WEEK-END ASSIGNMENT-12

Computer Networking Workshop (CSE 4541)

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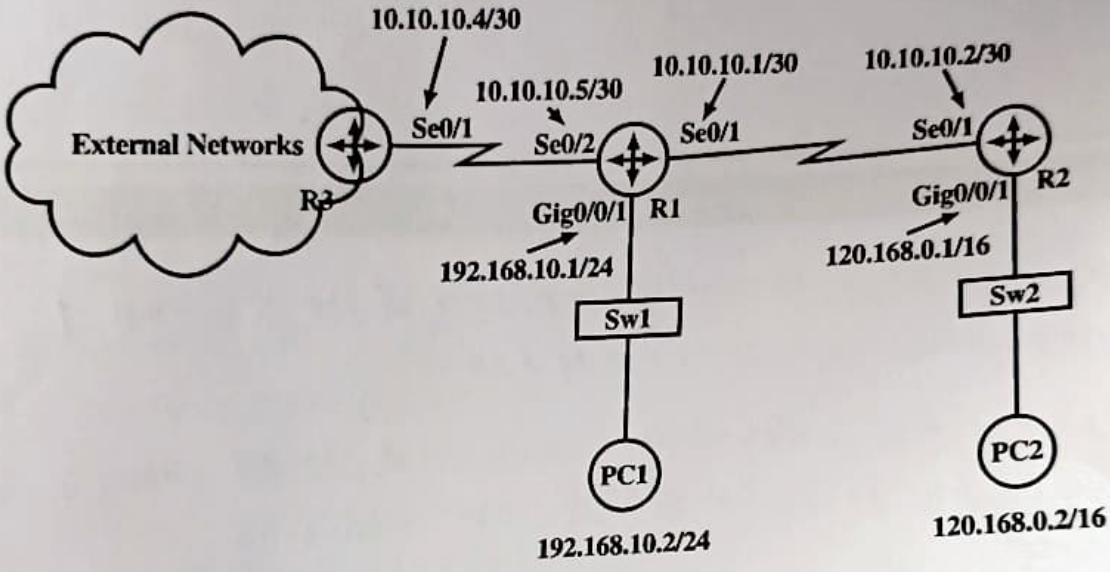
Course Outcome: CO_3 **Program Outcome:** PO_4 **Learning Level:** L_4

Routing Protocol

In this exercise, you will use Static and RIP (dynamic routing) to make communication possible. Considering R3 to be the destination for other networks which are not available in internal network:

Network topology



Commands used in Router R1 for Static routing **Remarks**

R1 > enable
R1# conf t
R1 (config)# ip route 10.10.10.4 255.255.255.252
R1 (config)# ip route 192.168.0.0 10.10.10.4 255.255.0.0
10.10.10.2
R1 (config)# do write
R1 (config)# end

Commands used in Router R2 for Static routing	Remarks
R2 > enable R2 # config t R2 (config) # ip route 192.168.10.0 255.255.255.0 10.10.10.1 R2 (config) # ip route 10.10.10.4 255.255.255.252 10.0.10.10.1	

Find routing table in R1 for Static routing	Remarks
Router R1 is directly connected to R3 on 1 hop with ip 10.10.10.4/20 Router R2 is directly connected to R1 on 1 hop with 10.10.10.2/30 on network 120.168.0.0	

Find routing table in R2 for Static routing	Remarks
Router R1 is directly connected to R2 on 1 hop with ip 10.10.10.1 on network Router R3 is 192.168.10.0 connected distantly to R2 on 2 hops with next hop ip 10.10.10.1	

Now, consider adding RIP routing instructions to the routers ;

Commands used in Router R1 for RIP routing — **Remarks**

```
R1 >enable
R1 #config t
R1 (config)# router rip
R1 (config)# version 2
R1 (config)# network 10.10.10.4
R1 (config)# network 10.10.10.0
R1 (config)# network 120.168.0.0
R1 (config)# do wr
R1 (config)# exit
```

Commands used in Router R2 for RIP routing — **Remarks**

```
R2 >enable
R2 # config t
R2 (config)# router rip
R2 (config)# version 2
R2 (config)# network 120.168.0.0
R2 (config)# network 10.10.10.0
R2 (config)# do wr
R2 (config) exit
```

Find updated routing table for router R1 — **Remarks**

As per the routing table Router R1 is connected to 5 networks by:-

10.10.10.0 → directly via Se 0/1
10.10.10.4 → directly via Se 0/2
192.168.10.0 → gig 0/0/1 directly
120.168.0.0 → distantly on 1 hop.
External network → distantly on 1 hop.

Find updated routing table for router R2

Remarks

As of the updated routing table of Router R2 it is connected to 5 networks by:-
120.168.0.0 → directly via gig 0/0/1.
10.10.10.0 → directly via s0/0/1
10.10.10.4 → distantly on 1 hops via s0/0/1
192.168.10.0 → distantly on 1 hops via s0/0/1
external network → distantly on 2 hops.

What changes are you able to observe in routing tables ? Give the reason for your observation:

Observation & Reasoning

Remarks

In using the rip protocol all the direct & distant network details are shared via the rip protocol and after the configuration every router in the network has these details.

Now you want to change the administrative distance of static routing in R1 to 200.

Commands used in R1

Remarks

```
R1>enable
R1#conf t
R1(config)#ip route 120.168.0.0 0.0.0.15
R1(config)#end
R1#copy running-config startup-config
```

What changes you observed in routing table of R1? Give reason for such observation;

Observation & Reasoning	Remarks
Static route in R1 directs traffic to external network (192.168.10.0/24) via R2. RIP created dynamic routes to other network learned from neighbouring routers.	

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21/11/2000