

Experiment No: 02

Experiment Name: Packet through Routers.

Objective:

Since we're going to transfer packet through Routers. we'll design a simple network diagram using " CISCO Packet Tracer".

First we'll test a simple packet transfer from one PC. The circuit contains one or more Hub(s) , Routers, some PCs. We'll connect two end point PC-to-PC , PC-to-Hub/Switch, PC to Routers, Routers to Hub, etc.

Design procedure:

Here a simple network connection using Routers & hubs:

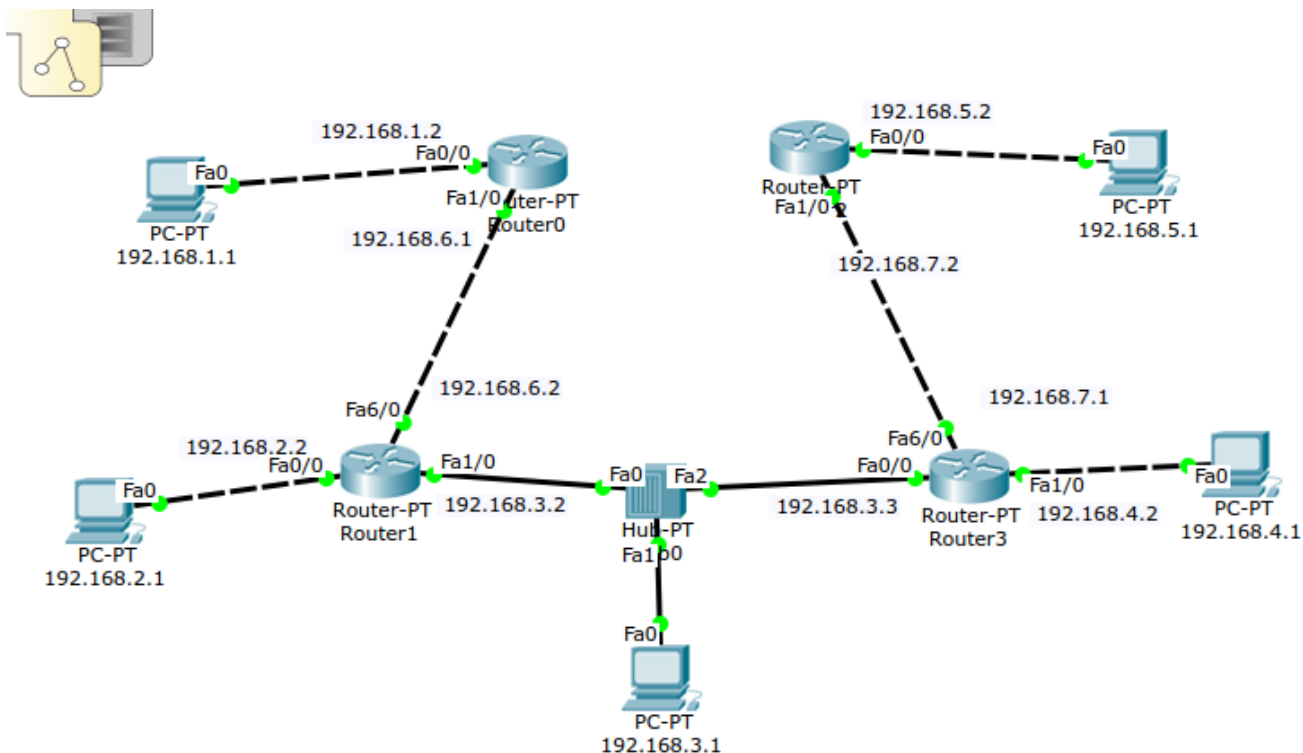


Illustration 1: A network connection with routers & Hub

This figure shows the connection among PC , routers and hub.

