

Assignment-10

1. Demonstrate the working of ARP Protocol.

(a) Between two PC of same network



→ Opening command prompt in PC 192.168.1.1

PC> arp -a

No ARP Entries Found

PC> ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=20ms TTL=128

...

Approximate round trip times in milliseconds:

Minimum 20ms, Maximum 20ms, Average 20ms

PC> arp -a

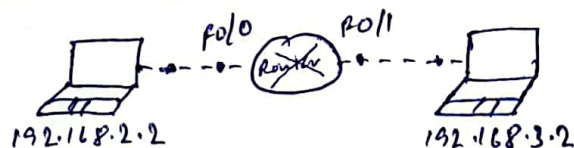
Internet Address	Physical Address	Type
192.168.1.2	0030.f2a5.d418	dynamic

PC> arp -d

PC> arp -a

No ARP Entries Found

(b) Between two PC of different Network



→ Opening command prompt in PC 192.168.2.2

PC> ping 192.168.3.2

Pinging from 192.168.3.2 with 32 bytes of data:

Reply from 192.168.3.2: bytes=32 time=20ms TTL=127

...

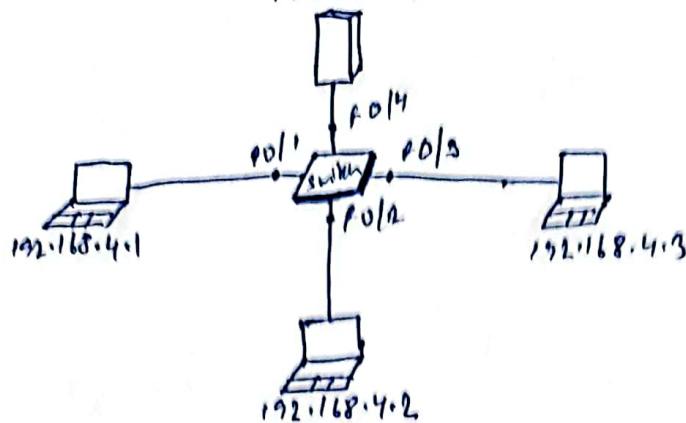
Approximate round trip times in milliseconds:

Minimum 20ms, Maximum 20ms, Average 20ms

PC> arp -a

Internet Address	Physical Address	Type
192.168.2.1	0002.ec2d.4a01	dynamic

© Demonstrate the update in ARP Table.



→ 3 PCs and 1 server is connected with a switch

→ Opening command prompt in server 192.168.4.4

Server> ping 192.168.4.2

Pinging 192.168.4.2 with 32 bytes of data

...

Minimum 20ms, Maximum 20ms, Average 20ms

Server> ping 192.168.4.1

Pinging 192.168.4.1 with 32 bytes of data

...

Minimum 20ms, Maximum 20ms, Average 20ms.

Server> ping 192.168.4.3

Pinging 192.168.4.3 with 32 bytes of data

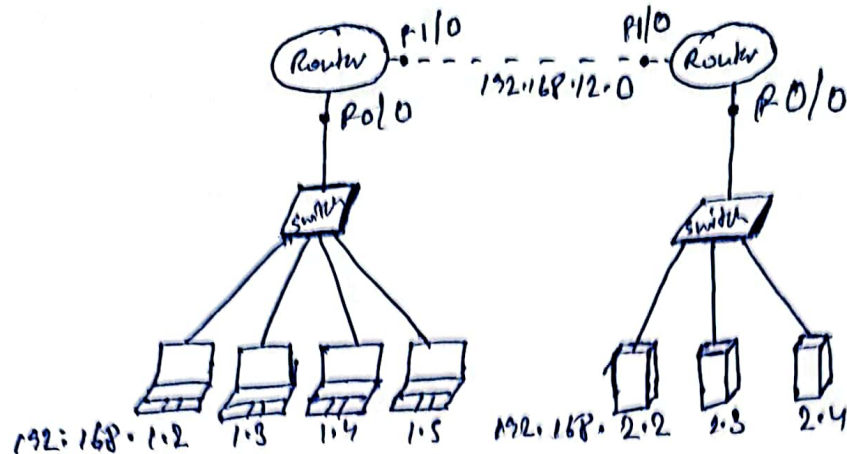
...

