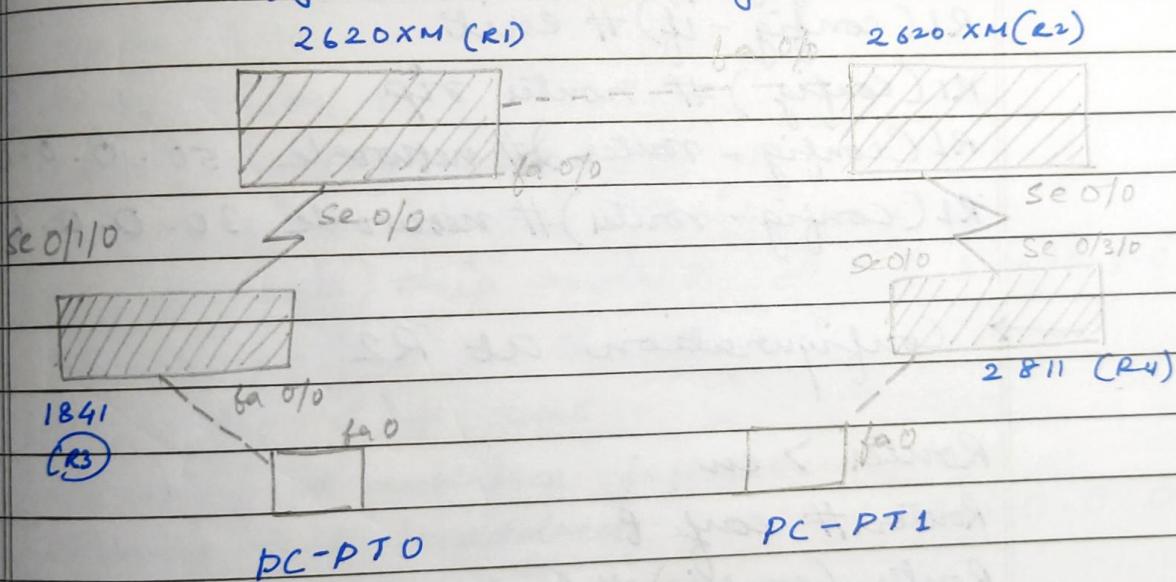


Q1: Using RIP, configure the given network and verify the connectivity b/w PC0 & PC1



→ Configuration at R1

Router > en

Router # conf t

Router (config) # hostname R1

R1 (config) # interface fastEthernet 0/0

R1 (config-if) # ip address 50.0.0.1 255.0.0.0

R1 (config-if) # no shutdown

R1 (config-if) # exit

R1 (config) # interface serial 0/0

R1 (config-if) # ip address 30.0.0.1 255.0.0.0

R1 (config-if) # clock rate 64000

```
R1(config-if)# bandwidth 64  
R1(config-if)# no shutdown  
R1(config-if)# exit  
R1(config)# router rip  
R1(config-router)# network 50.0.0.0  
R1(config-router)# network 30.0.0.0
```

### → Configuration at R2

Router > en

```
Router# conf t
```

```
Router(config)# hostname R2
```

```
R2(config)# interface fastethernet 0/0
```

```
R2(config-if)# ip address 50.0.0.2 255.0.0.0
```

```
R2(config-if)# no shutdown
```

```
R2(config-if)# exit
```

```
R2(config)# interface serial 0/0
```

```
R2(config-if)# ip address 40.0.0.1 255.0.0.0
```

```
R2(config-if)# clock rate 64000
```

```
R2(config-if)# bandwidth 64
```

```
R2(config-if)# no shutdown
```

```
R2(config-if)# exit
```

```
R2(config)# router rip
```

```
R2(config-router)# network 50.0.0.0
```

```
R2(config-router)# network 40.0.0.0
```