Details procedure of configure router, PC & hub:

1. PC IP configure:

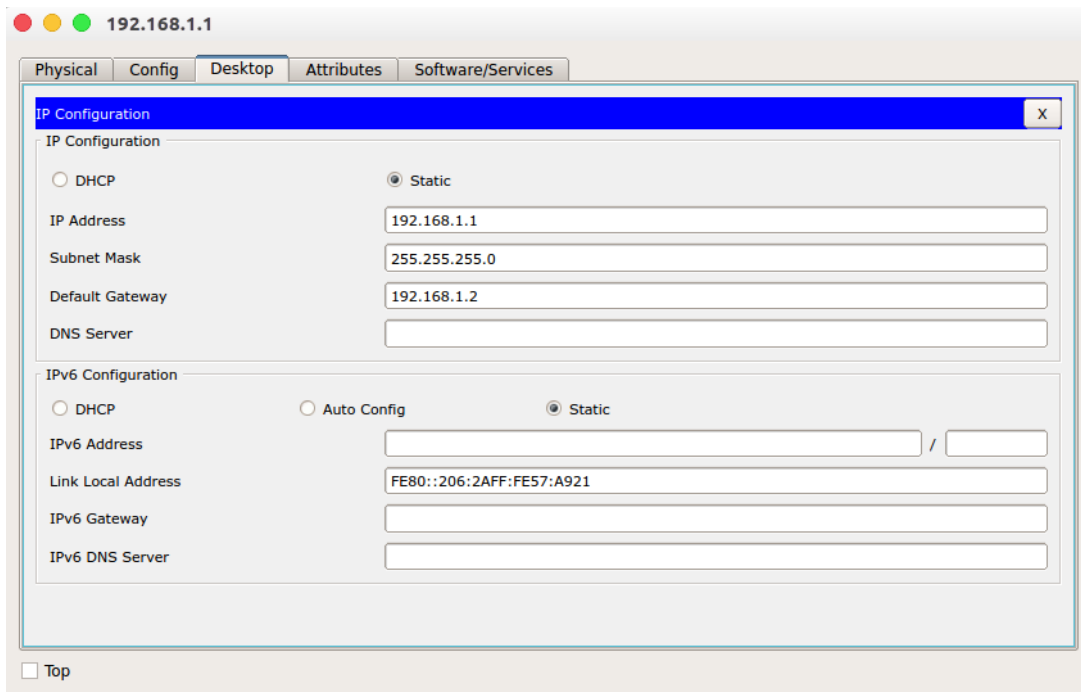


Illustration 2: IP configure of PC

2. Router configure:

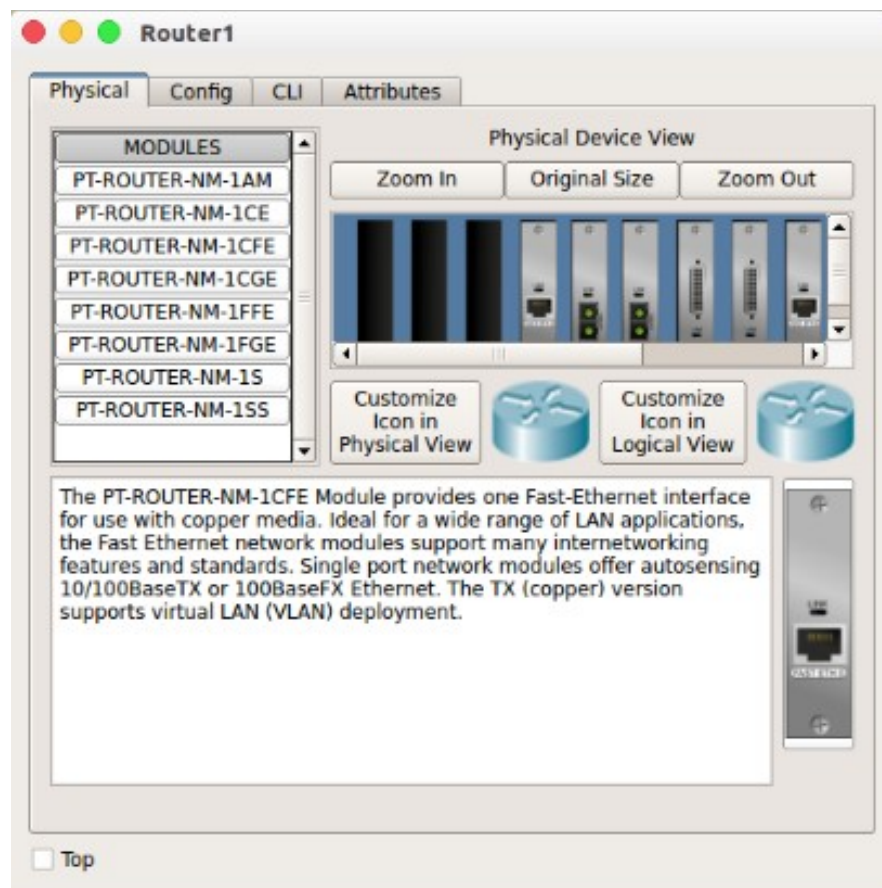


Illustration 3: Add Interface card ICFE

Router0

PhysicalConfigCLIAttributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

FastEthernet0/0

Port Status

☒ On

Bandwidth

☒ 100 Mbps☐ 10 Mbps

☒ Auto

Duplex

☒ Half Duplex☐ Full Duplex

☒ Auto

MAC Address

000C.85AE.69E8

IP Configuration

IP Address

192.168.1.1

Subnet Mask

255.255.255.0

Tx Ring Limit

10

Equivalent IOS Commands

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

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

%IP-4-DUPADDR: Duplicate address 192.168.1.1 on FastEthernet0/0, sourced by 0006.2A57.A921

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Illustration 4: Fast Ethernet Configure

Router0

PhysicalConfigCLIAttributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Static Routes

Network192.168.5.0

Mask255.255.255.0

Next Hop192.168.7.2

Add

Network Address

192.168.2.0/24 via 192.168.6.2

192.168.3.0/24 via 192.168.6.2

192.168.4.0/24 via 192.168.3.3

192.168.5.0/24 via 192.168.7.2

Remove

Equivalent IOS Commands

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router(config-if)#exit
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.6.2
Router(config)#ip route 192.168.4.0 255.255.255.0 192.168.3.3
Router(config)#ip route 192.168.5.0 255.255.255.0 192.168.7.2
Router(config)#

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Illustration 5: Routes configure

