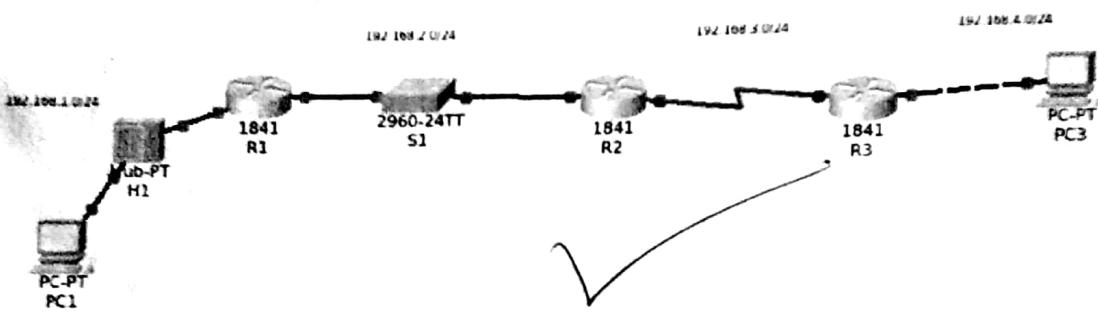


Aim → Basic command of routers : hostname, password,
show run, show IP int brief, assigning IP address to
interface



Aim → Basic command of routers: hostname, password, show run, show IP int brief, assigning IP address to interface

Objectives →

- Clear any existing configuration
- Configure the router using setup mode.
- Examine the results of using setup

→ Clear any existing configuration

① Access router R2

→ From the CLI terminal, enter privileged mode by issuing the "enable" command

→ Clear any existing config by issuing the command "erase setup-config" and confirm

→ Configure the router using setup mode

② Restart router R2

→ Restart the router using "reboot" command!

Teacher's Signature :

③ Use the configuration dialog

→ Confirm the use of the config dialog by entering 'yes'.

④ Enter basic management setup

→ Enter basic management setup by entering 'yes'

⑤ Configure the host name

→ Enter R2 for the host name

⑥ Configure the enable secret password

→ Enter 'cisco' for the enable secret

⑦ Configure the enable password

→ Enter 'cisco' for the enable password

⑧ Configure the virtual terminal password

→ Enter 'cisco' for vt password

⑨ Configure the router to use the management network.

→ Enter Fast Ethernet 0/0 for the interface name used to connect to the management network

⑩ Configure the interface

→ Confirm the configuration of IP on the interface

→ Enter 192.168.2.2 for the interface IP address.

→ Accept the default subnet mask

→ Accept the default to save this config to memory & exit

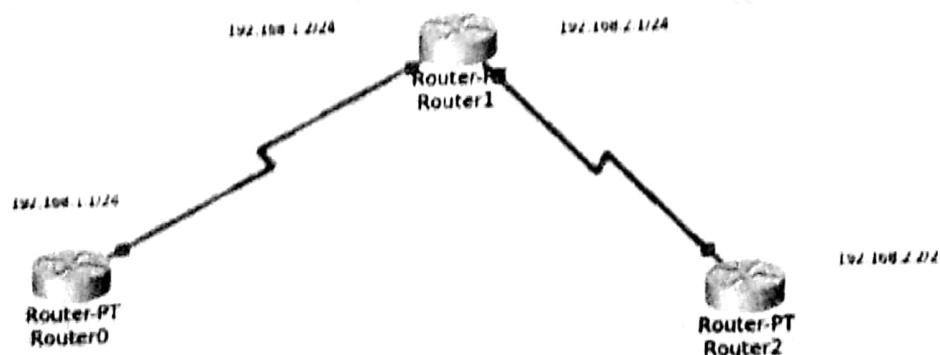
Examine the results of using setup

→ Enter privileged exec mode by issuing the 'enable' command & entering the password you set

→ Examine the new config by issuing 'show running-config'

Teacher's Signature

Ans To study static & default routing



Aim → To study static & default routing.

Objectives →

- Configure IP addresses on all routers to establish connectivity.
- Create a static route on router 0 to reach 192.168.2.0/24 network.
- Create a static route on router 2 to reach 192.168.1.0/24 network.
- Test connectivity by pinging router 2 from router 0.

