CN Experiments

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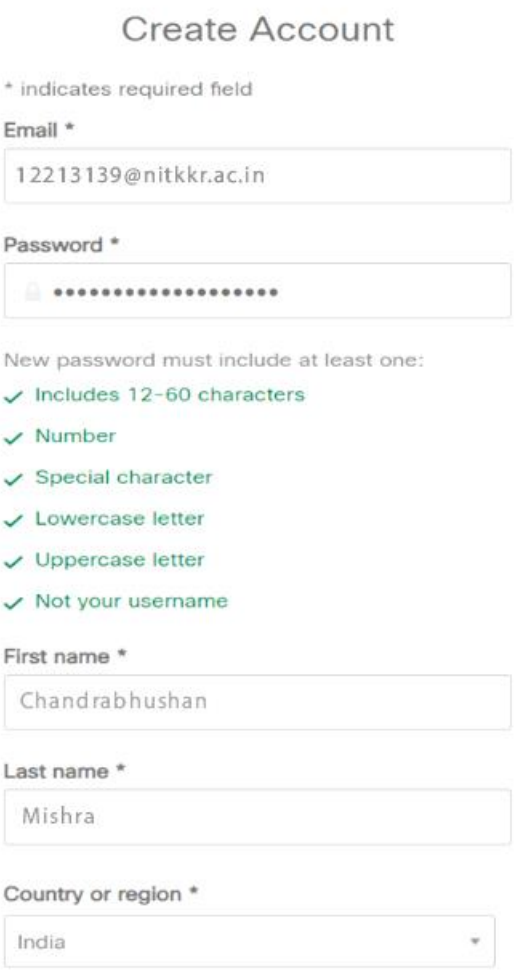
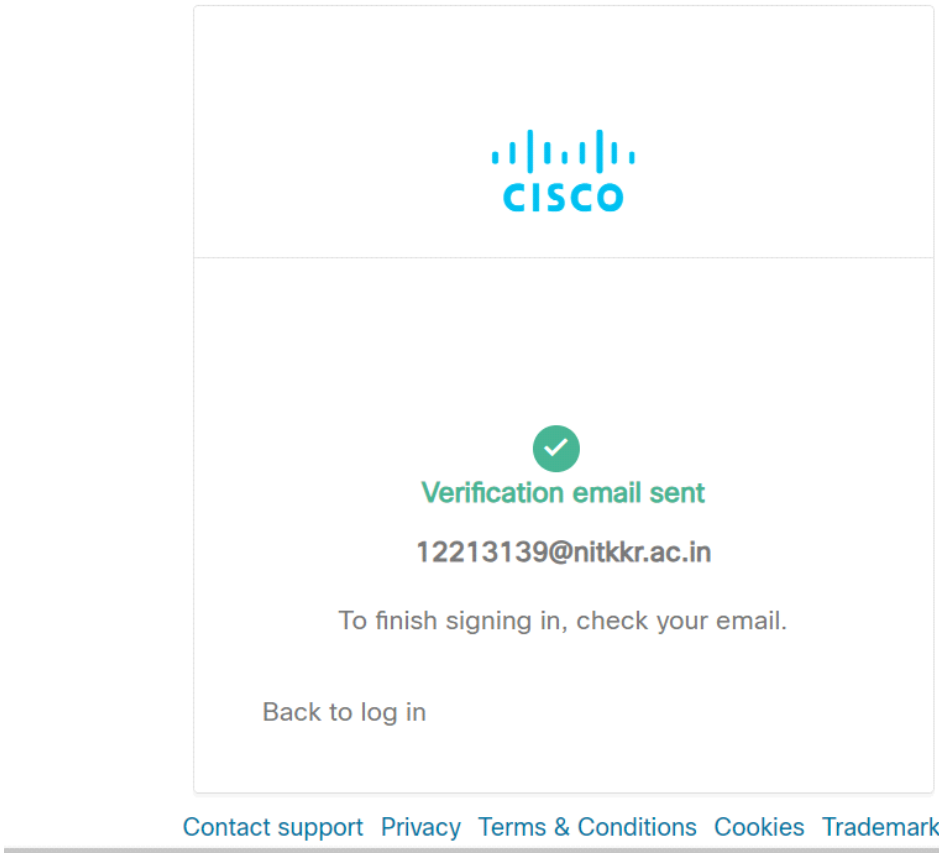
12213139 , IT(B)-07

