Week-5

Configure DHCP within a LAN

14 15 lab-05

Aim → Configure DHCP within a LAN.

Procedure →

First Network

1. Select 2Pcs, 1 laptop and a server and a switch. In a server, First set the IP address as 10.0.0.1 in IP configuration.

2. Then go to Services in Server. In Services select DHCP and follows as below for configure First network.

   Poolname: Switch1
   Default gateway : 10.0.0.1
   DNS Server : 10.0.0.0
   Start IP address : 10.0.0.3
   Subnet mask : 255.0.0.0
   Max no of user : 100

   Then click on Add. and confirm that Service must be on

3. Then go to each and every pc and laptop which were connected to first network.

   click on destop, go to IP configuration then give DHCP After that every pcs and laptops automatically assigned with the IP address.

2nd Network

1. Select 2 Pcs, 1 laptop for the Second Network connection. In a Server, change the IP address from 10.0.0.1 to 10.0.0.2

2. Then go to Services in server. In Services select DHCP and follow as below for configure 2nd network.

Poolname : switch2
Default gateway : 20.0.0.1
DNS server : 20.0.0.0
Start IP address : 20.0.0.3
Subnet mask : 255.0.0.0
max no. of user : 100
click on add button.

To Establish connection between the 1st and 2nd Network add router and connect with it
1st network connecting using Fiber wire
2nd network connecting using straight wire.

Go to router, Open CLI follow these below commands
for 1st network,

1. enable
2. Config terminal
3. interface fastethernet fa 4/0
4. ip address 10.0.0.1 255.0.0.0
5. ip helper-address 10.0.0.2
6. No shutdown
7. exit.

For 2nd Network,

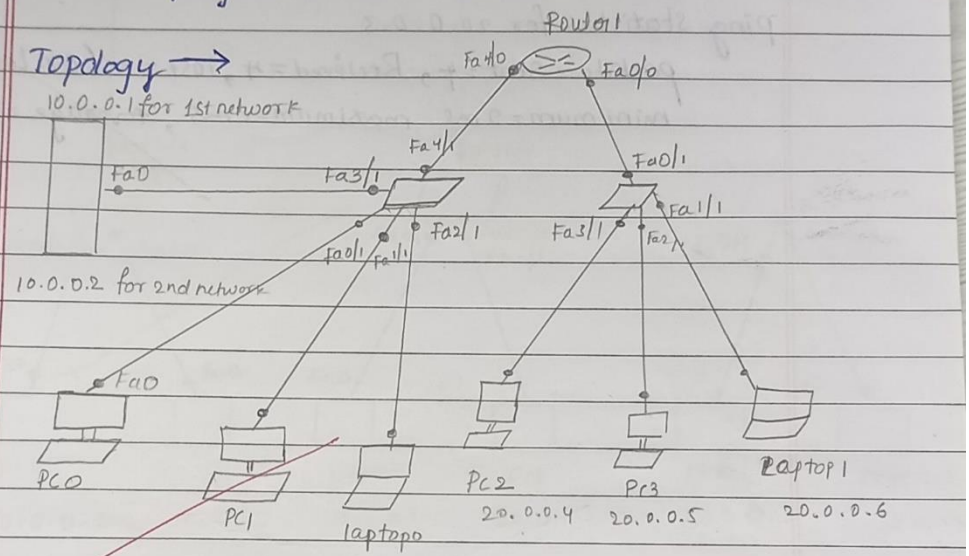
1. enable
2. Config terminal
3. interface fastethernet Fa0/0
4. ip address 20.0.0.1 255.0.0.0
5. ip helper-address 20.0.0.2
6. No shutdown
7. exit.

go to every pcs and laptop which are connected to 2nd Network.

click on Desktop, go to IP configuration then give DHCP After that every pcs and laptop automatically assigned with the IP address.

Once the connection established between the two networks, Start to ping between the networks.

Topology →



Observation →

each and every pcs and laptop sends packet to pcs and laptop present in 2nd networks and the packets get successfully Sent each Other.