→ Configure IP address on all routers

Router 0 →

```

r0 > enable
r0 # config terminal
r0(config)# int serial 2/0
r0(config-if)# ip address 192.168.1.2
                  255.255.255.0
                  # no shutdown
                  # end
    
```

Teacher's Signature:

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Router 1 →

```
r1 > enable
r1 # config terminal
r1(config)# int serial 2/0
r1(config-if)# ip address 192.168.1.2
              255.255.255.0
# no shutdown
# int serial 3/0
# ip address 192.168.2.1
              255.255.255.0
# no shutdown
# end
```

Router 2 →

```
r2 > enable
r2 # config terminal
r2(config)# int serial 2/0
r2(config-if)# ip address 192.168.2.2
              255.255.255.0
# no shutdown
# end.
```

Teacher's Signature:

→ Create a static route on router 0 to reach
192.168.2.0/24 network

```
r0> enable
r0# config t
r0(config)# ip route 192.168.2.0 255.255.255.0
               serial 2/0
# end
```

→ Create a static route on router 2 to reach
192.168.1.0/24 network

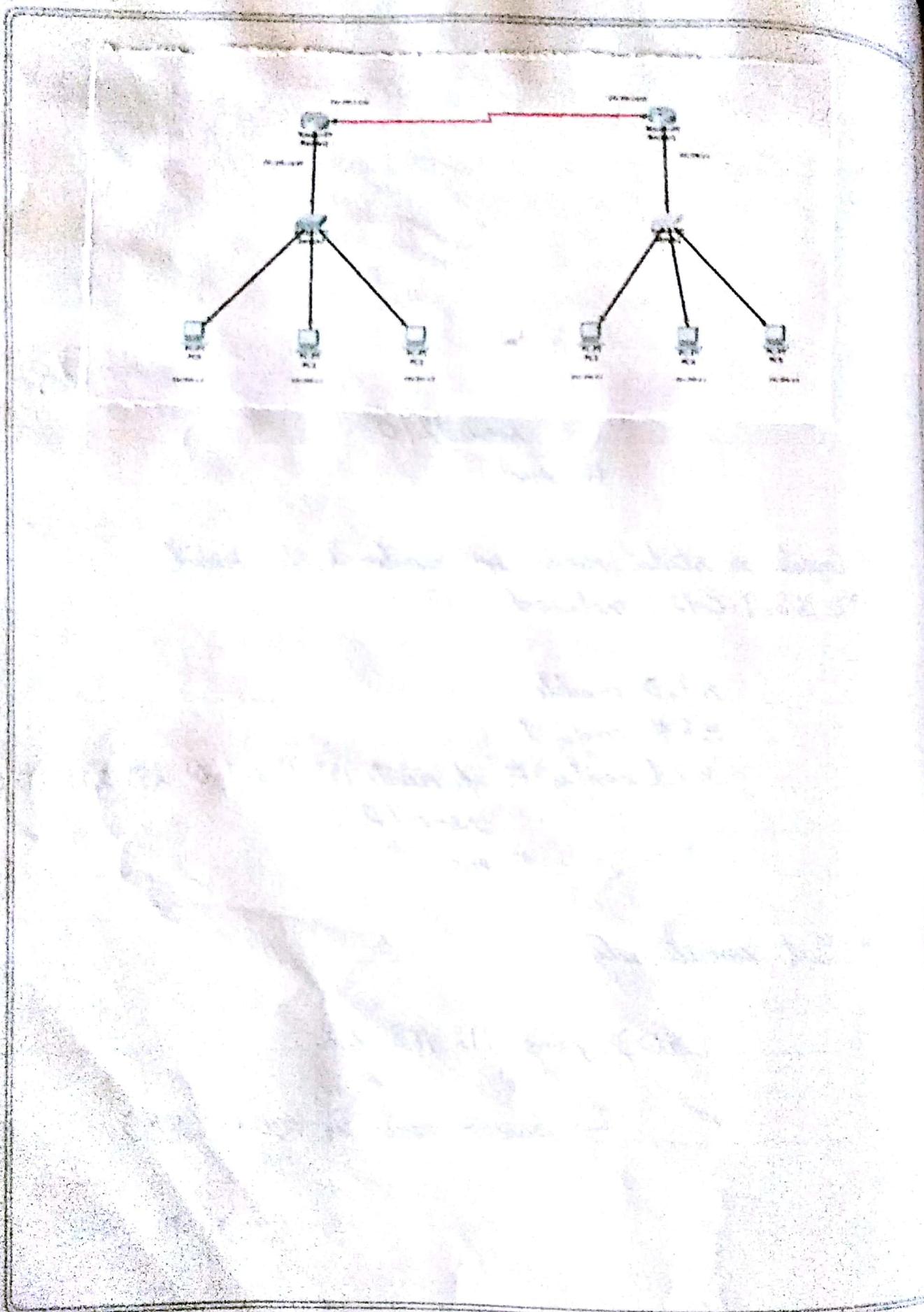
```
r2> enable
r2# config t
r2(config)# ip route 192.168.1.0 255.255.255.0
               serial 2/0
# end
```