Installation-

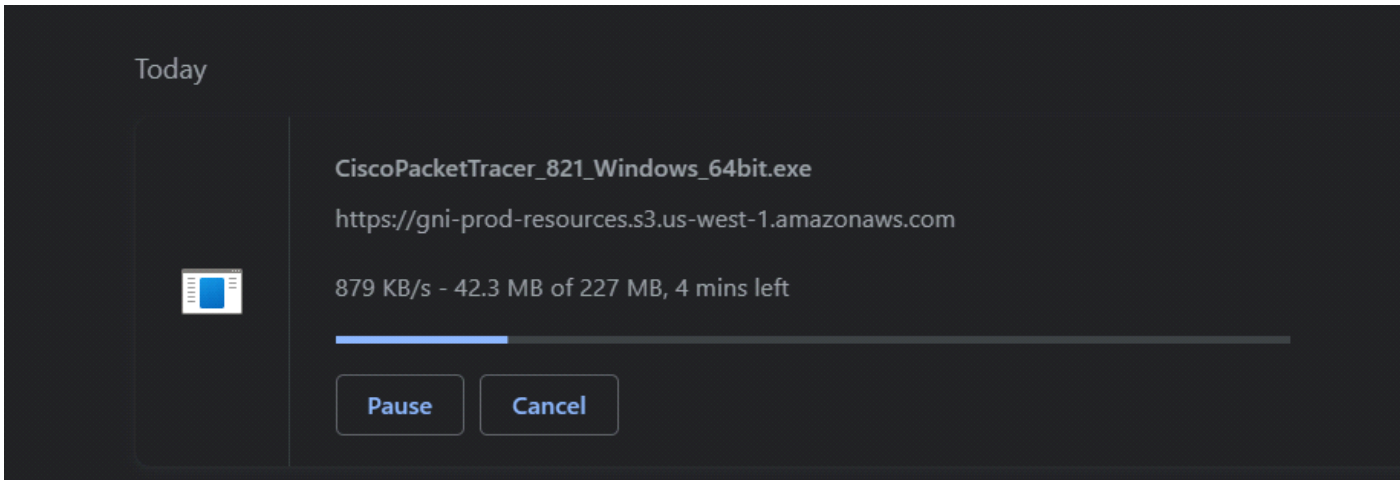
1)Create Account



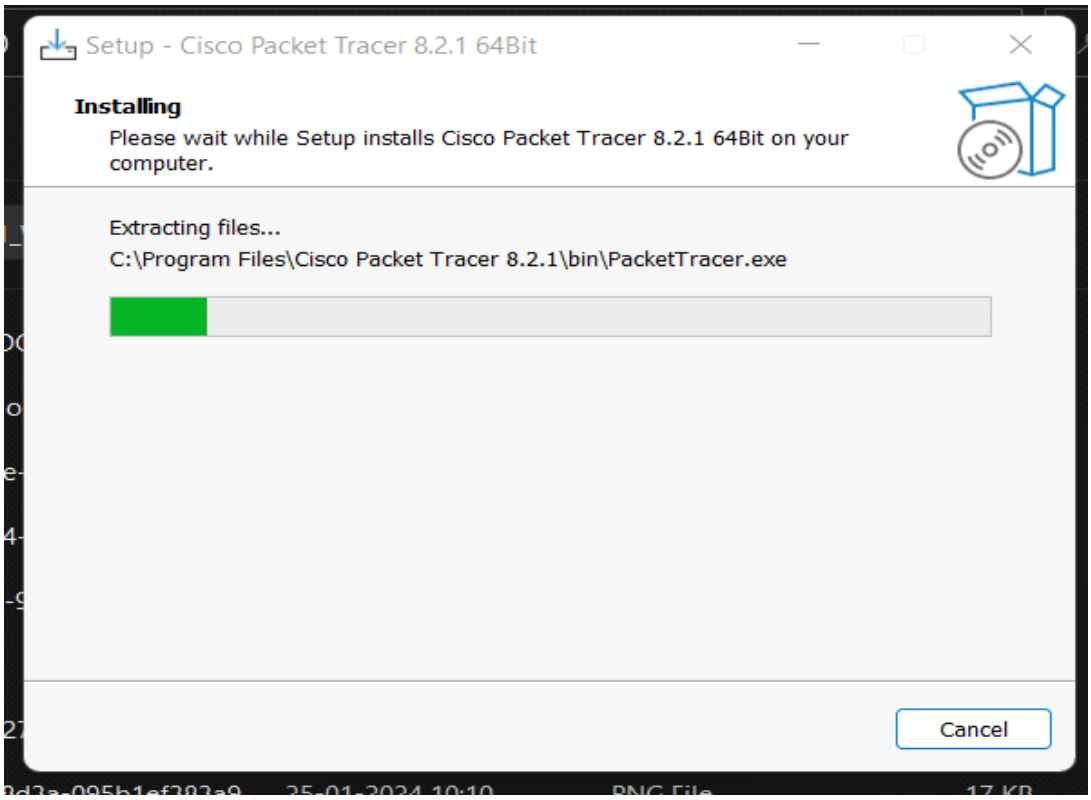
2) Verify Email



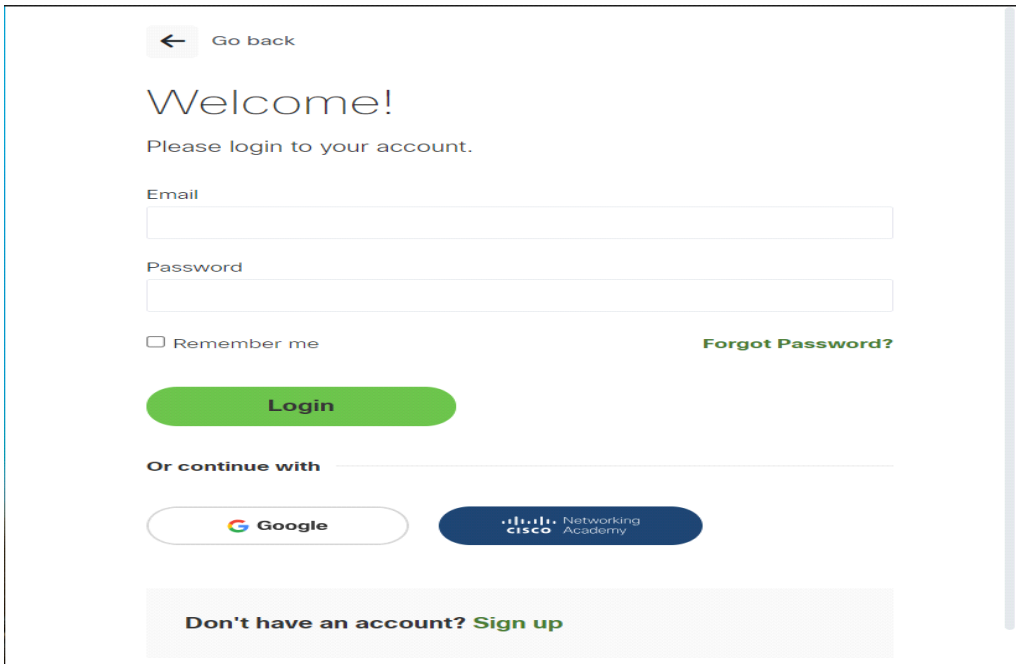
3) Downloading CiscoPacketTracer

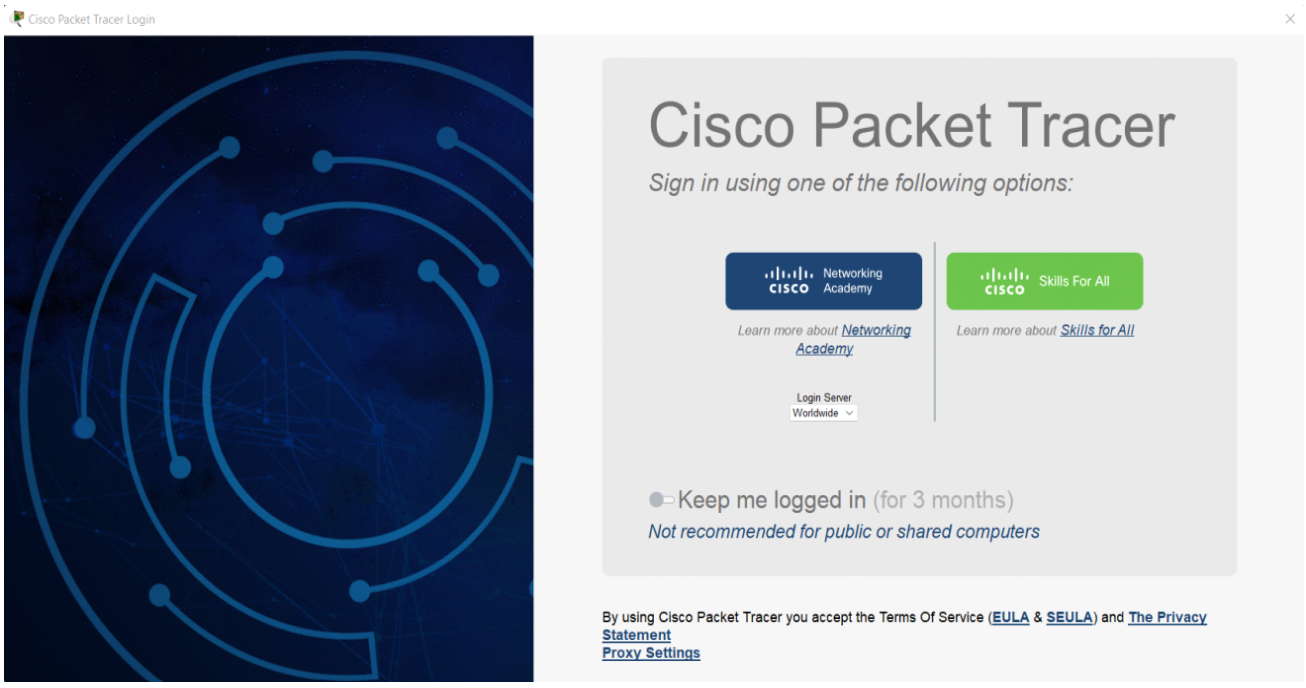


4) Installing Cisco Packet Tracer



5) Login into Account



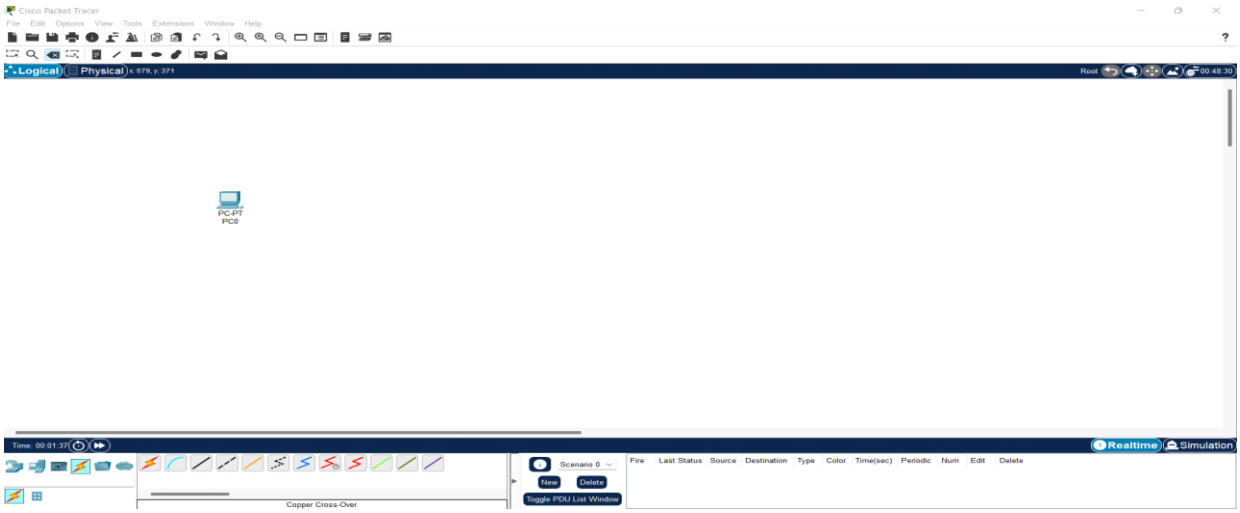


Sign in for Cisco Packet Tracer by clicking- Skills For All

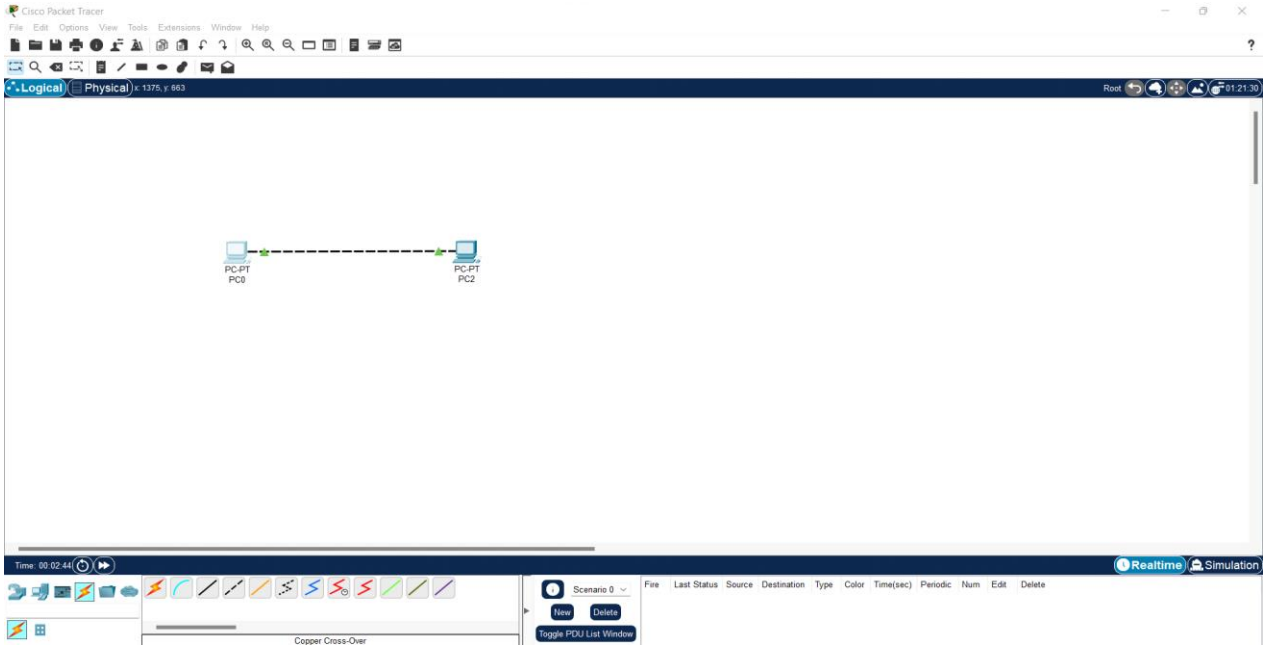
Implementing Topologies

1)Point to Point

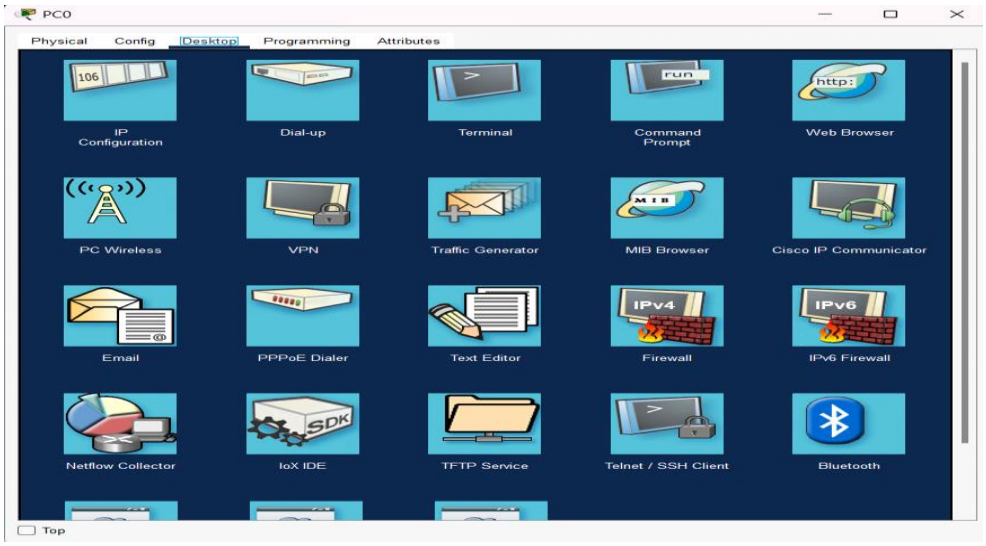
1)Take First PC as PC0



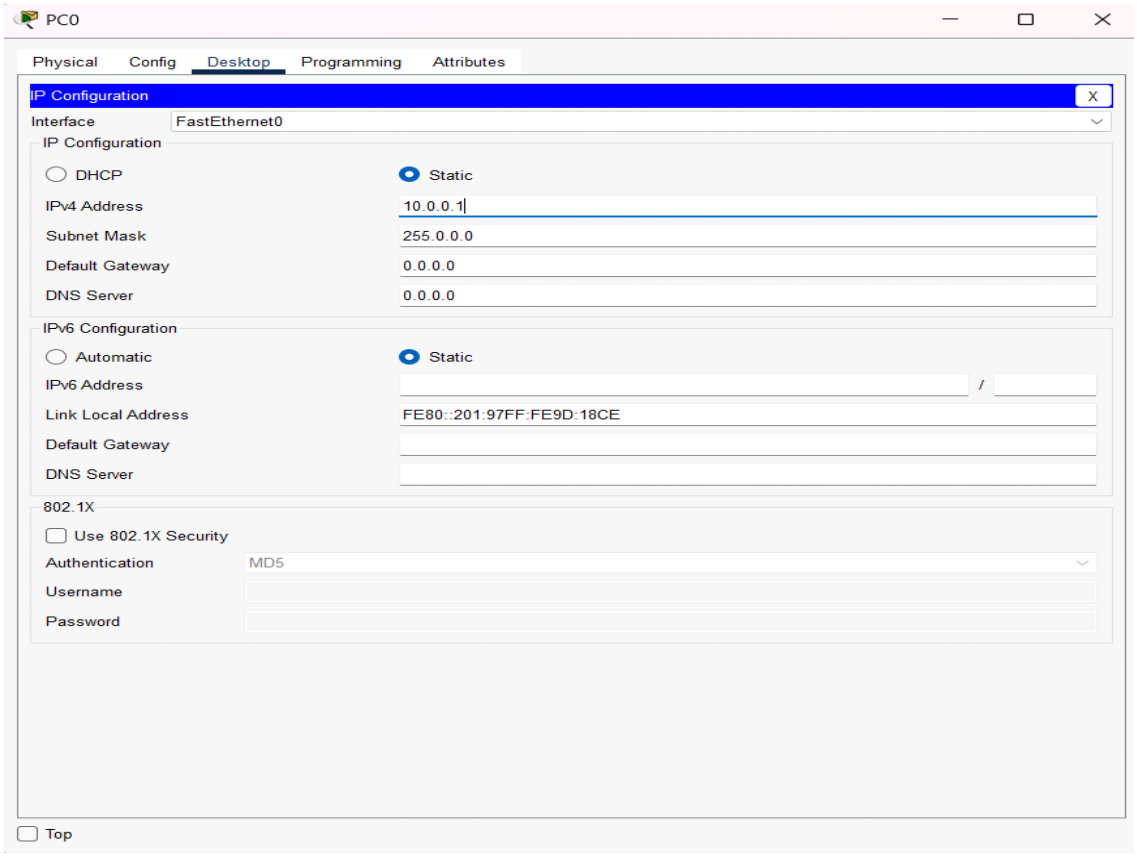
2)Take Second PC as PC1 and connect it with PC0 through cross over cable



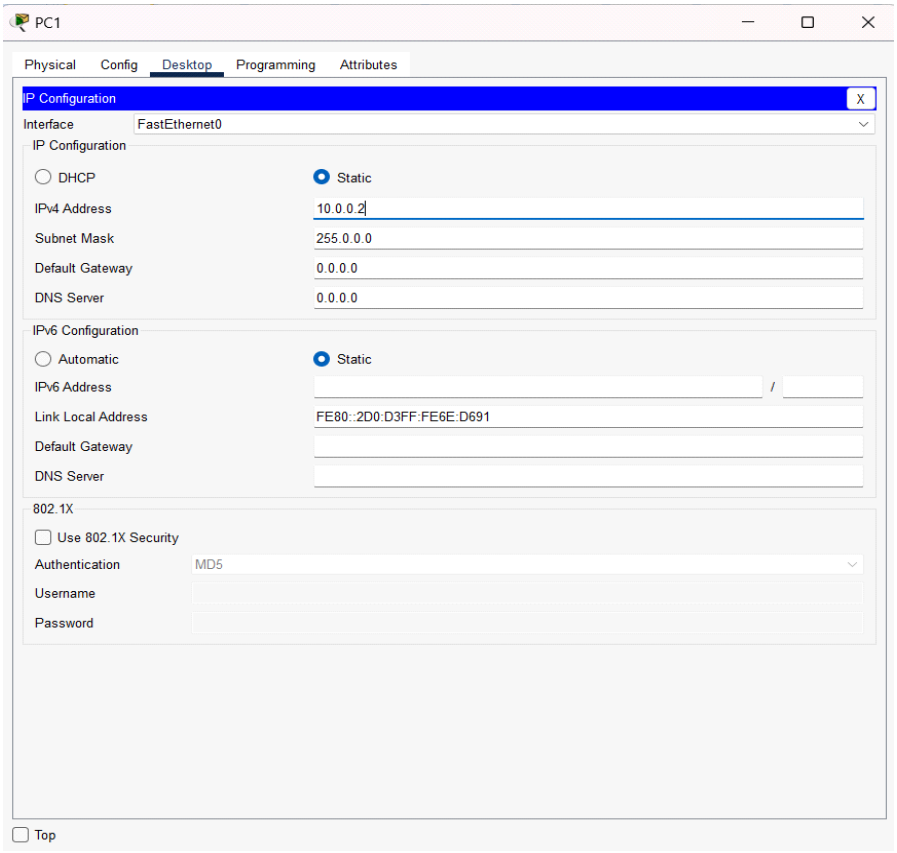
3)Configuring IP address of PC0



4) Setting 10.0.0.1 as IPv4 Address of PC0



5) Setting 10.0.0.2 as IPV4 Address of PC1



IPv4 Address through - Ipconfig Command on PC1

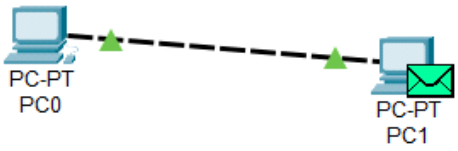
```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::2D0:D3FF:FE6E:D691
   IPv6 Address.....: ::
   IPv4 Address.....: 10.0.0.2
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0
```

IPv4 Address through - Ipconfig Command on PC0

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::201:97FF:FE9D:18CE
   IPv6 Address.....: ::
   IPv4 Address.....: 10.0.0.1
   Subnet Mask.....: 255.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: ::
   IPv6 Address.....: ::
   IPv4 Address.....: 0.0.0.0
   Subnet Mask.....: 0.0.0.0
   Default Gateway.....: ::
                                 0.0.0.0
```

6)Ping PC0 to PC1 through command – ping 10.0.0.2

```
C:\>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=4ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128
Reply from 10.0.0.2: bytes=32 time=2ms TTL=128