3. Packet transferring between two PC.

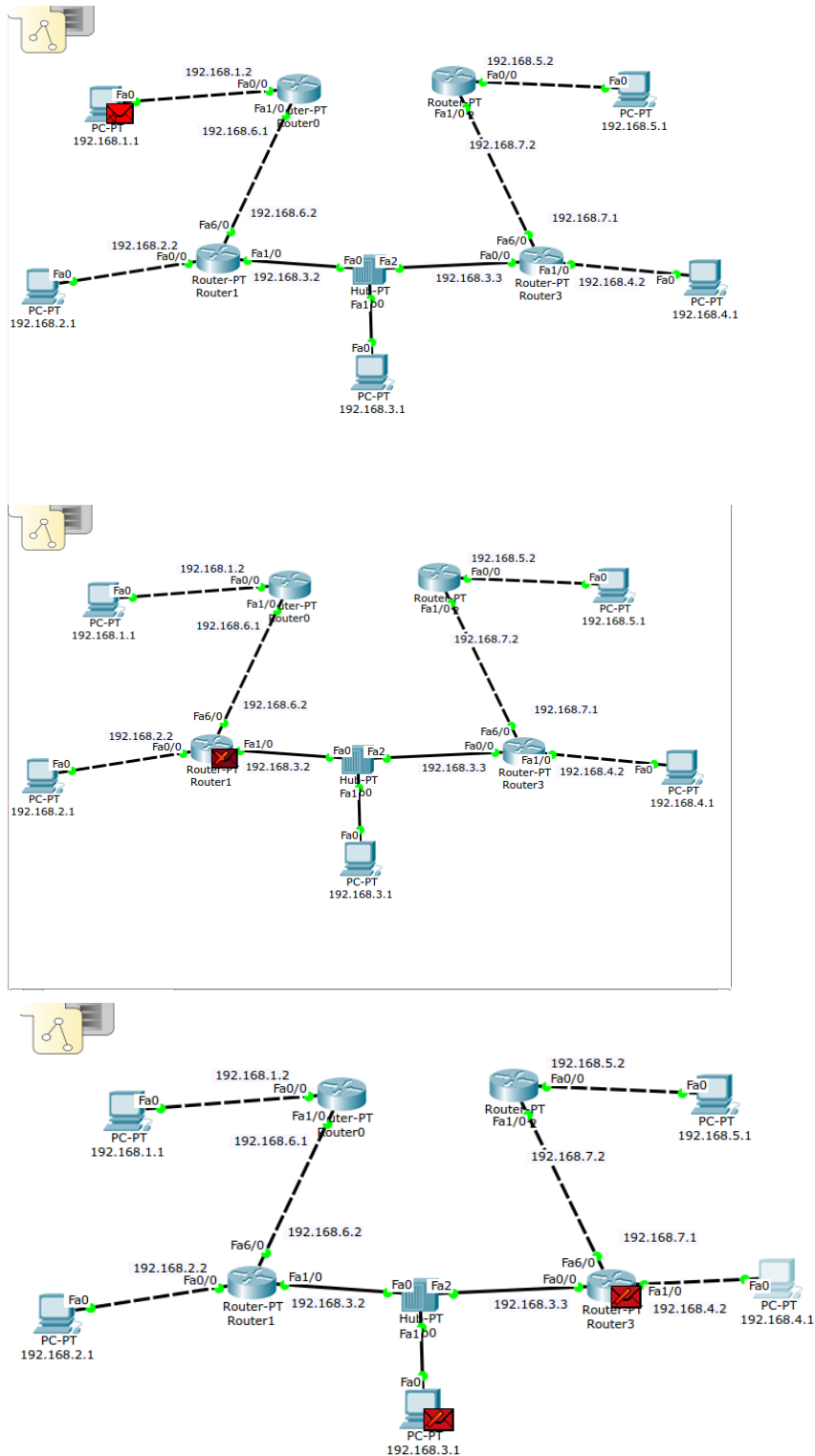