## → Configuration at R3

Router&gt;en

Router# conf t

Router(config)# hostname R3

R3(config)# interface serial 0/1/0

R3(config-if)# ip address 30.0.0.2 255.0.0.0

R3(config-if)# no shutdown

R3(config-if)# exit

R3(config)# interface fastethernet 0/0

R3(config-if)# ip address 10.0.0.1 255.0.0.0

R3(config-if)# no shutdown

R3(config-if)# exit

R3(config-if)# router rip

R3(config-router)# networks 30.0.0.0

R3(config-router)# network 10.0.0.0

## → Configuration at R4

Router&gt;en

Router# conf t

Router(config)# hostname R4

Router(config)# interface serial 0/3/0

R4(config-if)# ip address 40.0.0.2 255.0.0.0

R4(config-if)# no shutdown

R4(config-if)# exit

R4(config)# conf t router rip

R4(config-router)# network 40.0.0.0

R4(config-router)# network 20.0.0.0

→ Configuration of PC-PT

PC-PT0      ip > 10.0.0.2

subnet > 255.0.0.0

gateway > 10.0.0.1

PC-PT1      ip > 20.0.0.2

subnet > 255.0.0.0

gateway > 20.0.0.1

→ Output

Last Status	Source	Dest	Type
Successful	PC0	PC1	ICMP

Q2: For the above given scenario, configure the network using OSPF and verify the connectivity b/w the PCs

→ Configuration at R1

Router>en

Router# conf t

Router(config)# hostname R1

R1(config)# interface fastethernet 0/0

R1(config-if)# ip address 50.0.0.1 255.0.0.0

R1(config-if)# no shutdown

R1(config-if)# exit

R1( )# interface serial 0/0

R1(config-if)# ip address 30.0.0.1 255.0.0.0

R1(config-if)# clock rate 64000

R1(config-if)# bandwidth 64

R1(config-if)# no shutdown

R1(config-if)# exit

R1(config)# router OSPF 1

R1(config-router)# network 30.0.0.0

0.25.255.255 area0

## → Configuration at R2

Router &gt; en

Router # conf t

Router (config) # hostname R2

R2 (config) # interface fastethernet 0/0

R2 (config-if) # ip address 50.0.0.2

R2 (config-if) # no shutdown 255.0.0.0

R2 (config-if) # exit

R2 (config) # interface serial 0/0

R2 (config) # ip address 40.0.0.1 255.0.0.0

R2 (config-if) # no shutdown

R2 (config-if) # clock rate 64000

R2 (config-if) # bandwidth 64

R2 (config-if) # exit

R2 (config) # routes ospf 1

R2 (config-router) # network 50.0.0.0 0.255.

255.255

area 0

R2 (config-router) # network 40.0.0.0

0.255.255.255

area 0

→ Configuration at R3

Router > en

Router # config t

Router (config)# hostname R3

R3(config)# interface serial 0/1/0

R3(config-if)# ip address 30.0.0.2

R3(config-if)# no shutdown 255.0.0.0

R3(config-if)# exit.

R3(config)# interface fastethernet 0/0

R3(config-if)# ip address 40.0.0.2

255.0.0.0

R4(config-if)# no shutdown

R4(config-if)# ip address 20.0.0.1

25.0.0.0

R4(config-if)# no shutdown

R4(config-if)# exit

R4(config)# router OSPF 1

R4(config-router)# network 40.0.0.0

0.255.255.255

R4(config-router)# network 20.0.0.0 area 0

0.255.255.255

area 0.