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 4ms, Average = 2ms
```



Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	0.002	--
	0.003	PC0
	0.004	PC1
	1.006	--
	1.007	PC0
	1.008	PC1
	2.010	--
	2.011	PC0
	2.012	PC1
	3.014	--
	3.015	PC0
Visible	3.016	PC1

Reset Simulation | Constant Delay | Captured to: 3.016 s

Play Controls

Event List Filters - Visible Events

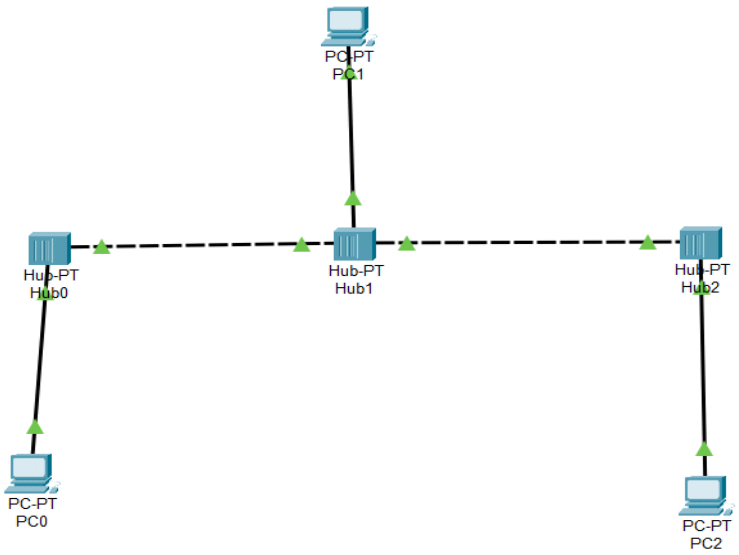
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters | Show All/None

Event List | Realtime | Simulation

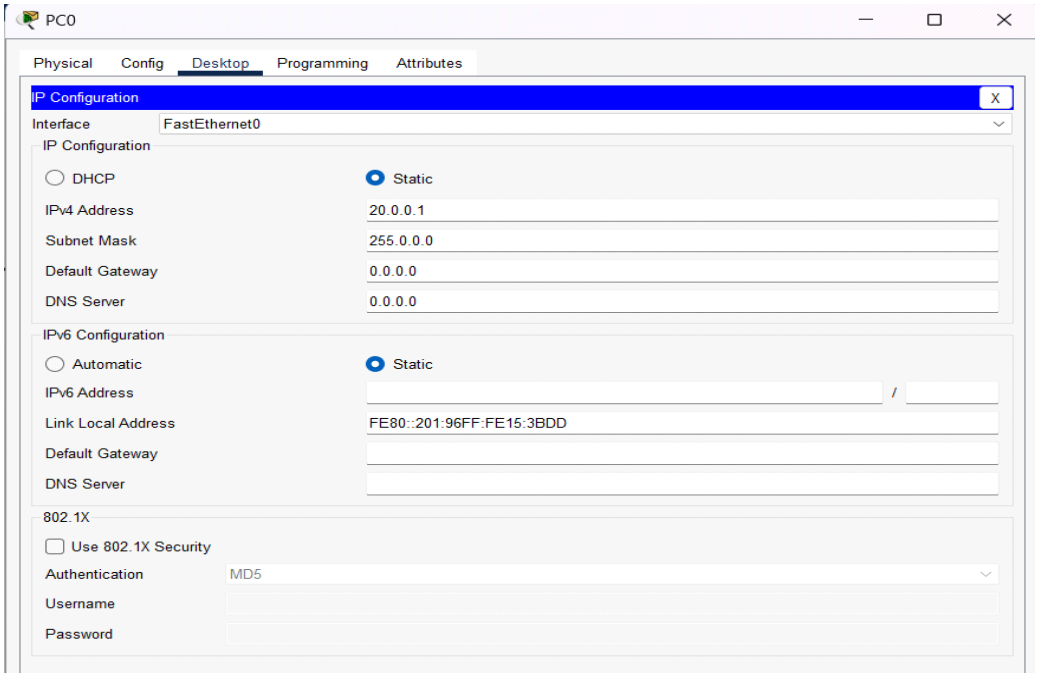
2)Bus Topology

Step01- Creating Circuit Diagram

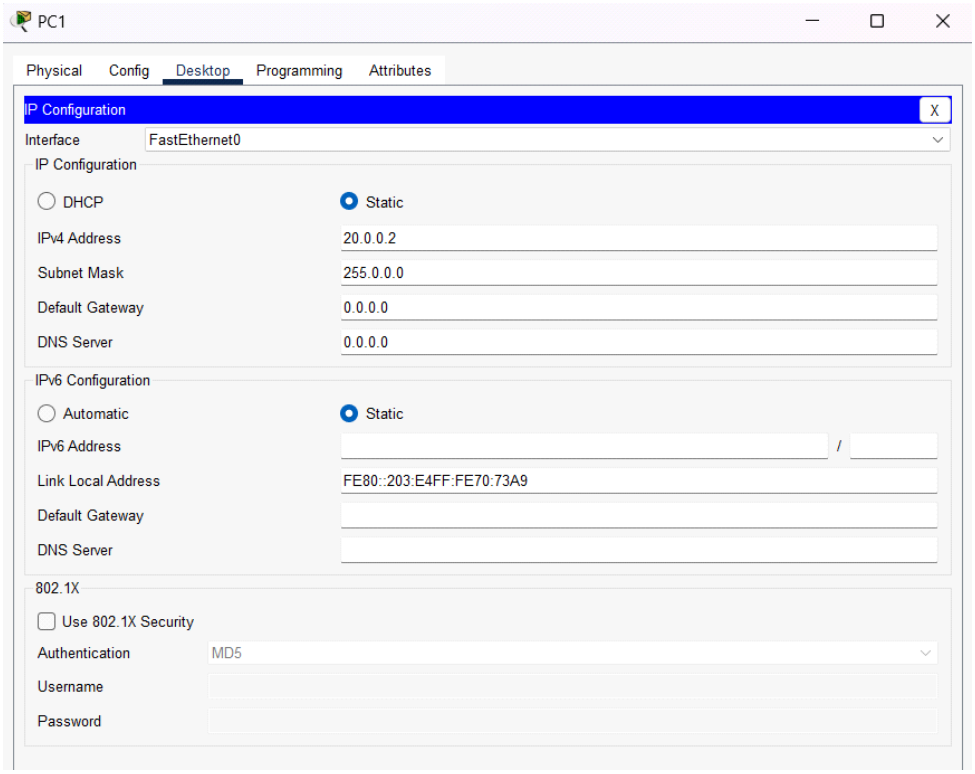


Step02: Configuring IPv4 address of all PCs

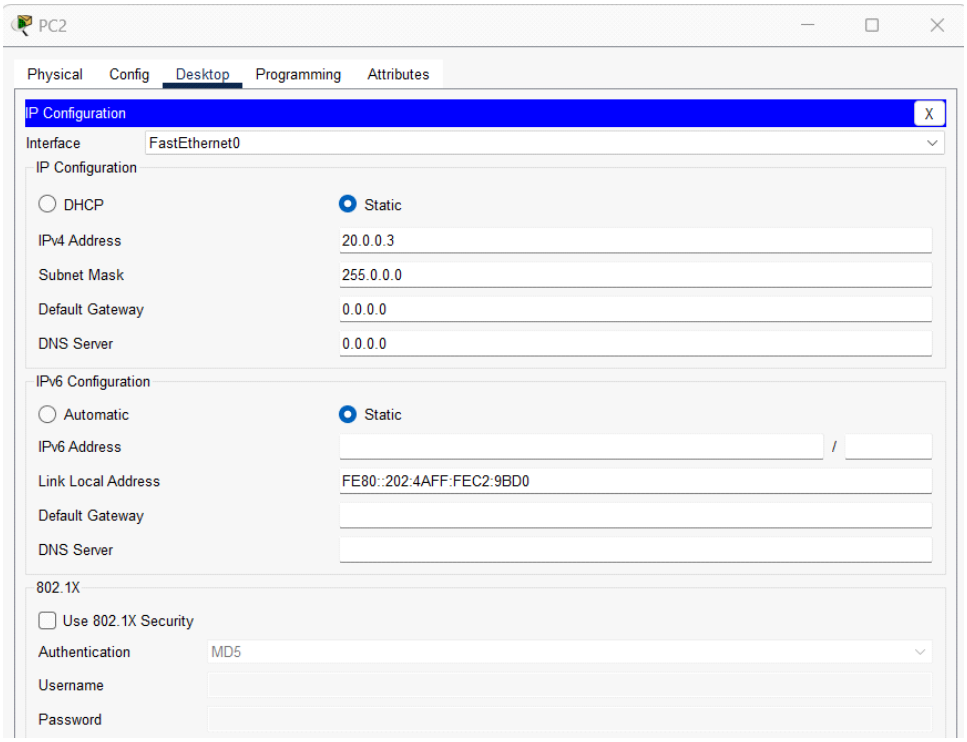
Pc0

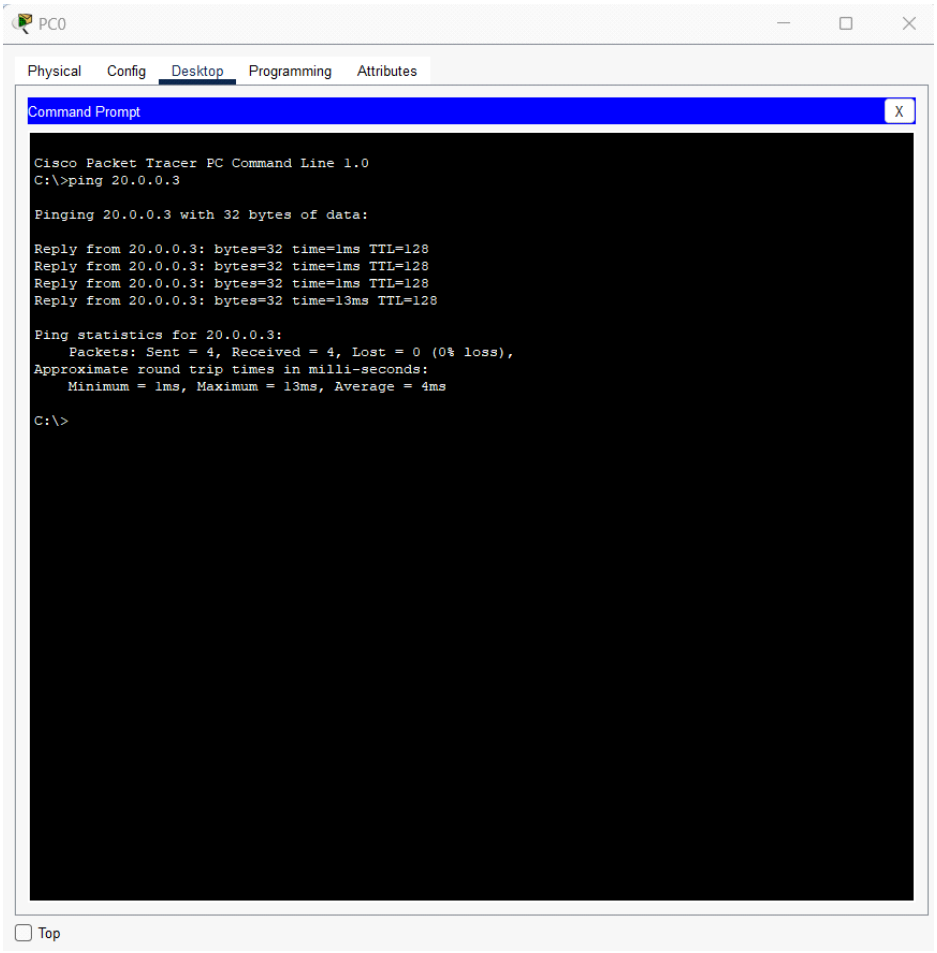


PC1-

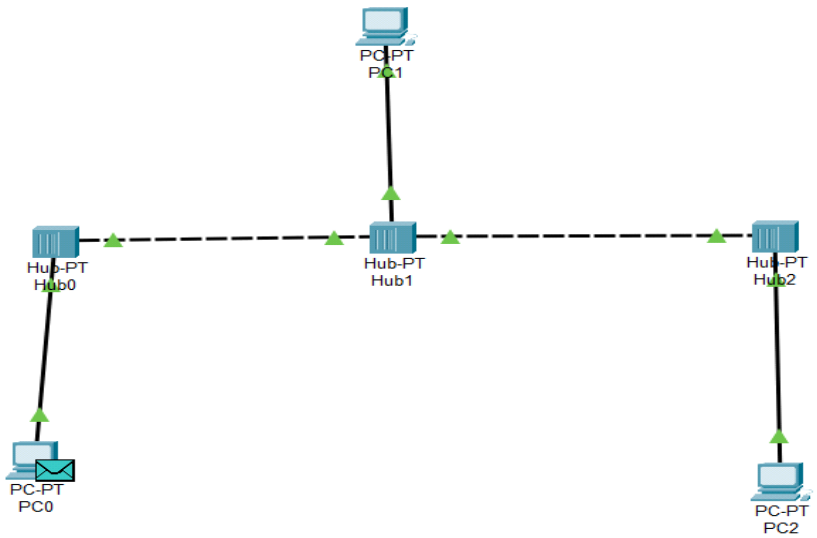

PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
20.0.0.2
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::203:E4FF:FE70:73A9
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

PC2-


PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
20.0.0.3
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::202:4AFF:FEC2:9BD0
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password



Step-3) Sending Package from PC0 to PC2 using command – ping 20.0.0.3 in command prompt of PC0



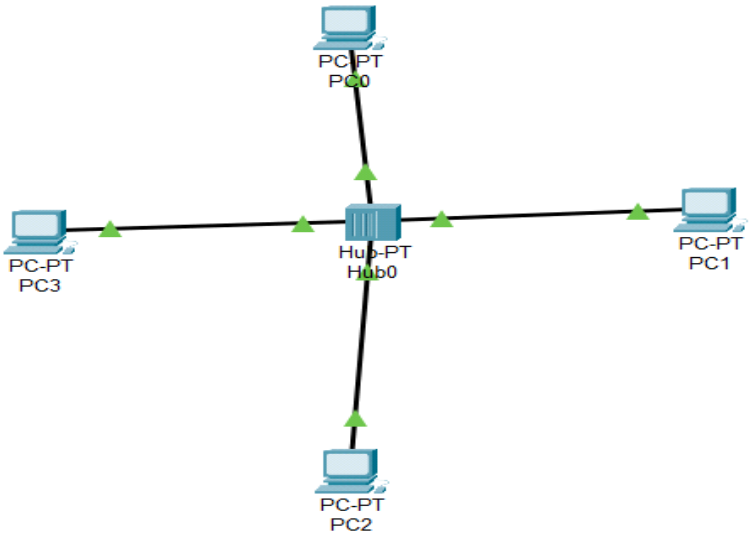
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Hub0	ICMP
	0.002	Hub0	Hub1	ICMP
	0.003	Hub1	Hub2	ICMP
	0.003	Hub1	PC1	ICMP
	0.004	Hub2	PC2	ICMP
	0.005	PC2	Hub2	ICMP
	0.006	Hub2	Hub1	ICMP
	0.007	Hub1	Hub0	ICMP
	0.007	Hub1	PC1	ICMP
	0.008	Hub0	PC0	ICMP
	1.009	--	PC0	ICMP
	1.010	PC0	Hub0	ICMP
	1.011	Hub0	Hub1	ICMP
	1.012	Hub1	Hub2	ICMP
	1.012	Hub1	PC1	ICMP
	1.013	Hub2	PC2	ICMP
	1.014	PC2	Hub2	ICMP

Simulator

	1.015	Hub2	Hub1	ICMP
	1.016	Hub1	Hub0	ICMP
	1.016	Hub1	PC1	ICMP
	1.017	Hub0	PC0	ICMP
	2.020	--	PC0	ICMP
	2.021	PC0	Hub0	ICMP
	2.022	Hub0	Hub1	ICMP
	2.023	Hub1	Hub2	ICMP
	2.023	Hub1	PC1	ICMP
	2.024	Hub2	PC2	ICMP
	2.025	PC2	Hub2	ICMP
	2.026	Hub2	Hub1	ICMP
	2.027	Hub1	Hub0	ICMP
	2.027	Hub1	PC1	ICMP
	2.028	Hub0	PC0	ICMP
	3.032	--	PC0	ICMP
	3.033	PC0	Hub0	ICMP
	3.034	Hub0	Hub1	ICMP
	3.035	Hub1	Hub2	ICMP
	3.035	Hub1	PC1	ICMP
	3.036	Hub2	PC2	ICMP
	3.037	PC2	Hub2	ICMP
	3.038	Hub2	Hub1	ICMP
	3.039	Hub1	Hub0	ICMP
	3.039	Hub1	PC1	ICMP
Visible	3.040	Hub0	PC0	ICMP

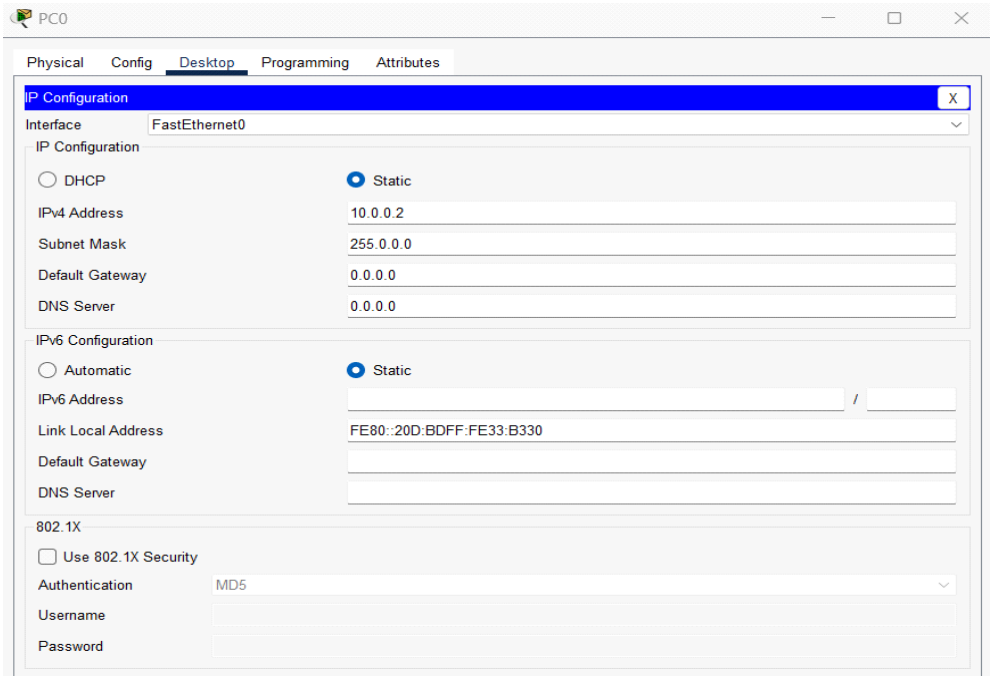
2) Star Topology using Hub

Step01: Creating circuit diagram

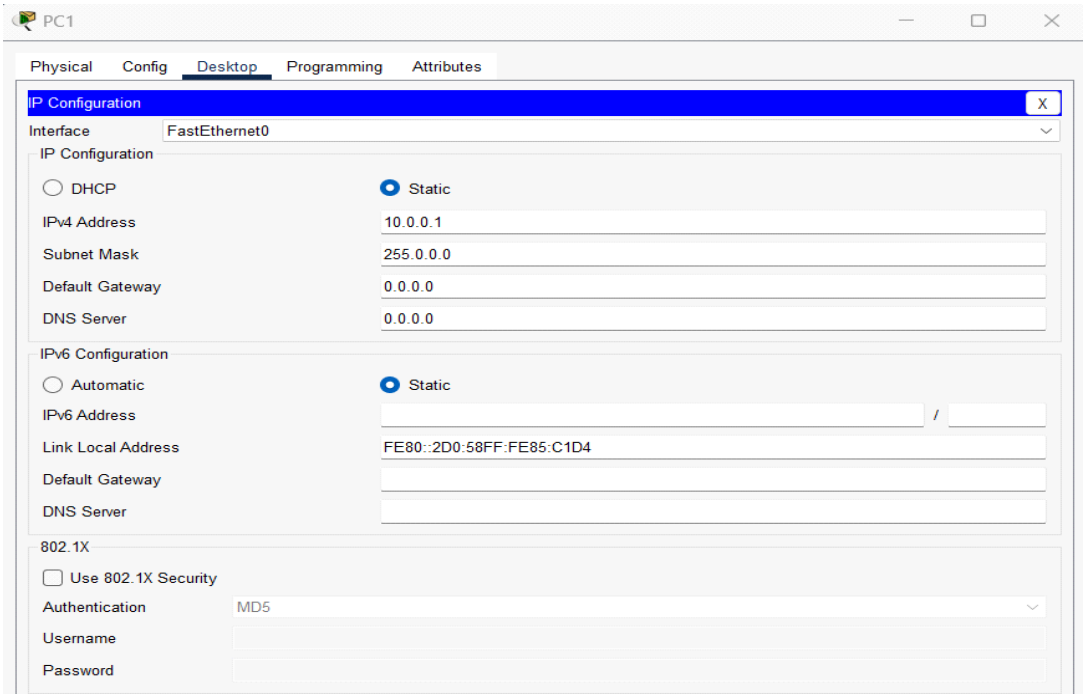


Step02:Configuring IPv4 address of all PCs

