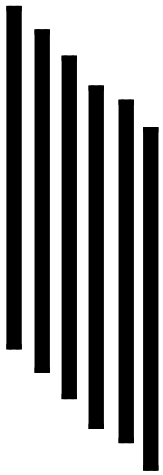
International College

Lab Report on
Computer Network(Static Routing)



B.Sc (CSIT) 4th Semester

Lab Report Number 02

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Lab Report 2

1) Static Routing protocol Implementation and Basic Router configuration.

- Introduction

  Static routing is the process which occurs when a router uses a manually-configured routing entry, rather than information from dynamic routing traffic.

- Objective

The aim of this lab is to understand the concept of static routing between 2 routers using different class IP Addresses.

 # Why do we need Static Routing?

In static routing, User handily type all network locations into the routing table and administrator is responsible for updating all the changes by hand onto all routers. Only administrator can add routers and configuration so there won't be any security issue.

- Procedure

From Figure Below, we have used devices (Router, Pc, Server, Switch) and cables (copper straight through, Serial DCE) in order to connect the devices with each other. Now, click on Pc from lower left part and click in the main window, follow same steps and drag and drop Server, Switch, Router in the main window. Then click on connections (Thunder Symbol) click on copper straight through cable then connect the pc and switch together and again with same cable connect Router and switch. Follow same steps to connect switch with server on another side. Use Serial DCE cable to create connection between two routers (Router1, Router2).

- PC configuration

  Click on PC then go to Desktop. Click on IP configuration. Add IPv4 Address then Default Gateway. Subnet Mask will be automatically generated according to IP address class. Just click on Subnet Mask input box.

- Server Configuration

  Click on Server then go to Desktop. Click on IP configuration. Add IPv4 Address then Default Gateway. Subnet Mask will be automatically generated according to IP address class. Just click on Subnet Mask input box.

- Router Configuration

  For router configuration, click on router and go to CLI and Hit enter to return. Same process is used in both routers. You can enter own IP address to configure router and other devices. Use the code given below in order to configure.

1) Configuring gigabitEthernet for Router

   1 Route: enable

   Route# configure terminal

Route(config)# interface gigabitEthernet 0/1 //selecting gigabitEthernet Router(config-if) # ip address 192.168.1.1 255.255.255.0 //add IP address with Subnet masks

Router(config-if) #no shutdown //to save changes

2) Configuring gigabitEthernet for Router

2 Route: enable

Route# configure terminal

Route(config)# interface gigabitEthernet 0/1 //selecting gigabitEthernet Router(config-if) # ip address 192.168.3.1 255.255.255.0 //add IP address with Subnet masks

Router(config-if) #no shutdown //to save changes

- Static Routing

After router configuration, Let do some static routing between two routers. In this process, the administrator types all network locations into the routing table. We just give one router a route of another router so that they can communicate with each other.

1) Serial Configuration for Router 1

Route(config)#interface serial 0/3/0

Route(config-if) #ip address 192.168.2.2 255.255.0.0 //adding IP to serial interface

Route(config-if) # no shutdown

Route(config-if) # ip route 192.168.3.0 255.255.255.0 192.168.2.2

2) Serial Cable Configuration for Router 2

Route(config)#interface serial 0/3/0

Route(config-if) #ip address 172.168.2.1 255.255.0.0 //adding IP to serial interface

