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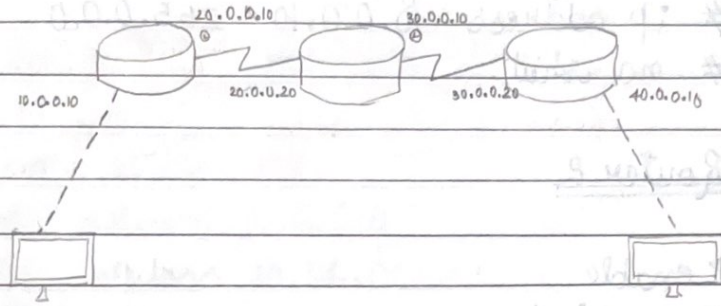
Date: Page:

# ROUTING INFORMATION PROTOCOL

AIM: Configure RIP routing Protocol in Routers

Topology:




Procedure:

- Place 2 PT-PC's and three routers onto the logical interface.
- Connect the router to one another using serial DCE.
- Connect the routers to PT-PC's using copper cross over.
- set ip address and gateways on PT-PC's.
  10.0.0.1 10.0.0.10

Setting router 1
Router > enable
Router # configure t
# interface Fast Ethernet 0/0
# ip address 10.0.0.10 255.0.0.0
# exit
# interface serial 2/0
# ip adress 20.0.0.10 255.0.0.0
# exit
# interface serial 2/0

# ip address 20.0.0.10 255.0.0.0
# encapsulation ppp
# clock rate 64000
# no shut.
# interface fastethernet 0/0
# ip address 10.0.0.10 255.0.0.0
# no shut.

Router 2

> enable
# config t.
# interface serial 2/0
# ~~exit~~ # exit ip address 20.0.0.20 255.0.0.0
# interface serial 3/0
# ip address 30.0.0.10 255.0.0.0
# encapsulation ppp
# clock rate 64000
# no shut
# exit.
# interface serial 2/0
# ip address 20.0.0.20 255.0.0.0
# encapsulation ppp
# no shut.

Router 3
# interface Serial 3/0
# ~~exit~~ ip address 30.0.0.20 255.0.0.0
# exit
# interface Fast Ethernet 0/0
# ip address 40.0.0.10 255.0.0.0
# no shut.

# exit
# interface serial 3/0
# ip address 30.0.0.20 255.0.0.0
# encapsulation ppp
# no shut

Router rip for Router 1
# exit
# router rip
# network 10.0.0.0
# network 20.00.0
# exit.

Router rip for Router 2
# exit
# router rip
# network 20.0.0.0
# network 30.0.0.0
# exit.

Router rip for Router 3
# exit
# router rip
# network 30.0.0.0
# network 40.0.0.0
# exit.
# exit

Router route for Router 3
# show ip route
Gateway of last resort is not set
R 10.0.0.0/8 [120/2] via

PC> Ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data

Reply from 10.0.0.1 : bytes = 32 time=14 ms TTL=125
Reply from 10.0.0.1 : bytes = 32 time=14ms TTL=125
Reply from 10.0.0.1 : bytes = 32 time= 11ms TTL=125
Reply from 10.0.0.1 : bytes = 32 time = 9ms TTL=125

Ping statistics. for 10.0.0.1:
Packets : sent = 4, Recieved = 4, Lost = 0(0% loss)
Approximate round trip times in milliseconds:
Minimum = 9ms, Max = 14ms, Avg = 12ms