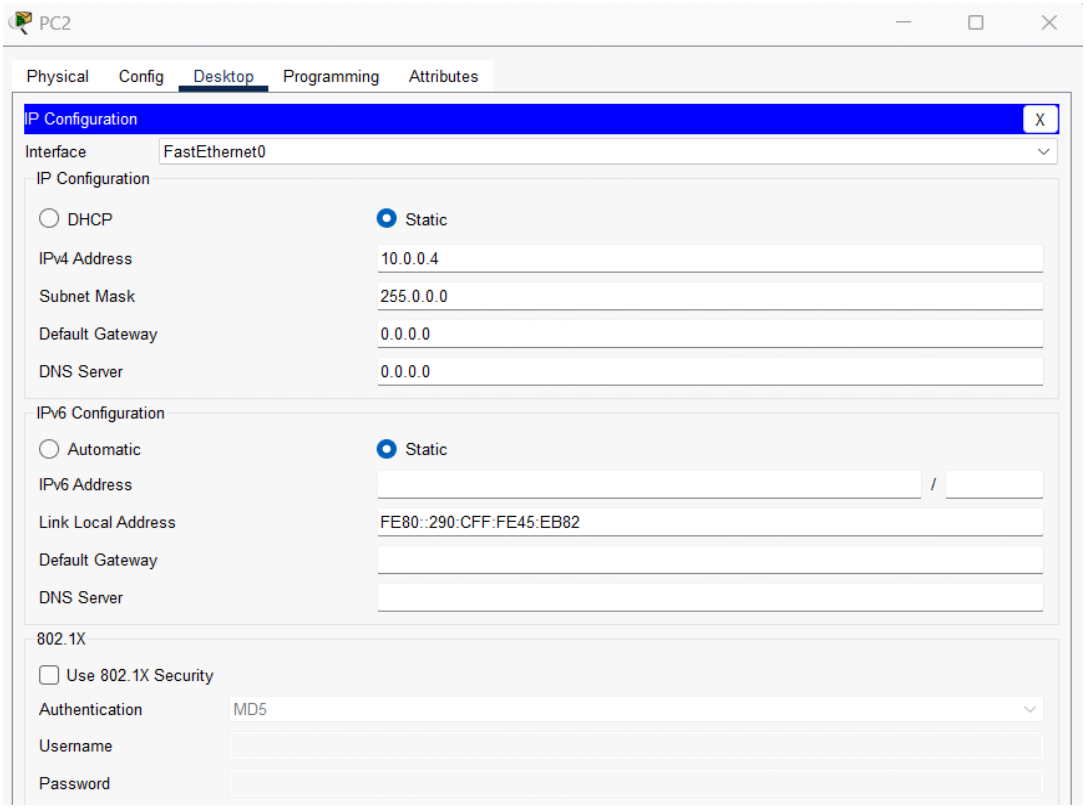
PC0:



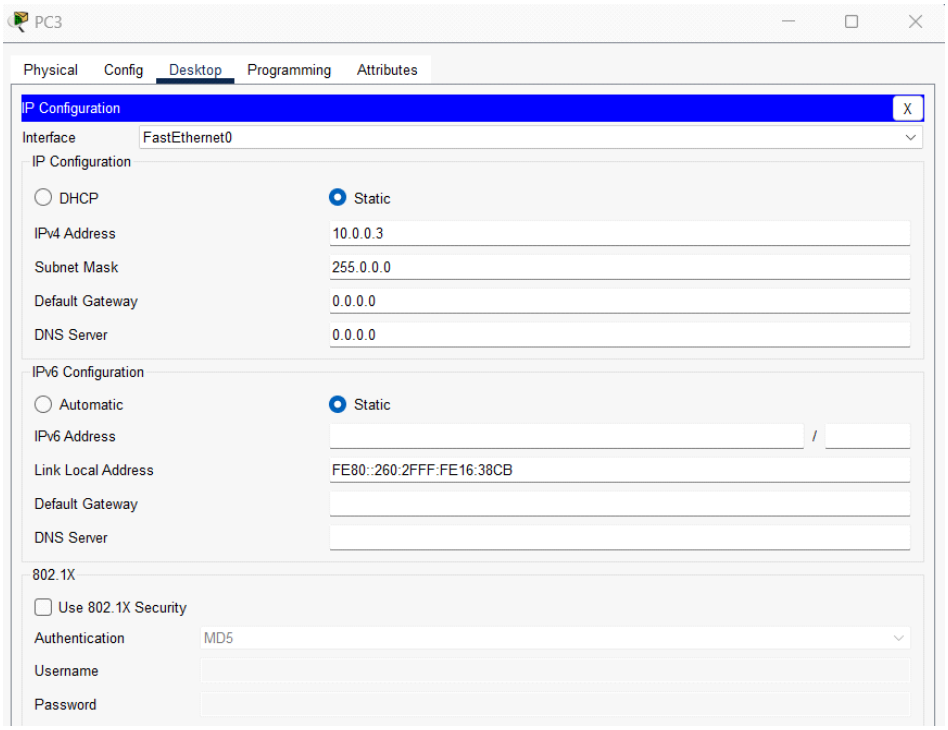
PC1:


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.1
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2D0:58FF:FE85:C1D4
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

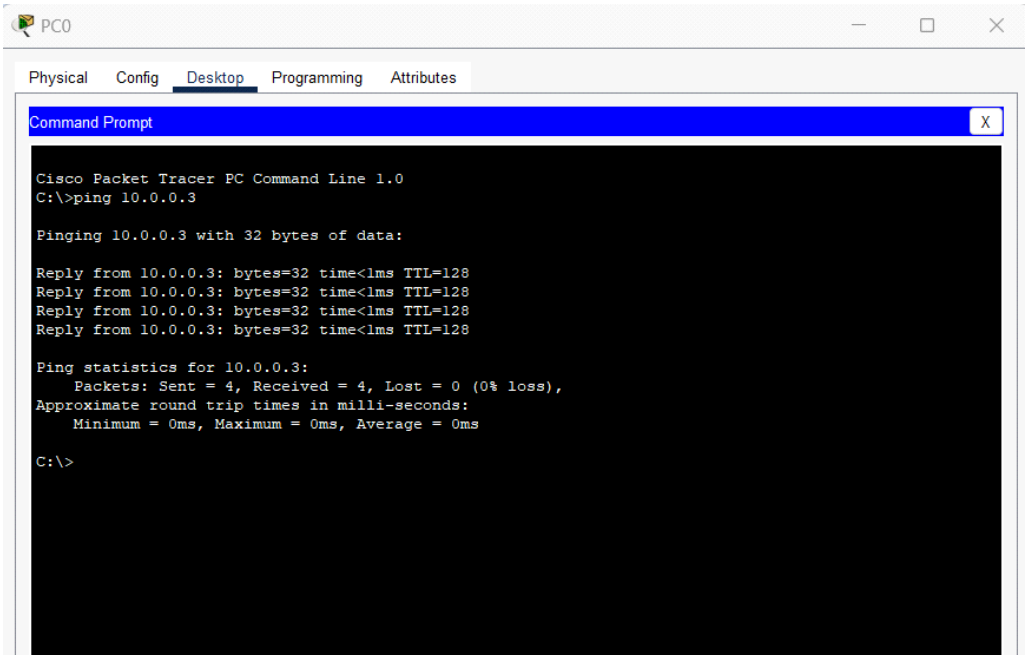
PC2:

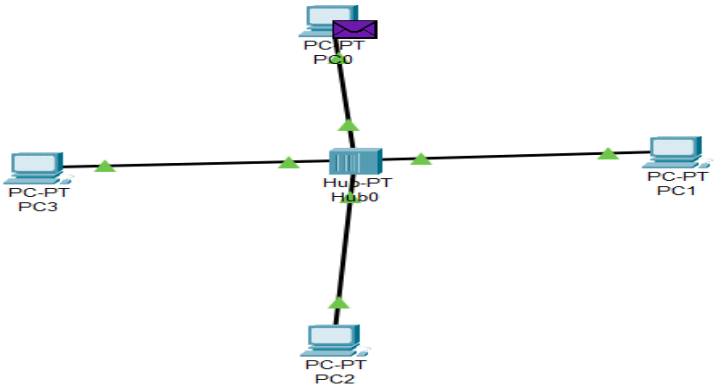

PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.4
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::290:CFF:FE45:EB82
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

PC3-



Step03: Sending Package from PC0 to PC3 using command – ping 10.0.0.3 in command prompt of PC0





Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Hub0	ICMP
	0.002	Hub0	PC1	ICMP
	0.002	Hub0	PC2	ICMP
	0.002	Hub0	PC3	ICMP
	0.003	PC3	Hub0	ICMP
	0.004	Hub0	PC0	ICMP
	0.004	Hub0	PC1	ICMP
	0.004	Hub0	PC2	ICMP
	1.005	--	PC0	ICMP
	1.006	PC0	Hub0	ICMP
	1.007	Hub0	PC1	ICMP
	1.007	Hub0	PC2	ICMP
	1.007	Hub0	PC3	ICMP
	1.008	PC3	Hub0	ICMP
	1.009	Hub0	PC0	ICMP
	1.009	Hub0	PC1	ICMP

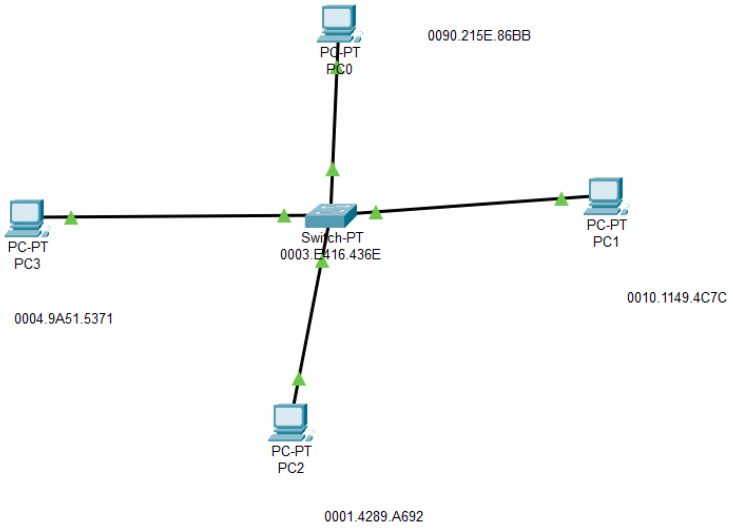
Event List

Vis.	Time(sec)	Last Device	At Device	Type
	1.009	Hub0	PC2	ICMP
	2.012	--	PC0	ICMP
	2.013	PC0	Hub0	ICMP
	2.014	Hub0	PC1	ICMP
	2.014	Hub0	PC2	ICMP
	2.014	Hub0	PC3	ICMP
	2.015	PC3	Hub0	ICMP
	2.016	Hub0	PC0	ICMP
	2.016	Hub0	PC1	ICMP
	2.016	Hub0	PC2	ICMP
	3.016	--	PC0	ICMP
	3.017	PC0	Hub0	ICMP
	3.018	Hub0	PC1	ICMP
	3.018	Hub0	PC2	ICMP
	3.018	Hub0	PC3	ICMP
	3.019	PC3	Hub0	ICMP
Visible	3.020	Hub0	PC0	ICMP

Visible	3.020	Hub0	PC1	ICMP
Visible	3.020	Hub0	PC2	ICMP

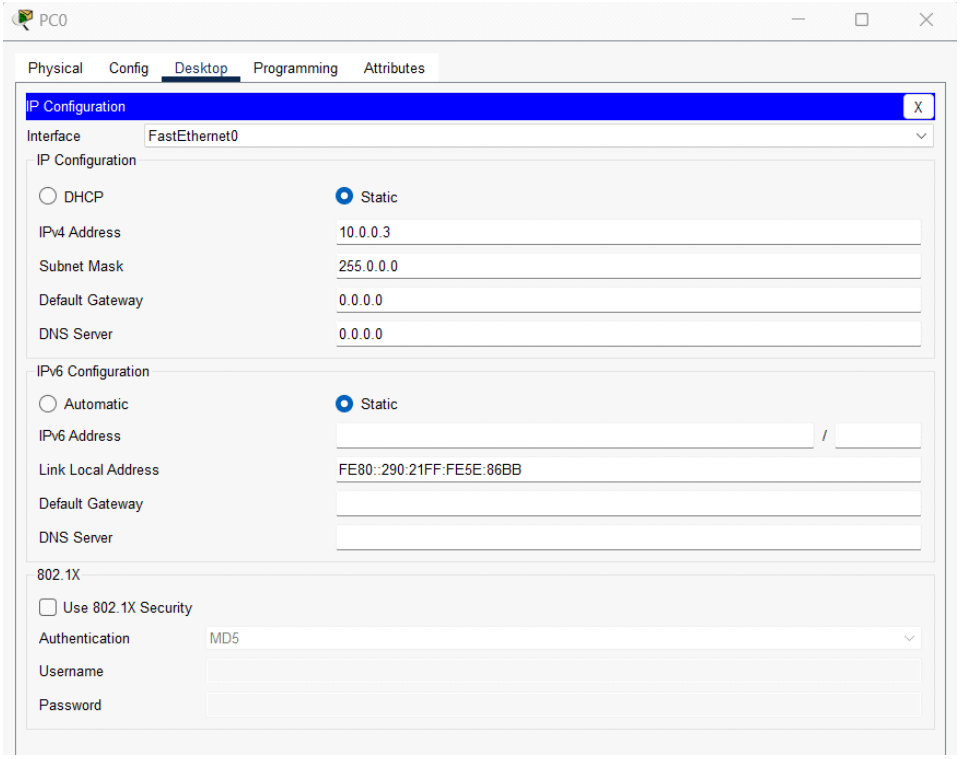
3)Star Topology using Switch

Step01: Creating circuit diagram

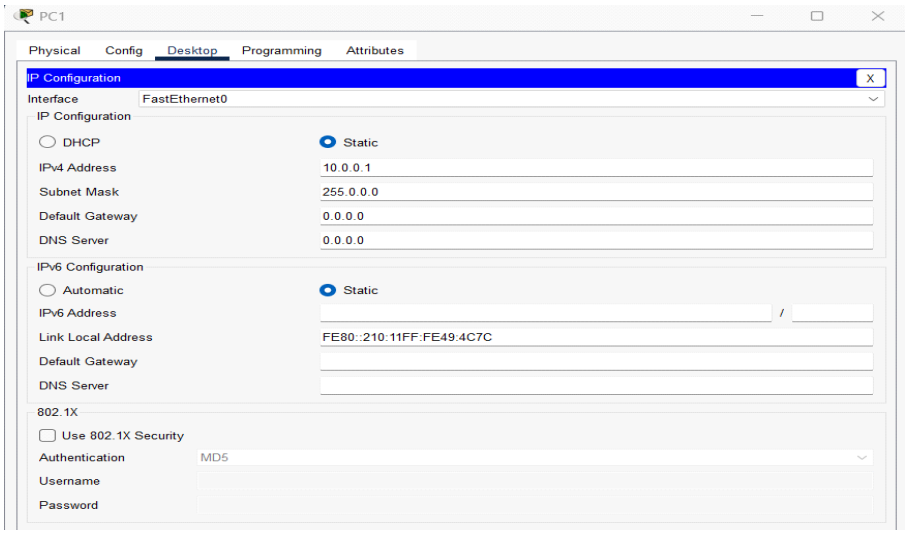


Step02: Configuring IPv4 address of all PCs

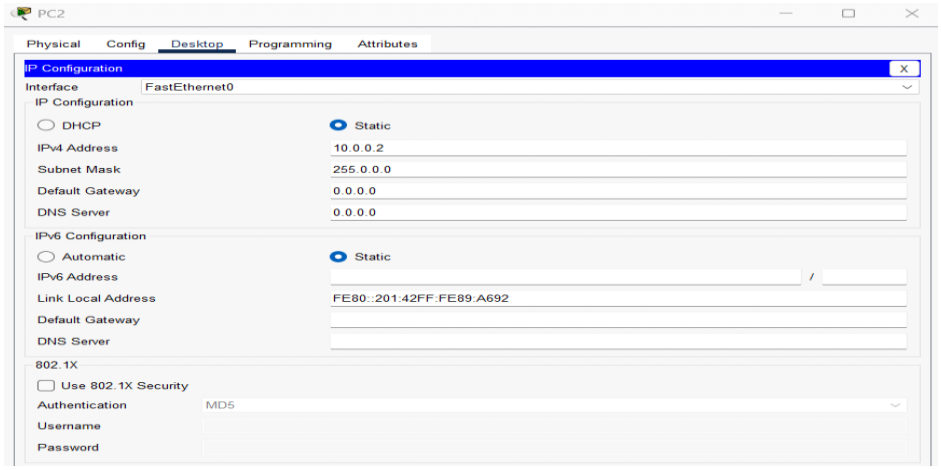
Pc0:



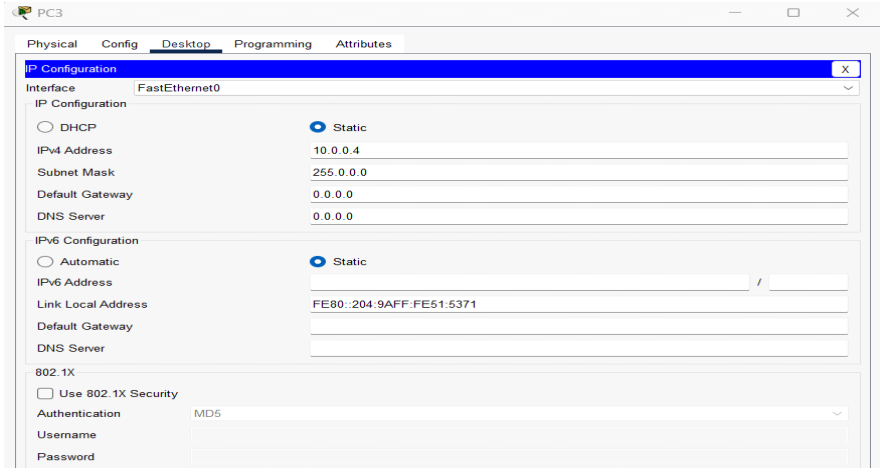
Pc1:


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.1
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::210:11FF:FE49:4C7C
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

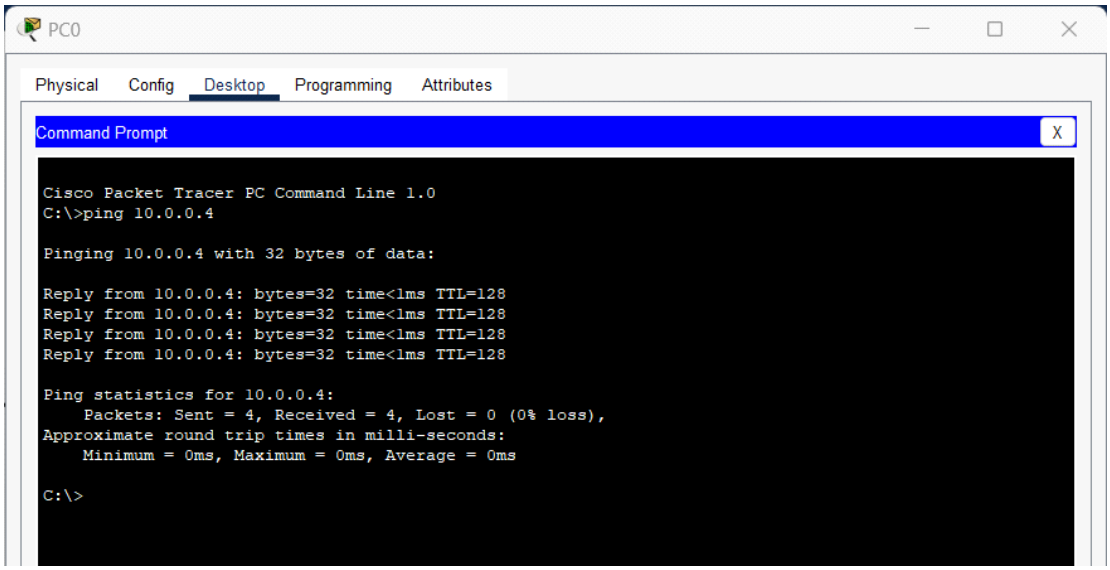
Pc2:


PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.2
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:42FF:FE89:A692
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

Pc3:


PC3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.4
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::204:9AFF:FE51:5371
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

Step03: Sending Package from PC0 to PC3 using command – ping 10.0.0.4 in command prompt of PC0



Initial Mac address table