So that the packet gonna sent from one network to another network through the Router connection.

o/p →

Pc0 : [Command prompt]

Pc > ping 20.0.0.3

pinging 20.0.0.3 with 32 bytes of data:

Replying from 20.0.0.3 : bytes 32 time : 0ms TIL = 127

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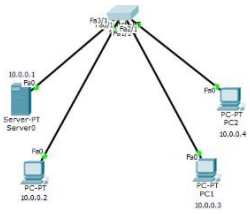
ping statistics for 20.0.0.3

packets : sent = 4, Recieved = 4, lost = 0 (0% loss),

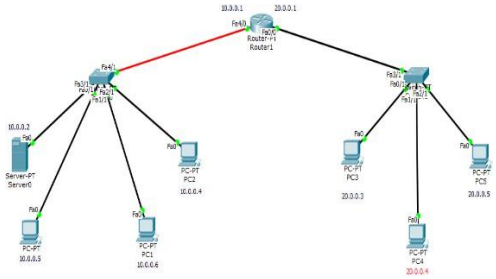
minimum = 2ms maximum = 0ms, ~~Average~~ = 0ms.

Topology:

(within Lan)

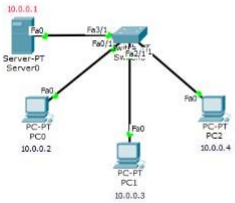


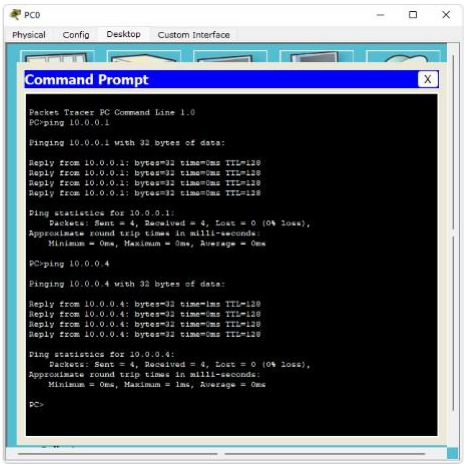
(outside Lan)



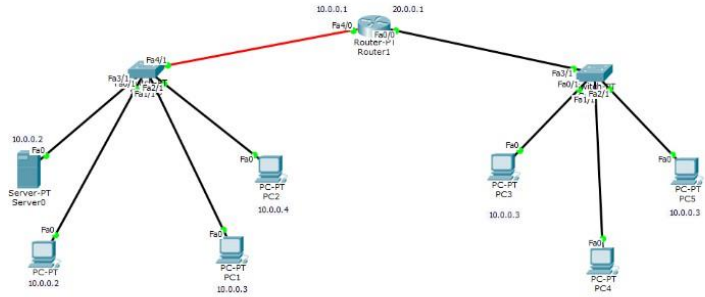
Output:

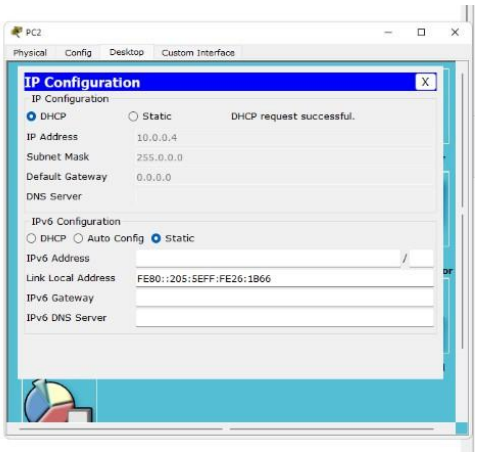
(within Lan)

