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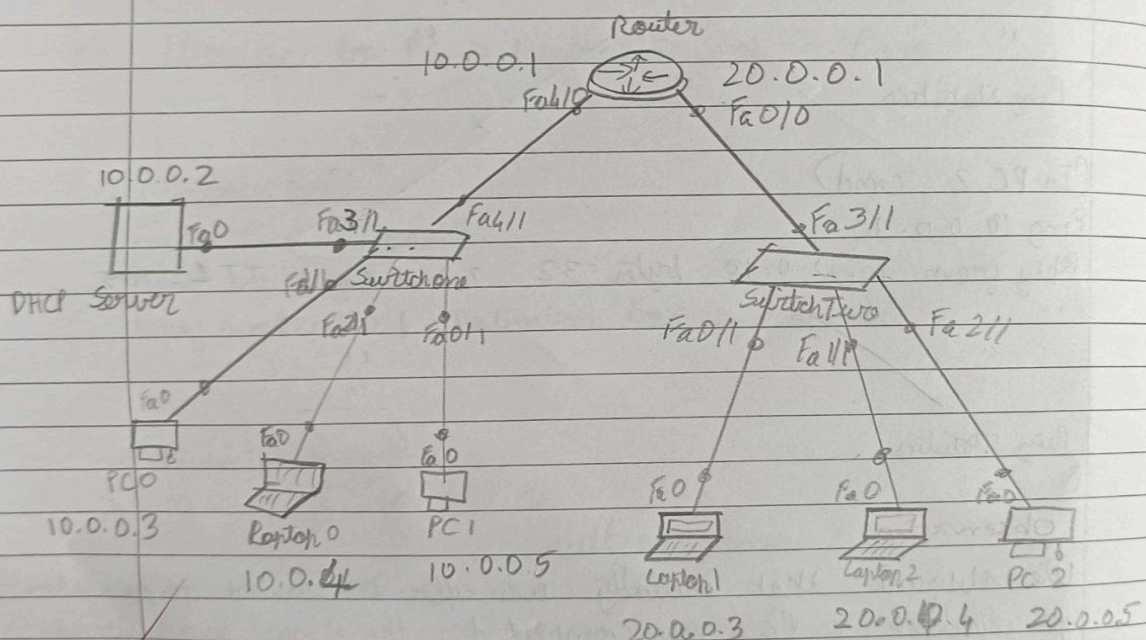
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Q Configure DHCP within LAN & Outside Lan

AIM: To Use server to ~~not~~ give systems IP addresses through DHCP within 2 different Networks.

Topology.



Procedure

(Within Lan)

- 1) Open Cisco packet tracer
- 2) Drag & drop the devices (and devices & server)
- 3) Connect them using switch (copper straight through)
- 4) In Server → Desktop → IP config → set IP **10.0.0.2** & Gateway **10.0.0.1** & subnet.
- 5) In config → Services → DHCP → Create Pool name Set Gateway **10.0.0.1**, Start IP **10.0.0.3** & Max **100** to **100** & add.

- 4) Go to each ~~end~~ end device → desktop → IP Config
→ Click DHCP mode → IP will be assigned.

Results:

In an end device → cnpd.

7 ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time=0ms TTL=128

"

"

"

"

Ping Statistics

~~Observation~~

Procedure

(outside LAN)

- 1) In the previous set up add router, extra switch & few ~~end~~ devices.
- 2) Join switch & end devices through the same method as before.
- 3) Connect both switches to Router.
- 4) In Router → Cli → No → enable → config Terminal → interface Fa4/0 → ~~enter~~ IP address 10.0.0.1 255.0.0.0 → ip helper-address 10.0.0.2 → No Shut.
- 5) Same for ~~second~~ Second Switch (change IP address to 20.0.0.1)
- 6) Go to each system → desktop → IP Config → Click DHCP mode → IP will be assigned (Switch Two).