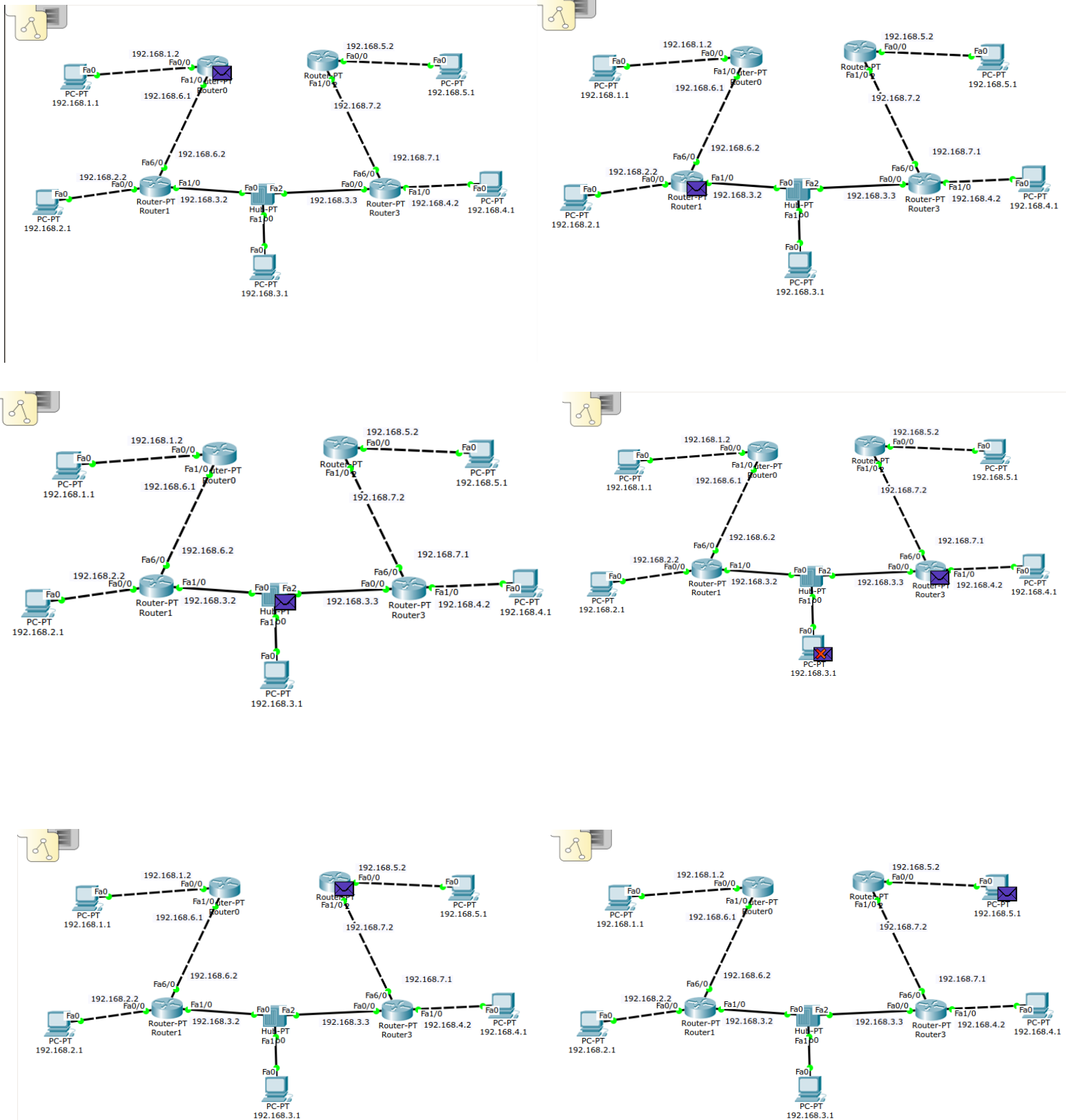


