WORKSHEET – 2.3

NAME – RAJDEEP JAISWAL

UID – 20BCS2761

BRANCH – BTECH CSE

SEC – 615 B

SUB – COMPUTER NETWORK

Aim:

Understand Routing Mechanism.

Task to be done:

Create a network to implement Distance Vector routing Protocol using Packet Tracer.

Requirements:

Packet Tracer.

Result/Output/Writing Summary:

a) **Static Routing:**

Static routing is the manual method of routing . In static routes the administrative distance is as default value. In **Static routing**, we can enter all the routes manually to the router. In other words, we can define each routing steps **one by one**. To access a network, which nodes we need to pass through, we can define such steps. This work is not an easy work, so static routing is used in small networks.

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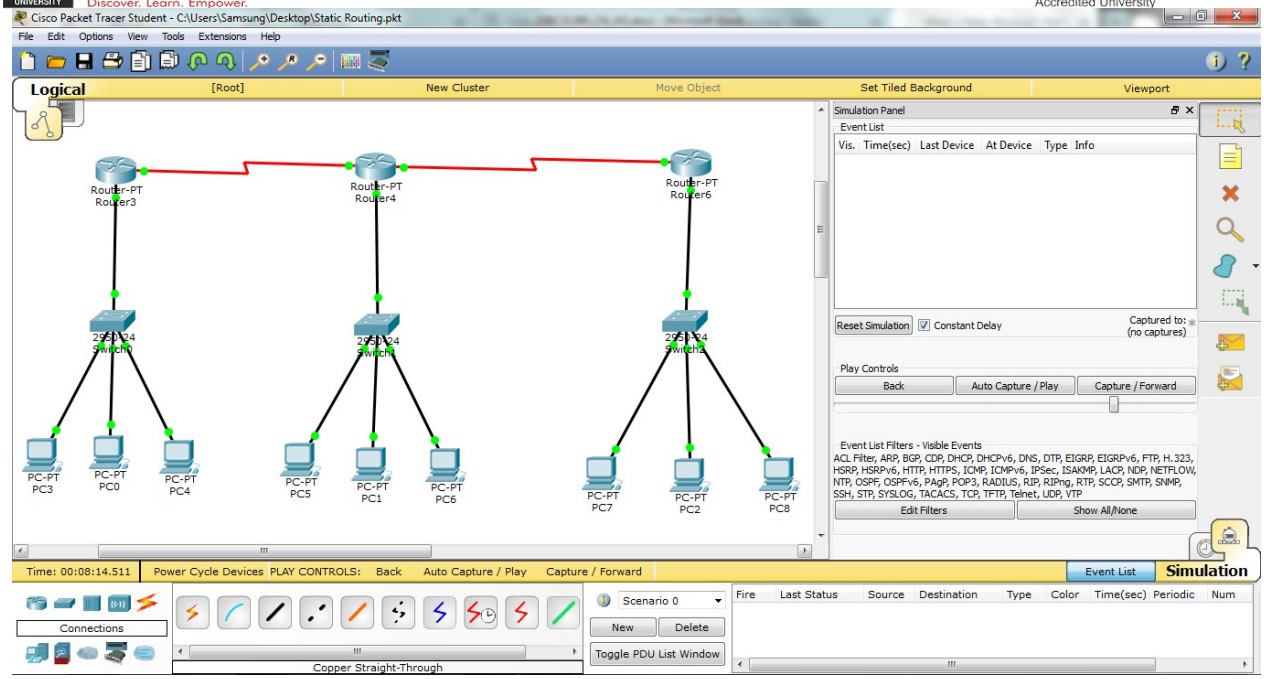
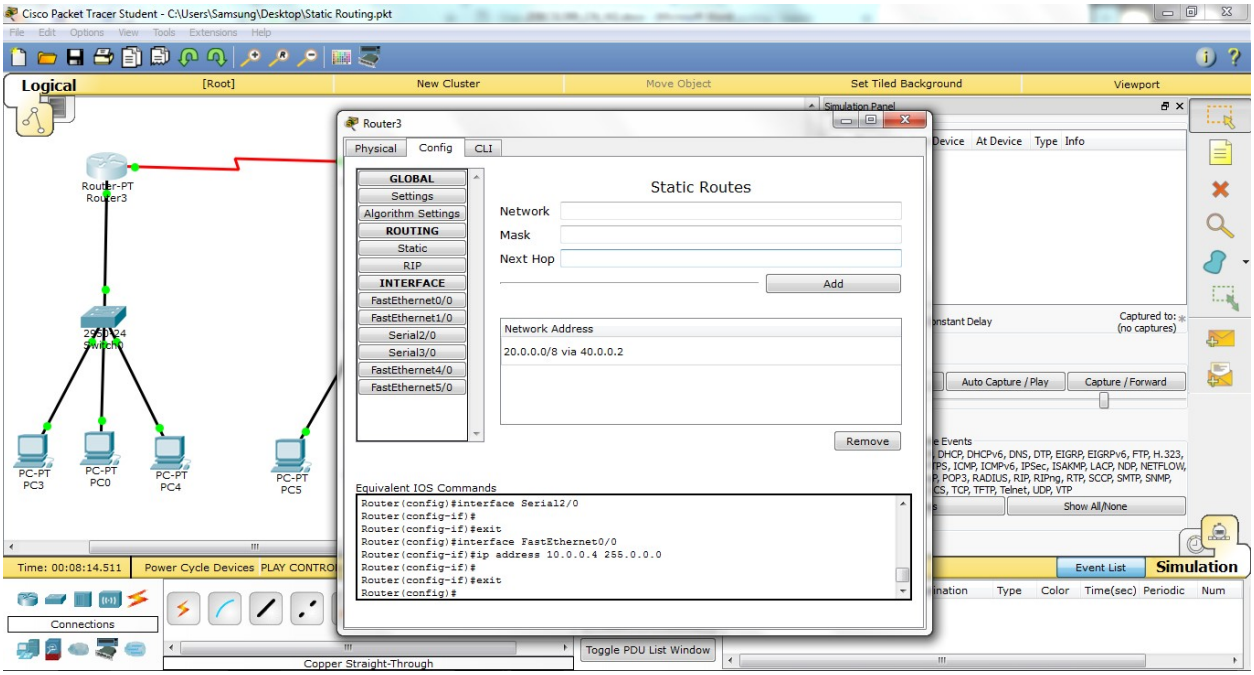
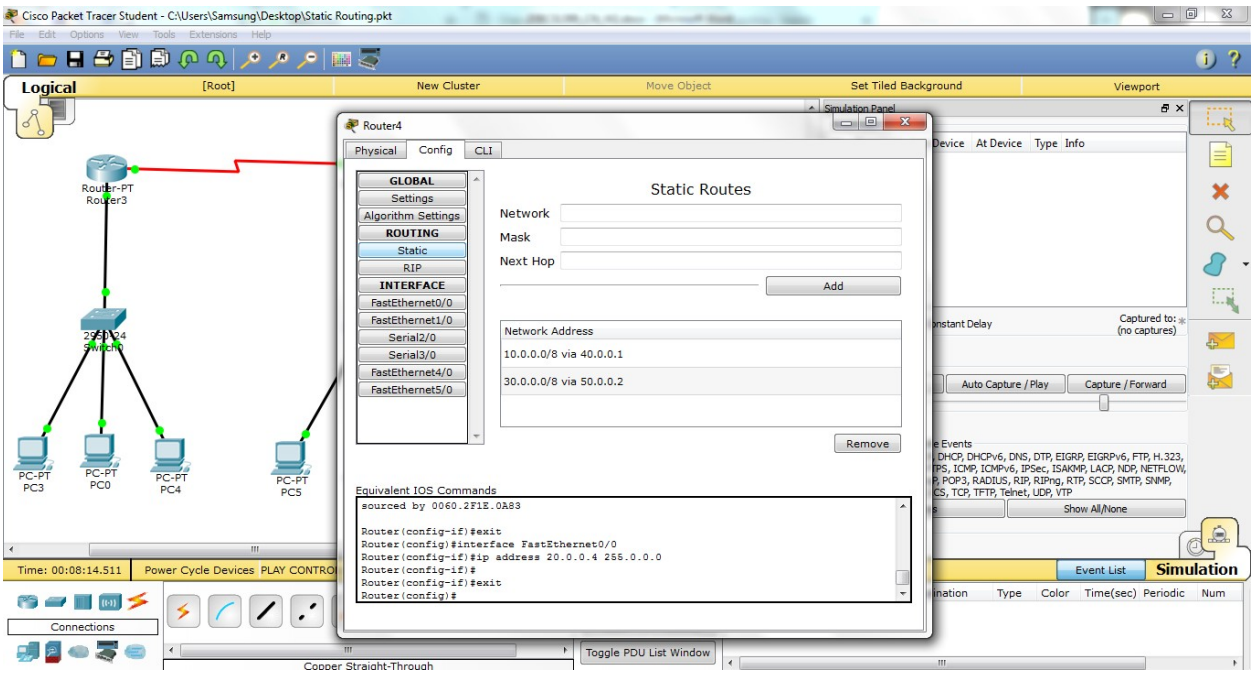
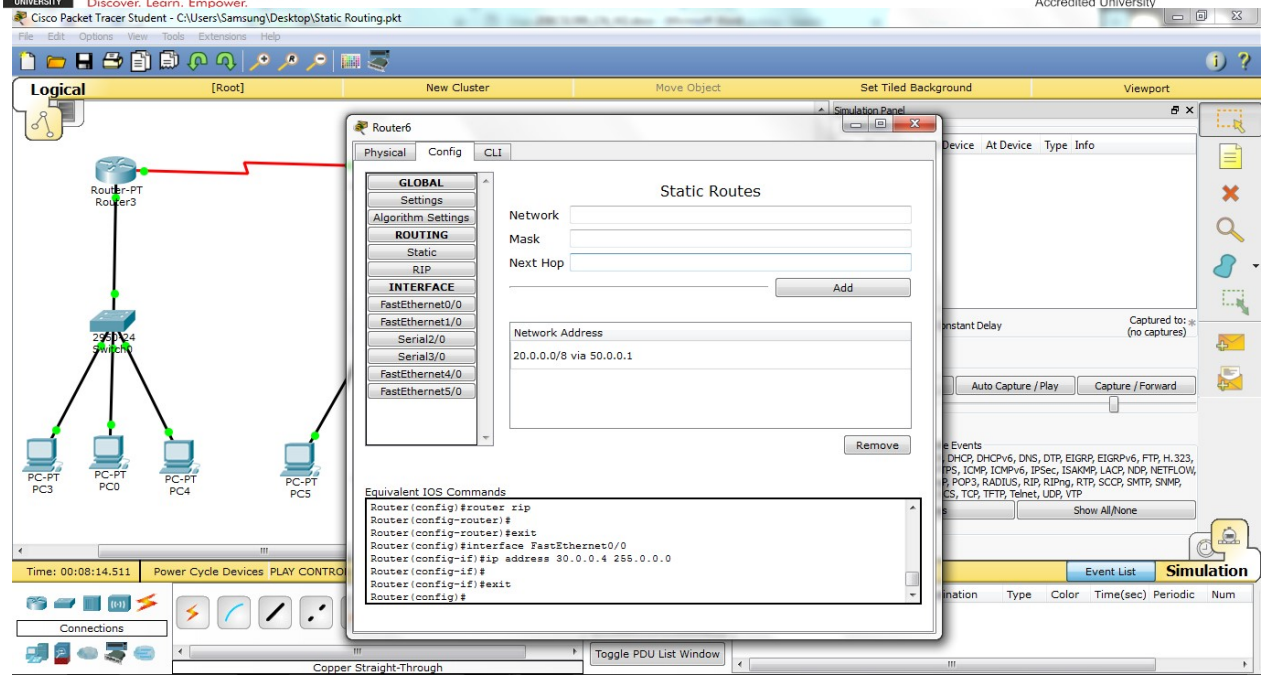