→ Test connectivity

```
r0> ping 192.168.2.2
```

→ Success rate is 100% (5/5).

Teacher's Signature :





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Default Routing →

Objectives →

- Create a default route from router 2 to reach network 192.168.3.0
- Create a default route from router 1 to reach ~~router 2~~ network 192.168.1.0
- Ping to verify.

→ Create a default route from router 2 to reach network 192.168.3.0

r2(config)# ip route 0.0.0.0 0.0.0.0
192.168.2.2

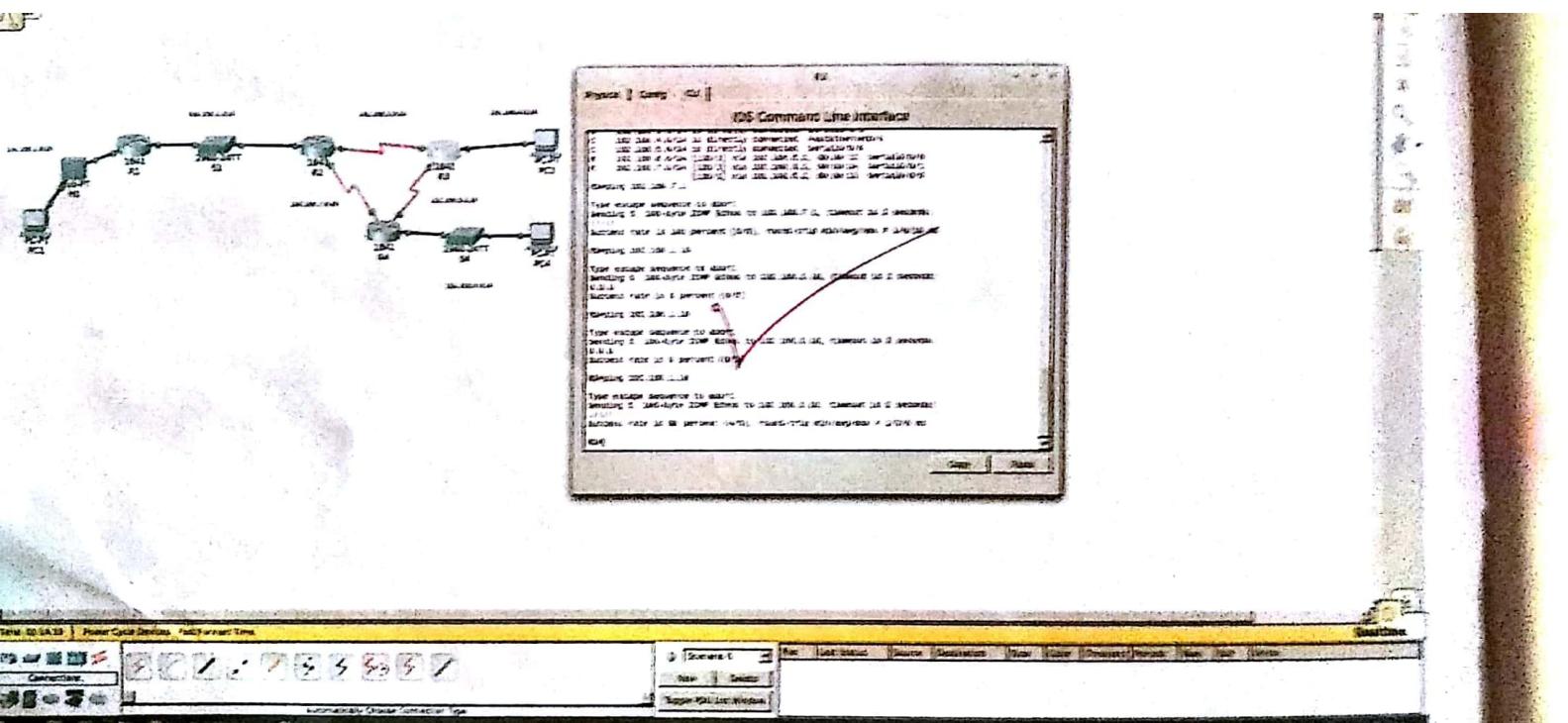
→ Create a default route from router 1 to reach 192.168.1.0

