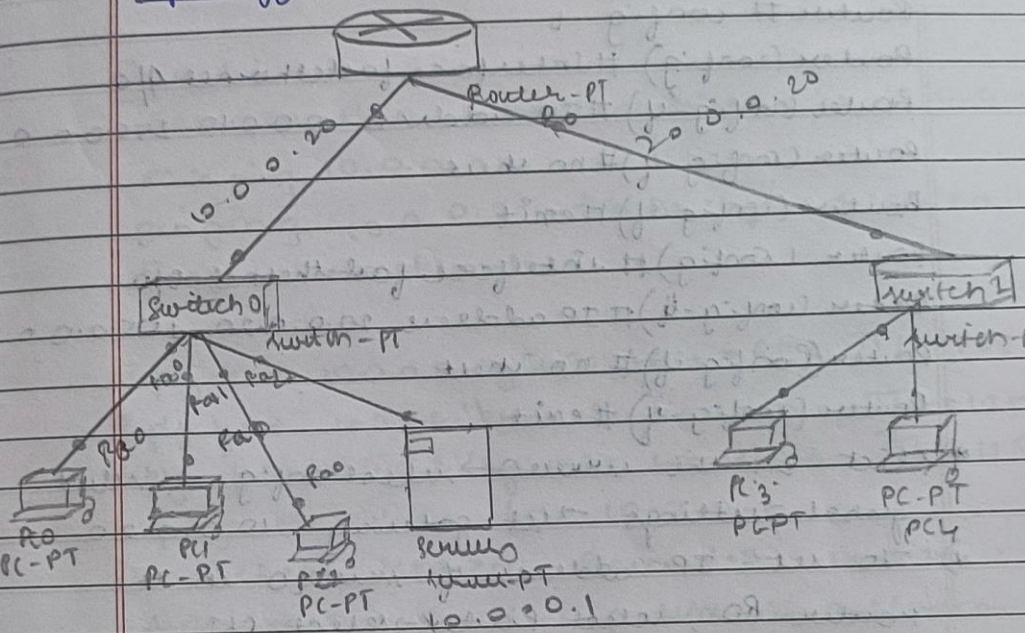
Bafna Gold
Date: Page:

14/7/23.

Experiment - 11

Aim: Create LAN connection within and outside the network using routers and switches.

Topology:



Procedure:-

1) Select one router two switches generic PCs and a server drop them to the workspace.
2) Connect two switches to the router using copper straight through connection. One switch is connected to PCs and a server using copper straight through connection while another switch is connected to two PCs
3) Set the IP address of the server as 10.0.0.1 Click on the server → select services → select DHCP Save the server IP address and

check IP address of all other devices in network by selecting the device → select desktop → select IP configuration.

* select the router, click router → select CLI and enable the router, enter no password

Router > enable
Router # config t
Router (config) # interface fastethernet 4/0
Router (config-if) # IP address 10.0.0.10 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # interface fastethernet 0/0
Router (config-if) # IP address 20.0.0.20 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit.

* click on the server0 → select config → select global → settings → set gateway 10.0.0.20
* To set IP address of server0 in the router R0, select Router → select CLI
Router # config t
Router (config) # interface fastethernet 0/0
Router (config-if) # IP helper-address 10.0.0.1
Router (config-if) # no shut
Router (config-if) # exit

* click on the server0 → select services → select DHCP → add a new IP address set IP address as 20.0.0.2
* select PC3 (PC out of the network) PC in the other switch PC3 or PC4, click PC3 → select desktop → select IP configuration. in IP configuration with two options DHCP and static. select DHCP IP gateway

can be seen.

Observation:

* The IP address of the other LAN is dynamically set. The IP helper-address command helps us to find the server.

Result:

PC2 to PC0 whose address is 10.0.0.2

PC> ping 10.0.0.2

pinging 10.0.0.2 with 32 bytes of data:

Request timed out

Reply from 10.0.0.2: bytes=32 time=6ms TTL=125

Reply from 10.0.0.2: bytes=32 time=2ms TTL=125

Reply from 10.0.0.2: bytes=32 time=2ms TTL=125

ping statistics for 10.0.0.2

Packets: Sent = 4, Received = 3, Lost = 1

Approximate round-trip time in milliseconds:

Minimum = 2ms, Maximum = 12ms, Average = 6ms.

Procedure: to add new pool.

