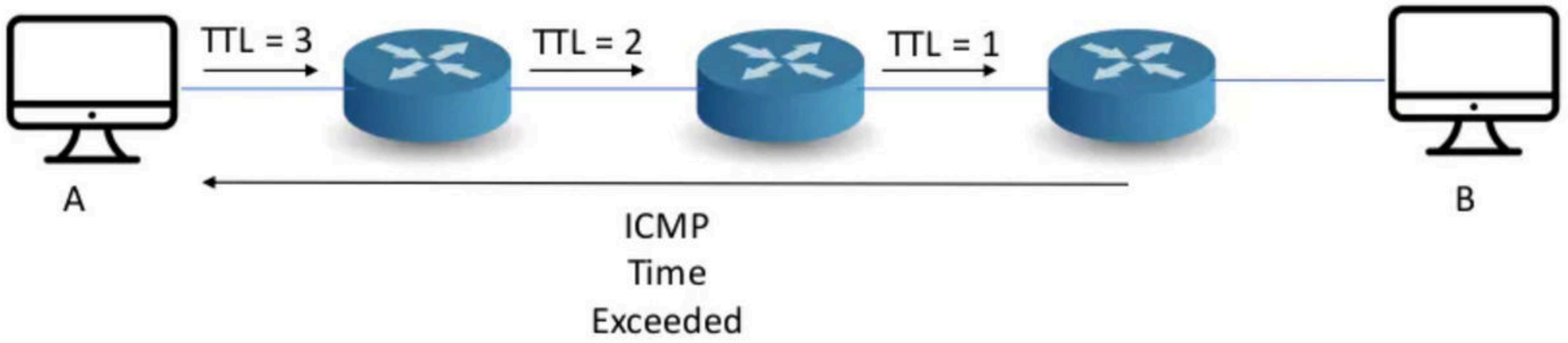


TTL Exceed

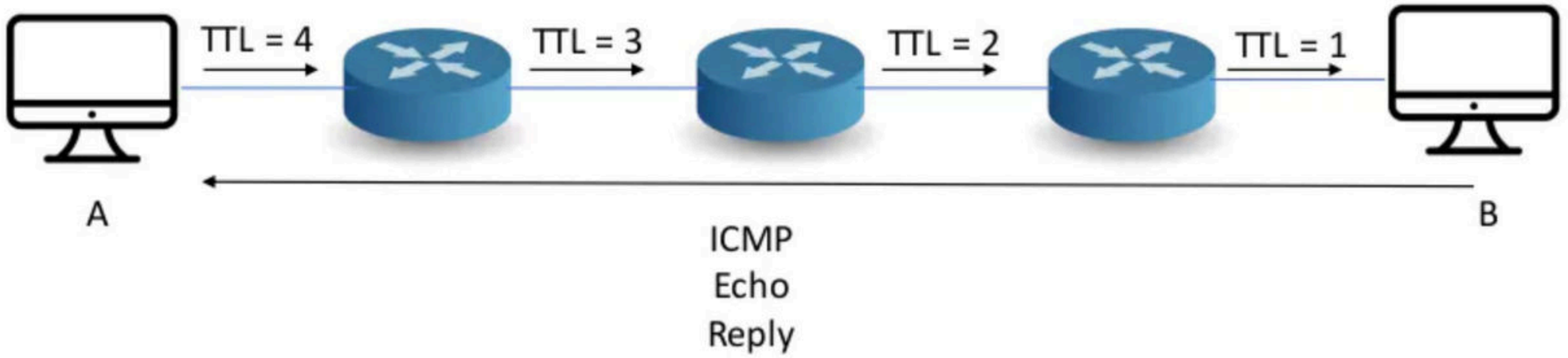
TTL Exceed



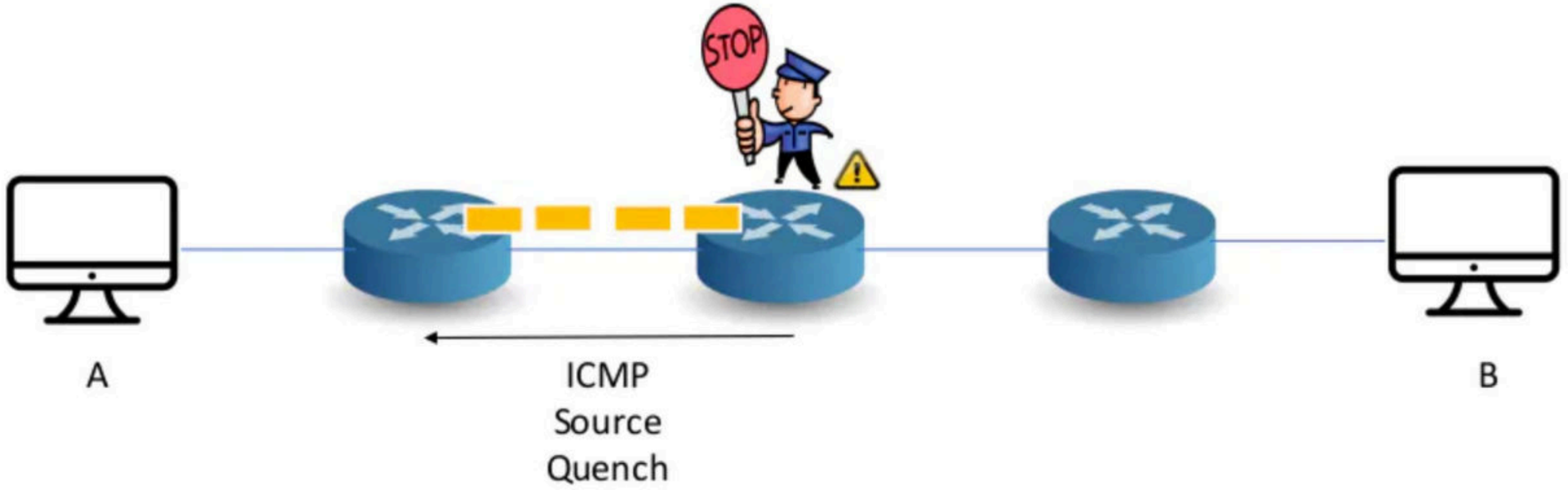
TTL Exceed



