Department of Information and Communication Engineering
Pabna University of Science and Technology

B.Sc. (Engineering) 4th Year 1st Semester Examination -2023

Session: 2019-2020

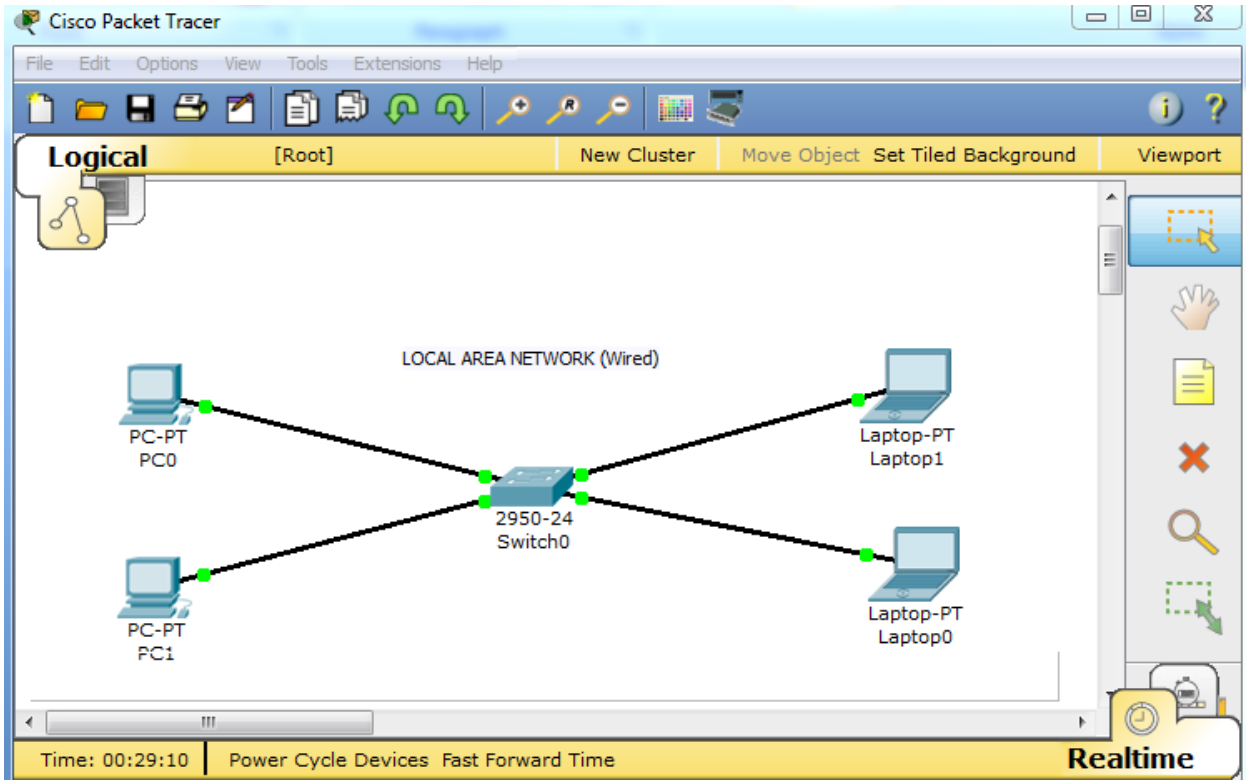
Course ID: ICE-4102

Course Title: Data Communication and Networking Sessional

Laboratory Problem List

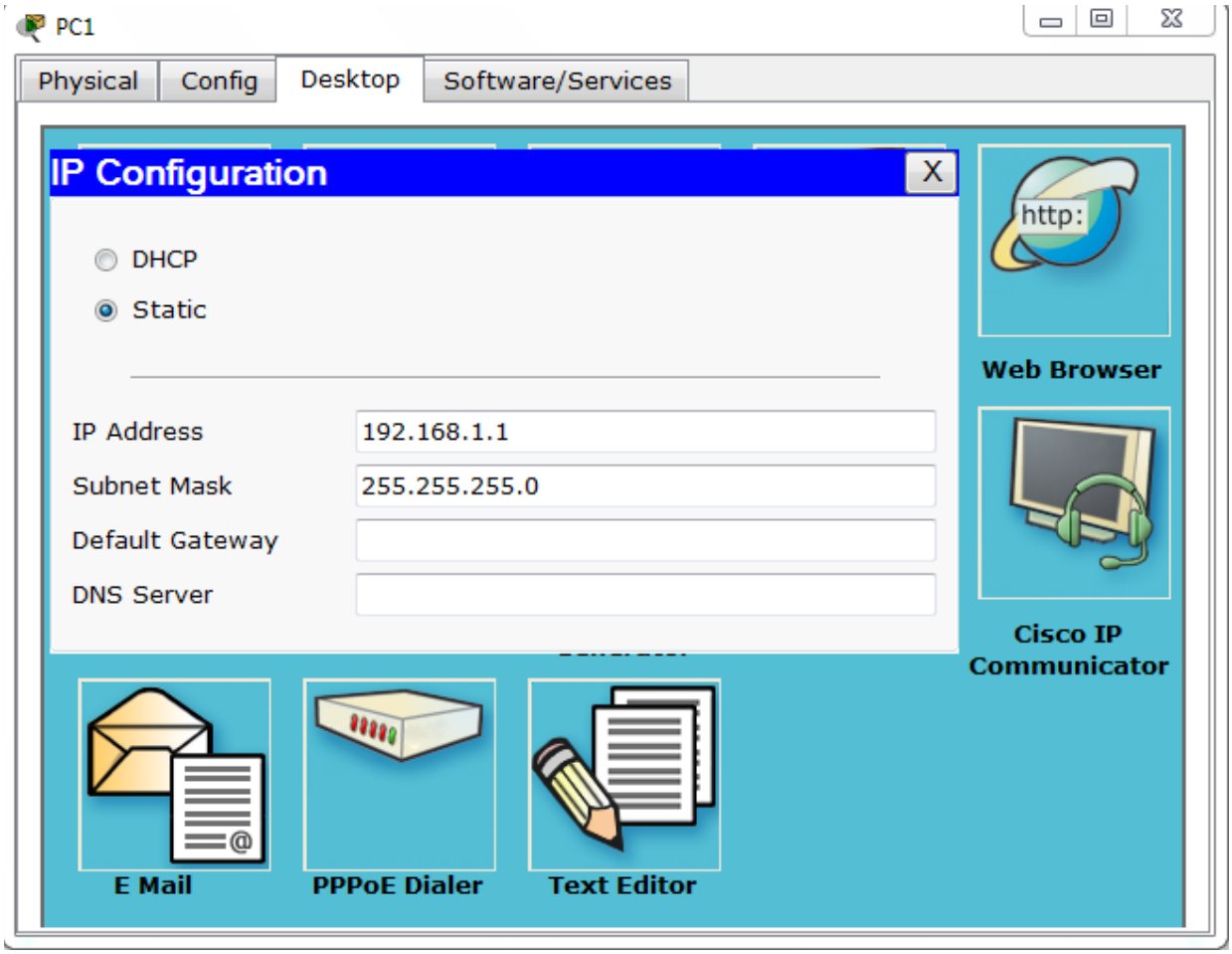
Experiment No. : 01
Name of the Experiment: Configure Local Area Network (Wired)
Required Component:

(1). Switch
(2). UTP Cable (Straight Through)
(3). End Device(Desktop, Laptop etc)
(4). IP Address (192.168.1.0)



#Procedure:

(1). Drag and Drop a switch on CISCO Packet Tracer interface.
(2). Take some end device which supports NIC Card with RJ45 connector.
(3). Choose Copper "Straight Through" UTP Cable for connect ion.
(4). Click on switch and select the specific port no for new connection.
(5). Repeat procedure (4) as much your end device remain connection less.
(6). Double click on an end device and you can see this interface is by default on "Physical" tab.
(7). Select Desktop tab and click on "IP Configuration"



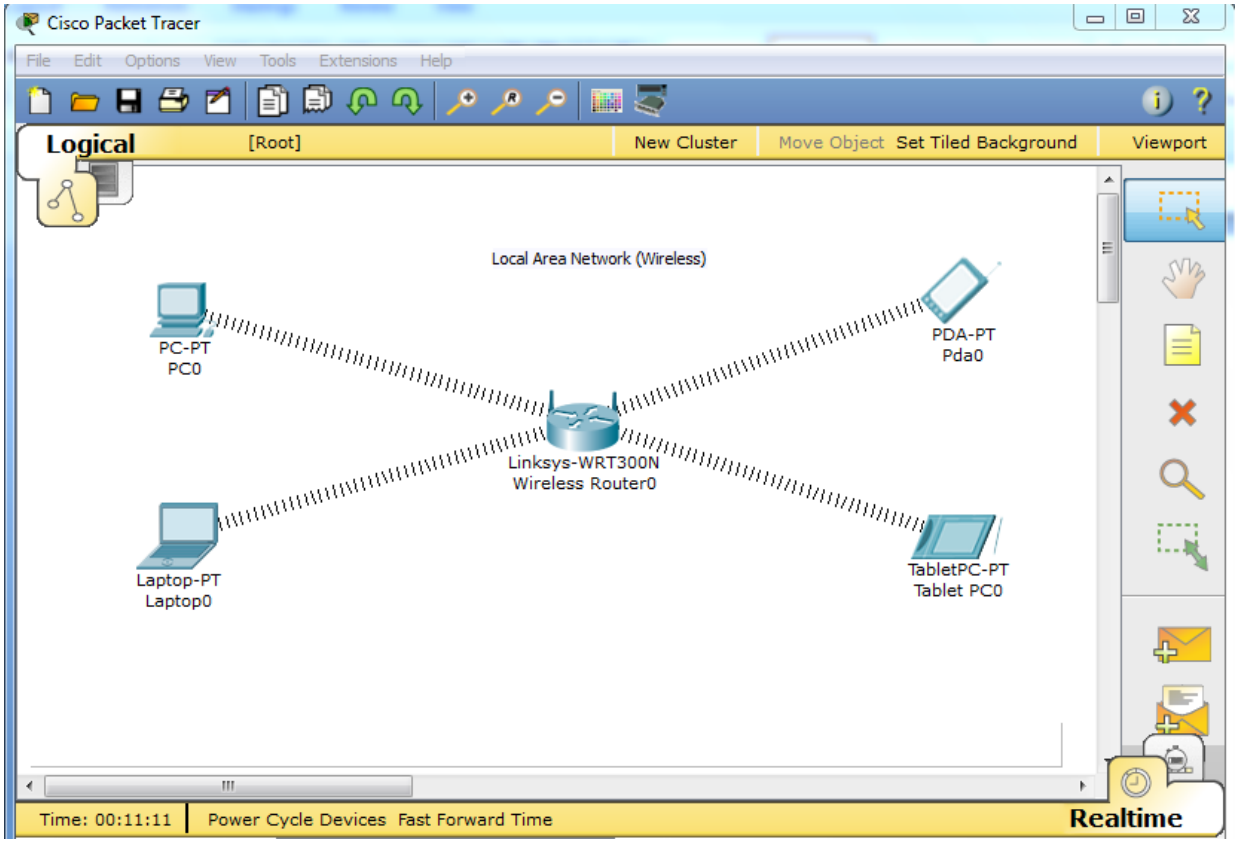
(8). Put IP Address and Click on submit section Subnet Mask will take automatically.
(9). Just close the section.
(10). Put IP Address on all the remaining end device.

#Simulation Process:

(#) first way:
(1). Select a packet from right side bar.Mouse pointer will change with packet symbol.
(2). Select first a PC and then select another PC with packet symbol pointer.
(3). It implies that a packet will flow from first device to second device.
(4). Then you can see successful notification right side bottom section.
(#). Second way:
(5). Double click on PC, select “Desktop” tab, Click on “Command Prompt”
(6). for example this pc with 192.168.1.1 and it will ping 192.168.1.2
(7). write down “ping 192.168.1.2” press enter.
(8). if your physical and logical connection is ok then it will say that...
Packet Send=4 Packet Received=4 Packet Lost=0%