r1(config)# ip route 0.0.0.0 0.0.0.0
192.168.2.1

→ Ping (from PC 0 to PC 3)

ping 192.168.3.2 → Sent = 4 Received = 4 Lost = 0

Teacher's Signature :



Aim → To perform dynamic routing using RIP

Objectives →

- Enable RIP on R2, R3 & R4
- Verify Routing tables on each router
- Establish a static route on R2 to reach R1
- Ping PC1 from R3

→ Enable RIP ~~on~~ R2, R3 & R4

R2 →

```
R2 (config)# router rip
R2 (config-Router)# network 192.168.2.0
R2 (config-Router)# network 192.168.3.0
#           "           192.168.7.0
```

R3 →

```
R3 (config)# router rip
R3 (config-Router)# network 192.168.3.0
"           192.168.5.0
"           192.168.7.0
```

R4 →

R4 (Config) # router rip

R4 (Config-Router) # network 192.168.5.0

" 192.168.6.0

" 192.168.7.0

→ Verify routing table on each router

On every router one by one enter
the following command to verify the
routing table →

✓ "Show IP route"

→ Establish a static route on R2 to reach R1

R2 (Config) # ip route 192.168.1.0

255.255.255.0 FastEthernet 0/1

end

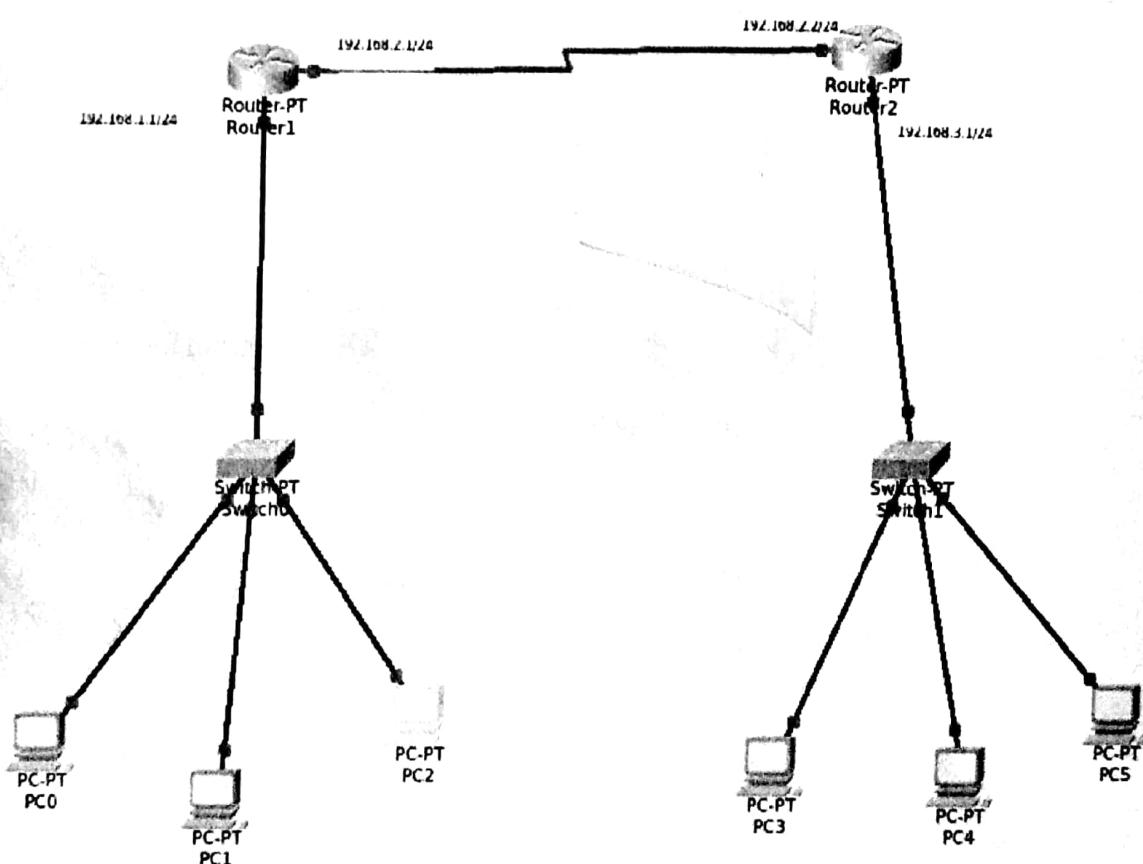
→ Ping PC 1 from R3

R3 > Ping 192.168.1.10

→ Success rate is 80% (4/5).

Teacher's Signature :

Aim → Performing Dynamic routing using EIGRP



Aim → To perform dynamic routing using EIGRP

Objectives →

- Enable EIGRP on routers 1 & 2
- Verify routing tables on each router
- ping PC4 from PC1

→ Enable EIGRP on routers 1 & 2

R1 →

```
R1 (config) # router EIGRP  
# network 192.168.1.0  
# network 192.168.2.0  
# End
```

R2 →

```
R2 (config) # router EIGRP  
# network 192.168.3.0  
# network 192.168.2.0
```

→ Verify Routing Tables →

R1 → R1 # show ip route

R2 → R2 # show ip route

Teacher's Signature : _____



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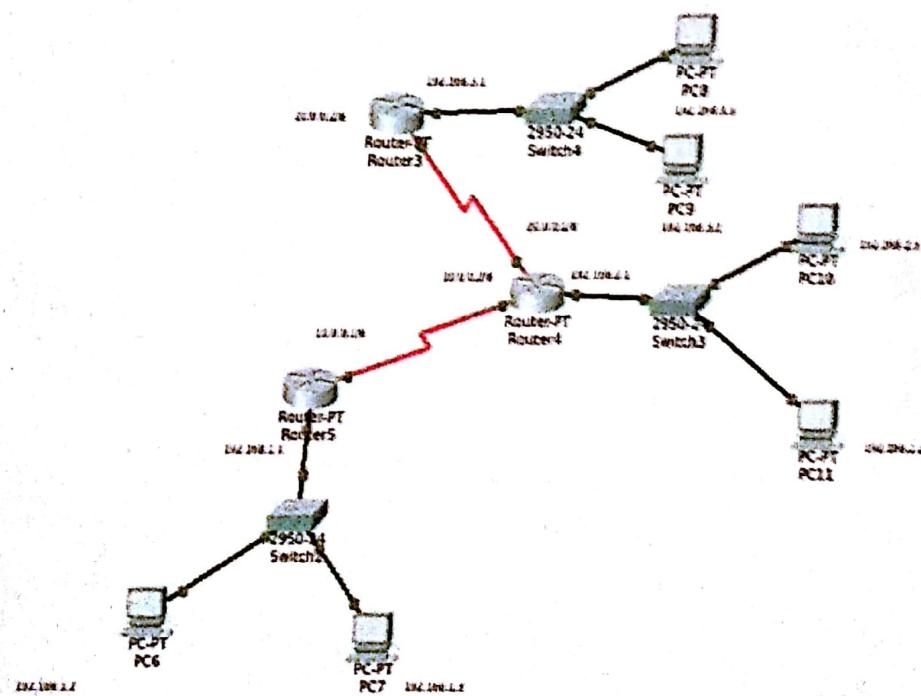
→ Ring PC 4 from PC 1

- Click on PC 4
- Click on Command Prompt
- Ring 192.168.3.3

✓ Sent = 4, Received = 4, Lost = 0

Teacher's Signature :

Aim → To perform dynamic routing using OSPF
with single area.



Aim → To perform dynamic routing using OSPF with single area.