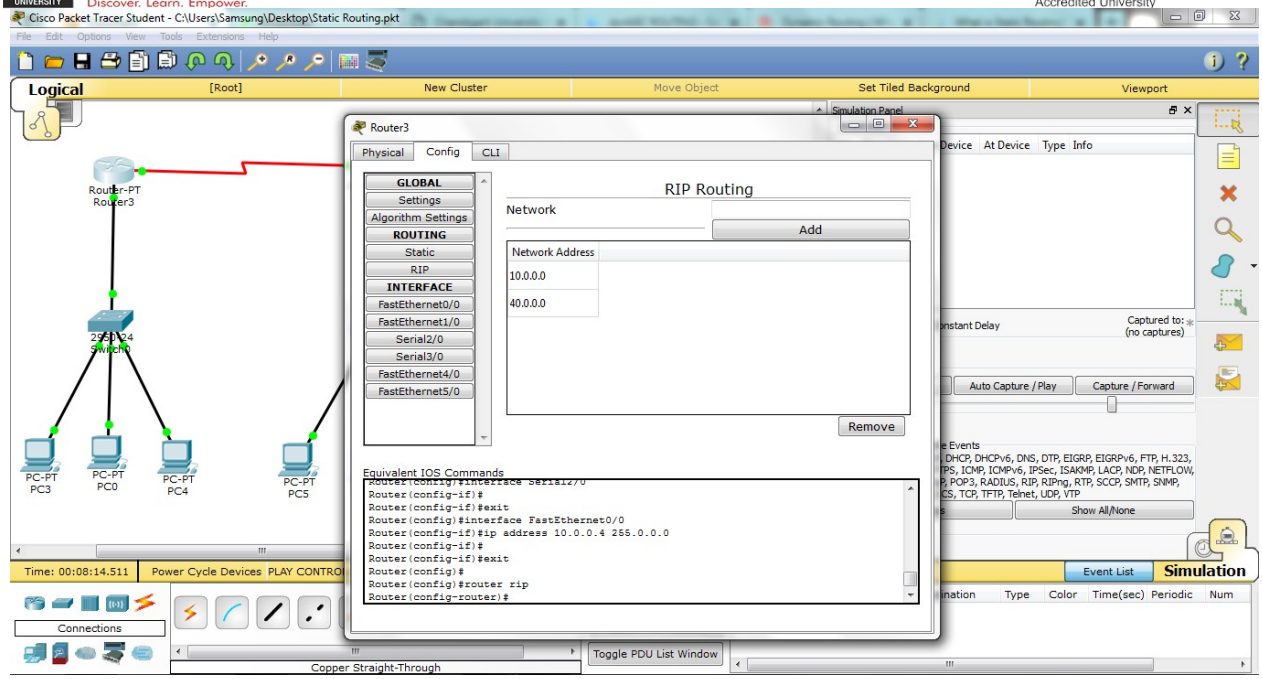

Cisco Packet Tracer Student - C:\Users\Samsung\Desktop\Static Routing.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router3
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Static Routes
Network
Mask
Next Hop
Add
Network Address
20.0.0.0/8 via 40.0.0.2
Remove
Equivalent IOS Commands
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.4 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router-PT Router3
PC-PT PC3
PC-PT PC0
PC-PT PC4
PC-PT PC5
Time: 00:08:14.511
Power Cycle Devices
PLAY CONTROL
Event List
Simulation
Connections
Copper Straight-Through
Toggle PDU List Window