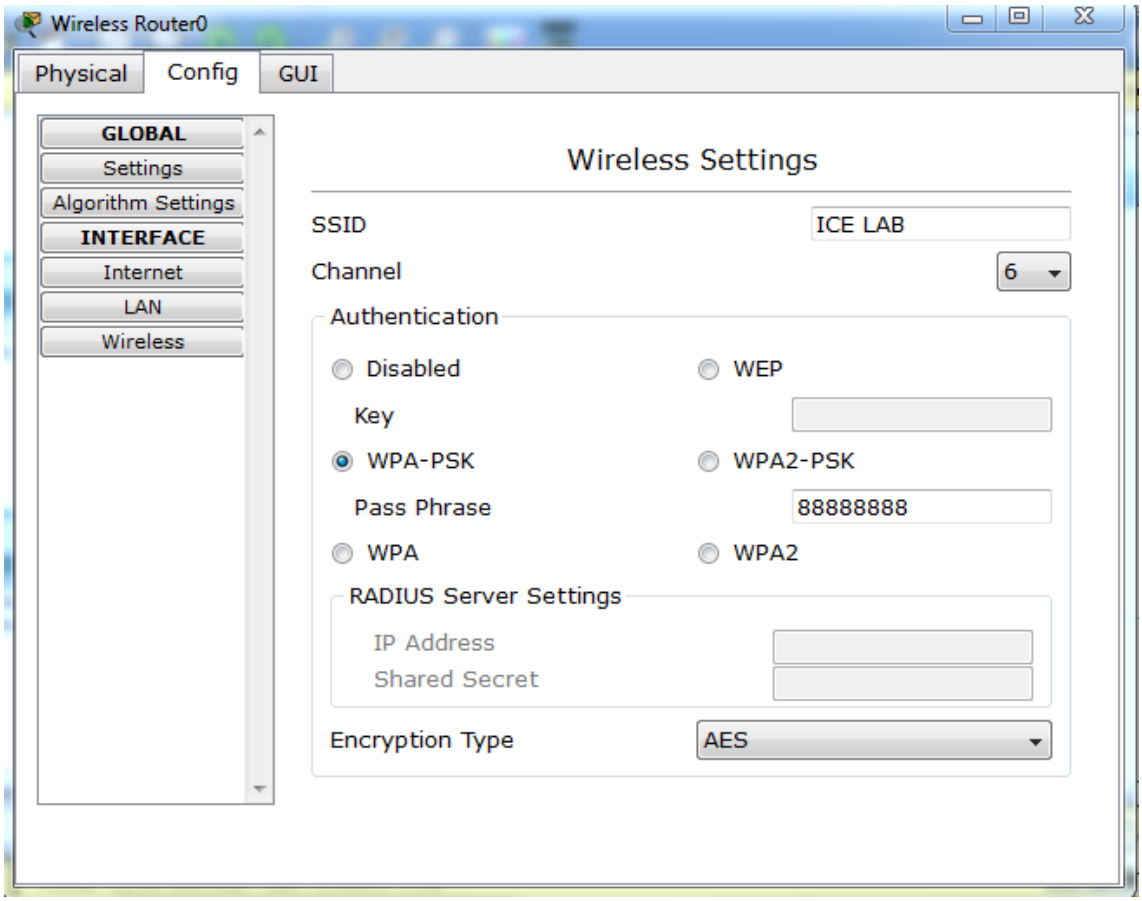
Experiment No. : 02
Name of the Experiment: Configure Local Area Network (Wireless)
Required Component:

(1) Router (Linksys-WRT300N)
(2) End Device (Desktop, Laptop, TabletPC, PDAetc)
(3) IP Address (192.168.1.0)



#Procedure:

(1). Drag and Drop a wireless router some device which support wireless communication on CISCO Packet Tracer interface.
(#). For Desktop PC
(2). Double click on PC-PT then by default “Physical” tab. first power off your pc. We need to add Linksys-WMP300N Module on this pc.
(3). Replace existing module with our “Linksys-WMP300N” module.
(4). power on your device.
(#). For laptop same procedure will apply. Now desktop and laptop are ready to communicate over wireless media.
(#). Router configuration:
(5). Double Click and go to “Config” tab. Then select wireless.
(6). now give a name to your access point (SSID)
(7). Select an Authentication type. By default it will Disabled we will check out “WPA-PSK” and set password 88888888 and colse it.



(8). double click on desktop pc and open “PC Wireless” from “Desktop” tab.
(9). click on “Connect” tab by default it will link information. Press “Refresh” button.
(10). Then we will see an access point and press “Connect” button.
(11). put your password of network on “Pre Shared key” and then connect. Same on Laptop
(#) Config for PDA
(12). Double click on it and then select “Config” tab and also “Wireless” from left bottom.
(13). put your Access point name (SSID) and password “WPA-PSK” and close it. Same for Tablet.

#Simulation Process:

(#) first way:

(1). Select a packet from right side bar.Mouse pointer will change with packet symbol.
(2). Select first a PC and then select another PC with packet symbol pointer.
(3). It implies that a packet will flow from first device to second device.
(4). Then you can see successful notification right side bottom section.

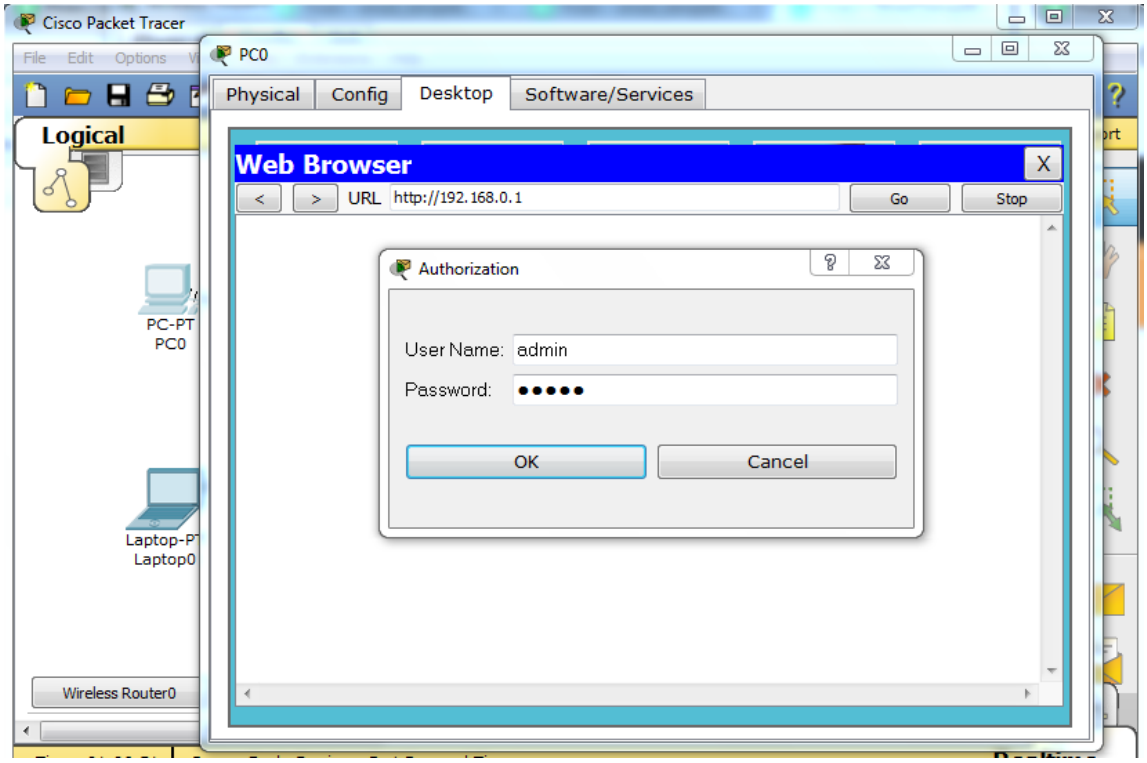
(#). Second way:

(5). Double click on PC, select “Desktop” tab, Click on “Command Prompt”
(6). for example this pc with 192.168.1.1 and it will ping 192.168.1.2
(7). write down “ping 192.168.1.2” press enter.
(8). if your physical and logical connection is ok then it will say that...
Packet Send=4 Packet Received=4 Packet Lost=0%

(#). Third way: access router control panel through end device

(9) Double click on desktop or laptop then select “Web Browser” from “Desktop” tab

(10). write down router ip address on browser address bar and press inter.
(11). A command prompt will appear for authentication give username and password admin.
(12). If everything is ok then you will allow to access on router.

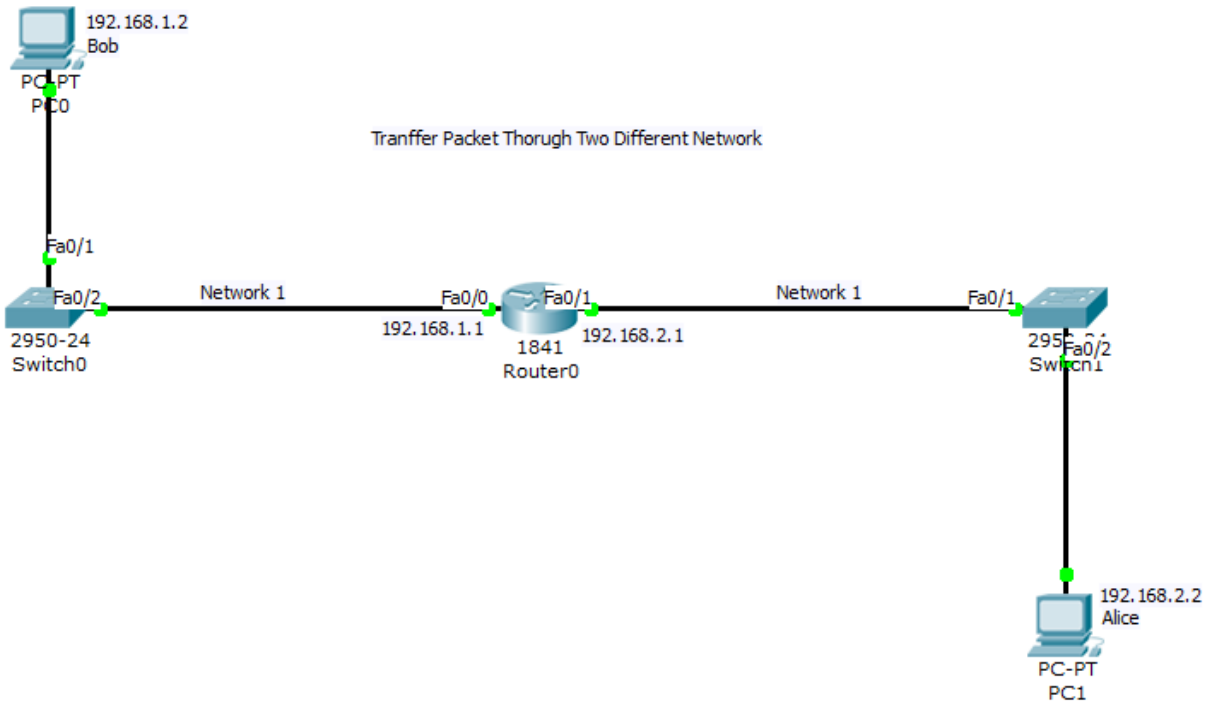


Experiment No. : 03

Name of the Experiment: Transfer packets through two different network

Required Component:

(1). Switch
(2). UTP Cable (Straight Through)
(3). End Device (Desktop, Laptop etc)
(4). IP Address (192.168.1.0, 192.168.2.0)
(5). Router



#Procedure:

(1). Drag and Drop two switch one router and 2 end device
(2). Select cable and connect two switch through router and then end device will connected with switch.
(3). Double click on router, here this router by default two interface fa 0/0 and fa 0/1. those two interface are connected two different switch also two different network.
(4). Click on CLI type no on the text edit option.
(5). If you press yes then router will ask several question for his system maintains but all of those are not usable to us. so we just type no.
(6). Router stay normally three stages. one is privilege mode then global config and Finlay specific configuration
(7). Now we are in privilege mode to promote global config type enable and press enter then you can see it's router symbol will change
(8). we are now global configuration mode so we need to access specific interface and configure it.
(9). just write down "interface fa 0/0" this is for interface 0/0 of router. Then it need to add ip address so that just type e.g "ip address 192.168.1.1" then put subnet musk 255.255.255.0
(10). By default every interface of Cisco device down state. So we need it to up. just write down

“no shut” command
(11). go back to previlege mode by “exit” command.
(12). finally write down “wr” to save configuration
(13). we just configured only one interface. we need another one of different network with different ip address.
(14). After configure the router we need to mention ip address of each end device.