Result

Router

Show IP Route

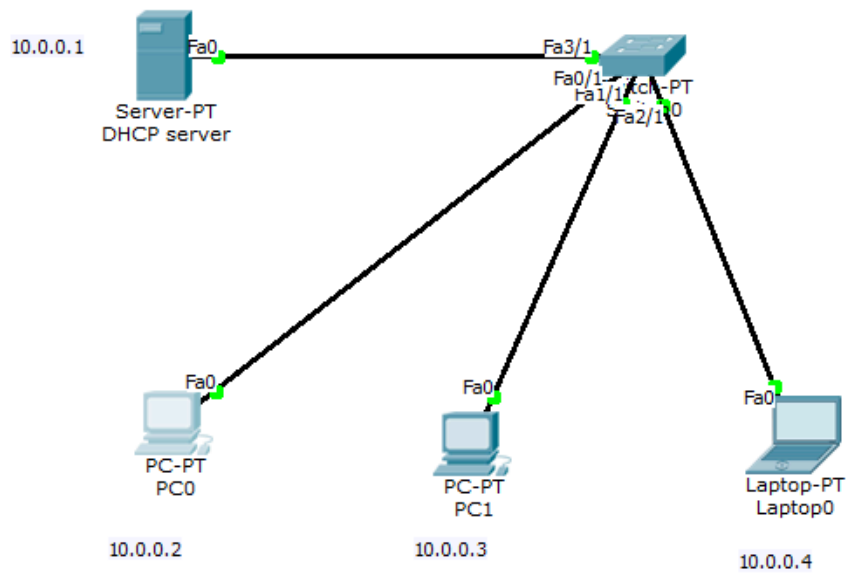
C 10.0.0.0/8 is directly Connected Fa4/0

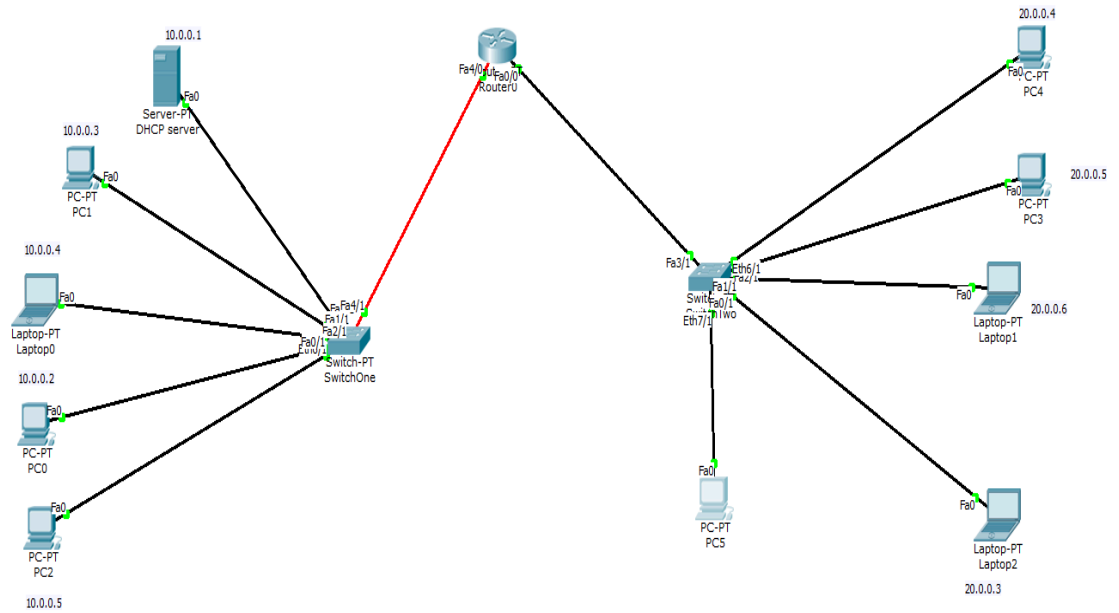
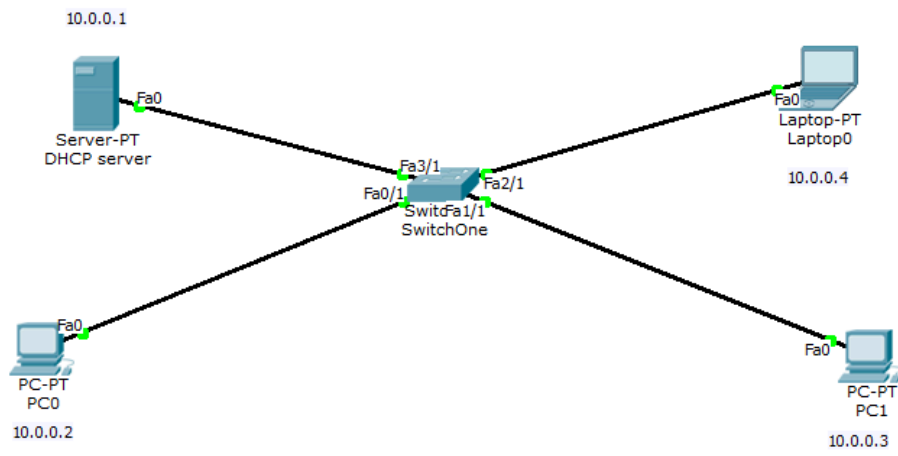
C 20.0.0.0/8 is directly Connected Fa0/0