DATE

## Configuration of PCs

PC-PT 0      ip: 10.0.0.2

Sub: 255.0.0.0

Gateway: 10.0.0.1

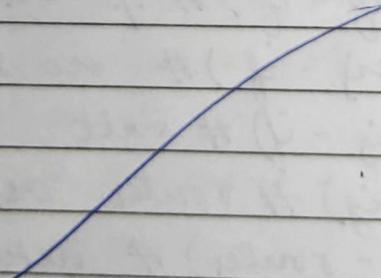
PC-PT 1      ip: 20.0.0.2

Subnet: 255.0.0.0

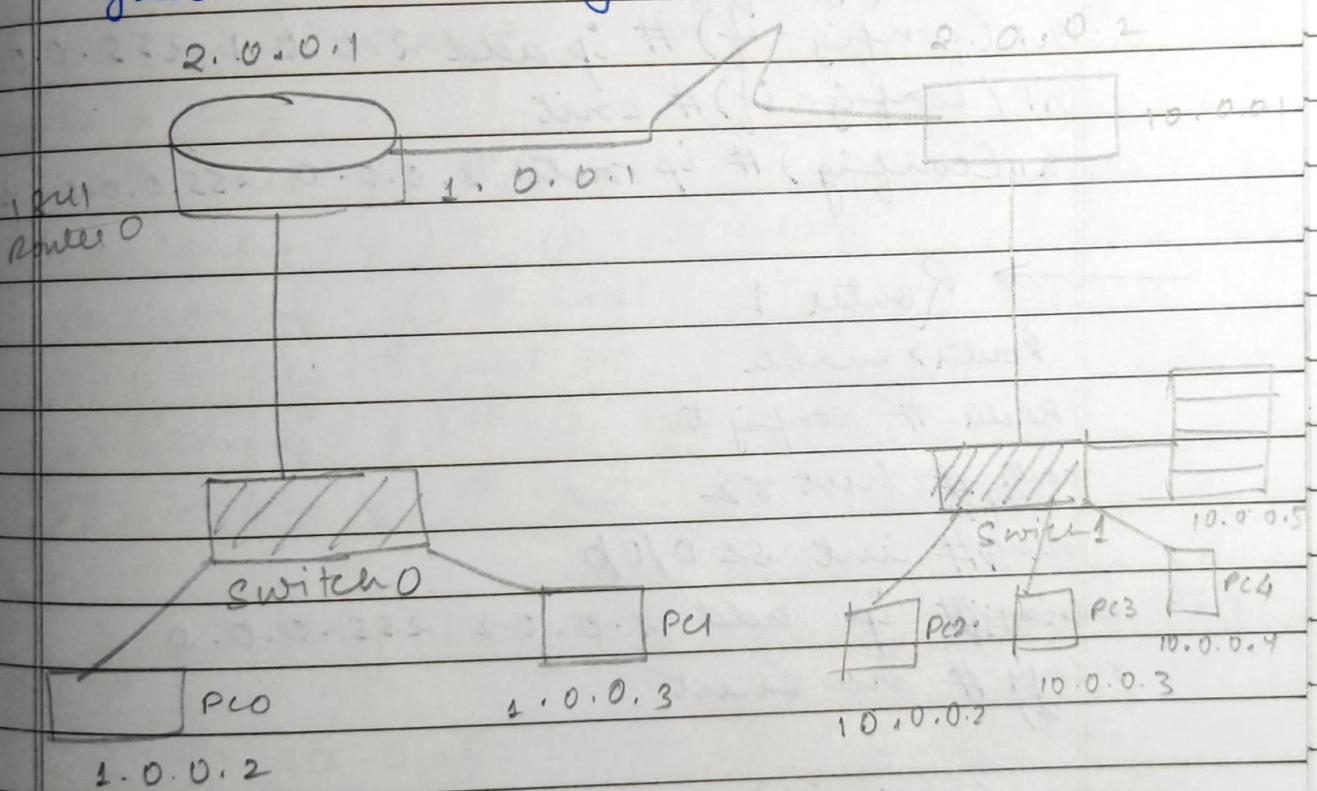
Gateway: 20.0.0.1

→ output

Last Status	Source	Dest	Type
Successful	PC0	PC 1	ICMP



1 Configure static NAT for below given scenario. Also ping a put IP address given mention your inference.



### NETWORK

1.0.0.0 public

2.0.0.0 public

10.0.0.0 put

→ Router 0

route # config t

Router (config) # host R1

R1 (config) # int fa0/0

R1 (config-if) # ip add 1.0.0.1 255.0.0.0

R1 (config-if) no shunt

```
r1(config-if)# exit  
r1(config)# int se0/0/0  
r1(config-if)# clock rate 64000  
r1(config-if)# ip add 2.0.0.1 255.0.0.0  
r1(config-if)# exit  
r1(config)# ip route 3.0.0.0 255.0.0.0 2.0.0.1
```

→ Router 1

```
Router> enable  
Router# config t  
router# host r2  
r2(config)# int se 0/0/b  
r2(config)# ip add 2.0.0.2 255.0.0.0  
r2(config)# no shut  
if)
```

```
r2(config-if)# exit  
r2(config)# int fa 0/0  
r2(config-if)# ip add 10.0.0.1 255.0.0.0  
r2(config-if)# no shut
```

→ ~~host~~ PVT to public

```
r2(config)# ip route 1.0.0.0 255.0.0.0  
2.0.0.1
```

```
r2(config)# ip nat inside source static  
10.0.0.2  
3.0.0.1
```

r2(config) # ip nat inside source static  
10.0.0.4  
3.0.0.4  
r2(config) # ip nat inside source static 10.0.0.5  
3.0.0.5  
r2(config) # exit  
r2 # config t  
r2# int fa 0/0  
r2(config-if) # ip nat inside  
r2(config-if) # exit  
r2(config) # int se 0/0/0  
r2(config-if) # ip nat outside  
r2(config-if) # exit.

