

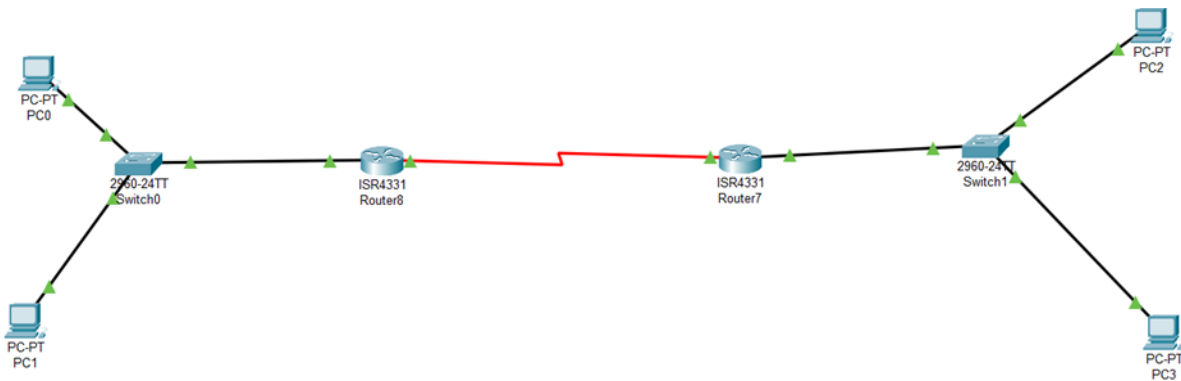
National University of Computer & Emerging Sciences, Karachi

Spring -2023 CL3001-Computer Networks Lab 09

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Routing Protocol:



Router 0:

```
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface se0/1/0
Router(config-if)#ip address 15.0.0.1 255.0.0.0
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to down
Router(config-if)#interface g0/0/0
Router(config-if)#ip address 10.0.0.10 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed
state to up

%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed state to
up

Router(config-if)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 15.0.0.0
Router(config-router)#exit
Router(config)#show ip protocol
^
```

Router 1:

```
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface s0/1/0
Router(config-if)#ip address 15.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

Router(config-if)#interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed st
Router(config-if)#interface g0/0/0
Router(config-if)#ip address 20.0.0.10 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, chang
state to up

Router(config-if)#router rip
Router(config-router)#network 15.0.0.0
Router(config-router)#network 20.0.0.0
Router(config-router)#
```

PC:

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	10.0.0.1
Subnet Mask	255.0.0.0
Default Gateway	10.0.0.10
DNS Server	0.0.0.0

Ping:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.1: bytes=32 time=13ms TTL=126
Reply from 20.0.0.1: bytes=32 time=2ms TTL=126
Reply from 20.0.0.1: bytes=32 time=2ms TTL=126

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 13ms, Average = 5ms

C:\>
```

```
Router#show ip protocol
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 23 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 1, receive any version
  Interface          Send Recv Triggered RIP Key-chain
GigabitEthernet0/0/0 12 1
Serial0/1/0          12 1
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
  10.0.0.0
  15.0.0.0
Passive Interface(s):
Routing Information Sources:
  Gateway            Distance            Last Update
  15.0.0.2            120                00:00:04
Distance: (default is 120)
Router#show ip route
```

OSPF Protocol:

```
Router>
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ospf 1
      ^
% Invalid input detected at '^' marker.

Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.255.255.255 area 0
Router(config-router)#network 15.0.0.0 0.255.255.255 area 0
Router(config-router)#
00:27:42: %OSPF-5-ADJCHG: Process 1, Nbr 20.0.0.10 on Serial0/1/0 from
LOADING to FULL, Loading Done
```

```
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2
Router(config-router)#network 15.0.0.0 0.255.255.255 area 0
Router(config-router)#network 20.0.0.0 0.255.255.255 area 0
Router(config-router)#
00:38:46: %OSPF-5-ADJCHG: Process 2, Nbr 15.0.0.1 on Serial0/1/0 from LOADING
to FULL, Loading Done
```

```
Router#show ip ospf
Routing Process "ospf 2" with ID 20.0.0.10
Supports only single TOS(TOS0) routes
Supports opaque LSA
SPF schedule delay 5 secs, Hold time between two SPFs 10 sec
Minimum LSA interval 5 secs. Minimum LSA arrival 1 secs
Number of external LSA 0. Checksum Sum 0x000000
Number of opaque AS LSA 0. Checksum Sum 0x000000
Number of DCbitless external and opaque AS LSA 0
Number of DoNotAge external and opaque AS LSA 0
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
External flood list length 0
  Area BACKBONE(0)
    Number of interfaces in this area is 2
    Area has no authentication
    SPF algorithm executed 1 times
    Area ranges are
    Number of LSA 2. Checksum Sum 0x00cab4
    Number of opaque link LSA 0. Checksum Sum 0x000000
    Number of DCbitless LSA 0
    Number of indication LSA 0
    Number of DoNotAge LSA 0
    Flood list length 0
```