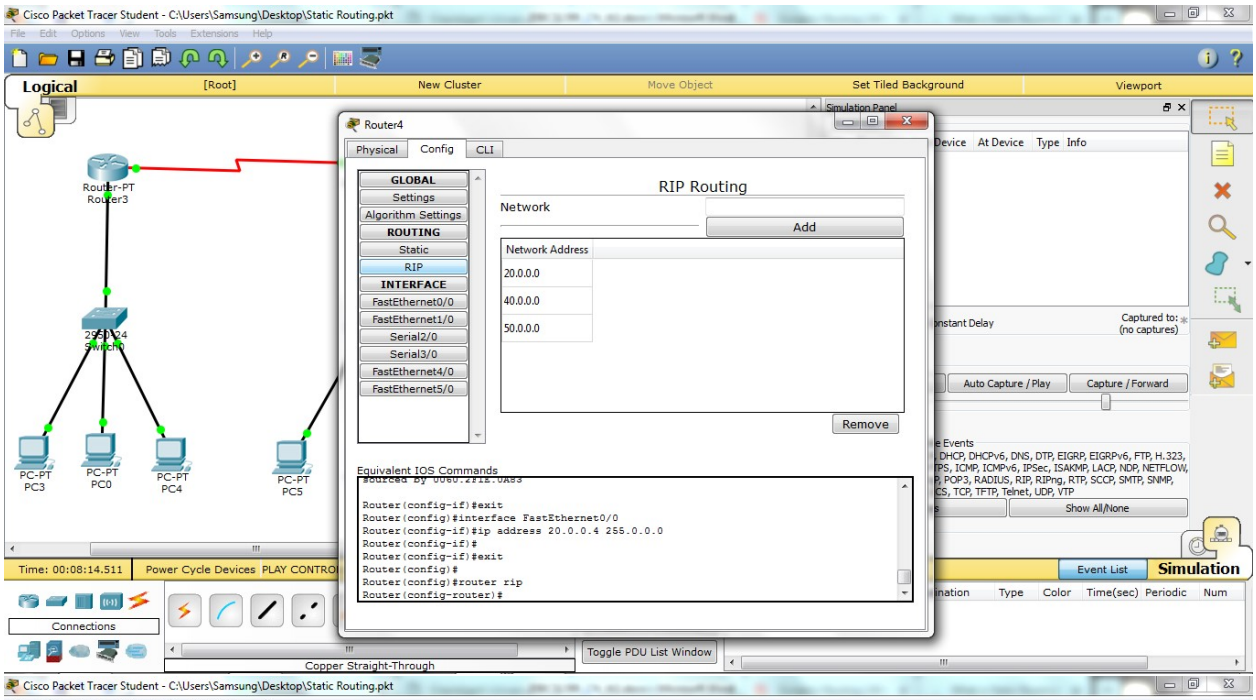

Cisco Packet Tracer Student - C:\Users\Samsung\Desktop\Static Routing.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router4
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
Static Routes
Network
Mask
Next Hop
Add
Network Address
10.0.0.0/8 via 40.0.0.1
30.0.0.0/8 via 50.0.0.2
Remove
Equivalent IOS Commands
sourced by 0060.2F1E.0A83
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 20.0.0.4 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router-PT Router3
PC-PT PC3
PC-PT PC0
PC-PT PC4
PC-PT PC5
Time: 00:08:14.511
Power Cycle Devices
PLAY CONTROL
Event List
Simulation
Connections
Copper Straight-Through
Toggle PDU List Window