D/P Now try to ping 10.0.0.1 from PC1

>ping 10.0.0.1

Reply from 1.0.0.1: Destination host

Reply from 1.0.0.1: Destination host unreachable.

Reply from 1.0.0.1: Destination host unreachable.

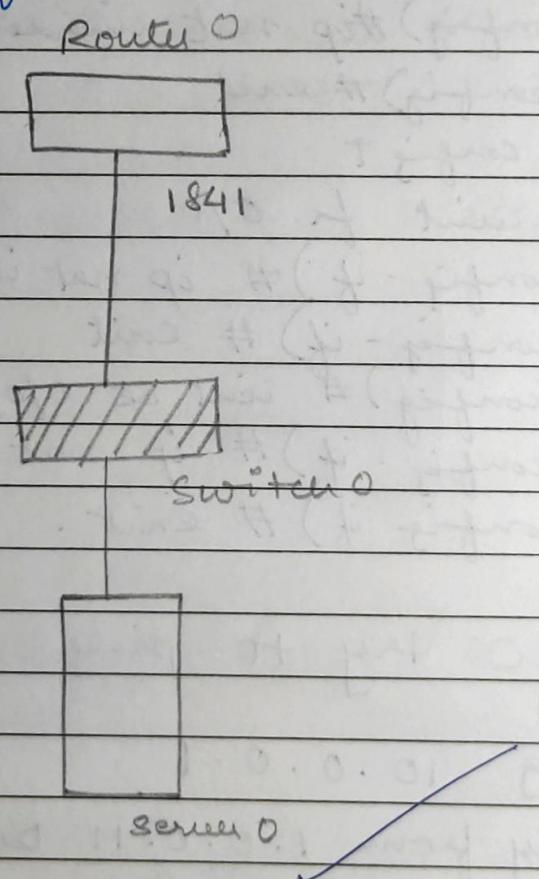
Reply from 1.0.0.1: Destination host unreachable.

ping statistics for 10.0.0.1:

packets: sent = 4, Received = 0,

lost = 4 (100% loss);