```
Switch>
Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```

After transfer of package

```
Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    0004.9a51.5371    DYNAMIC     Fa2/1
   1    0090.215e.86bb    DYNAMIC     Fa3/1
```

Simulation

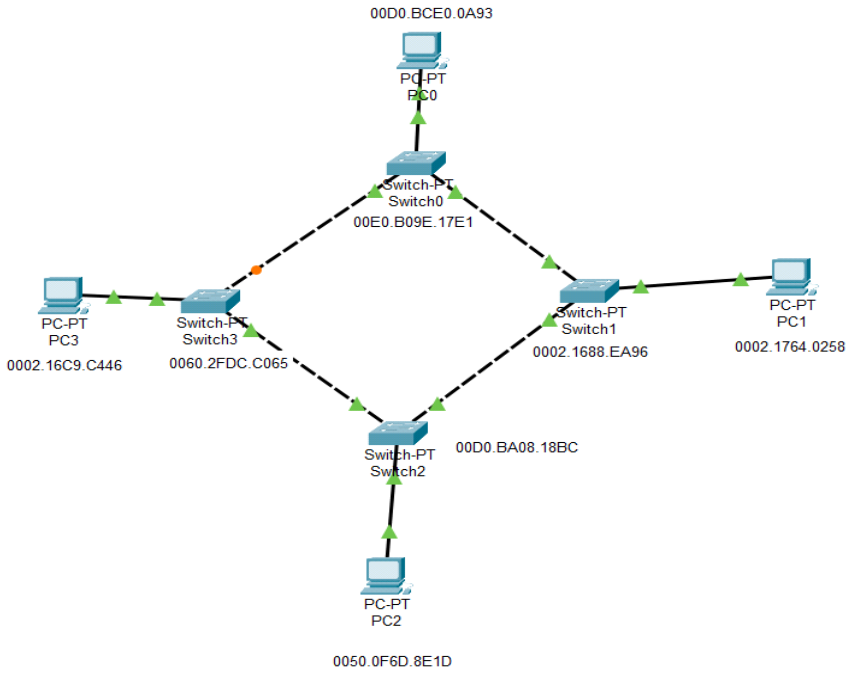
Simulation Panel

Event List

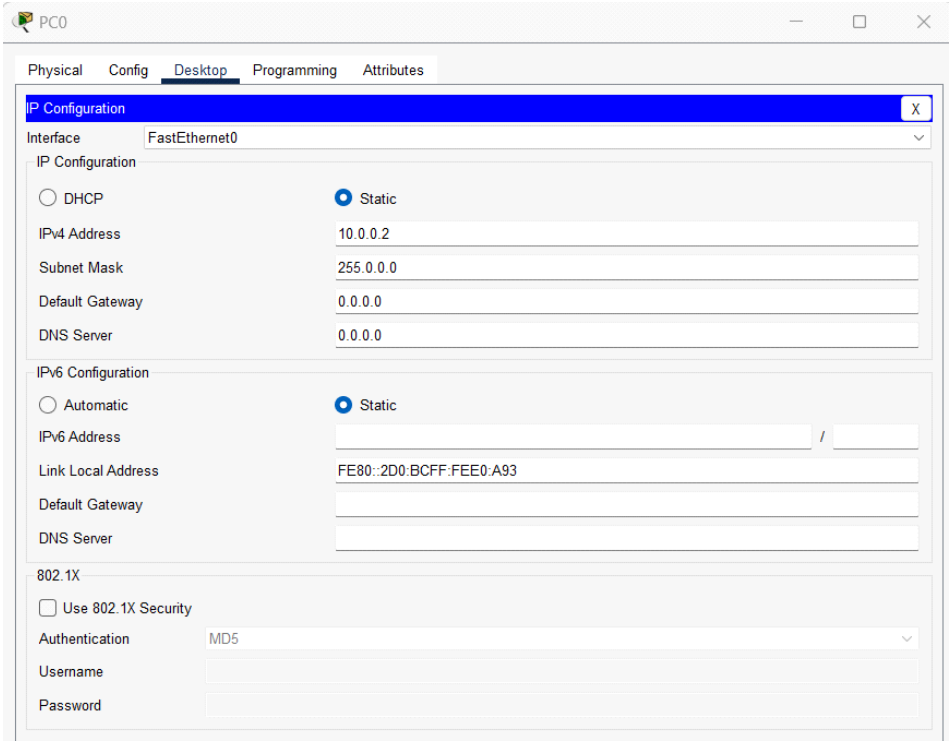
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Switch	ICMP
	0.002	Switch	PC1	ICMP
	0.002	Switch	PC2	ICMP
	0.002	Switch	PC3	ICMP
	0.003	PC3	Switch	ICMP
	0.004	Switch	PC0	ICMP
	1.004	--	PC0	ICMP
	1.005	PC0	Switch	ICMP
	1.006	Switch	PC3	ICMP
	1.007	PC3	Switch	ICMP
	1.008	Switch	PC0	ICMP
	1.996	--	Switch	STP
	1.997	Switch	PC2	STP
	1.997	Switch	PC3	STP
	1.997	Switch	PC0	STP
	1.997	Switch	PC1	STP
	2.012	--	PC0	ICMP
	2.013	PC0	Switch	ICMP
	2.014	Switch	PC3	ICMP
	2.015	PC3	Switch	ICMP
	2.016	Switch	PC0	ICMP
	3.019	--	PC0	ICMP
	3.020	PC0	Switch	ICMP
	3.021	Switch	PC3	ICMP
	3.022	PC3	Switch	ICMP
Visible	3.023	Switch	PC0	ICMP