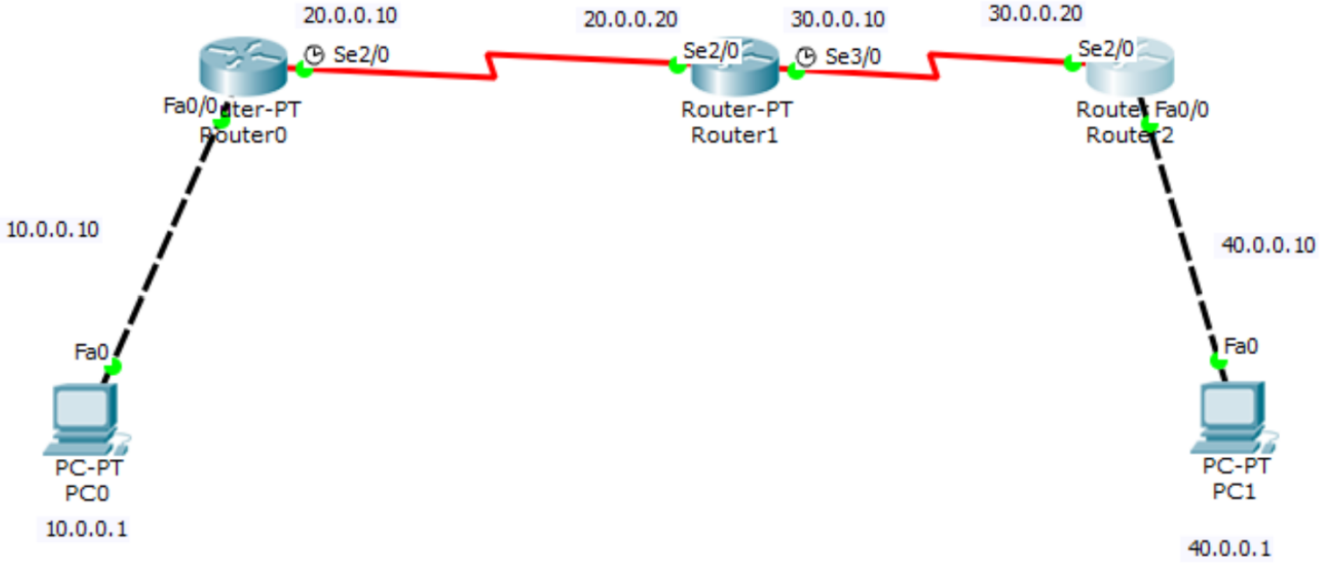
Router route for Router3
# show ip route

Gateway of last resort is not set.

R 10.0.0.0/8 [120/2] via 3.0.0.10, 00:00:05, Serial 3/0
R 20.0.0.0/8 [120/1] via 30.0.0.10. 00:00:05, serial 3/0
30:0.0.0/8 is directly variably subnetted subnets, 2 masks

10/0
N
25/7/23

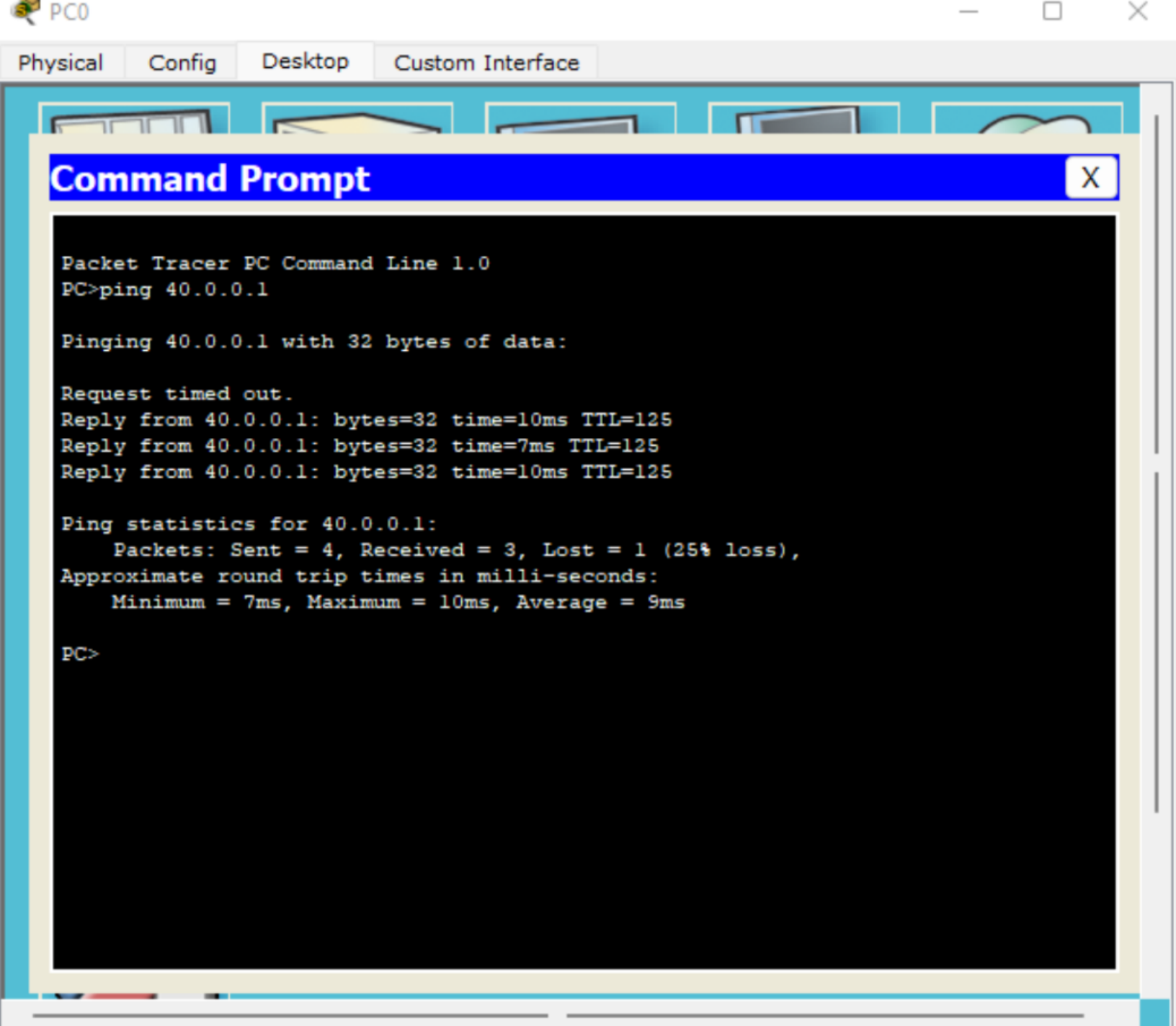
C 30.0.0.0/8 is directly connected, to serial 3/0
C 30.0.0.10/32 is directly connected, serial 3/0
C 40.0.0.0/8 is directly connected, FastEthernet 0/0.


