Computer Networks: Lab Record

Week: 2

Experiment 2: Single Router Configuration

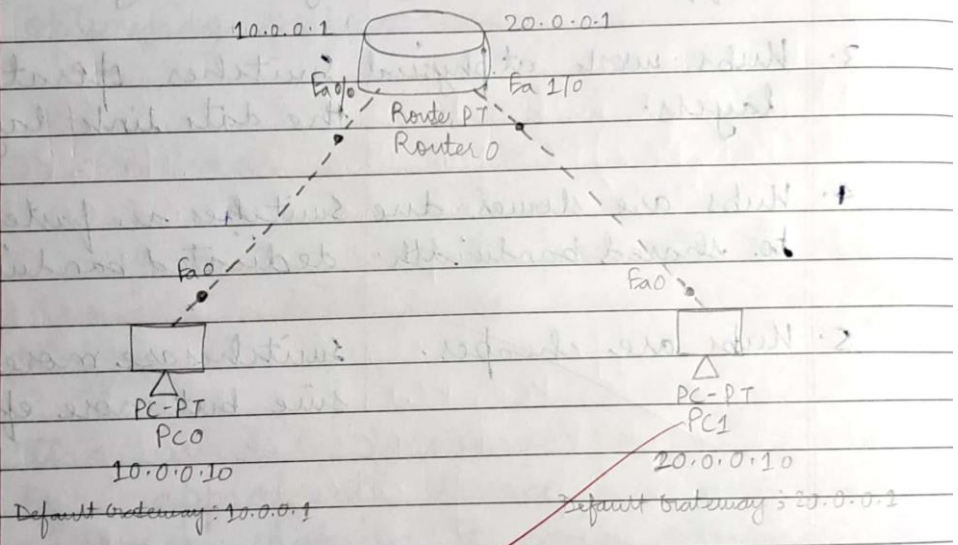
Create a network consisting of 2 PCs connected to a Router and observe the behaviour of data transmission using router.

Observation:

Lab :- 2

Aim :- To create a network consisting of 2 PCs connected to a routers. This connection will help observe the behaviours of data transmission using router.

⇒ Topology :-



1. PC0 :- connected to router's interface Fa 0/0 using a cross-over scale.
   IP address :- 10.0.0.10
   Default Gateway :- 10.0.0.1

2. PC1 :- connected to the router's interface Fa 1/0 using a cross-over scale.
   IP address :- 20.0.0.10
   Default Gateway :- 20.0.0.1

~~Lab: 2~~

3. Router :)
   Interface Fa 0/0 connected to PC0
   Interface Fa 1/0 connected to PC1
   IP address of Fa 0/0: 10.0.0.1
   IP address of Fa 1/0: 20.0.0.1

⇒ Procedure :- Two PCs (PC0 and PC1) are assigned with IP address 10.0.0.10 & 20.0.0.20 & gateway 10.0.0.1 & 20.0.0.1. respectively.

② Open CLI in router & enter the following :-

```
Router > enable
Router # config terminal
Router (config)# interface fastethernet 0/0
Router (config-if)# ip address 10.0.0.1 255.0.0.0
Router (config-if)# no shutdown.
exit

Router (config)# interface fastethernet 1/0
Router (config-if)# ip address 20.0.0.1 255.0.0.0
Router (config-if)# no shutdown.
exit
```

③ Ping another system or interface from the command prompt of PC0 or PC1 using command prompt.

```
> ping 20.0.0.10.
```

⇒ Observation :-

Command prompt gives output

Pinging 20.0.0.10 with 32 bytes of data:

Reply from 20.0.0.10 : bytes = 32 time = 0 ms TTL = 127
Reply from 20.0.0.10 : bytes = 32 time = 0 ms TTL = 127
Reply from 20.0.0.10 : bytes = 32 time = 0 ms TTL = 127
Reply from 20.0.0.10 : bytes = 32 time = 0 ms TTL = 127

Ping statistics for 20.0.0.10 :