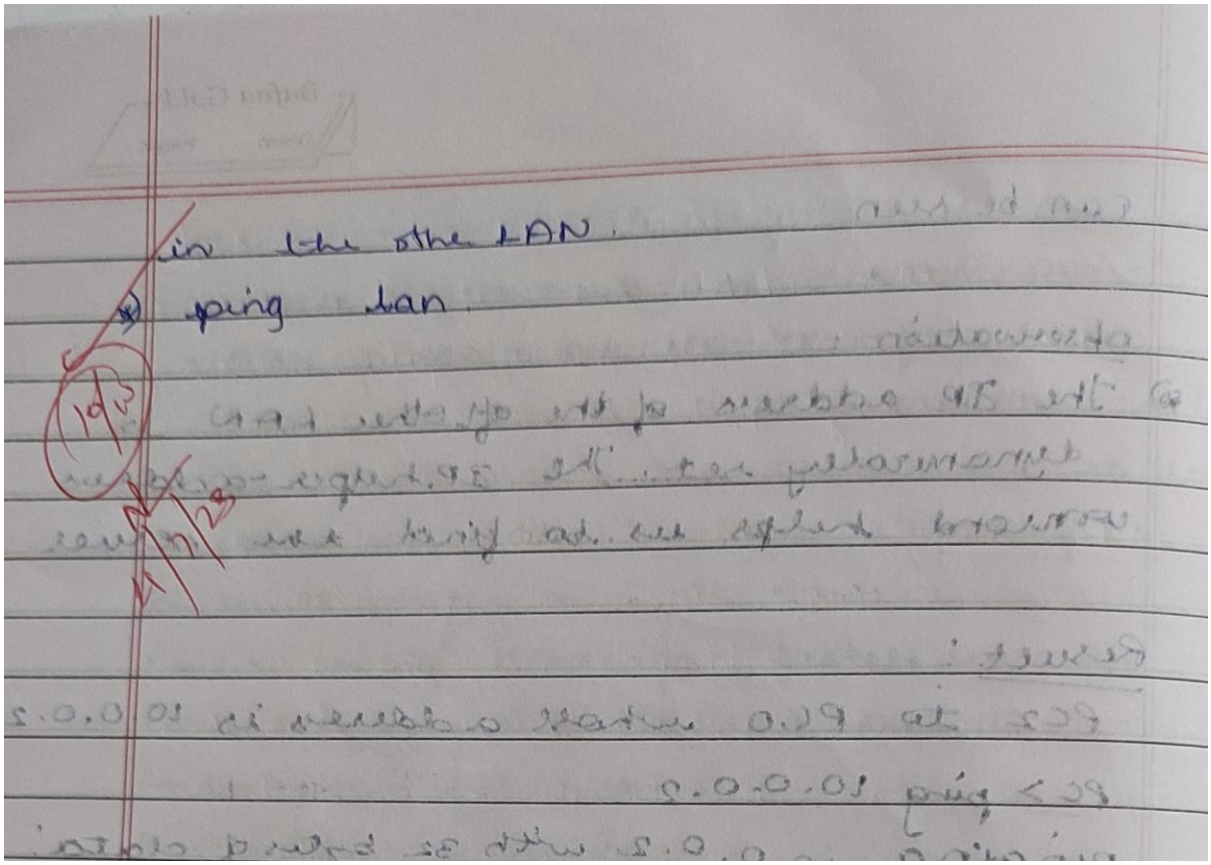
pool name	default gateway	DNS server	start IP address
~~server pool~~	10.0.0.20	0.0.0.0	10.0.0.2
serverpool1	20.0.0.20	0.0.0.0	10.0.0.2