#CLI Procedure:

```
Continue with configuration dialog? [yes/no]: no
Press RETURN to get started!

Router>enable
Router#configure terminal
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

%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)#interface fastEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
[OK]
Router#
```

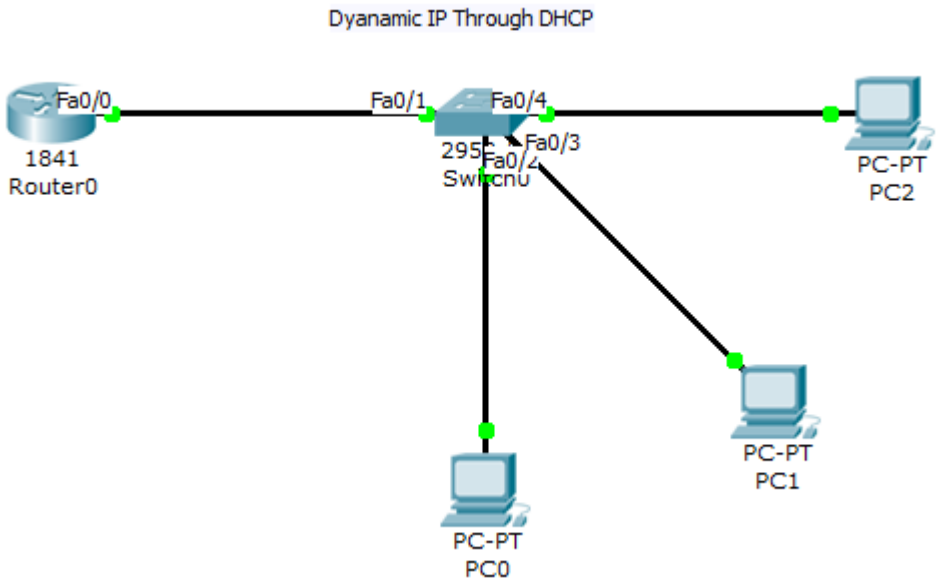
#Simulation Process:

(#) first way:

(1). Select a packet from right side bar.Mouse pointer will change with packet symbol.
(2). Select first a PC and then select another PC with packet symbol pointer.
(3). It implies that a packet will flow from first device to second device.
(4). Then you can see successful notification right side bottom section.

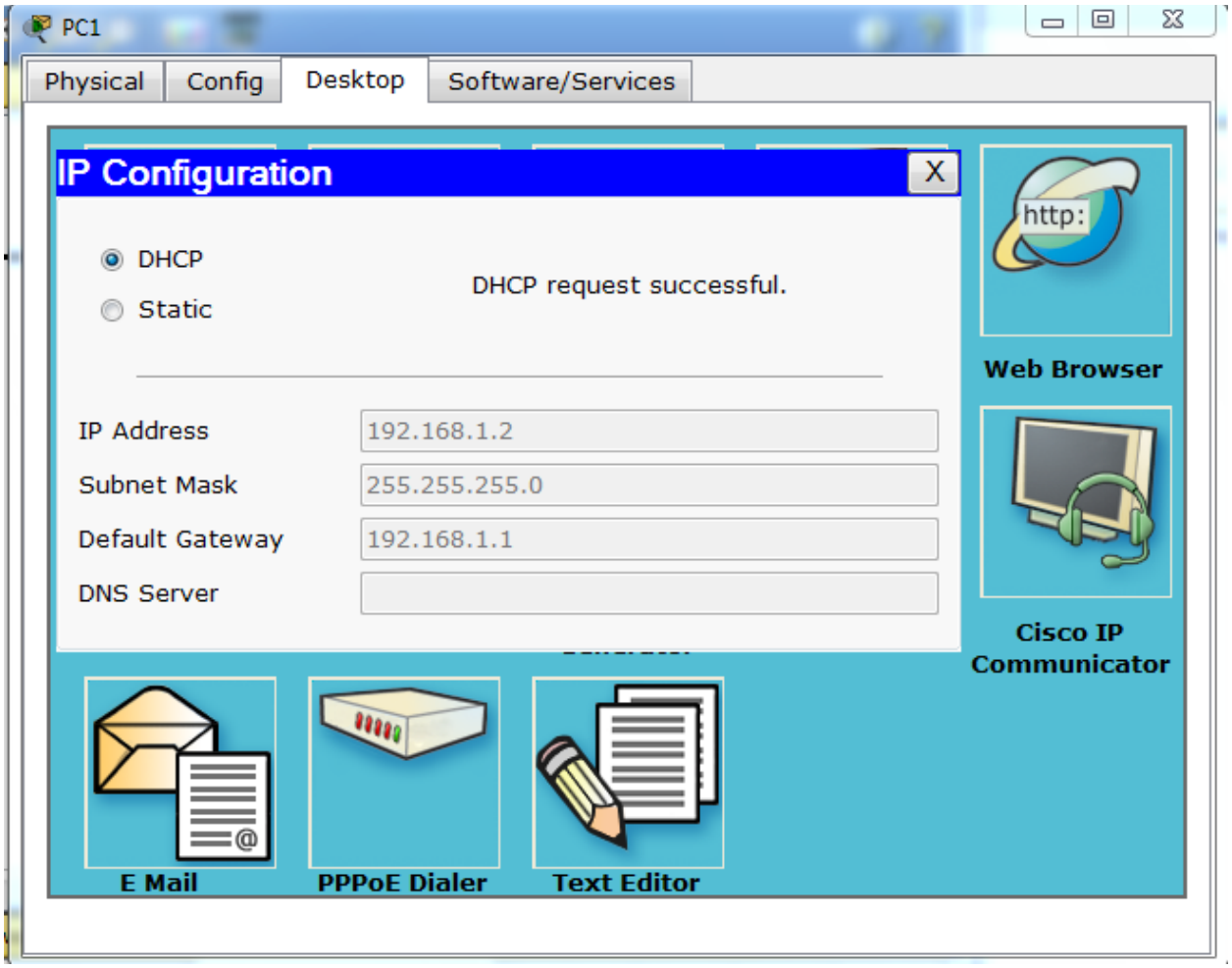
Experiment No. : 04
Name of the Experiment: Dynamic IP through DHCP
Required Component:

(1). Switch
(2). UTP Cable (Straight Through)
(3). End Device (Desktop, Laptop etc)
(4). IP Address (192.168.1.0)
(5). Router



#Procedure:

(1). Drag and Drop one switch one router and 3 or more end device
(2). Connect them UTP Straight Through Cable
(3). Double click on router and then click on CLI Mode
(4). enter privilege then global configuration mode.
(5). Access an interface such as fa 0/0
(6). Assign ip and subnet musk then “no shut” to up this state.
(7). exit from here to global configuration mode
(8). write down the command “ipdhcp pool myPoleName”
(9). Mention the network and then router default ip
(10). exit and save change.
(11) double click on select “Desktop” and click on “IP configuration”
(12). click on DHCP to send a request for ip



#CLI Procedure:
Continue with configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