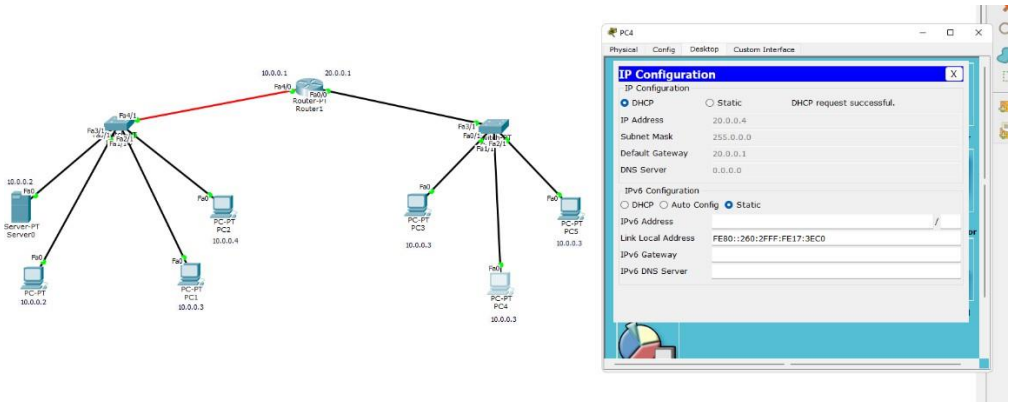


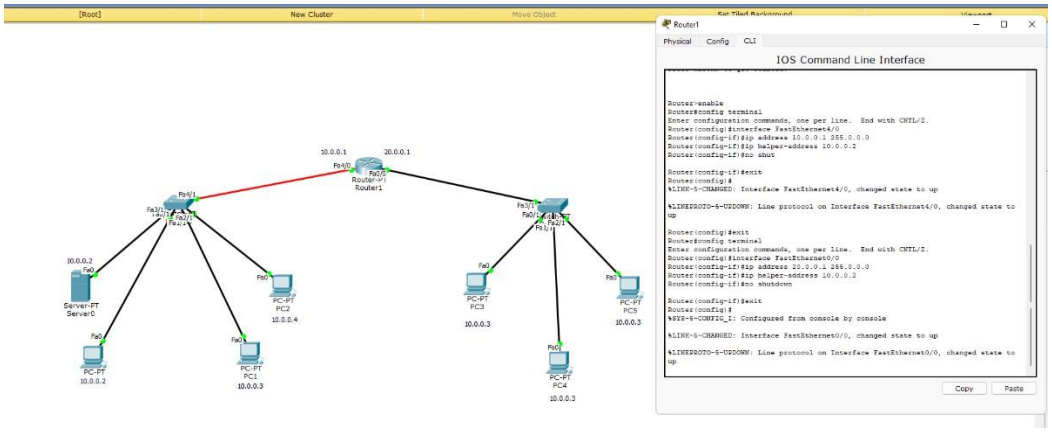


(outside Lan)






10.0.0.1
20.0.0.1
Router1
Server-PT
Server0
10.0.0.2
PC-PT
PC1
10.0.0.3
PC2
10.0.0.4
PC3
10.0.0.3
PC4
10.0.0.3
PC5
10.0.0.3
PC4
Physical
Config
Desktop
Custom Interface
IP Configuration
DHCP
Static
DHCP request successful.
IP Address
20.0.0.4
Subnet Mask
255.0.0.0
Default Gateway
20.0.0.1
DNS Server
0.0.0.0
IPv6 Configuration
Auto Config
IPv6 Address
Link Local Address
FE80::260:2FFF:FE17:3EC0
IPv6 Gateway
IPv6 DNS Server


[Root]
New Cluster
Move Object
10.0.0.1
20.0.0.1
Router1
Server-PT
Server0
10.0.0.2
PC-PT
PC1
10.0.0.3
PC2
10.0.0.4
PC3
10.0.0.3
PC4
10.0.0.3
PC5
10.0.0.3
Router1
Physical
Config
CLI
IOS Command Line Interface
Router>enable
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet4/0
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)#exit
Router(config)#
%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)#exit
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
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 shutdown
Router(config-if)#exit
Router(config)#
%SYS-5-CONFIG_I: Configured from console by console
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Copy
Paste