Minimum 20ms, Maximum 20ms, Average 20ms

Server> arp -a

Internet Address	Physical Address	Type
192.168.4.1	00d0.bab0.0843	dynamic
192.168.4.2	00e0.8f0d.781d	dynamic
192.168.4.3	000a.4146.515c	dynamic

2. Implement the EIGRP Protocol for two networks



→ Two routers are connected ~~with~~ to each switch then ~~and~~
Router 1 is connected with 4 PCs and Router 2 is connected with

→ IP addresses for Routers at each port:-

Router 1

	<u>IP Address</u>	<u>Subnet Mask</u>
P0/0	192.168.1.1	255.255.255.0
P1/0	192.168.12.1	255.255.255.0

Router 2

P0/0	192.168.2.1	255.255.255.0
P1/0	192.168.12.2	255.255.255.0

→ In CLI menu of Router 1

Router ~~Config~~ > en

Router # conf t

Router (config) # router eigrp ?

<1-65535> Autonomous system number

Router (config) # router eigrp 1

Router (config-router) # network 192.168.1.0

Router (config-router) # network 192.168.12.0

Router (config-router) # 12

Router # wr

Building configuration...

[OK]

→ Same CLI is to be written on Router 2 CLI menu.

→ Sending packets from PC's network to servers' network

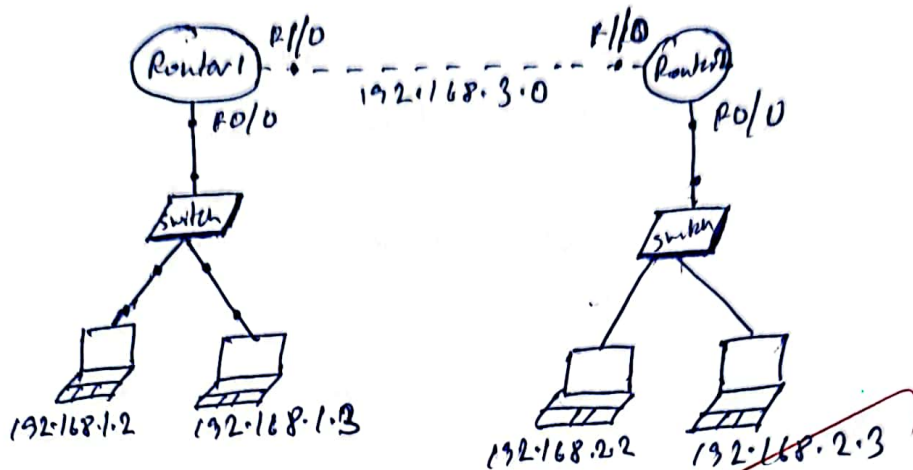
PC> ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

...

Minimum 20ms, Maximum 20ms, Average 20ms

3. Implement the BGP Protocol for two LAN



→ Two routers are connected to each switch then it is connected to two PCs respectively.

→ IP addresses for Routers at each port:-

<u>Router 1</u>	<u>IP addresses</u>	<u>Subnet Mask</u>
F0/0	192.168.1.1	255.255.255.0
R1/0	192.168.3.1	255.255.255.0
<u>Router 2</u>		
F0/0	192.168.2.1	255.255.255.0
R1/0	192.168.3.2	255.255.255.0

→ In CLI Menu of Router 1

Router> en

Router# conf t

Router(config)# router bgp 60

Router(config-router)# network 192.168.1.0

Router(config-router)# network 192.168.2.0

Router(config-router)# network 192.168.3.0

Router (conting-router) # neighbor 192.168.3.2 remote-as 20

Router (conting-router) # neighbor 192.168.2.2 remote-as 20

Router (conting-router) # neighbor 192.168.2.3 remote-as 20

Router (conting-router) # ^z

Router # wr

Building configuration...

[OK]

→ Same CLI is to be written on Router 2. CLI menu

→ Sending packets from Router 1's PCs to Router 2's PCs.

PC) ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

...

Minimum 20ms, Maximum 21ms, Average 20ms

Stan
2/11/23