Objectives →

- Enable OSPF on routers 3, 4 & 5
- Verify routing table on each router
- Ping PC 9 from PC 7

→ Enable OSPF on routers 3, 4 & 5

R3 →

```
R3(config)# router OSPF 1  
# network 192.168.3.0 0.0.0.255  
      area 0  
# network 20.0.0.0 0.255.255.255  
      area 0  
# end
```

R4 →

```
R2(config)# router OSPF 1  
# network 192.168.2.0 0.0.0.255  
      area 0  
# network 20.0.0.0 0.255.255.255  
      area 0  
# network 10.0.0.0 0.255.255.255  
      area 0
```

Teacher's Signature :

R5 →

R5 (config)# router OSPF 1

network 10.0.0.0 0.0.0.255 area 0

network 192.168.1.0 0.255.255.255 area 0

end

→ Verify routing table on each router

On every router type the command
'show ip route' in the CLI tab

→ Ping PC9 from PC7

→ Open PC7

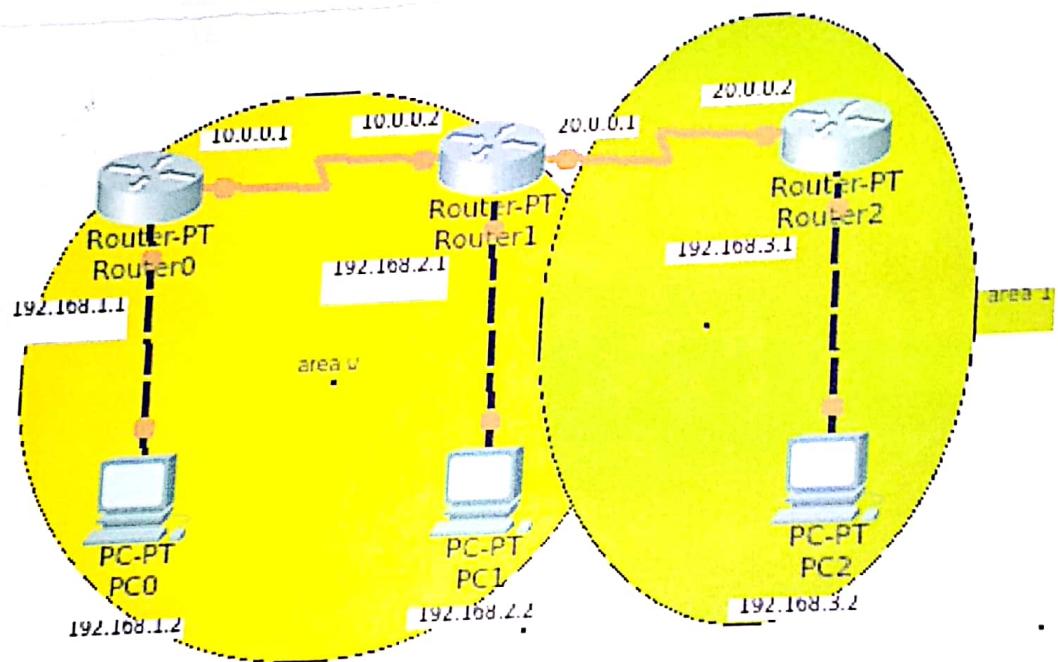
→ Select Command Prompt

→ Enter Ping A2.168.3.2

→ sent = 4, received = 4, lost = 0

Teacher's Signature :

Aim → Perform Dynamic Routing using OSPF with multiple area concept.



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Aim → Perform Dynamic Routing using OSPF with multiple area concept.

Objectives →

- Enable OSPF on routers R0, R1 & R2
- Assign PC0 & 1 to area 0 & PC2 to area 1
- Verify routing tables
- Ping PC2 from PC0 in area 0

→ Enable OSPF on routers R0, R1 & R2 →

R0 →

r0(config)# router OSPF

R1 →

r1(config)# router OSPF

R2 →

r2(config)# router OSPF

→ Assign PC0 & 1 to area 0 & PC2 to area 1 →

R0 →

r0(config-network)# network 10.0.0.0

~~0.0.0~~ 0.255.255.255

area 0

Teacher's Signature :

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R0 (config-network) # network 192.168.1.0 0.0.0.255
area 0

R1 →

R1 (config-network) # network 10.0.0.0
0.255.255.255 area 0
network 20.0.0.0 0.255.255.
255 area 1
network 192.168.2.0 ~~0.0.0.255~~
0.0.0.255

R2 →

R2 (config-network) # network 20.0.0.0
0.255.255.255 area 1
network 192.168.3.0
0.0.0.255 area 1

→ Verify Routing Tables →

On every router run the command 'show ip route' one by one & check the routing table.

Teacher's Signature :

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→ Ping PC2 from PC0 in area 0 →

Ping 192.168.3.1
→ sent = 4, received = 4, lost = 0