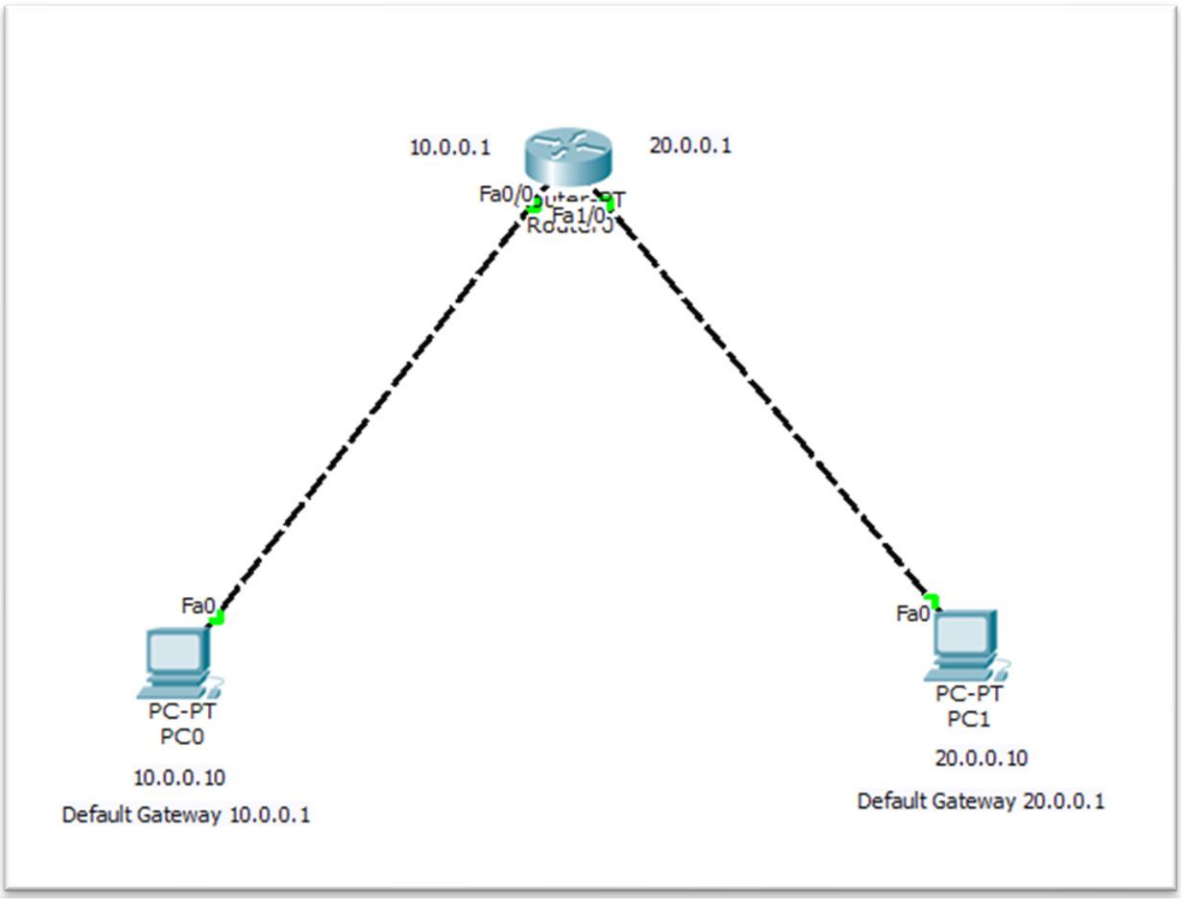
Packets : Sent = 4, Received = 4, Lost = 0 (0% loss),

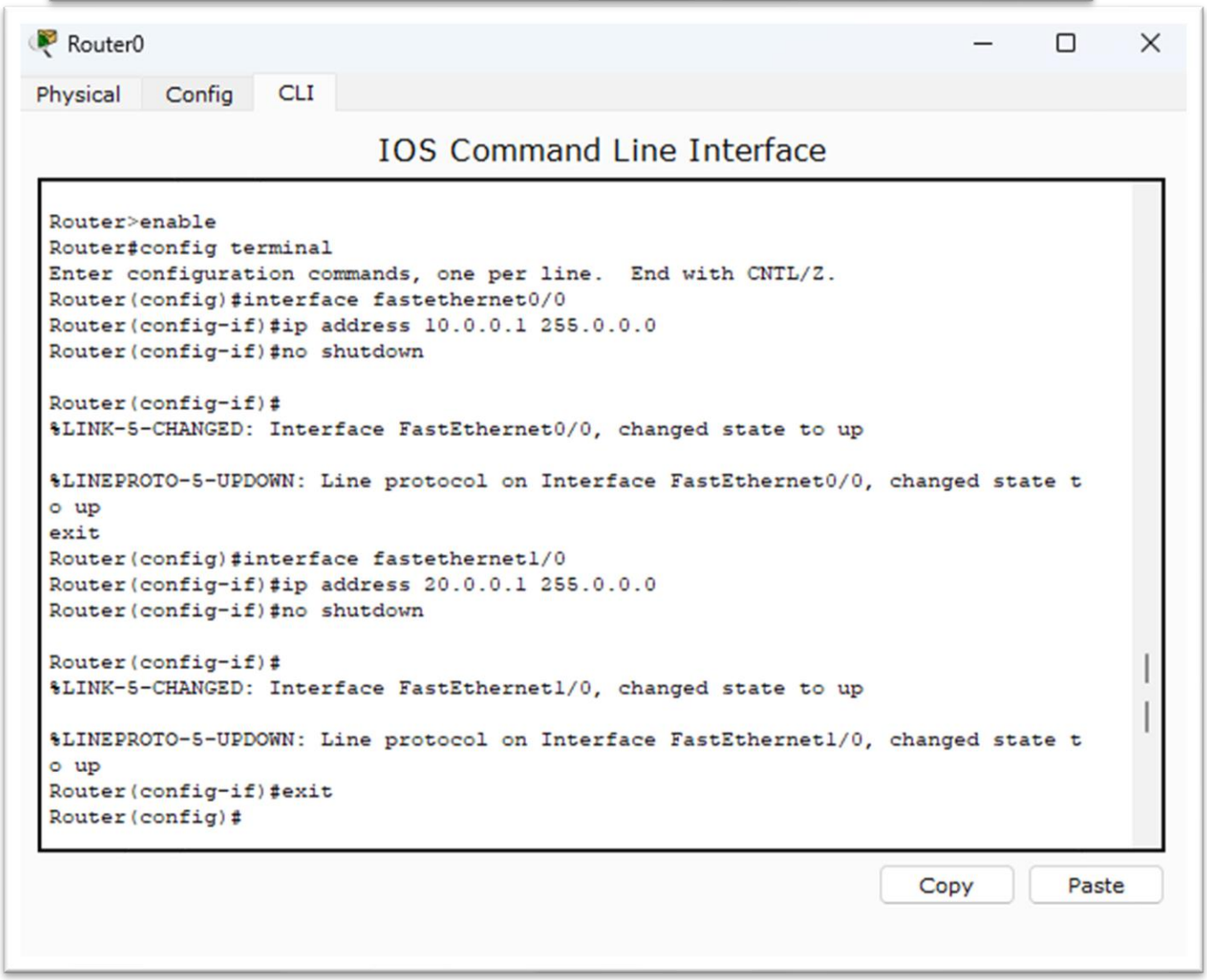
Approximate round trip times in milli-seconds :