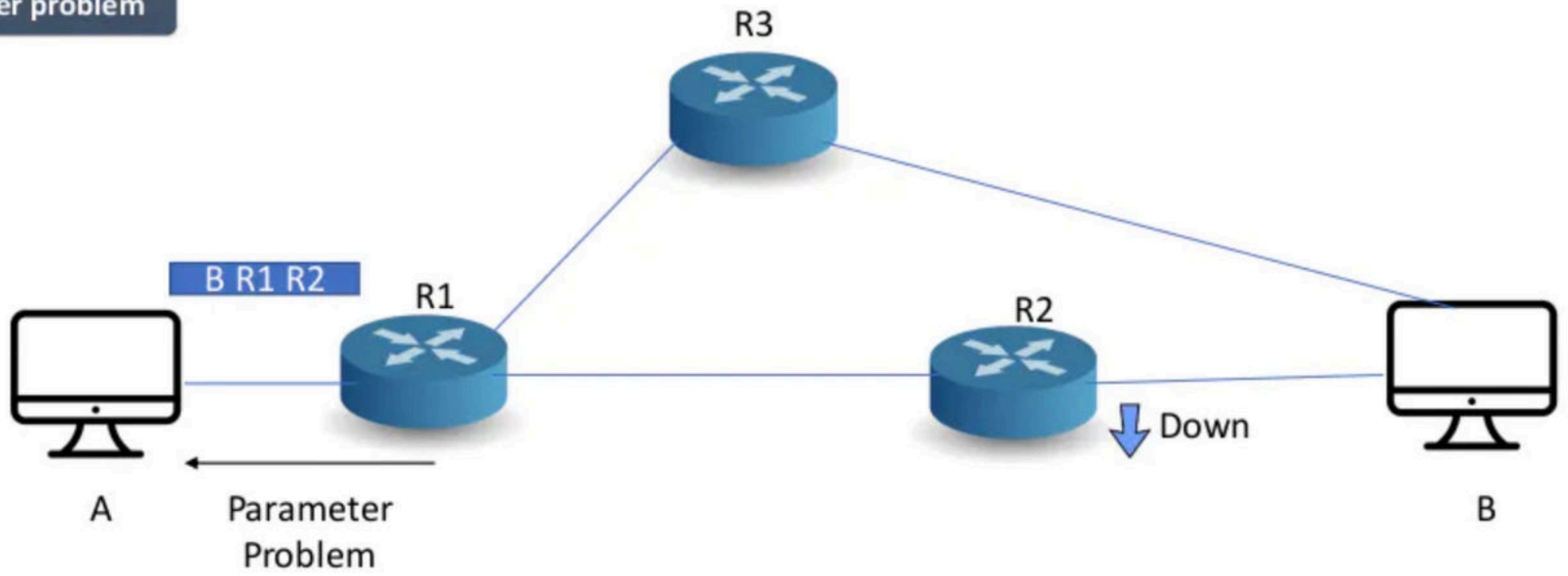
TTL Exceed



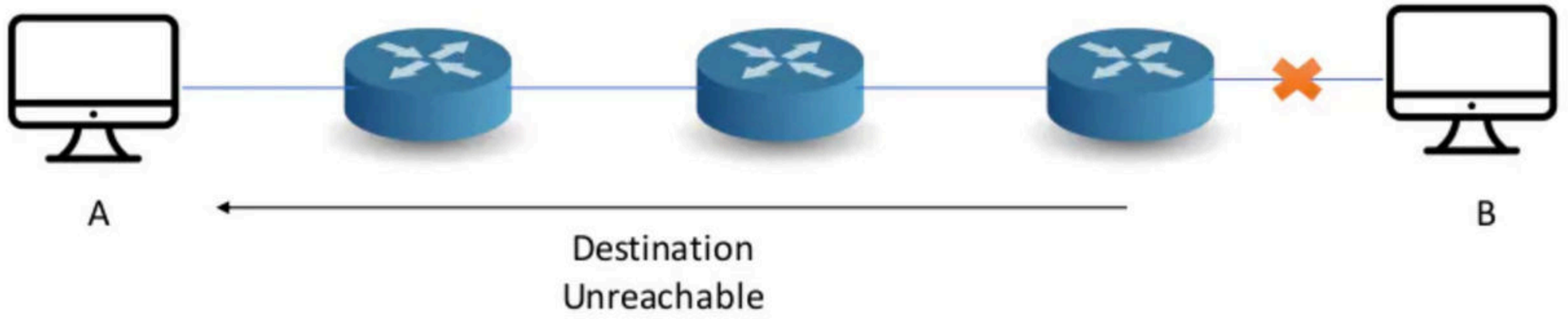
Source quench



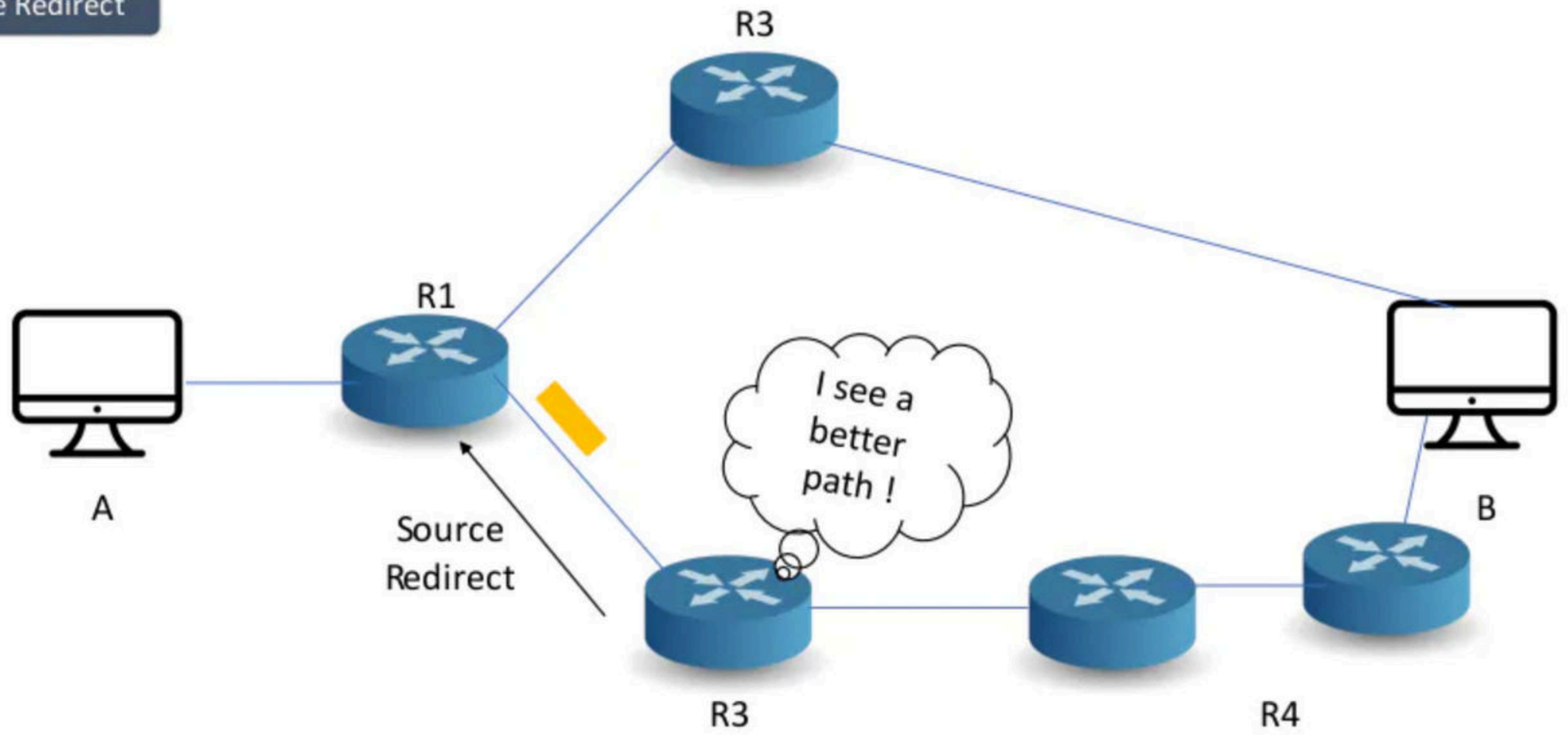
Parameter problem



Destination unreachable



Source Redirect



These are things that sender should know:
Who discarded ?
Why it got discarded ?
What packet did you discard?