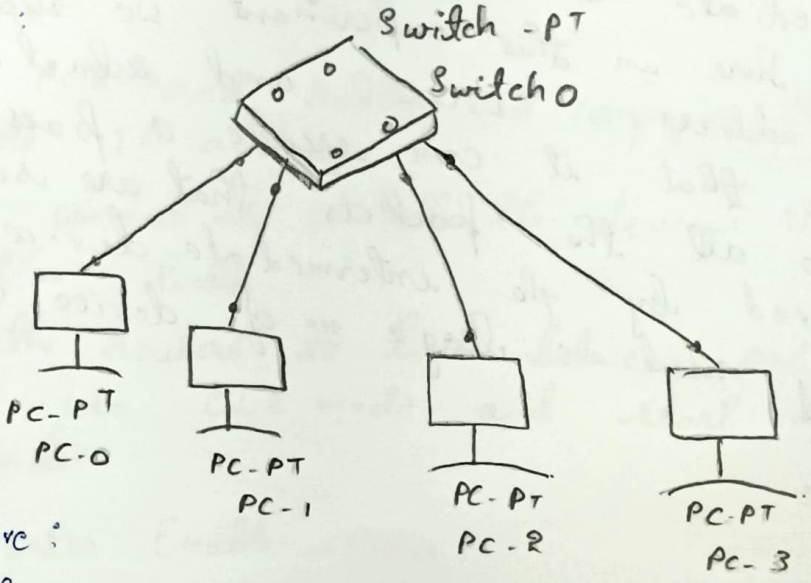
Lab-4

2.07.23

4(A)

Aim: Configure DHCP with a LAN and outside LAN

Topology:



Procedure:

* Connect 3 PC's and 1 Server to a switch using copper straigh through cable.
* Click on Server and go to services tab select DHCP and turn on DHCP service.
* Set the IP address of the stoat IP address as 10.0.0.2 & click on Save button.
* Before this, set the IP address of Server in config Tab under fastethernet to 10.0.0.1
* Next click on PC0 & go to desktop tab, click on IP configuration. Select DHCP here. It will request for an IP address and successfully get the DHCP request also sets the IP address.
* Repeat this step for other 2 pc's
* To send a packet across pc's go to pc's Command prompt and type ping destination

ping output:

Packet tracer PC command line 10:

PC > ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data.

Reply from 10.0.0.3: bytes=32 time=0ms TTL=128

Reply from 10.0.0.3: bytes=32 time=0ms TTL=128

Reply from 10.0.0.3: bytes=32 time=1ms TTL=128

Ping statistics from 10.0.0.3

Packets sent = 4 Received 4. Lost = 0 (0% loss)

Approximate round trip times in ms

minimum = 0ms, Maximum = 1ms. Average = 0ms.