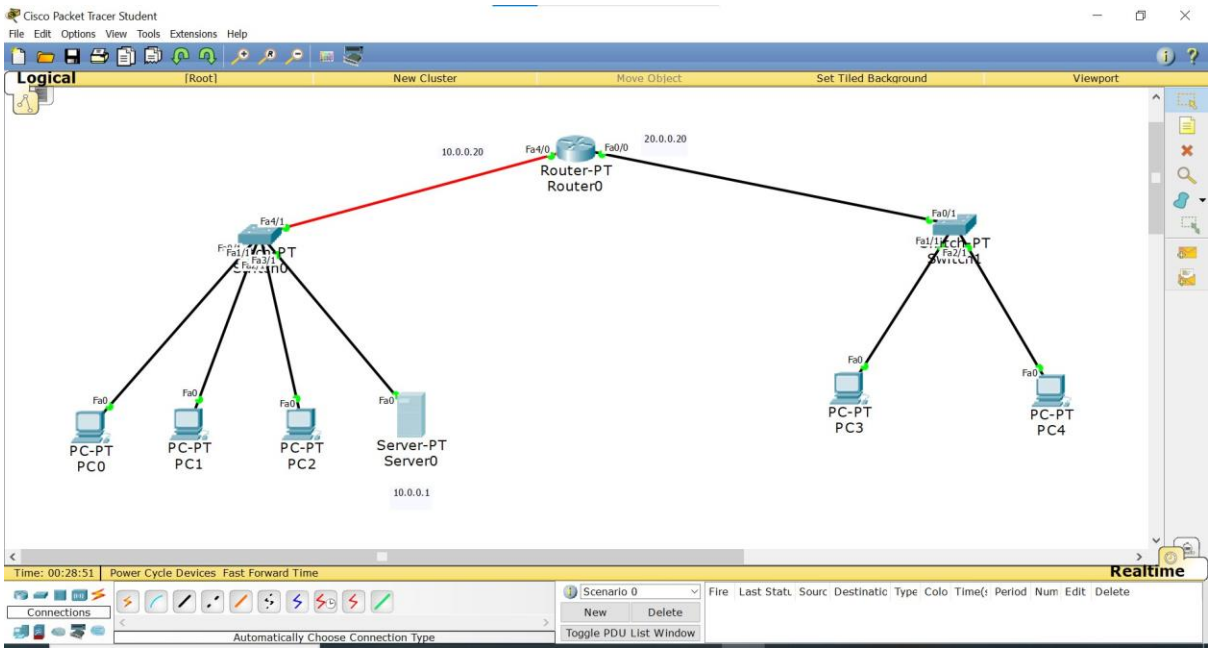
subnet mask	max users	TFTP
255.0.0.0	512	0.0.0.0
255.0.0.0	512	0.0.0.0