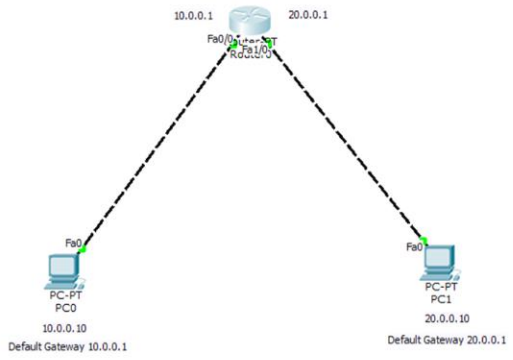
Minimum = 0 ms, Maximum = 2 ms,

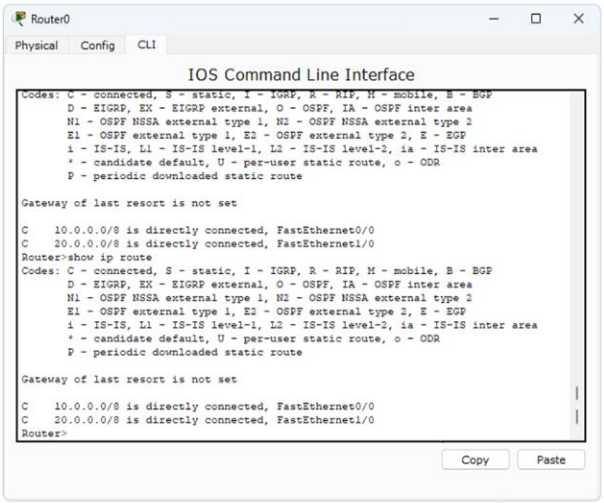
Average = 0 ms.

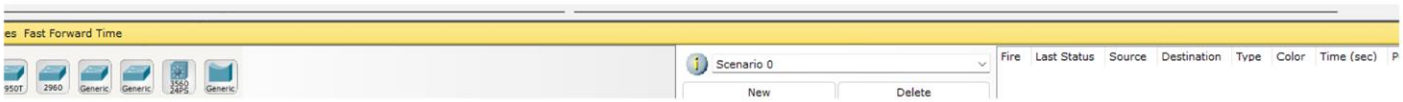
Screenshots:

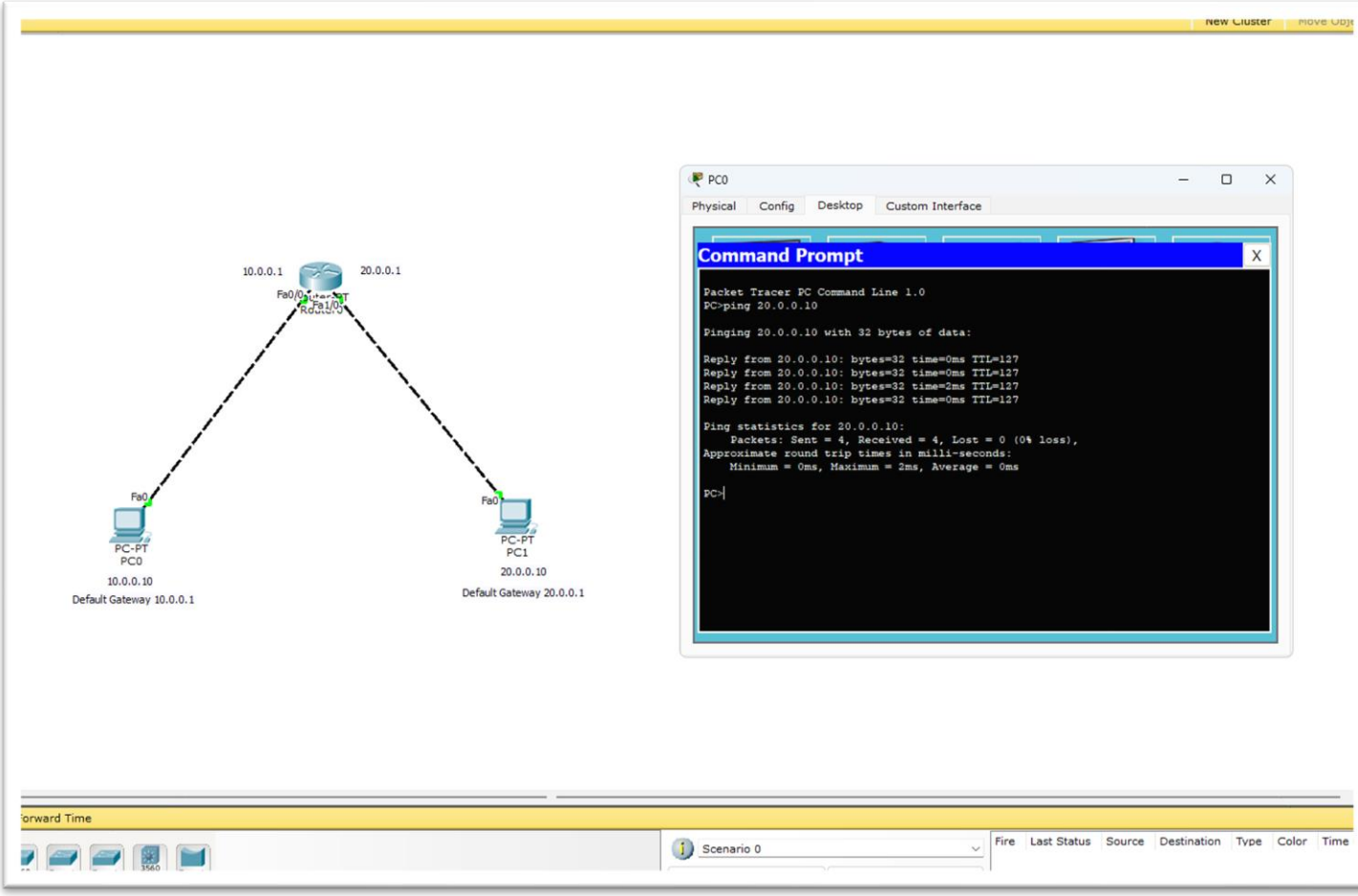





10.0.0.1
20.0.0.1
Fa0/0
Fa1/0
Fa0
PC-PT
PC0
10.0.0.10
Default Gateway 10.0.0.1
Fa0
PC-PT
PC1
20.0.0.10
Default Gateway 20.0.0.1


Router0
Physical
Config
CLI
IOS Command Line Interface
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
C 20.0.0.0/8 is directly connected, FastEthernet1/0
Router>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
C 20.0.0.0/8 is directly connected, FastEthernet1/0
Router>
Copy
Paste


es Fast Forward Time
Scenario 0
New
Delete
Fire
Last Status
Source
Destination
Type
Color
Time (sec)


New Cluster
10.0.0.1
20.0.0.1
Fa0/0
Fa1/0
Fa0
PC-PT
PC0
10.0.0.10
Default Gateway 10.0.0.1
Fa0
PC-PT
PC1
20.0.0.10
Default Gateway 20.0.0.1
PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.10
Pinging 20.0.0.10 with 32 bytes of data:
Reply from 20.0.0.10: bytes=32 time=0ms TTL=127
Reply from 20.0.0.10: bytes=32 time=0ms TTL=127
Reply from 20.0.0.10: bytes=32 time=2ms TTL=127
Reply from 20.0.0.10: bytes=32 time=0ms TTL=127
Ping statistics for 20.0.0.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
PC>
orward Time
Scenario 0
Fire
Last Status
Source
Destination
Type
Color
Time