3)Ring Topology

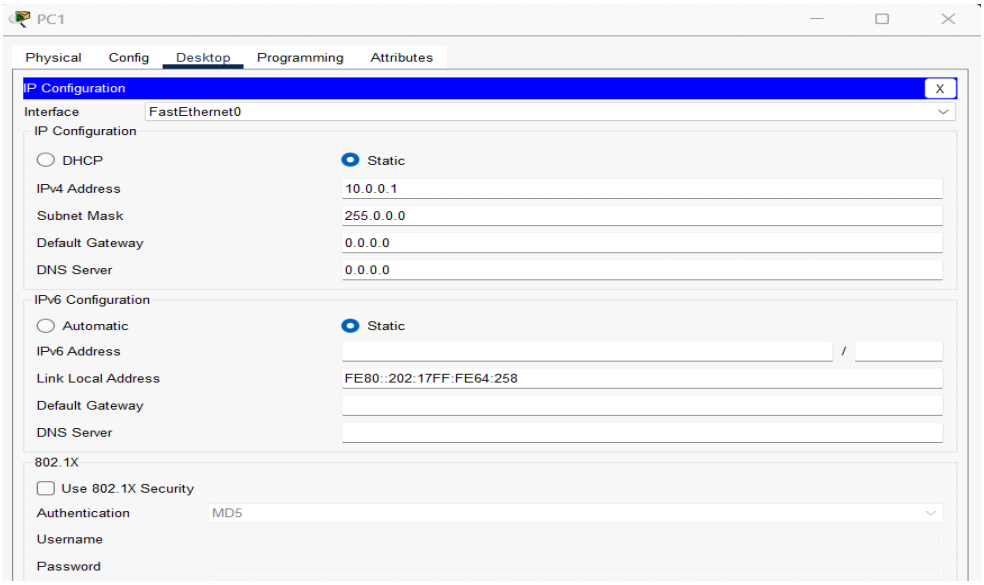
Step01: Creating circuit diagram



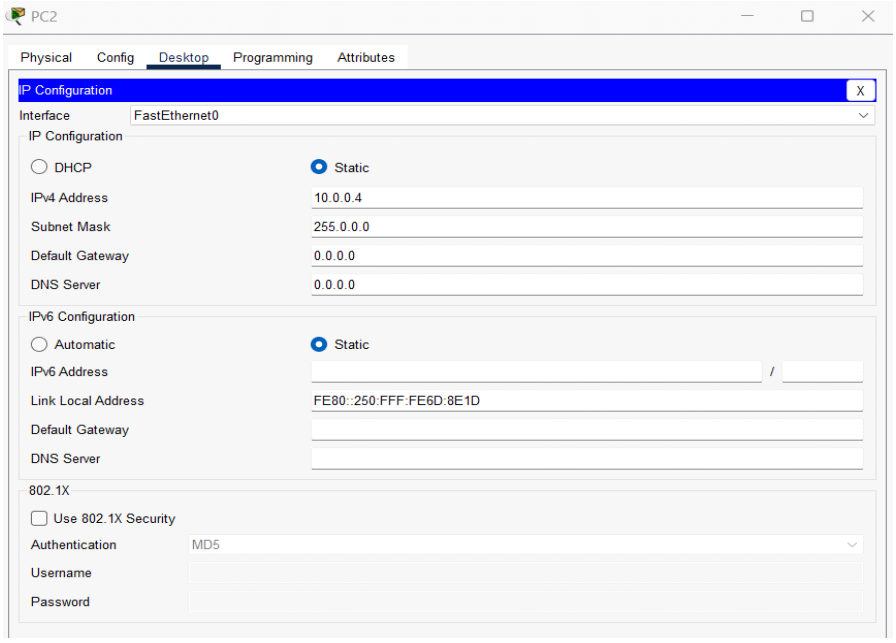
Step02: Configuring IPv4 address of all PCs



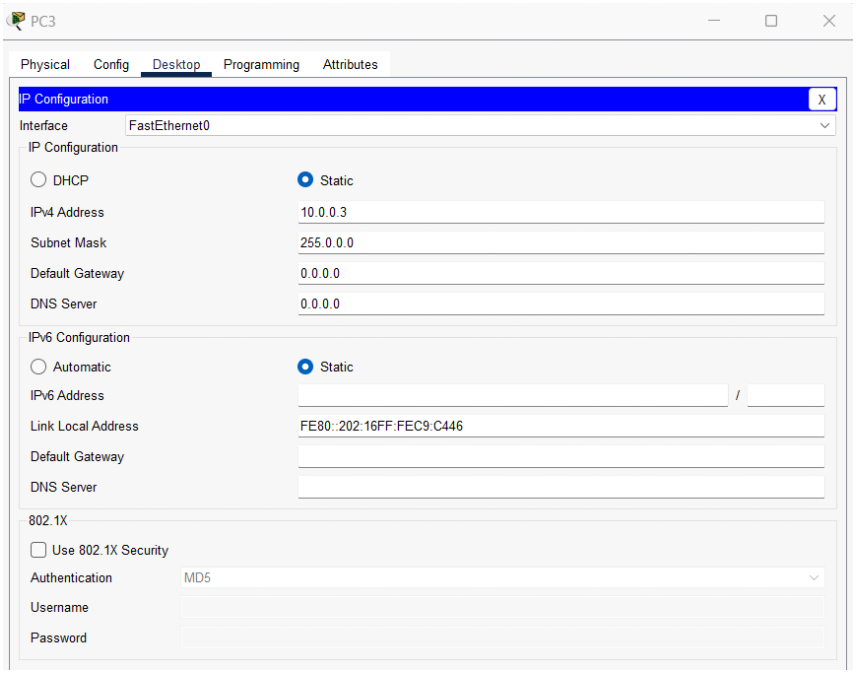
Pc1:


PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.1
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::202:17FF:FE64:258
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

Pc2:


PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.4
Subnet Mask
255.0.0.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::250:FFF:FE6D:8E1D
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

Pc3:



Step03: Sending Package from PC0 to PC2 using command – ping 10.0.0.4 in command prompt of PC0

Initial mac-address table of switch0

```
Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    000a.f3e7.be20    DYNAMIC     Fa1/1
Switch>
```

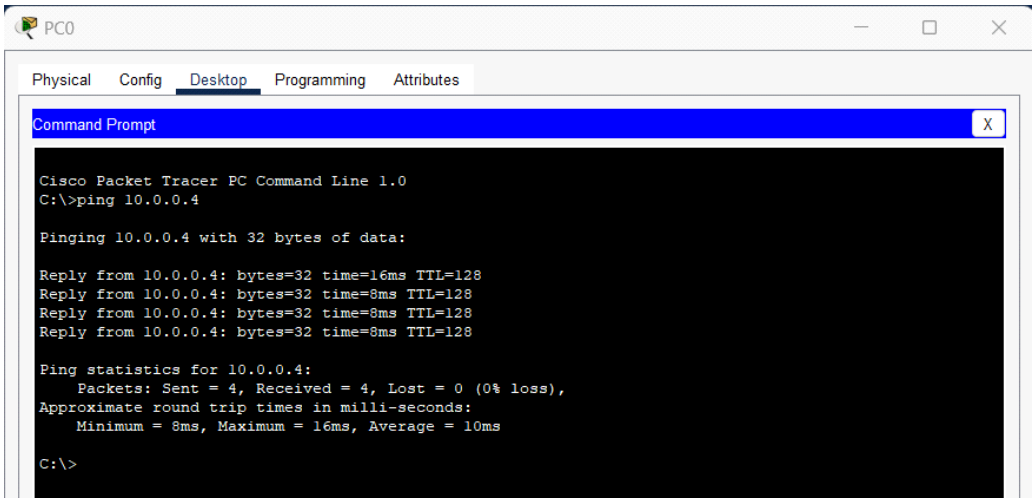
Initial mac-address table of switch1

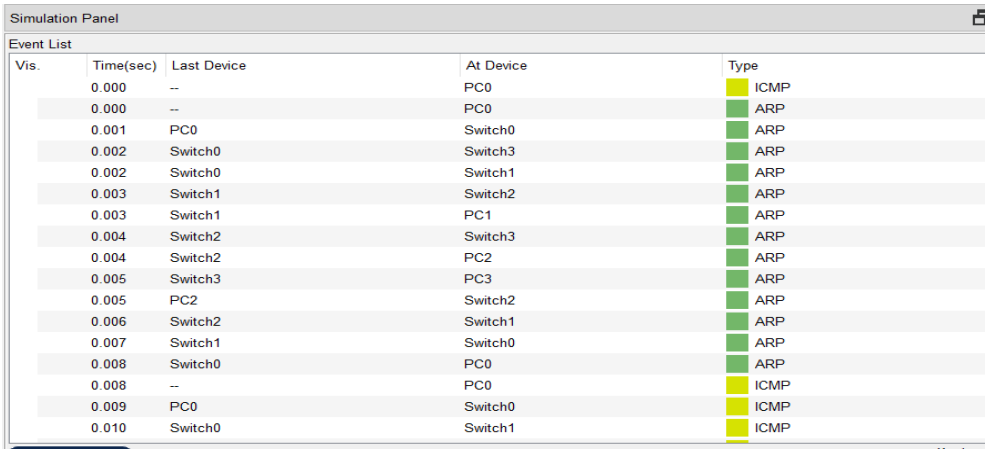
```
Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    0002.164e.ddca    DYNAMIC     Fa1/1
   1    000b.bed8.b811    DYNAMIC     Fa0/1
Switch>
```

Initial mac-address table of switch2

```
Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    0002.179a.bdba    DYNAMIC     Fa0/1
   1    00d0.bc25.dd8b    DYNAMIC     Fa1/1
Switch>


Switch>show mac-address
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    0003.e44e.9235    DYNAMIC     Fa1/1
Switch>
```