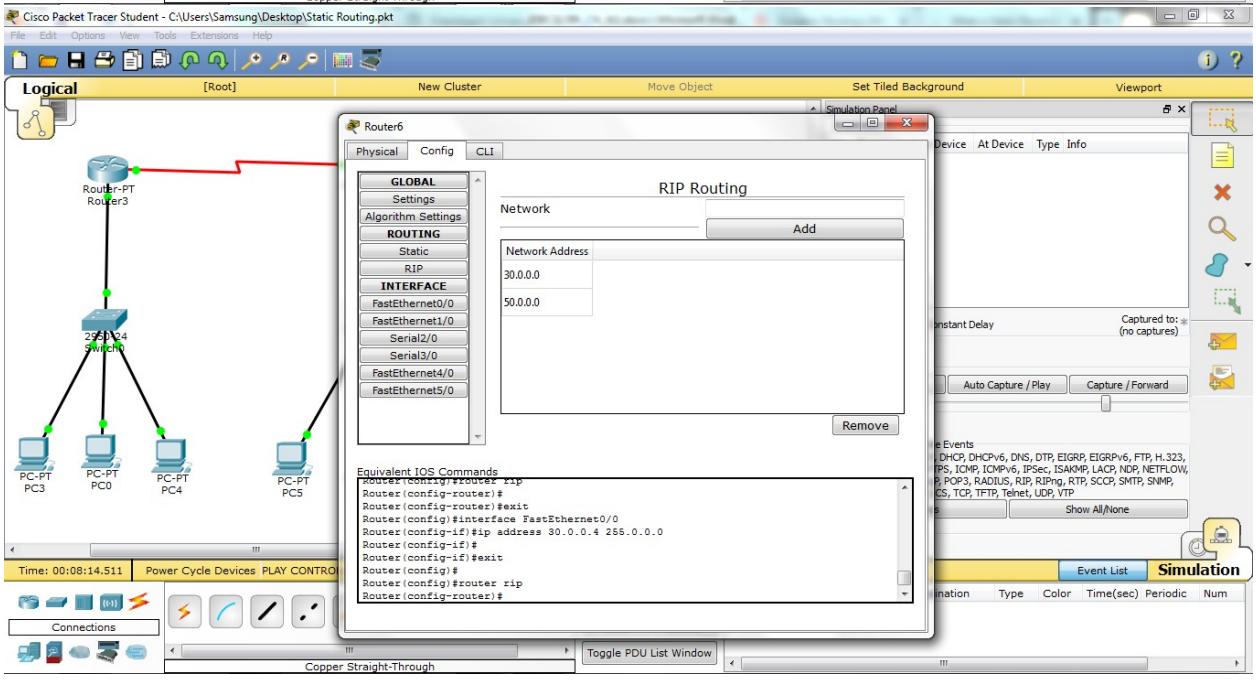


b) **Dynamic Routing:**

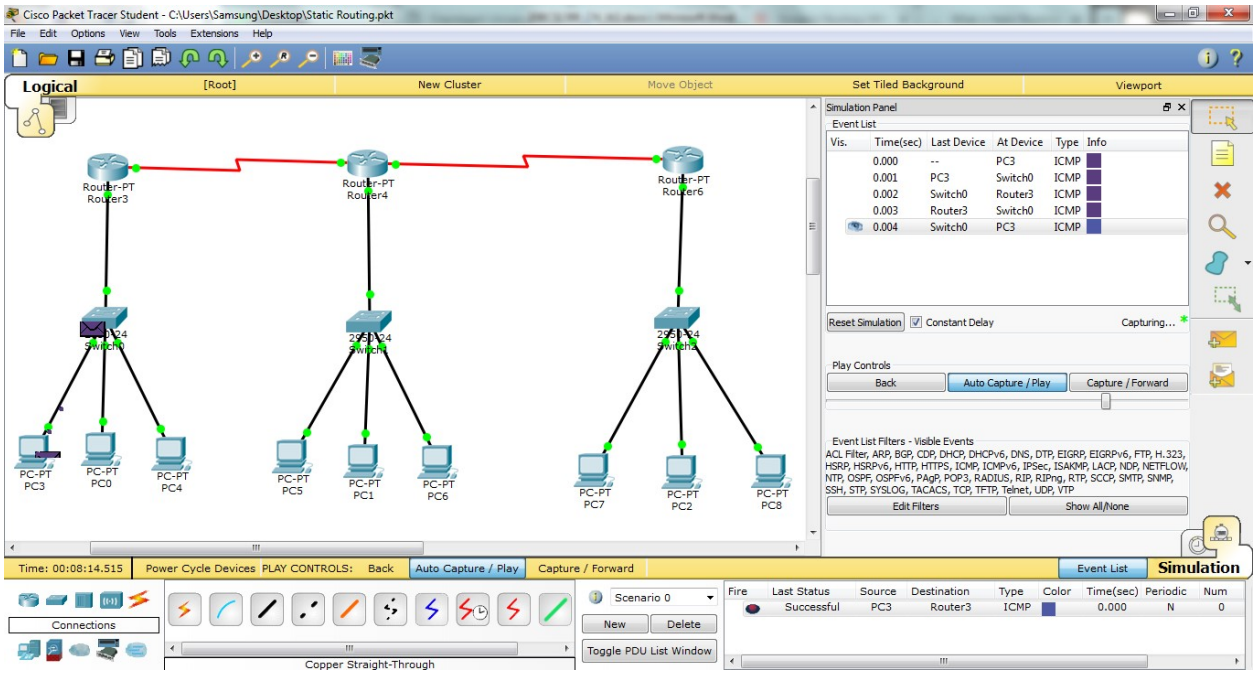
Dynamic routing is the routing that is done with the help of Routing Protocols. Dynamic Routing is a network routing procedure that facilitates the routers to pick and choose the routing paths depending on the network structure's logical changes in real-time. This is opposite to the typical traditional static network routing. This is an automated routing technique that requires very less administration and supervision. Various protocols used in this routing method are Open Shortest Path First (OSPF), Routing Information Protocol (RIP), Border Gateway Protocol (BGP), and Enhanced Interior Gateway Routing Protocol (EIGRP).


Cisco Packet Tracer Student - C:\Users\Samsung\Desktop\Static Routing.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router3
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
RIP Routing
Network
Add
Network Address
10.0.0.0
40.0.0.0
Remove
Equivalent IOS Commands
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 10.0.0.4 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#router rip
Router(config-router)#
Router-PT Router3
PC-PT PC3
PC-PT PC0
PC-PT PC4
PC-PT PC5
Time: 00:08:14.511
Power Cycle Devices
Connections
Copper Straight-Through
Toggle PDU List Window
Auto Capture / Play
Capture / Forward
Event List
Simulation