Q2: Perform NTP client server config for the below given topology



### Config ip on Router

Router > enable

Router > config t

Router (config) # host r1

r1 (config) # int fa 0/0

r1 (config-if) # ip add 1.0.0.1 255.0.0.0

r1 (config) # no shutdown

r1 (config) # exit

DATE

→ Now time before NTP config

ri# show clock

\* 0:8:25 : 144 UTC Mon May 1993

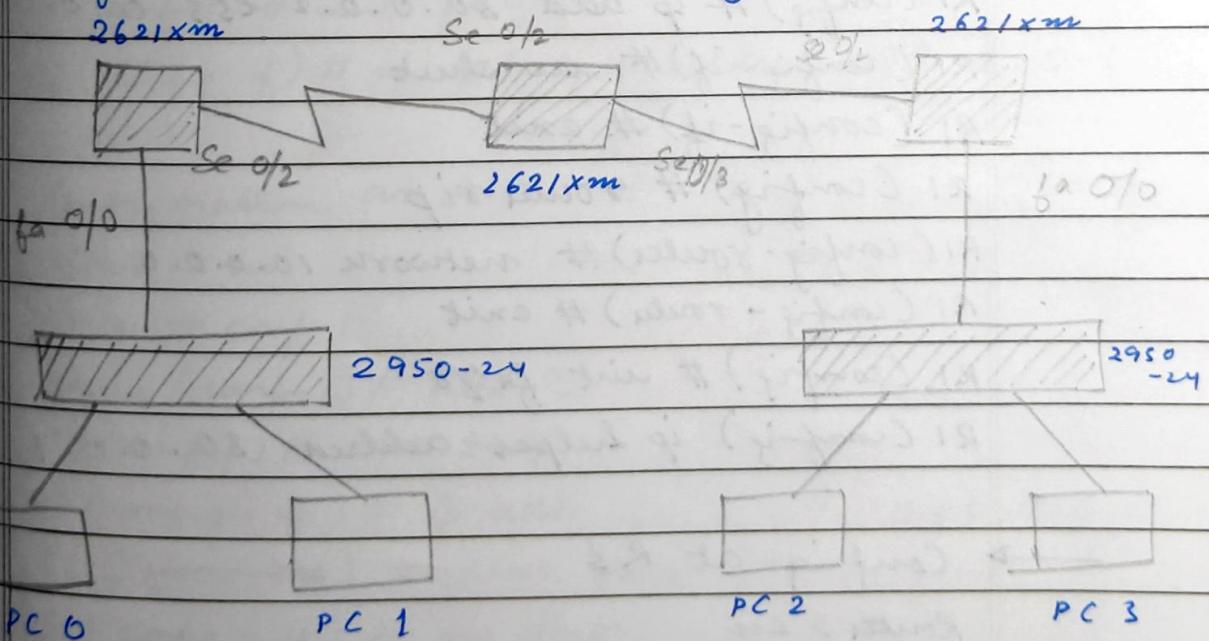
Now setup NTP client

ri# config t

ri(config)# ntp server 1.0.0.2

ri(config)# exit)

→ Configure DHCP for following topology



→ configuration at R1

Router > en

Router > conf t

Router (config) host R1

R1(config)# int fa 0/0

R1(config-if)# ip add 10.0.0.1 255.0.0.0

R1(config-if)# no shut

R1(config-if)# exit

R1(config)# int se 0/2

R1(config)# ip add 30.0.0.2 255.0.0.0

R1(config-if)# no shut

R1(config-if)# exit

R1(config)# router rip

R1(config-router)# network 10.0.0.0

R1(config-router)# exit

R1(config)# int fa 0/0

R1(config) ip helper-address 30.0.0.1

→ Config at R3

Router > en

Router # conf t

Router (config)# host R3

R3(config)# int fa 0/0

R3(config-if)# ip add 20.0.0.1 255.0.0.0

```
R3 (config-if) # no shut
R3 (config-if) # exit
R3 (config) # int se 0/2
R3 (config-if) # ip add 40.0.0.2 255.0.0.0
R3 (config-if) # no shut
R3 (config-if) # exit
R3 (config) # router rip
R3 (config-router) # network 20.0.0.0
R3 (config-router) # network 40.0.0.0
R3 (config) # int fa 0/0
R3 (config-if) # if ip helper address 40.0.0.1
```

→ Configuration at R2

```
Router > en
Router # conf t
Router (config) # host R2
R2 (config) # int se 0/2
R2 (config-if) # ip add 30.0.0.1 255.0.0.0
R2 (config-if) # clock rate 64000
R2 (config-if) # no shut
R2 (config-if) # exit.
```

R2 (config) # int Se 0/3  
R2 (config-if) # ip add 40.0.0.1 255.0.0.0  
R2 (config-if) # clock rate 64000  
R2 (config-if) # no shut  
R2 (config-if) # exit  
R2 (config) # router rip  
R2 (config-router) # network 30.0.0.0  
R2 (config-router) # network 40.0.0.0  
R2 (config) # exit  
R2 (config) # ip dhcp excluded-address  
                  10.0.0.1   10.0.0.20  
R2 (config) # ip dhcp pool leftpool  
R2 (dhcp-config) # network 10.0.0.0 255.0.0.0  
R2 (dhcp-config) # default-router 10.0.0.1  
R2 (dhcp-config) # dns-server 10.0.0.100  
R2 (dhcp-config) # exit  
R2 (config) # ip dhcp excluded-address 20.0.0.1  
                  20.0.0.20  
R (config) # ip dhcp pool rightpool  
R2 (dhcp-pool) # network 20.0.0.0  
                  255.0.0.0  
R2 (dhcp-pool) # default-router 20.0.0.1  
R2 (dhcp-pool) # dns-server 20.0.0.100  
R2 (dhcp-config) # exit