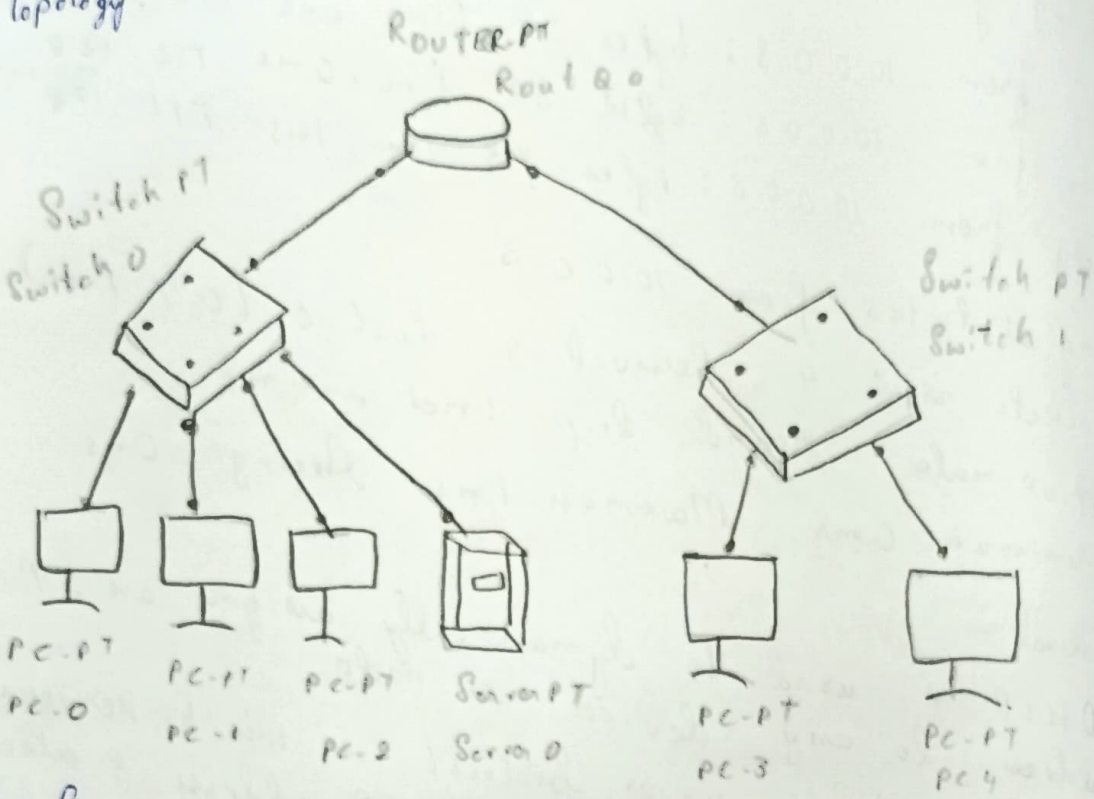
Observation:

* DHCP is used to dynamically assigns an IP address to any device or node
* It is client-server protocol in which servers manage a pool of unique IP address & also about client configuration parameters.
* DHCP enabled clients sends a request to DHCP server when they want to connect to a network.

4 (A)

Aim : Configure DHCP with a LAN and outside LAN

Topology



Procedure :

Add a router, a switch and 5 pc's to 4 (A) program network & connect the router to both switches

→ Set the server IP address of server & with the help of server set the first 3 PC's IP address through DHCP

→ click on server

→ go to desktop → IP configuration

→ Add IP address, Subnet Mask and gateway

IP address 10.0.0.1

Subnet Mask 255.0.0.0

Gateway 10.0.0.20

Step 3 : Configure the router

→ click on router go to CL & 2

nable
uter # config t.
uter (config) # fastethernet 0/0
outer (config) # ip address 10.0.0.20 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # interface fastethernet 1/0
Router (config-if) # ip address 20.0.0.20 250.0.0.0
Router (config-if) # exit