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Observation
 We learn that we can use the server to assign
 the IP address to any device connected to the
 server within LAN or outside the LAN ~~to~~
 through DHCP.

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PC2

IP Configuration

IP Configuration

☒ DHCP

☐ Static

DHCP request successful.

IP Address

10.0.0.5

Subnet Mask

255.0.0.0

Default Gateway

0.0.0.0

DNS Server

IPv6 Configuration

☐ DHCP

☐ Auto Config

☒ Static

IPv6 Address


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Link Local Address

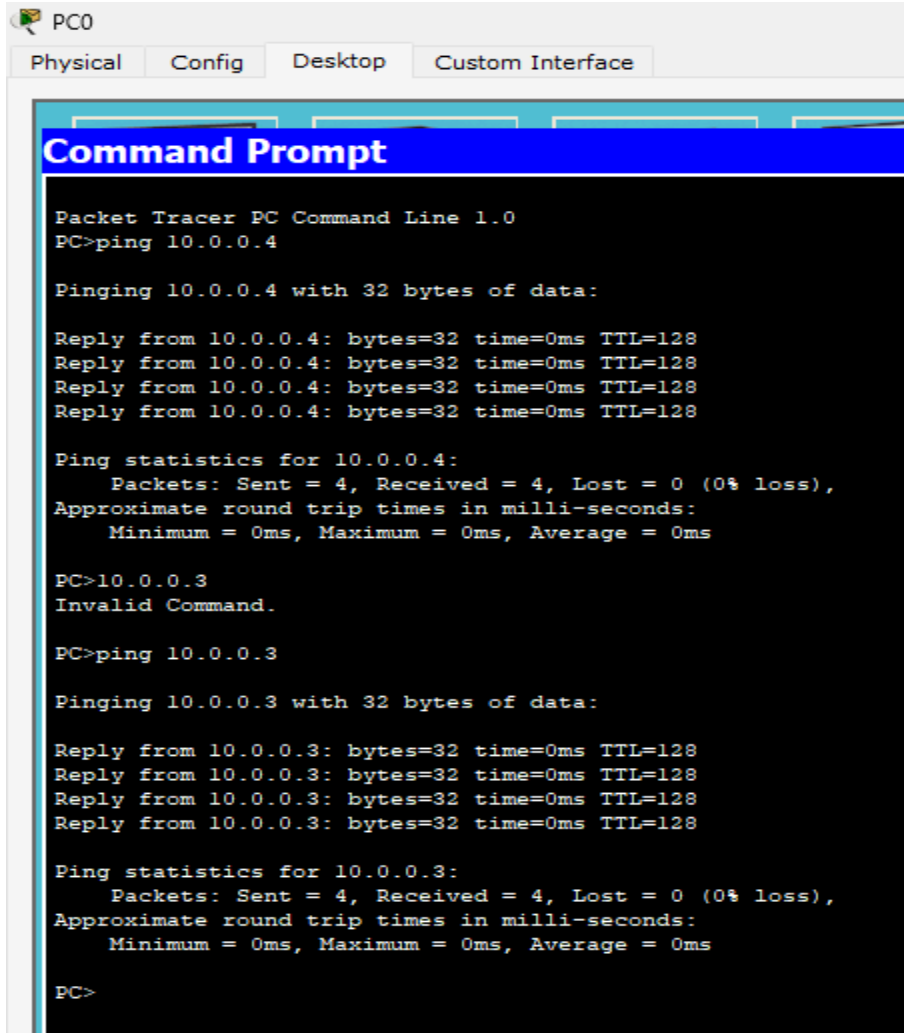
FE80::2D0:97FF:FE57:CB46

IPv6 Gateway

IPv6 DNS Server


Web Browser


Cisco IP Communicator



Command Prompt

Packet Tracer PC Command Line 1.0

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.2:

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

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

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=0ms TTL=128

Reply from 10.0.0.3: bytes=32 time=10ms 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 = 10ms, Average = 2ms

PC>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:

Reply from 10.0.0.4: bytes=32 time=4ms TTL=128

Reply from 10.0.0.4: bytes=32 time=3ms TTL=128

Reply from 10.0.0.4: bytes=32 time=0ms TTL=128

Reply from 10.0.0.4: bytes=32 time=4ms TTL=128

Ping statistics for 10.0.0.4:

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

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 4ms, Average = 2ms

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=0ms TTL=128

Reply from 10.0.0.1: bytes=32 time=0ms TTL=128

Reply from 10.0.0.1: bytes=32 time=0ms TTL=128

Reply from 10.0.0.1: bytes=32 time=0ms TTL=128

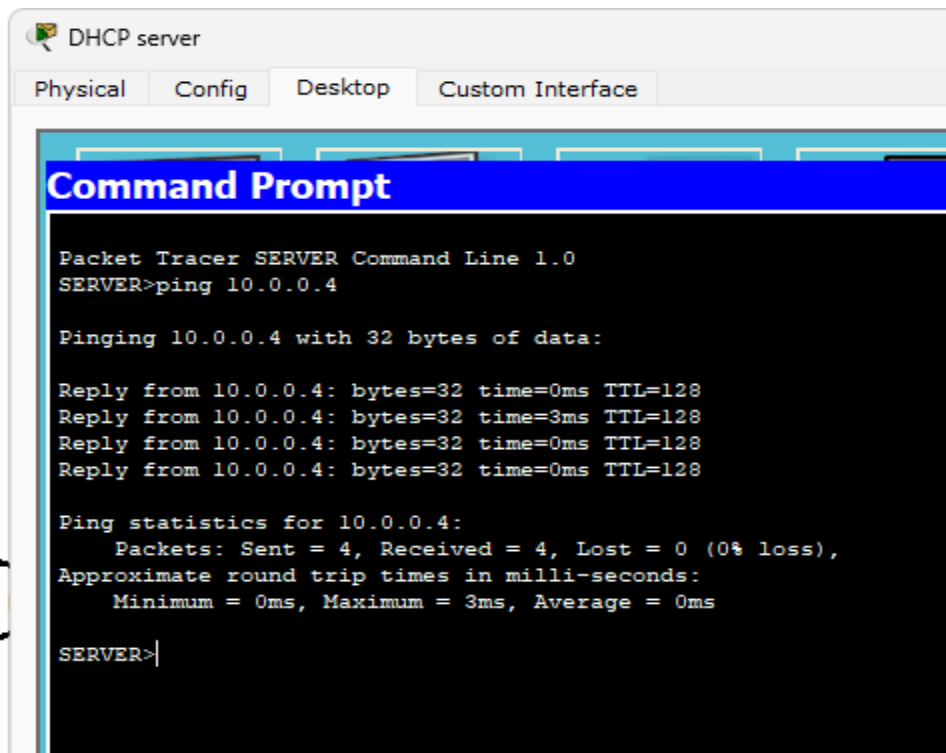
Ping statistics for 10.0.0.1:

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

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>|



--- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable

Router#config terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface fa4/0

Router(config-if)#ip address 10.0.0.1 255.0.0.0

Router(config-if)#ip helper-address 10.0.0.2

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet4/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet4/0, changed state to up

Router(config-if)#exit

Router(config)#interface fa0/0

Router(config-if)#ip address 20.0.0.1 255.0.0.0

Router(config-if)#ip helper-address 10.0.0.2

Router(config-if)#no shut

Router(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#

PC5

IP Configuration

IP Configuration

☒ DHCP

☐ Static

DHCP request successful.

IP Address

20.0.0.7

Subnet Mask

255.0.0.0

Default Gateway

20.0.0.1

DNS Server

0.0.0.0

IPv6 Configuration

☐ DHCP

☐ Auto Config

☒ Static

IPv6 Address


/


Link Local Address

FE80::260:70FF:FE6D:CB48

IPv6 Gateway

IPv6 DNS Server


Web Browser


Cisco IP Communicator