DATE

→ Output

Last status

Successful

Source

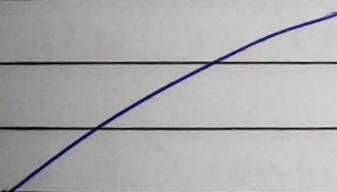
PC 0

Dest

PC 2

Type

ICMP



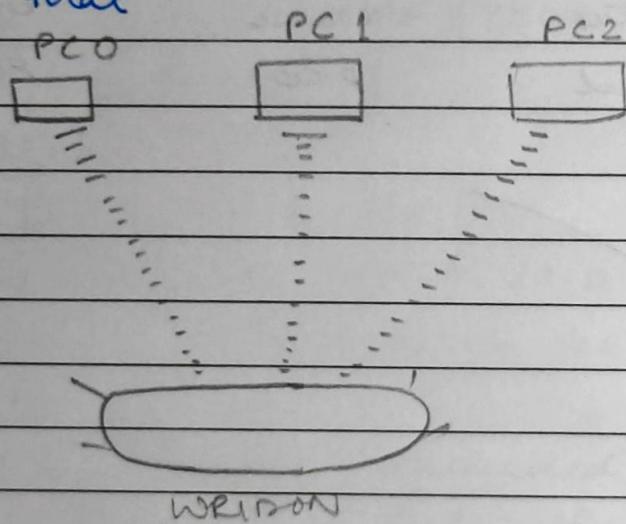
QH

LAB - 12

DATE

## WIRELESS & VOIP

- ① Given that



- ① DHCP is enabled
- ② IP pool is 192.168.0.100 to 192.168.0.150
- ③ PC are configured to receive IP from DHCP server.
- ④ No security
- ⑤ Default SSID is default.
- ⑥ Topology working on infrastructure mode
- ⑦ Def username and pw is admin
- ⑧ IP of wireless is 192.168.0.1

i) click router > config > internet > IP configuration > static

click on PC0 > Desktop > IP configuration > static

click on PC1 > Desktop > IP configuration > static

click on PC2 > Desktop > IP config > static

ii) Router > config > wireless > SSID > "MotherNetwork"

iii) Router > config > lan > IPv4 Address > 10.0.0.1

PC0 > Desktop > IP configuration > Static > IPv4 Address > 10.0.0.2

PC1 > Desktop > IP configuration > Static > IPv4 Address > 10.0.0.3

PC2 > Desktop > IP configuration > Static > IPv4 Address > 10.0.0.4

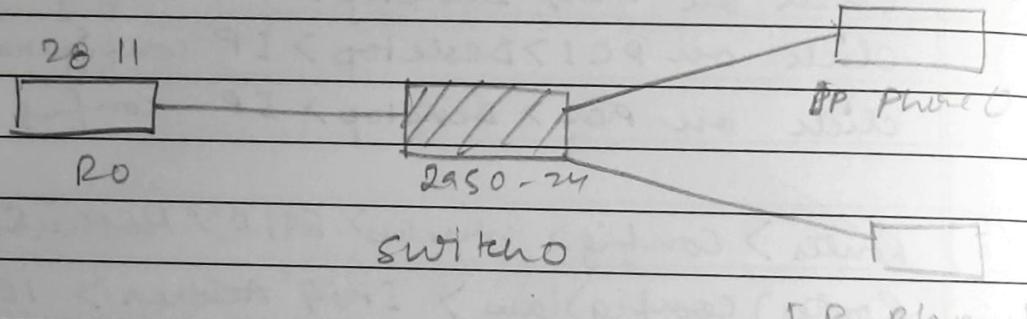
iv) Router > config > wireless > WEP > "123456789A"

v) PC0 > Desktop > PC wireless > Connect > Refresh > "MotherNetwork" > Connect > WEPkey 1: "123456789A"

PC1 > Desktop > PC wireless > Connect > Refresh > "MotherNetwork" > Connect > WEPkey 1: "123456789A"

PC2 > Desktop > PC wireless > Connect > Refresh > "MotherNetwork" > Connect > WEPkey 1: "123456789A"

② Configure the VoIP for given topology and call IP phone 1 from IP phone 0



(A) R0 :-

```
>en  
>conf t  
> host R0  
> int fa 0/0  
> ip address 10.0.0.1 255.0.0.0  
> no shut  
> exit  
> ip dhcp pool voip  
> network 10.0.0.0 255.0.0.0  
> default router 10.0.0.1  
> option 150 ip 10.0.0.1  
> exit.
```

> telephone service

> Max e-phone 5

> max-sn 5

> ip source-address 10.0.0.1 port 2000

> auto assign 1 to 6

> auto assign 1 to 5

> exit

> ephone du 1

> number 1234

> exit

> ephone du 2

> number 4321

> exit

Switch 0

> en

> Conf t

> host s0

> interface range 1 fa0/1-24)

> switchport mode access

> switchport voice VLAN 1

> exit

DATE

IP phone 1 → GUI dial 1234

other phone will ring → can receive

IP phone 0 → GUI dial 4321

other phone will ring call recd