Route(config-if) # no shutdown

Route(config-if) # ip route 192.168.1.0 255.255.255.0 192.168.2.1

Task #1

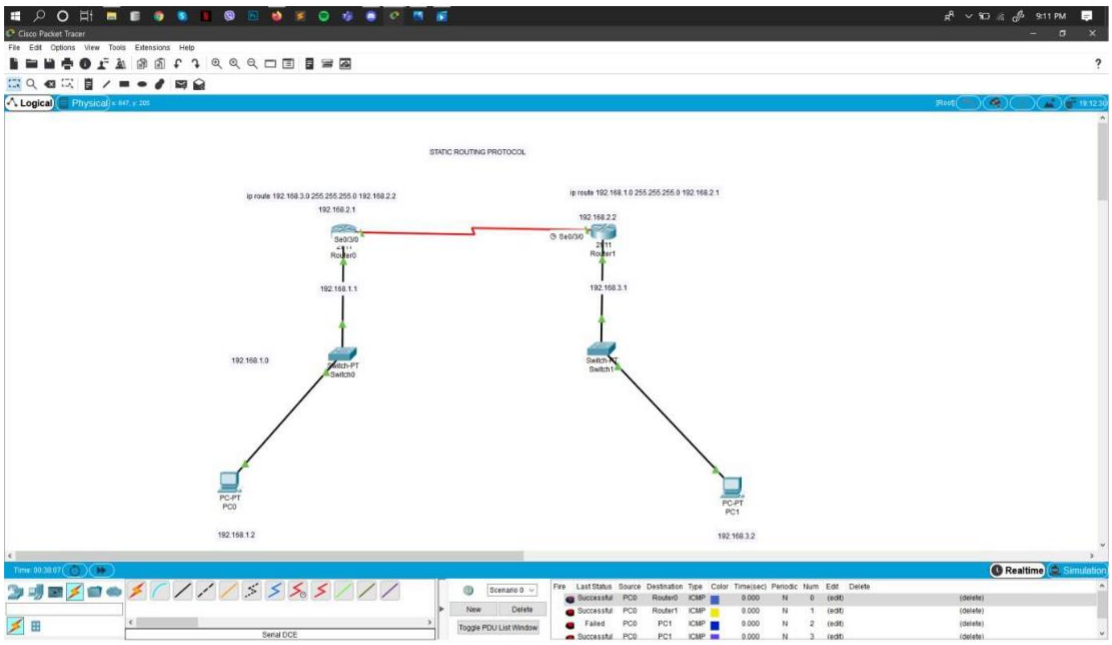


Figure: Static Routing Configuration using 2 routes

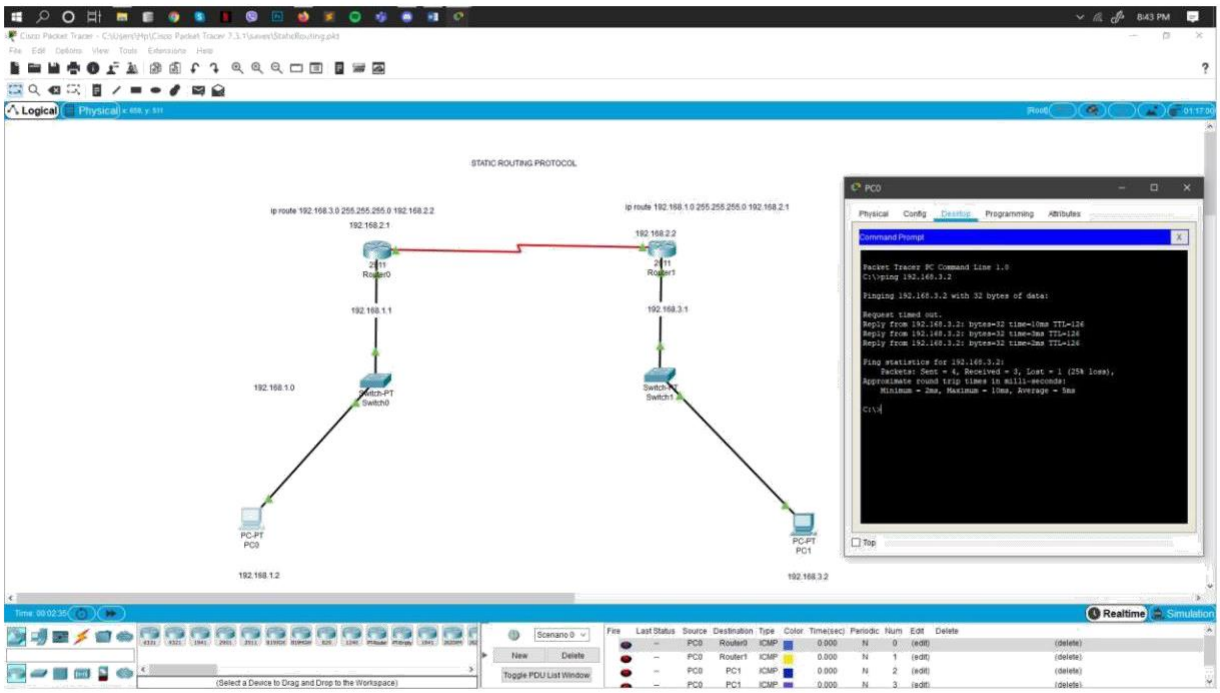
Let's Ping in order to see if we are connected together or not.

In order to ping, click on pc in the main window, go to Desktop then command prompt and type in the command given below.

C:\> ping 192.168.3.2

We send a ping request to the server from our pc. We can see packet sent and received in our cmd.

#Task 2



➢ Conclusion

In this lab, we learned how to do static routing between two routers by the help of CISCO Packet Tracer.