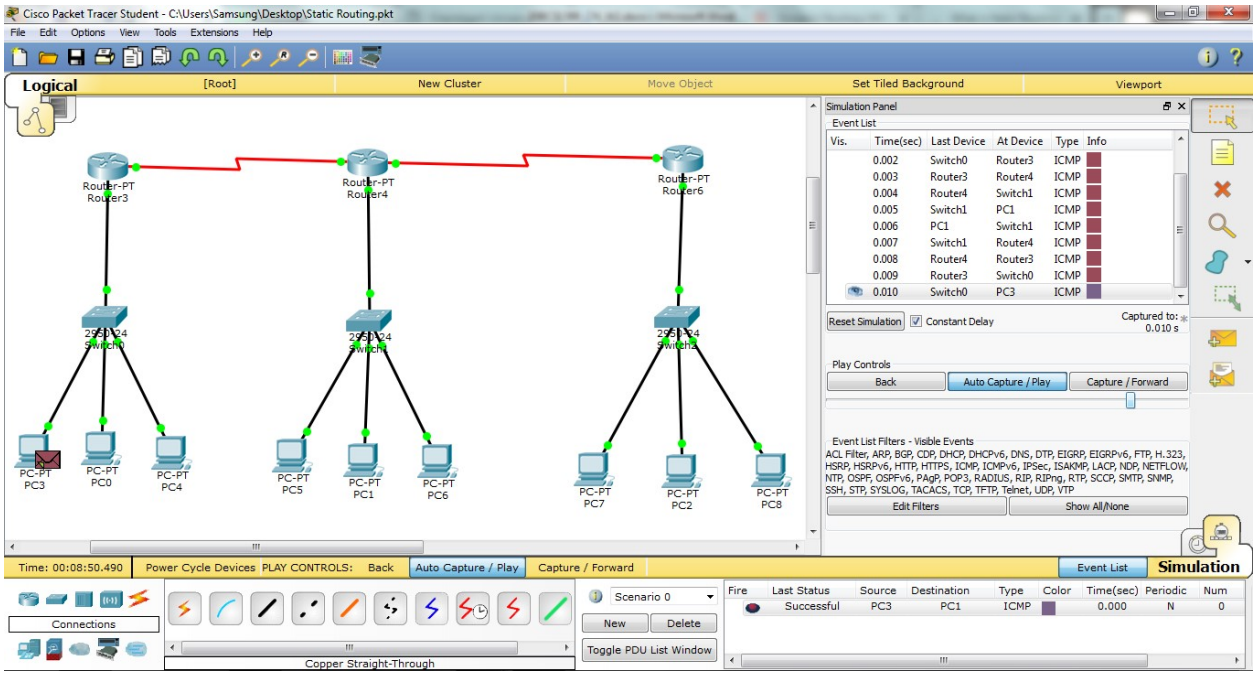

Cisco Packet Tracer Student - C:\Users\Samsung\Desktop\Static Routing.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router4
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
RIP Routing
Network
Add
Network Address
20.0.0.0
40.0.0.0
50.0.0.0
Remove
Equivalent IOS Commands
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 20.0.0.4 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#router rip
Router(config-router)#
Router-PT Router3
2950-24 Switch0
PC-PT PC3
PC-PT PC0
PC-PT PC4
PC-PT PC5
Time: 00:08:14.511
Power Cycle Devices
PLAY CONTRO
Connections
Copper Straight-Through
Toggle PDU List Window
Event List
Simulation


Cisco Packet Tracer Student - C:\Users\Samsung\Desktop\Static Routing.pkt
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router6
Physical
Config
CLI
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0
RIP Routing
Network
Add
Network Address
30.0.0.0
50.0.0.0
Remove
Equivalent IOS Commands
Router(config-router)#
Router(config-router)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 30.0.0.4 255.0.0.0
Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#router rip
Router(config-router)#
Router-PT Router3
2950-24 Switch0
PC-PT PC3
PC-PT PC0
PC-PT PC4
PC-PT PC5
Time: 00:08:14.511
Power Cycle Devices
PLAY CONTRO
Connections
Copper Straight-Through
Toggle PDU List Window
Event List
Simulation

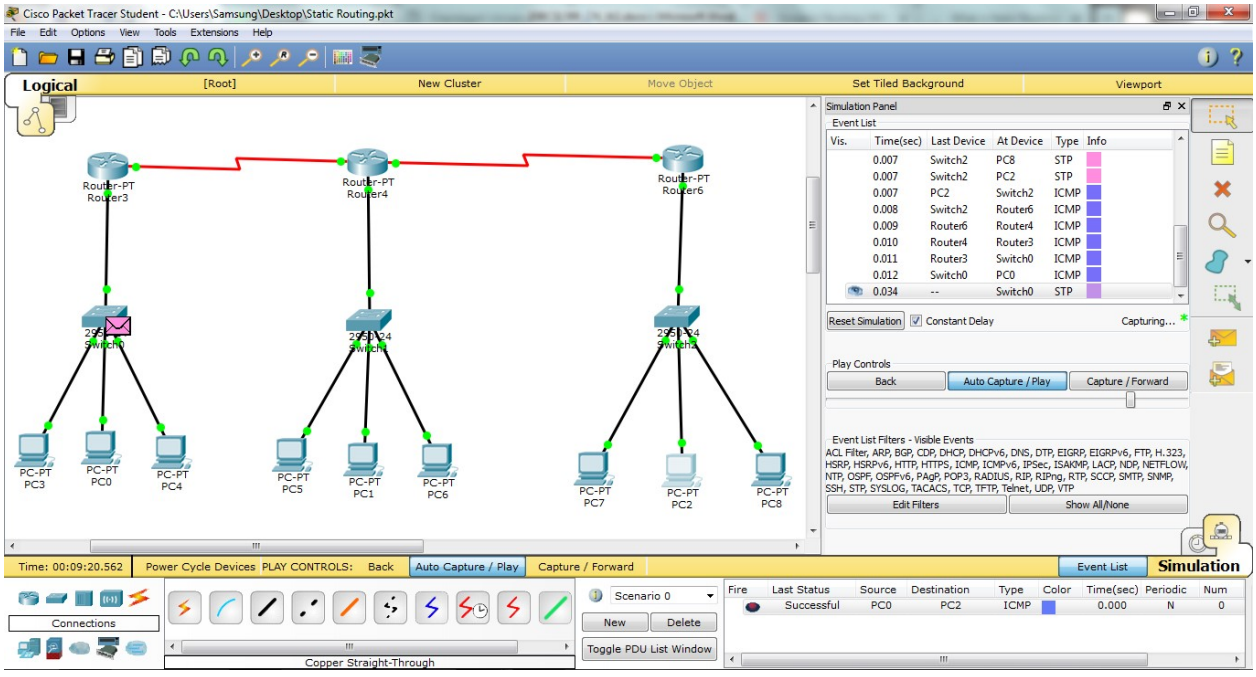
Complete Network:



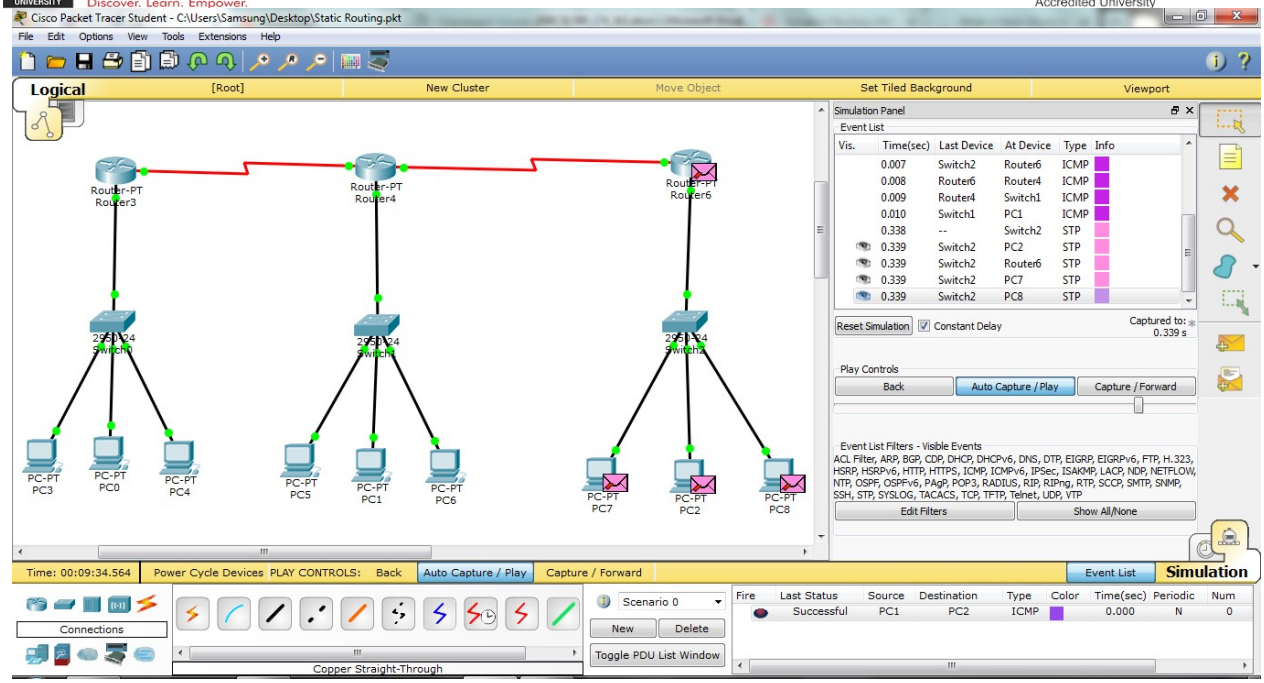
(Message Sent from Pc3 to router-3)



(Message sent from Pc-3 to Pc-1)



(Message Sent from PC-0 to Pc-2)



(Message sent from Pc-1 to Pc-2)

Learning outcomes (What I have learnt):

- Leant about Routing.
- Learnt how to configure network using static and dynamic routing.
- How to troubleshoot the network.
- Learnt to route the different networks.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			