exit

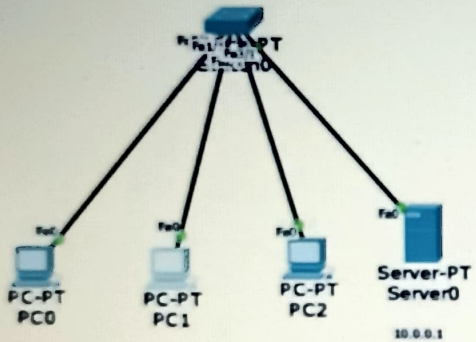
Routing table

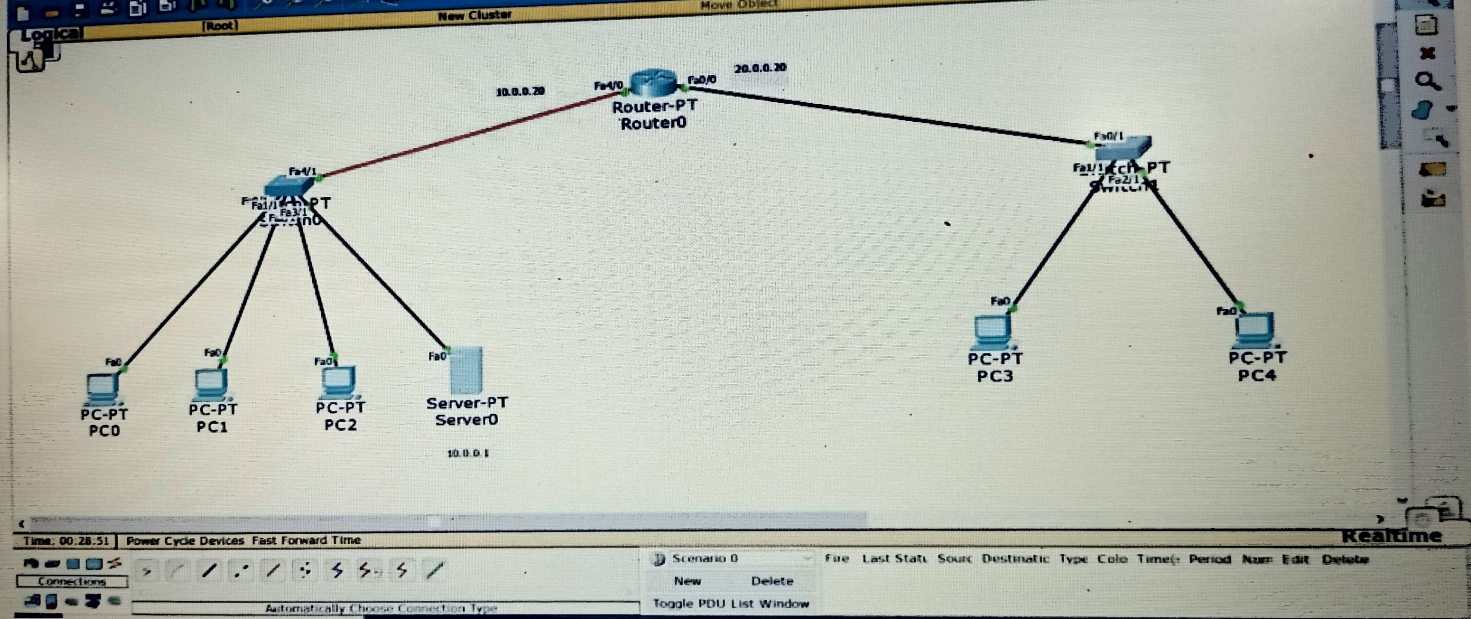
Router → show ip route
10.0.0.0/1 is directly connected.