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

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

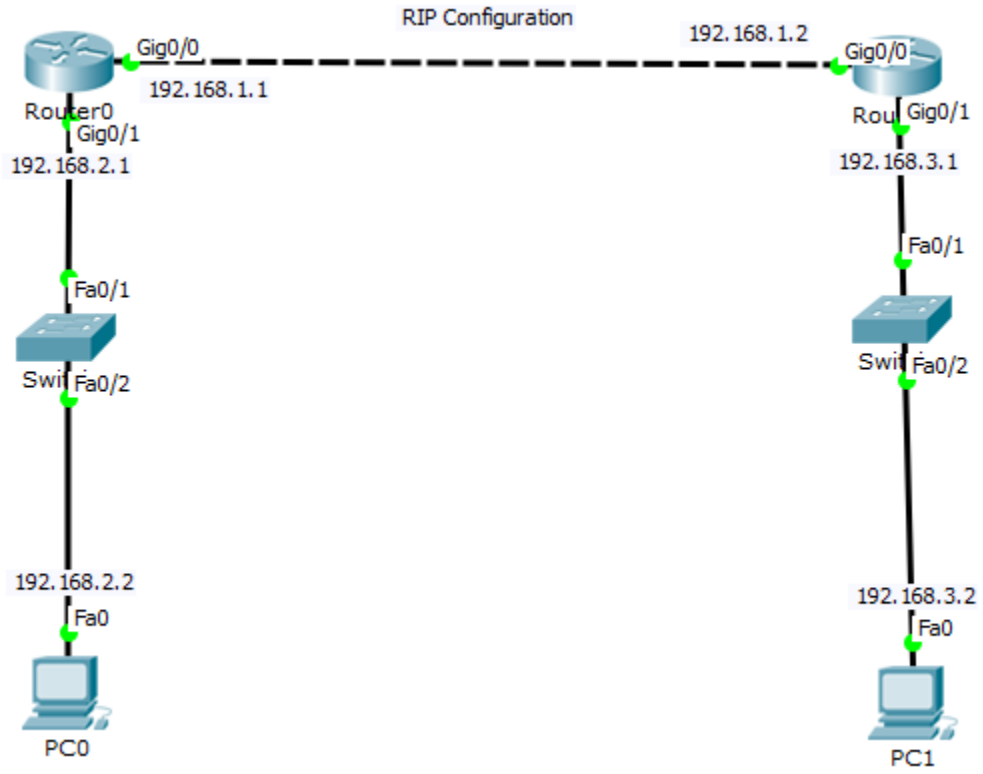
```
Router(config-if)#exit
Router(config)#ip dhcp pool ice
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
[OK]
Router#
```

Experiment No. : 05

Name of the Experiment: Configure Routing Information Protocol (RIP)

Required Component:

(1). Switch
(2). UTP Cable (Straight Through)
(3). Ethernet crossover cable
(4). End Device (Desktop, Laptop etc)
(5). Router



#Procedure:

(1). Drag and Drop Routers, Switches and PCs.
(2). Select cable and make sure a proper connections.
(3). Double click on router.
(4). Click on CLI Tab.
(5). First assign IP Address of on interface
(6). Assign RIP command.
(7). Mention RIP version
(8). Finally save this configuration

 # IP Configuration Router0 :

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
```

```
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.168.2.1 255.255.255.0
Router(config-if)#no shut
```

 # IP Configuration Router1 :

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.2 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.168.3.1 255.255.255.0
Router(config-if)#no shut
```

#RIP Configuration Router0 :

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router RIP
Router(config-router)#version 2
Router(config-router)#net 192.168.1.0
Router(config-router)#net 192.168.2.0
Router(config-router)#exit
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
```

 # RIP Configuration Router1 :

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router RIP
Router(config-router)#version 2
```

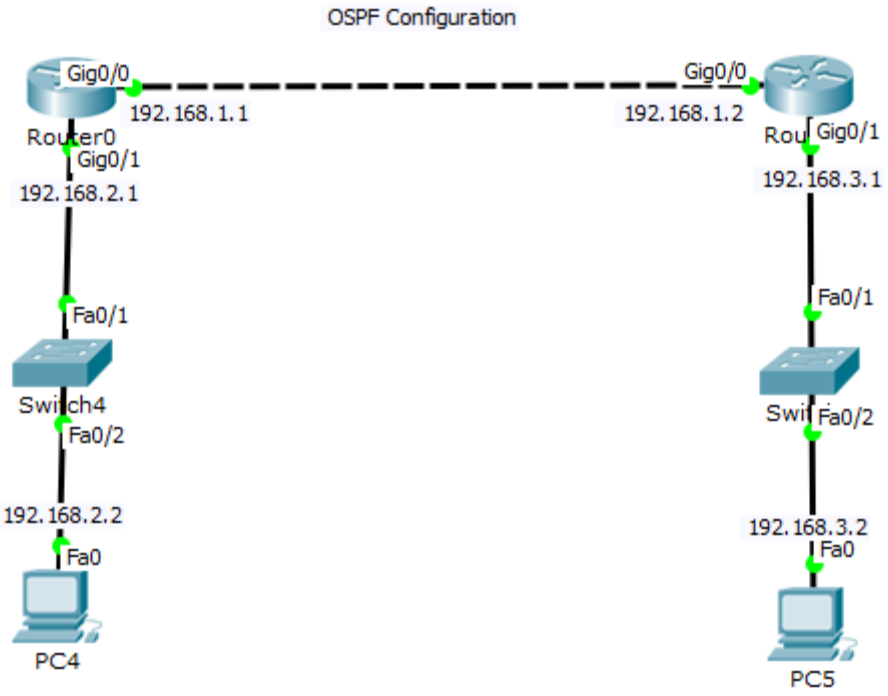
```
Router(config-router)#net 192.168.1.0
Router(config-router)#net 192.168.3.0
Router(config-router)#exit
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
```

#Simulation Process: (Router0)

```
Router#
Router#showip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.2/32 is directly connected, GigabitEthernet0/0
R    192.168.2.0/24 [110/2] via 192.168.1.1, 00:00:07, GigabitEthernet0/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/1
```

Name of the Experiment: 06
Name of the Experiment: Configure Open Shortest Path First (OSPF) Routing Protocol
Required Component:

(1). Switch
(2). UTP Cable (Straight Through)
(3). Ethernet crossover cable
(4). End Device (Desktop, Laptop etc)
(5). Router



#Procedure:

(1). Drag and Drop Routers, Switches and PCs.
(2). Select cable and make sure a proper connections.
(3). Double click on router.
(4). Click on CLI Tab.
(5). First assign IP Address of on interface
(6). Assign OSPF command. (ospf then numerical value such as 1,2,3)
(7). Mention Network then Wild card mask then area.
(8). Finally save this configuration

 # IP Configuration Router0 :

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
```

```
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.168.2.1 255.255.255.0
Router(config-if)#no shut
```

 # IP Configuration Router1 :

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.2 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.168.3.1 255.255.255.0
Router(config-if)#no shut
```

#OSPF Configuration Router0 :

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 192.168.2.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
```

 # OSPF Configuration Router1 :

```
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#network 192.168.1.0 0.0.0.255 area 0
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#exit
```

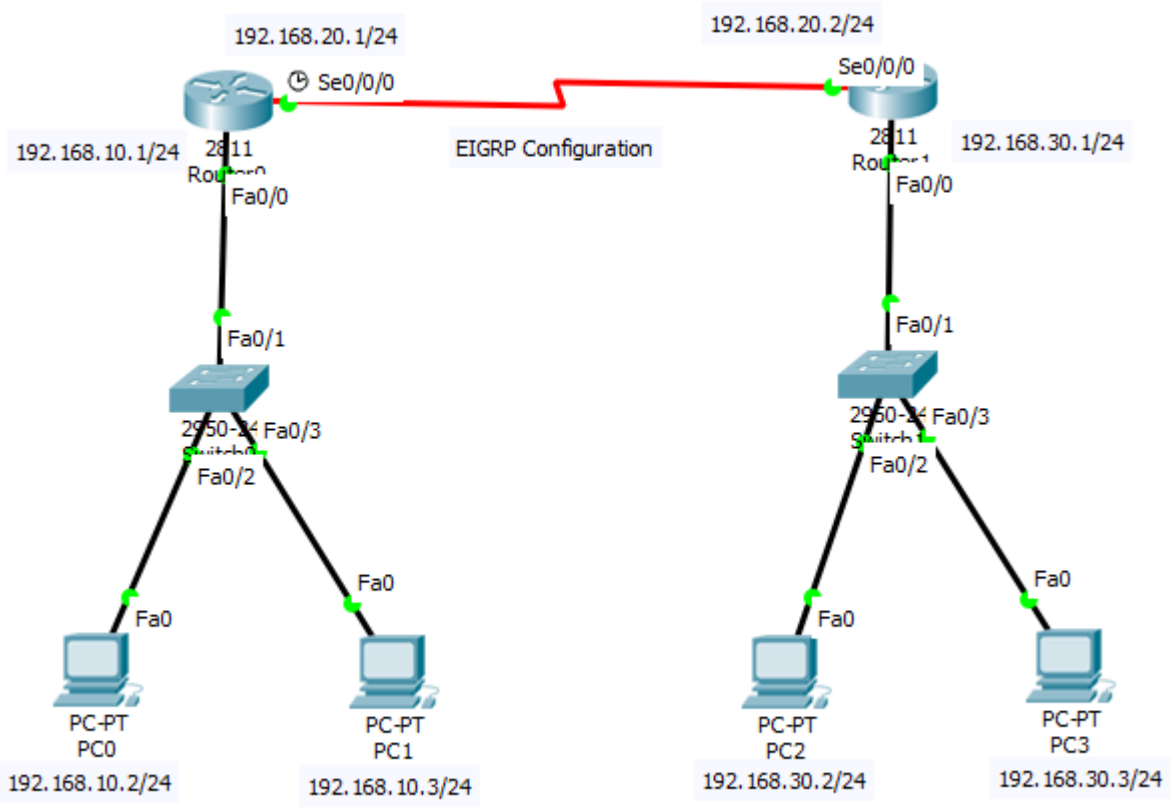
```
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
```

#Simulation Process: (Router0)