20.0.0.10
Se2/0
20.0.0.20
Se2/0
30.0.0.10
Se3/0
30.0.0.20
Se2/0
Fa0/0
Router-PT
Router0
Router-PT
Router1
Router-PT
Router2
Fa0/0
10.0.0.10
40.0.0.10
Fa0
Fa0
PC-PT
PC0
PC-PT
PC1
10.0.0.1
40.0.0.1

```
Router#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C    10.0.0.0/8 is directly connected, FastEthernet0/0
     20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       20.0.0.0/8 is directly connected, Serial2/0
C       20.0.0.20/32 is directly connected, Serial2/0
R    30.0.0.0/8 [120/1] via 20.0.0.20, 00:00:18, Serial2/0
R    40.0.0.0/8 [120/2] via 20.0.0.20, 00:00:18, Serial2/0
Router#
```

```
Router#
%LINK-5-CHANGED: Interface Serial3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 20.0.0.0
Router(config-router)#network 30.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/1] via 20.0.0.10, 00:00:20, Serial2/0
     20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       20.0.0.0/8 is directly connected, Serial2/0
C       20.0.0.10/32 is directly connected, Serial2/0
     30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       30.0.0.0/8 is directly connected, Serial3/0
C       30.0.0.20/32 is directly connected, Serial3/0
R    40.0.0.0/8 [120/1] via 30.0.0.20, 00:00:19, Serial3/0
Router#
```

```
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#network 30.0.0.0
                   ^
% Invalid input detected at '^' marker.

Router(config)#router rip
Router(config-router)#network 30.0.0.0
Router(config-router)#network 40.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

R    10.0.0.0/8 [120/2] via 30.0.0.10, 00:00:14, Serial2/0
R    20.0.0.0/8 [120/1] via 30.0.0.10, 00:00:14, Serial2/0
     30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       30.0.0.0/8 is directly connected, Serial2/0
C       30.0.0.10/32 is directly connected, Serial2/0
C    40.0.0.0/8 is directly connected, FastEthernet0/0
Router#
```


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Request timed out.
Reply from 40.0.0.1: bytes=32 time=10ms TTL=125
Reply from 40.0.0.1: bytes=32 time=7ms TTL=125
Reply from 40.0.0.1: bytes=32 time=10ms TTL=125
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 7ms, Maximum = 10ms, Average = 9ms
PC>