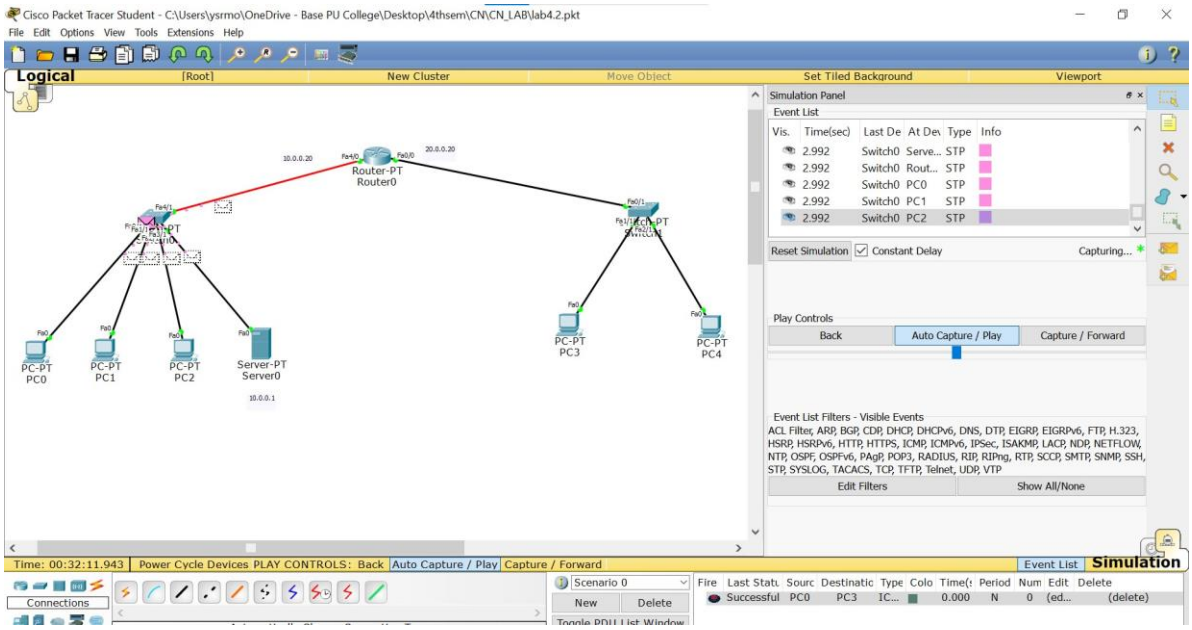
now go to pc's nw dan ⇒

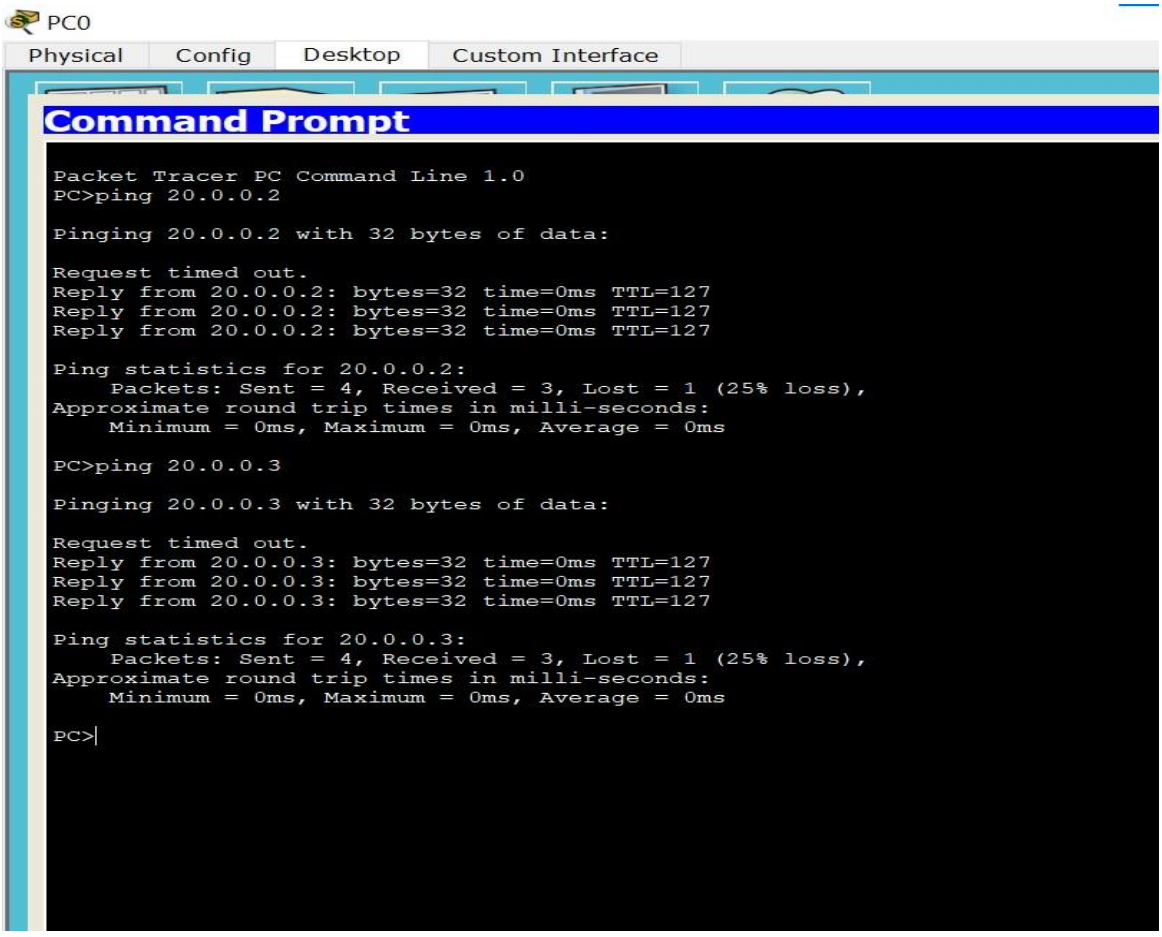
desktop ⇒ IP config ⇒ DHCP ⇒

now the IP address will be generated. generate IP add for all systems


in the the LAN.
ping lan.


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
10.0.0.20
Fa4/0
Fa0/0
20.0.0.20
Router-PT
Router0
Fa4/1
Fa0/1
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 Statu Sourc Destinatic Type Colo Time(s Period Num Edit Delete


Cisco Packet Tracer Student - C:\Users\ysrmo\OneDrive - Base PU College\Desktop\4thsem\CN\CN_LAB\lab4.2.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router-PT
Router0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
Server-PT
Server0
PC-PT
PC3
PC-PT
PC4
Simulation Panel
Event List
Vis. Time(sec) Last De At De Type Info
2.992 Switch0 Serve... STP
2.992 Switch0 Rout... STP
2.992 Switch0 PC0 STP
2.992 Switch0 PC1 STP
2.992 Switch0 PC2 STP
Reset Simulation
Constant Delay
Capturing...
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: 00:32:11.943
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Scenario 0
New
Delete
Fire Last Stat Sourc Destinatic Type Colo Time(Period Num Edit Delete
Successful PC0 PC3 IC... 0.000 N 0 (ed... (delete)


PC0
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>