```
Router#
Router#showip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.2/32 is directly connected, GigabitEthernet0/0
O    192.168.2.0/24 [110/2] via 192.168.1.1, 00:00:07, GigabitEthernet0/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/1
```

Name of the Experiment: 07
Name of the Experiment: Configure Enhanced Interior Gateway Routing Protocol (EIGRP)
Required Components:

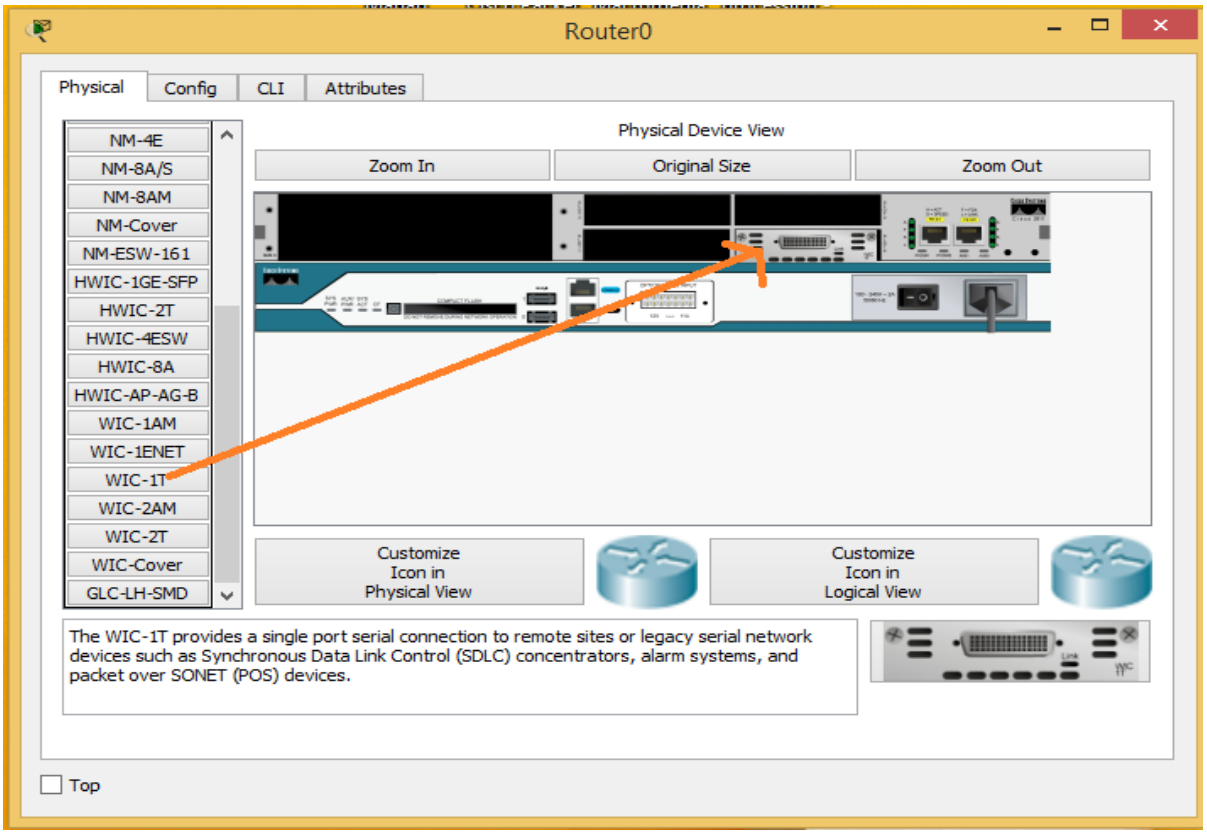
(1). Switch
(2). UTP Cable (Straight Through)
(3). Serial DCE cable
(4). End Device (Desktop, Laptop etc.)
(5). Router



#Procedure:

(1). Drag and Drop Routers (2811), Switches and PCs.

(2).Double click on router then by default “Physical” tab. first power off your router. We need to add WIC-!T Module on this router.Then power on your router.



(2). Select cable and make sure a proper connections.

(3). Double click on router.

(4). Click on CLI Tab.

(5). First assign IP Address of on interface

(6). Assign EIGRP command. (eigrp then numerical value such as 1,2,3)

(7). Mention network then subnet mask.

(8). Finally save this configuration

 # IP Configuration Router0 :

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
```

```
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)#interface serial 0/0/0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#clock rate 128000
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

 # IP Configuration Router1 :

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.30.1 255.255.255.0
Router(config-if)#no shutdown

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)#interface serial 0/0/0
Router(config-if)#ip address 192.168.20.2 255.255.255.0
```

```
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

 # EIGRP Configuration Router0 :

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router eigrp 10
Router(config-router)#network 192.168.10.0 255.255.255.0
Router(config-router)#network 192.168.20.0 255.255.255.0
Router(config-router)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

 # EIGRP Configuration Router1 :

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router eigrp 10
Router(config-router)#network 192.168.20.0 255.255.255.0
Router(config-router)#
%DUAL-5-NBRCHANGE: IP-EIGRP 10: Neighbor 192.168.20.1 (Serial0/0/0) is up: new
adjacency

Router(config-router)#network 192.168.30.0 255.255.255.0
Router(config-router)#^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#copy runn
Router#copy running-config st
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

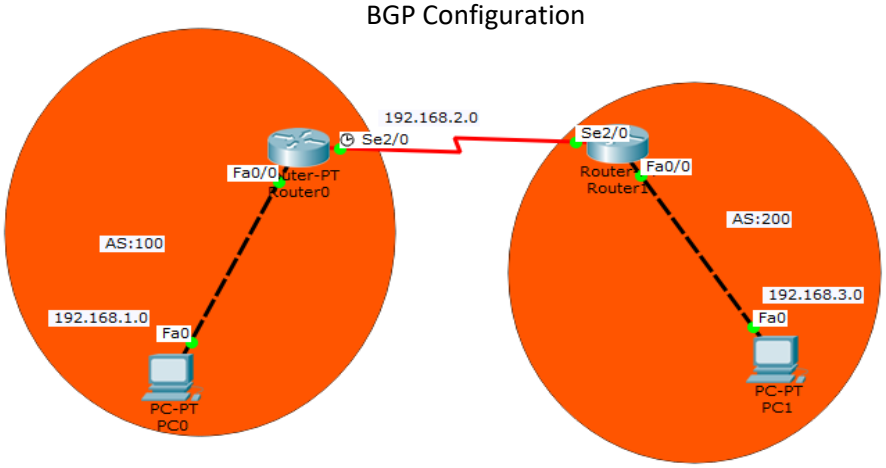
 # Simulation Process: (Router0)

```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route

Gateway of last resort is not set

C 192.168.10.0/24 is directly connected, FastEthernet0/0
C 192.168.20.0/24 is directly connected, Serial0/0/0
D 192.168.30.0/24 [90/20514560] via 192.168.20.2, 00:12:51, Serial0/0/0
```

Name of the Experiment: 08
Name of the Experiment: Configure Border Gateway Protocol (BGP)
Required Components:

(1). Switch
(2). Automatically choose connection type cable
(3). End Device (Desktop, Laptop etc)
(4). Router.

BGP Configuration



 # Procedure:

(1). Drag and Drop Routers, Switches and PCs.
(2). Select cable and make sure a proper connections.
(3). Double click on router.
(4). Click on CLI Tab.
(5). First assign IP Address of on interface
(6). Assign BGP command. (bgp then numerical value such as 100,200)
(7). Mention Network then neighbor network with remote-as(100/200).
(8). Finally save this configuration

 # IP Configuration Router0 :

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown

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)#
Router(config)#interface se2/0
Router(config-if)#ip address 192.168.2.2 255.255.255.0
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#clock rate 64000
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
[OK]
Router#

 # IP Configuration Router1 :

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#no shutdown

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)#interface se2/0
Router(config-if)#ip address 192.168.2.3 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface Serial2/0, changed state to up

Router(config-if)#exit
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up

Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
[OK]
Router#

 # BGP Configuration Router0 :

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router bgp 100
Router(config-router)#network 192.168.1.0
Router(config-router)#network 192.168.2.0
Router(config-router)#neighbor 192.168.2.3 remote-as 200
Router(config-router)#neighbor 192.168.3.2 remote-as 200
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
[OK]
Router#

 # BGP Configuration Router1 :

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router bgp 200
Router(config-router)#network 192.168.2.0
Router(config-router)#network 192.168.3.0
Router(config-router)#neighbor 192.168.2.2 remote-as 100
Router(config-router)#%BGP-5-ADJCHANGE: neighbor 192.168.2.2 Up

Router(config-router)#neighbor 192.168.1.2 remote-as 100
Router(config-router)#exit

```
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Building configuration...
        [OK]
Router#
```

 # Simulation Process: (Router0)

```
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route

Gateway of last resort is not set

C 192.168.1.0/24 is directly connected, FastEthernet0/0
C 192.168.2.0/24 is directly connected, Serial2/0
B 192.168.3.0/24 [20/0] via 192.168.2.3, 01:02:34
```