Illustration 6: First time packet transferring

Successful packet transferring:



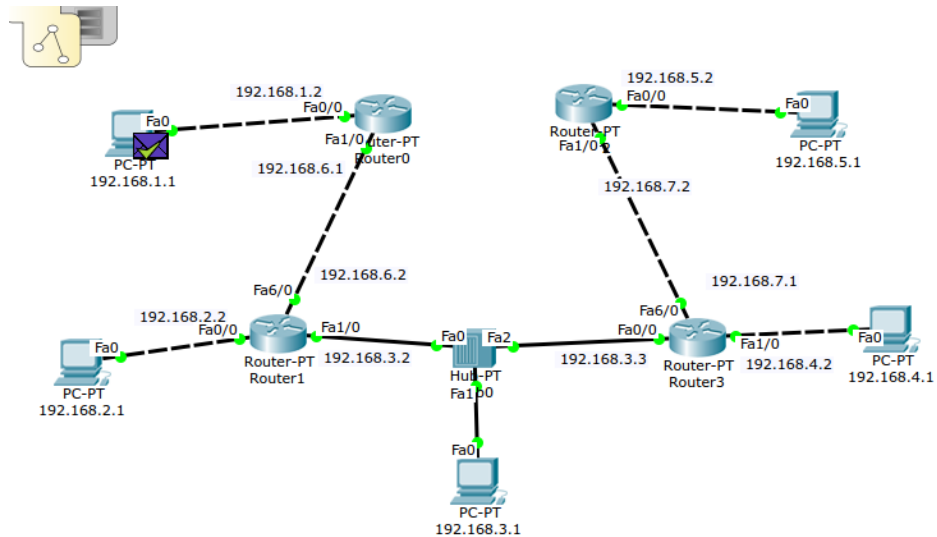
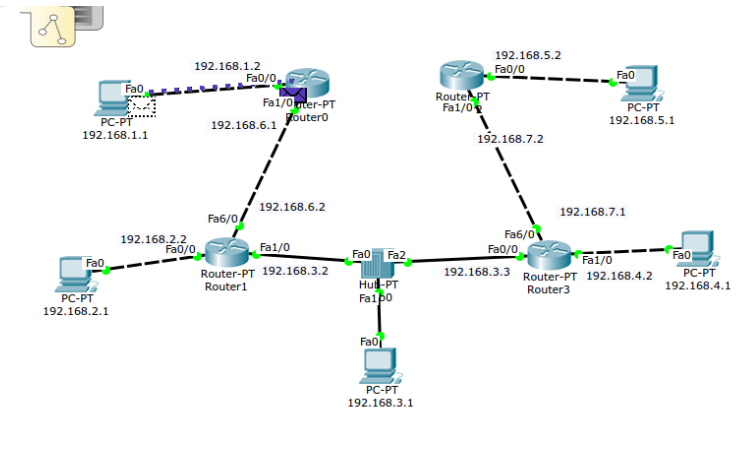
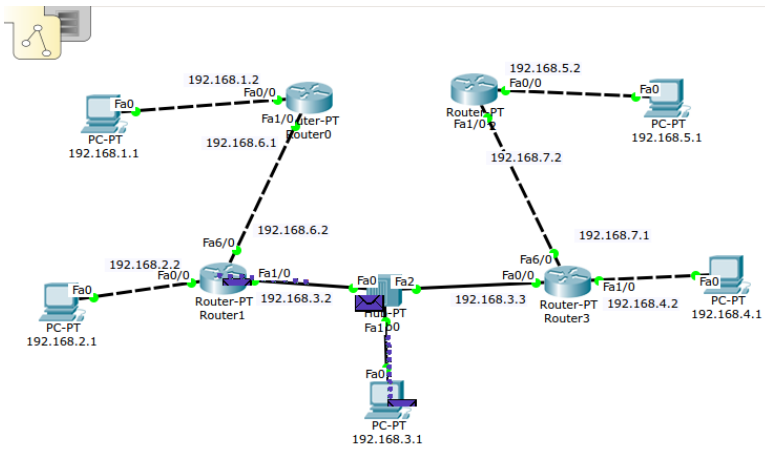
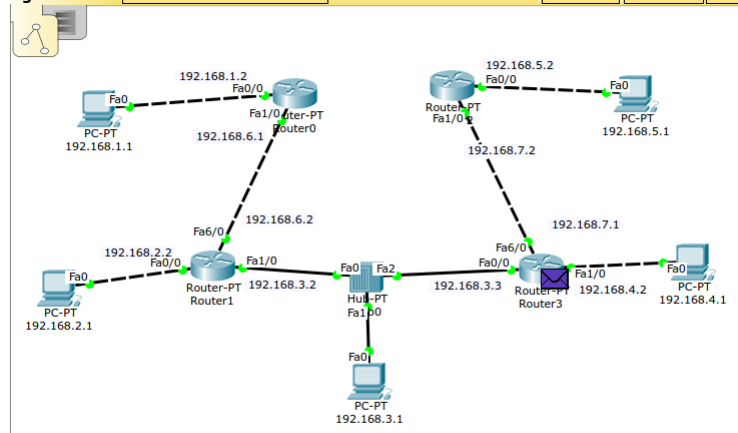
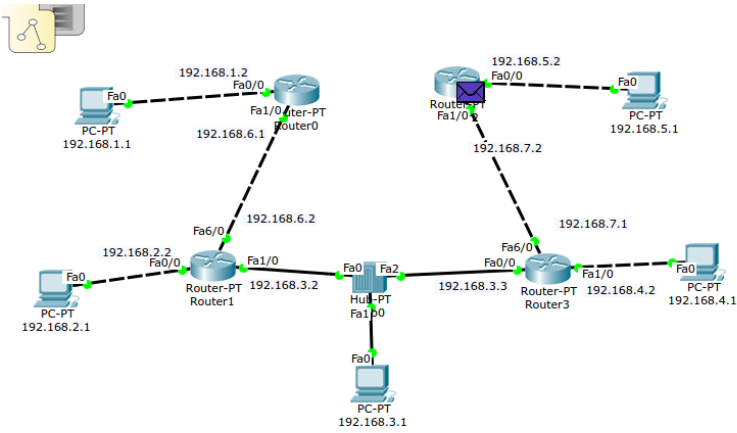


Illustration 7: Transferring packet trough Routers.