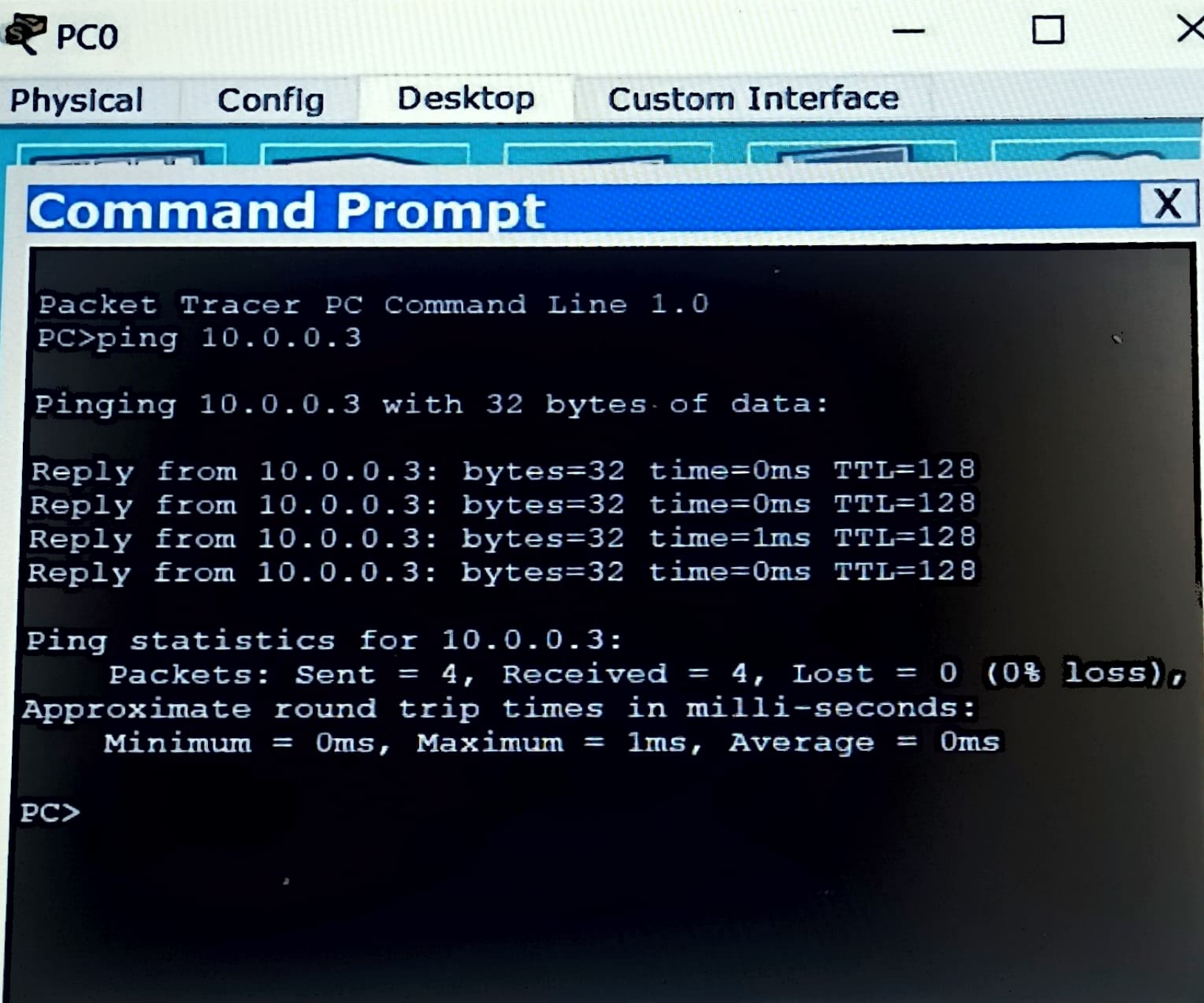
Step 4: Go to Server
→ Select services then go to DHCP
→ set Service on
→ set Start IP address from the server

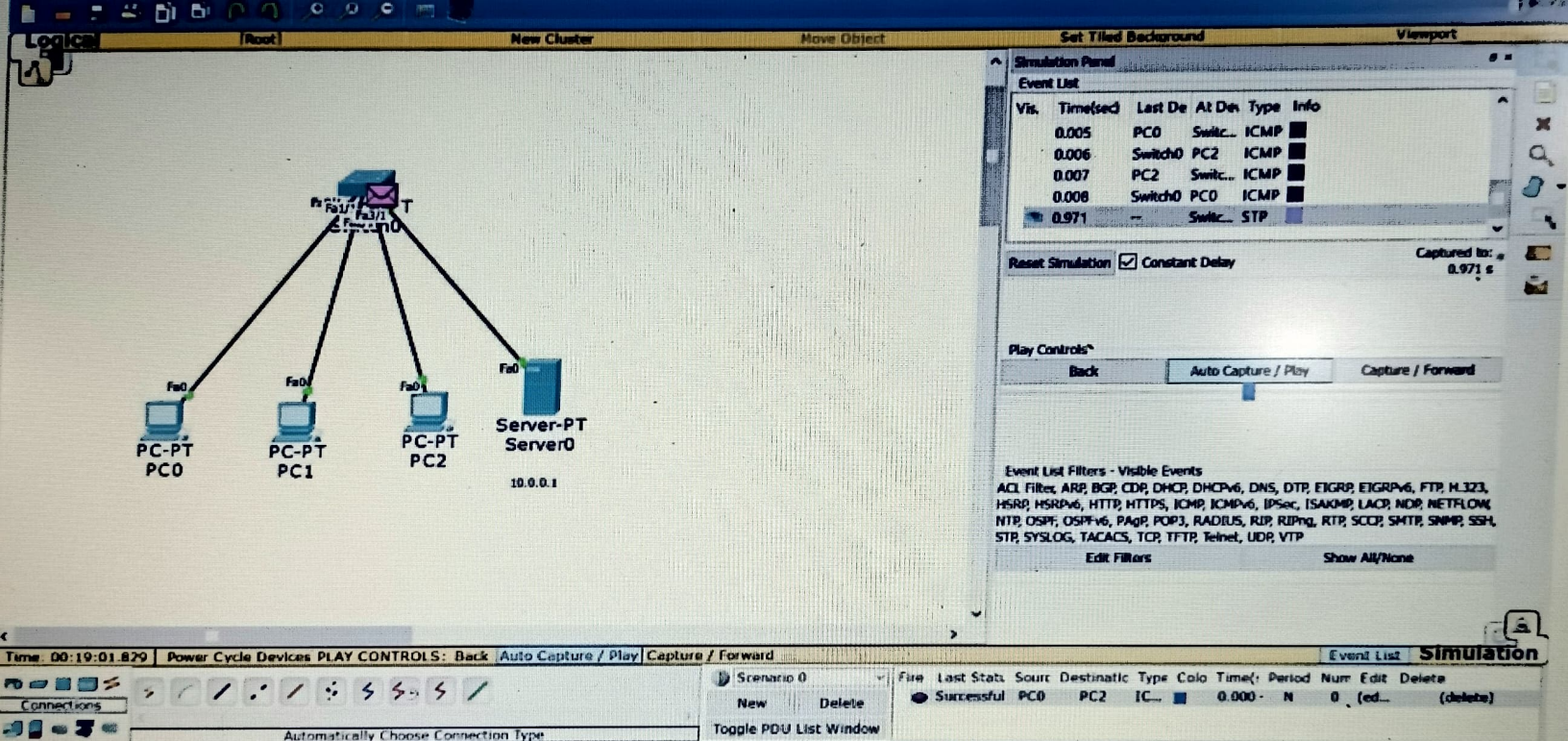
Step 5: Then configure the pc's.
→ Select a pc then desktop go to IP configuration
select DHCP
→ Repeat the same procedure for all other pc's

Observation:
→ DHCP is used to design IP address dynamically to different devices.
→ To assign continous IP address we create a server pool where we assign the starting IP address and a default gateway number.
for pc's under different switches we create a different server pool again & start.


PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Server-PT
Server0
10.0.0.1


Logical
[Root]
New Cluster
Move Object
10.0.0.20
Fa4/0
Fa0/0
20.0.0.20
Router-PT
Router0
Fa0/1
Fa4/1
Fa1/1
Fa2/1
Fa3/1
Fa0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Server-PT
Server0
10.0.0.1
PC-PT
PC3
PC-PT
PC4
Time: 00:28:51
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Edit
Delete


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.3
Pinging 10.0.0.3 with 32 bytes of data:
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Ping statistics for 10.0.0.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
PC>


Logical
Root
New Cluster
Move Object
Set Tiled Background
Viewport
Server0
Fa0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Server-PT
Server0
10.0.0.1
Simulation Panel
Event List
Vis. Time(sec) Last De At De Type Info
0.005 PC0 Switc... ICMP
0.006 Switch0 PC2 ICMP
0.007 PC2 Switc... ICMP
0.008 Switch0 PC0 ICMP
0.971 -- Switc... STP
Reset Simulation
Constant Delay
Captured to:
0.971 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 00:19:01.879
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Automatically Choose Connection Type
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Stat Sourc Destinatic Type Colo Time(Period Num Edit Delete
Successful PC0 PC2 IC... 0.000 - N 0 (ed... (delete)

Physical | Config | Desktop | Custom Interface

Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127
Reply from 20.0.0.2: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```