Initial mac-address table of switch2





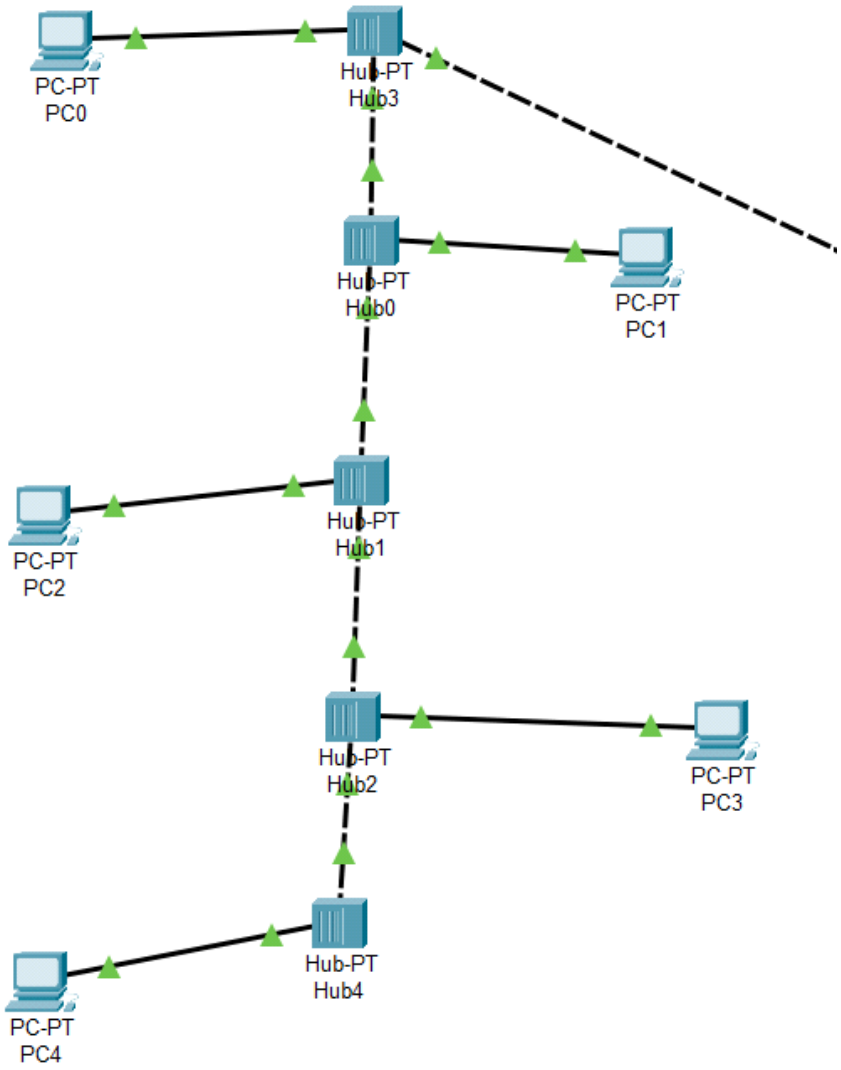
Simulation Panel

Event List

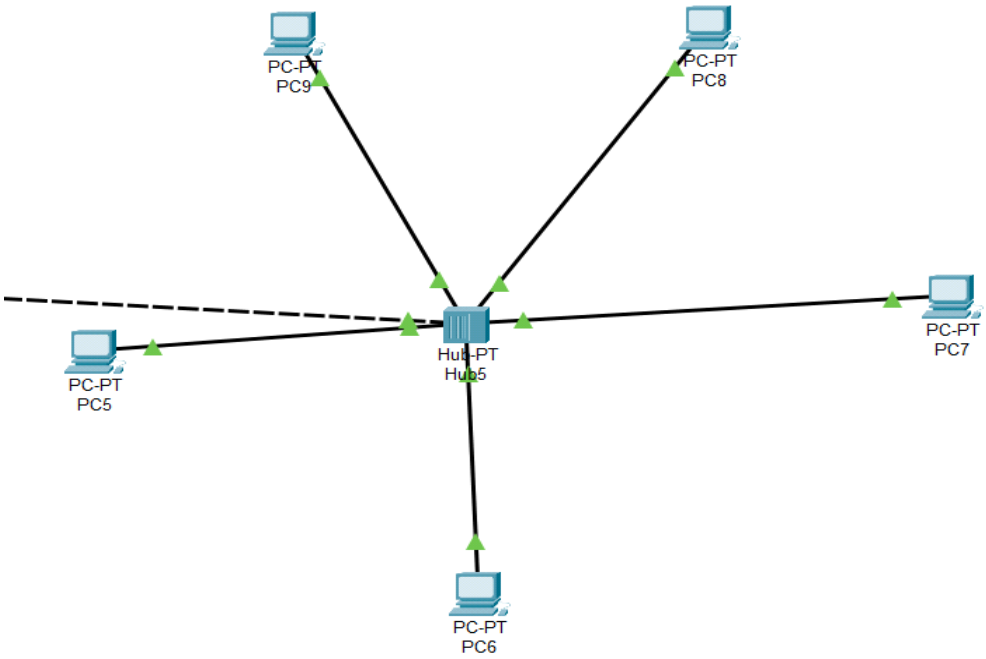
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.000	--	PC0	ARP
	0.001	PC0	Switch0	ARP
	0.002	Switch0	Switch3	ARP
	0.002	Switch0	Switch1	ARP
	0.003	Switch1	Switch2	ARP
	0.003	Switch1	PC1	ARP
	0.004	Switch2	Switch3	ARP
	0.004	Switch2	PC2	ARP
	0.005	Switch3	PC3	ARP
	0.005	PC2	Switch2	ARP
	0.006	Switch2	Switch1	ARP
	0.007	Switch1	Switch0	ARP
	0.008	Switch0	PC0	ARP
	0.008	--	PC0	ICMP
	0.009	PC0	Switch0	ICMP
	0.010	Switch0	Switch1	ICMP
	0.011	Switch1	Switch2	ICMP
	0.012	Switch2	PC2	ICMP
	0.013	PC2	Switch2	ICMP
	0.014	Switch2	Switch1	ICMP
	0.015	Switch1	Switch0	ICMP
	0.016	Switch0	PC0	ICMP
	0.466	--	Switch1	STP
	0.467	Switch1	Switch2	STP
	0.467	Switch1	Switch0	STP
	0.467	Switch1	PC1	STP
	0.468	Switch2	Switch3	STP
	0.468	Switch2	PC2	STP
	0.468	Switch0	PC0	STP
	0.468	Switch0	Switch3	STP
	0.469	Switch3	PC3	STP
	1.016	--	PC0	ICMP
	1.017	PC0	Switch0	ICMP
	1.018	Switch0	Switch1	ICMP
	1.019	Switch1	Switch2	ICMP
	1.020	Switch2	PC2	ICMP
	1.021	PC2	Switch2	ICMP
	1.022	Switch2	Switch1	ICMP
	1.023	Switch1	Switch0	ICMP
	1.024	Switch0	PC0	ICMP
	2.028	--	PC0	ICMP
	2.029	PC0	Switch0	ICMP
	2.030	Switch0	Switch1	ICMP
	2.031	Switch1	Switch2	ICMP
	2.032	Switch2	PC2	ICMP
	2.033	PC2	Switch2	ICMP
	2.034	Switch2	Switch1	ICMP
	2.035	Switch1	Switch0	ICMP
	2.036	Switch0	PC0	ICMP
	2.464	--	Switch1	STP
	2.465	Switch1	Switch2	STP
	2.465	Switch1	Switch0	STP
	2.465	Switch1	PC1	STP
	2.466	Switch2	Switch3	STP
	2.466	Switch2	PC2	STP
	2.466	Switch0	PC0	STP
	2.466	Switch0	Switch3	STP
	2.467	Switch3	PC3	STP
	3.040	--	PC0	ICMP
	3.041	PC0	Switch0	ICMP
	3.042	Switch0	Switch1	ICMP
	3.043	Switch1	Switch2	ICMP
	3.044	Switch2	PC2	ICMP
	3.045	PC2	Switch2	ICMP
	3.046	Switch2	Switch1	ICMP
	3.047	Switch1	Switch0	ICMP
	3.048	Switch0	PC0	ICMP

4) Hybrid Topology using Switch

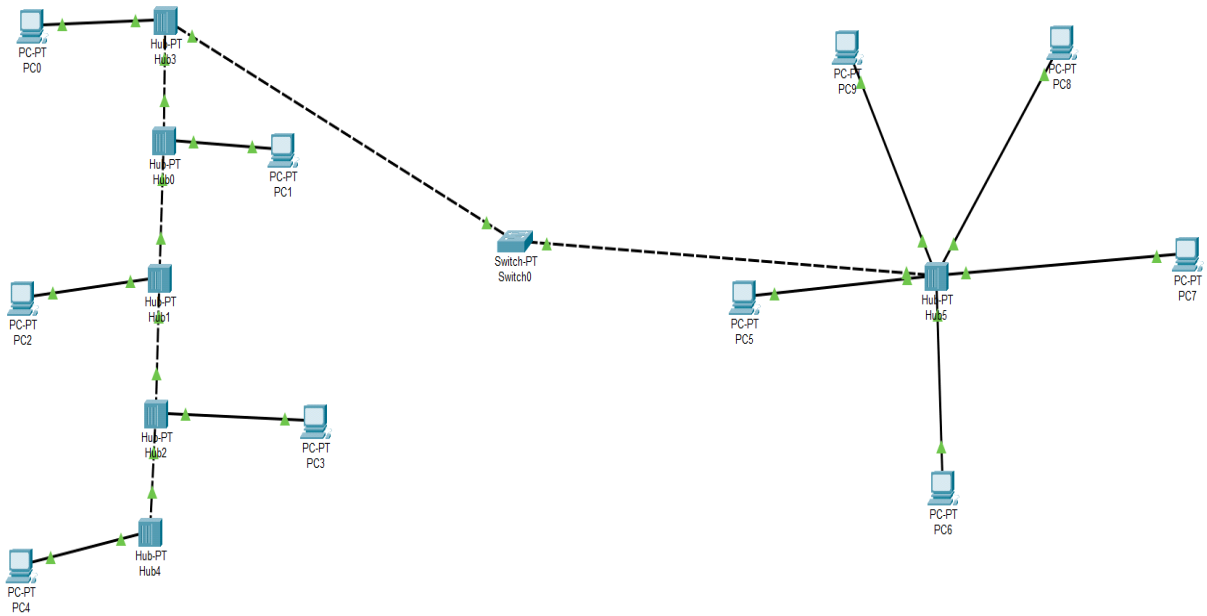
Step01: Creating Connection for Bus topology with 5 PCs and 5 Hubs



Step02: Creating Connection for Star Topology with 5 PCs and 1 Hub

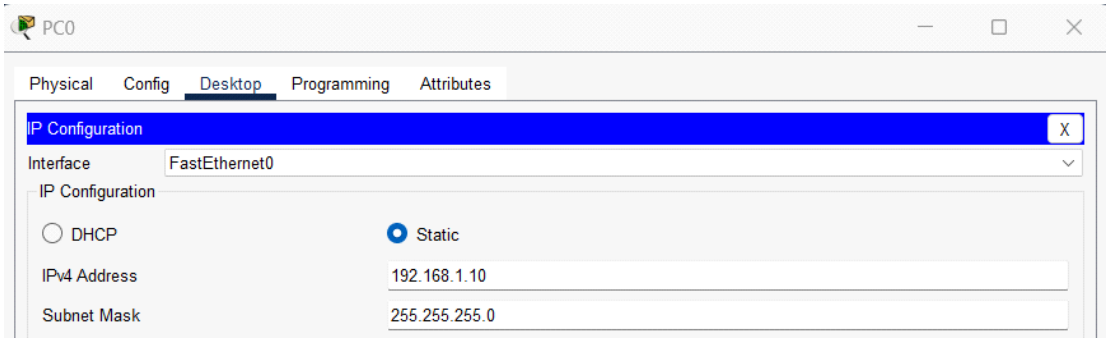


Step03: Connect both Topology Via PT-Switch

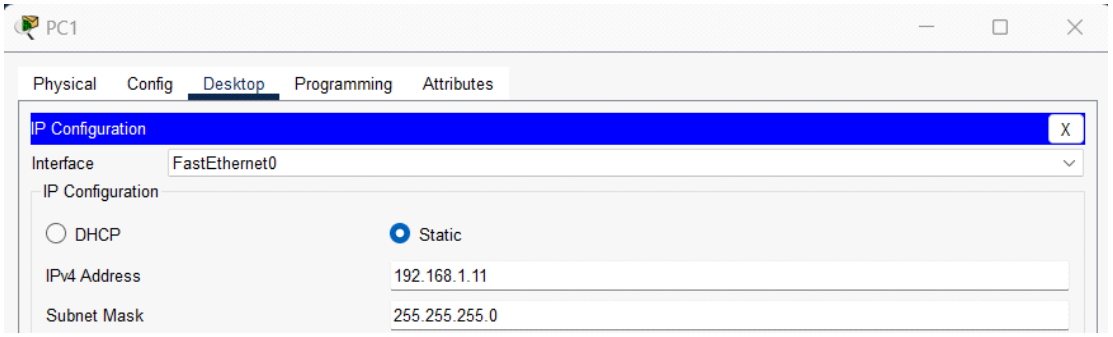


Step-4) Now Configure IP address of all the PCs in BUS topology as-

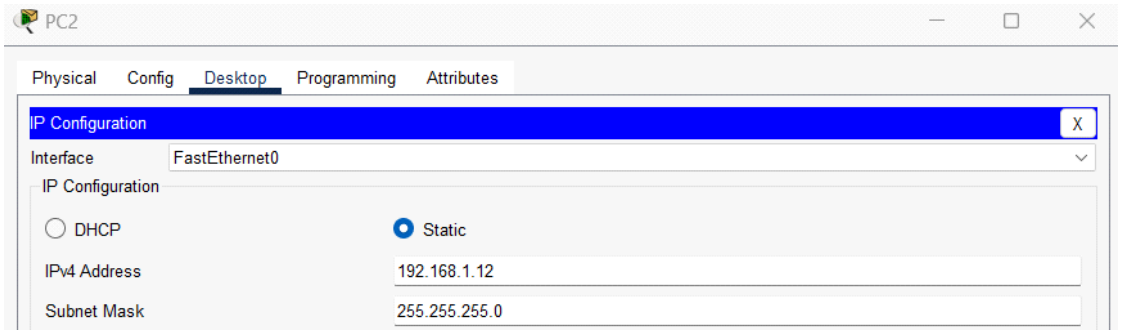
Pc0:



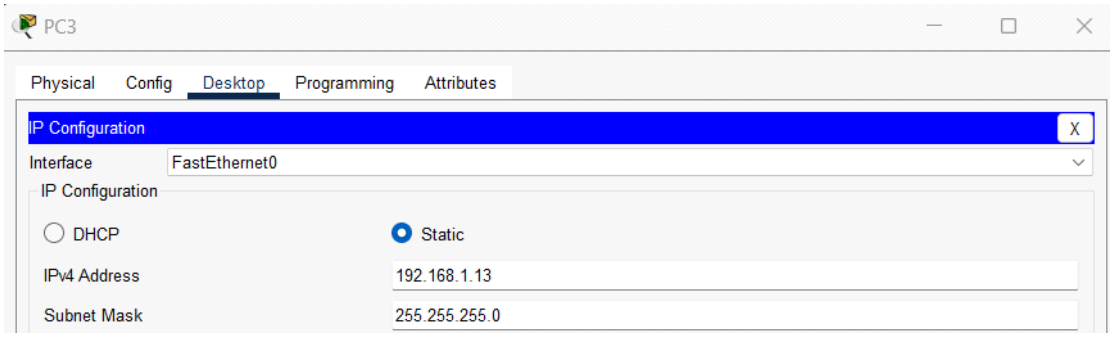
Pc1:



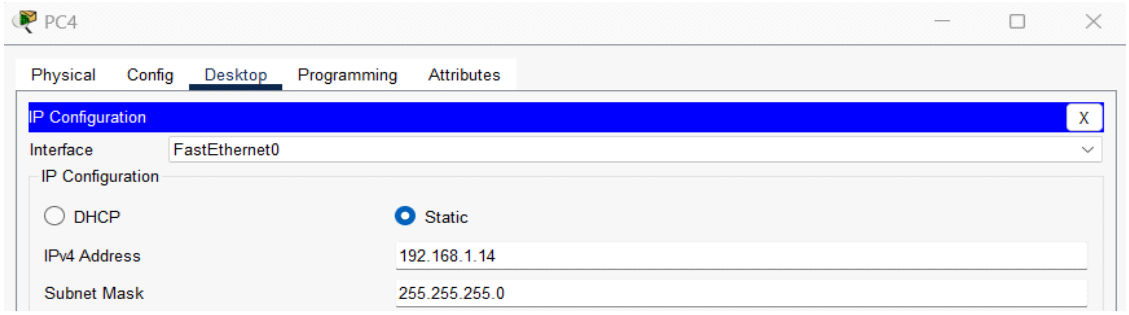
Pc2:



Pc3:

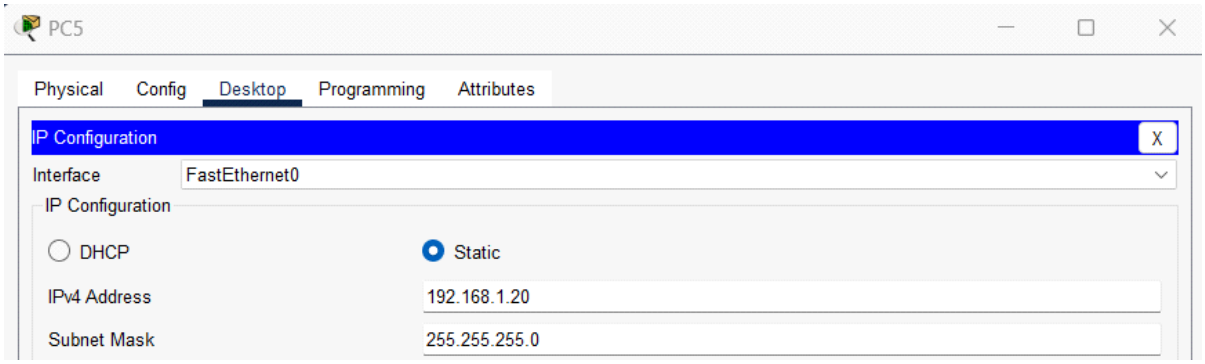


Pc4:

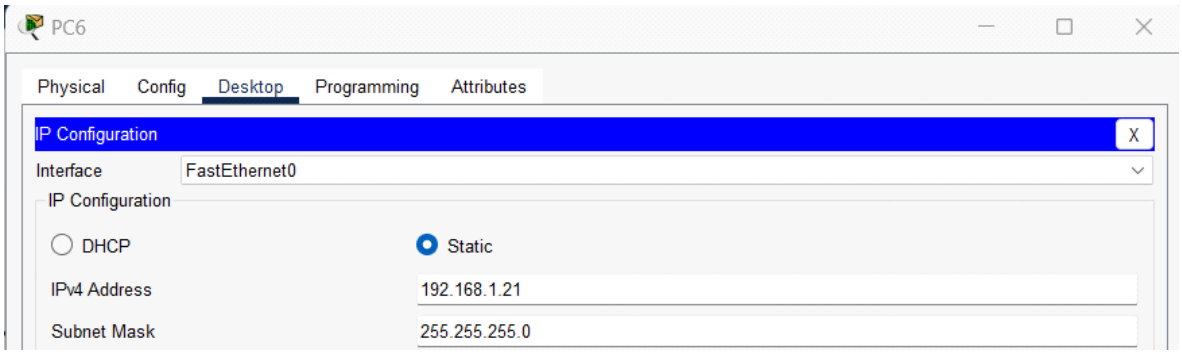


Step-5) Now Configure IP address of all PCs in Star Topology as-

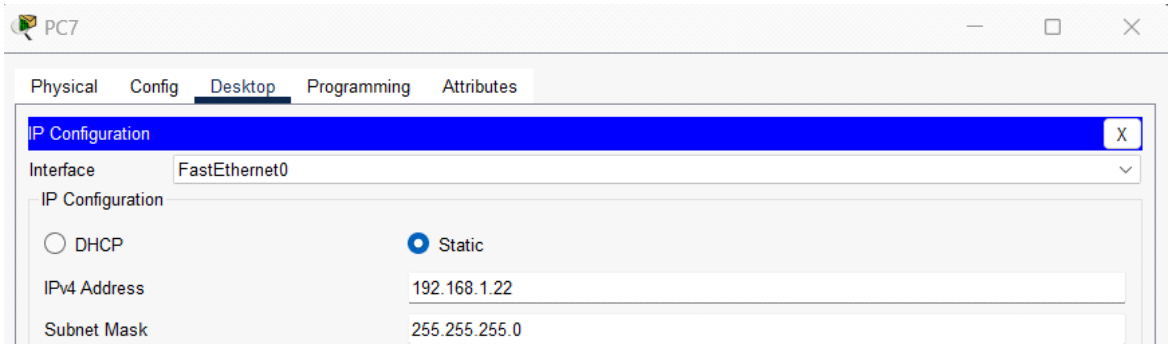
Pc5:



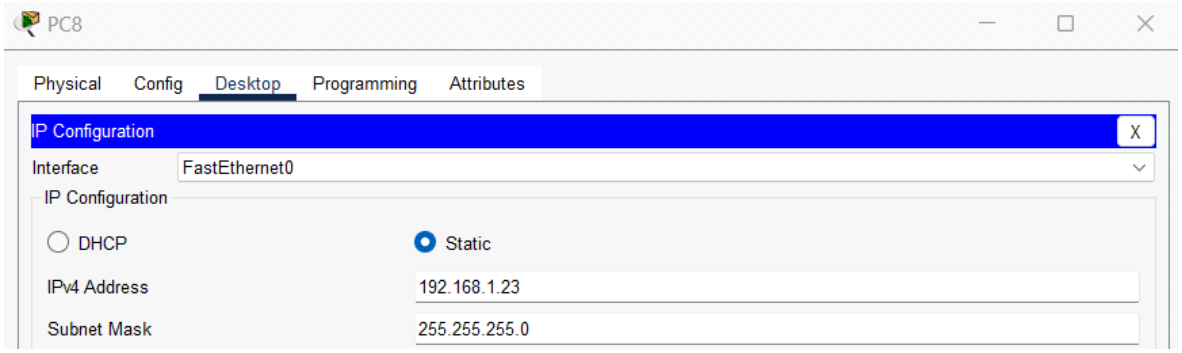
Pc6:



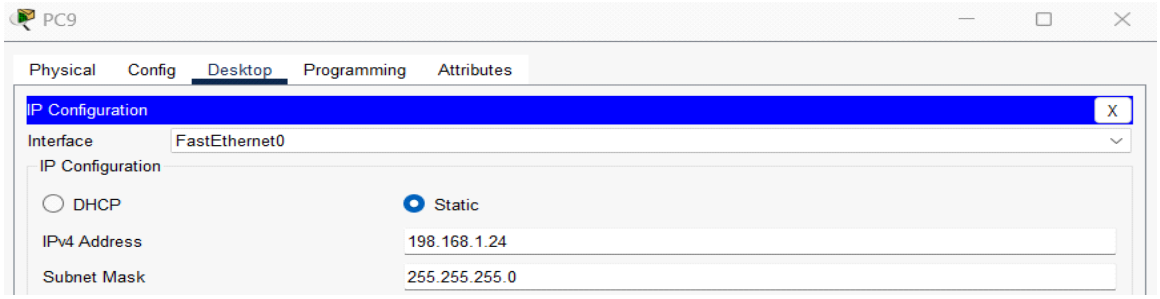
Pc7:



Pc8:



Pc9:



Note- Here all PCs are having same Network Id of Class C IP address

Step06: Sending Packet from PC2 to PC7

Initial Mac Address Table of Switch

```
Switch>show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----
```

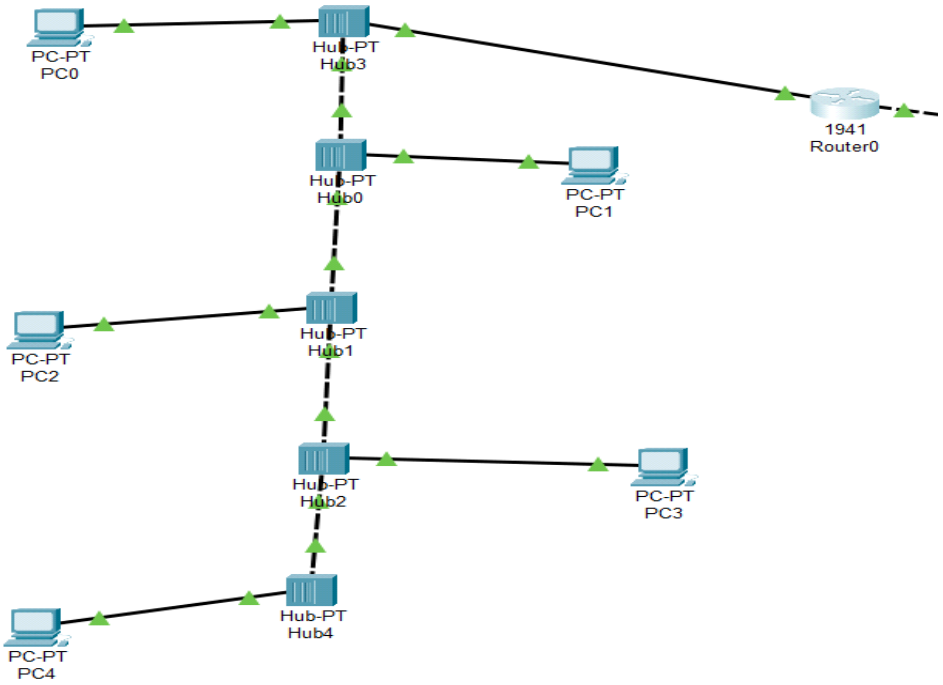
Final Mac Address Table of Switch

```
Switch>show mac-address-table
          Mac Address Table
-------------------------------------------

Vlan    Mac Address       Type        Ports
----    -----------       --------    -----

   1    0001.426b.4056    DYNAMIC     Fa0/1
   1    00e0.b024.b6aa    DYNAMIC     Fa1/1
Switch>
```

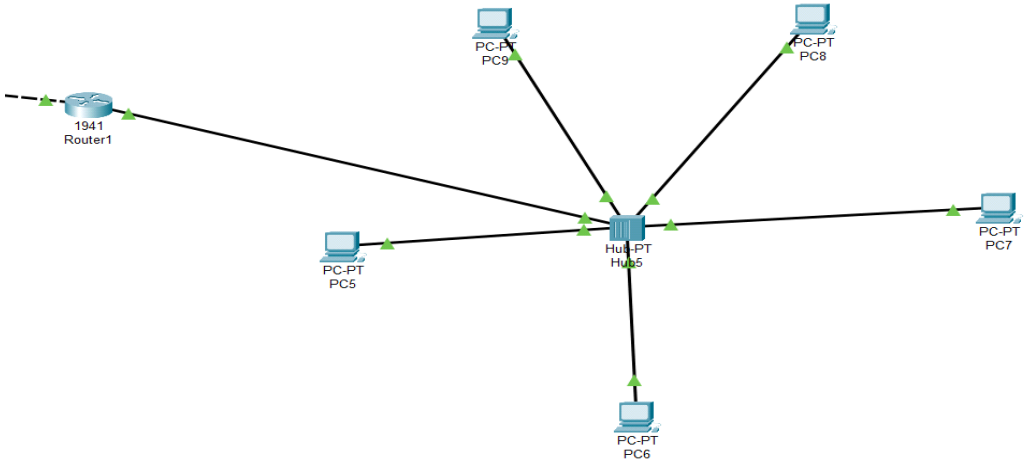
```
C:\>ping 192.168.1.22

Pinging 192.168.1.22 with 32 bytes of data:

Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.1.22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

Exp-2) Static Routing between Bus Topology and Star Topology

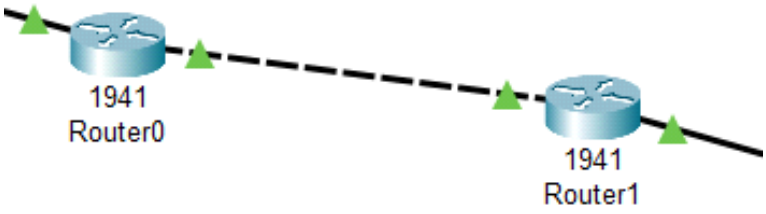
Step01: Create Connections for Bus Topology and connects its one Hub to 1941 router through gigabitEthernet port



Step-2) Create Connections for Star Topology and connects its hub to another 1941 router through GigabitEthernet Port



Step-3) Connect both of these router with cross-over cable



Step-4) Configure IP address to router0 at its GigabitEthernet0/0 and GigabitEthernet0/1 port

GigabitEthernet 0/0 -

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address 192.168.1.254 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

GigabitEthernet 0/1 –

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 172.16.0.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Step05: Configure IP address to router1 at its GigabitEthernet0/0 and GigabitEthernet0/1 port

GigabitEthernet 0/0 –

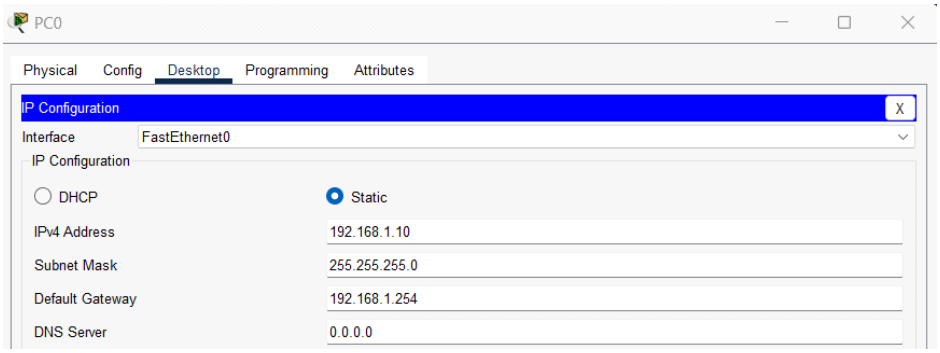
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address 172.16.0.2 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

GigabitEthernet 0/1 –

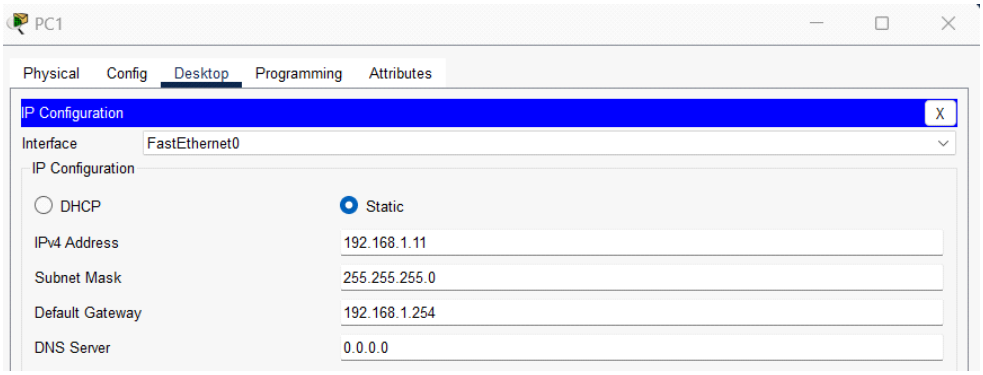
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.2.254 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Step-6) Configure IP address of all PCs of Bus topology and default gateway as 192.168.1.254

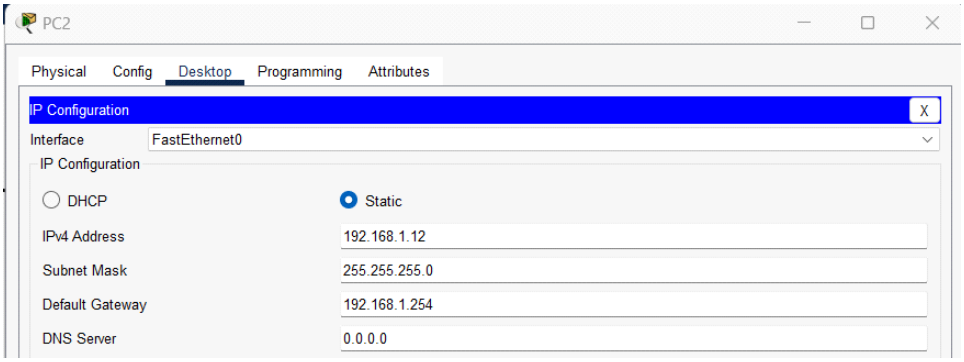
Pc0:



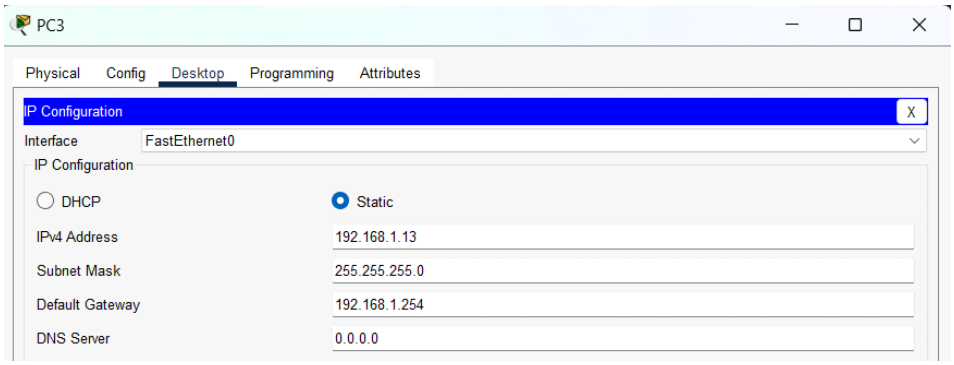
Pc1:



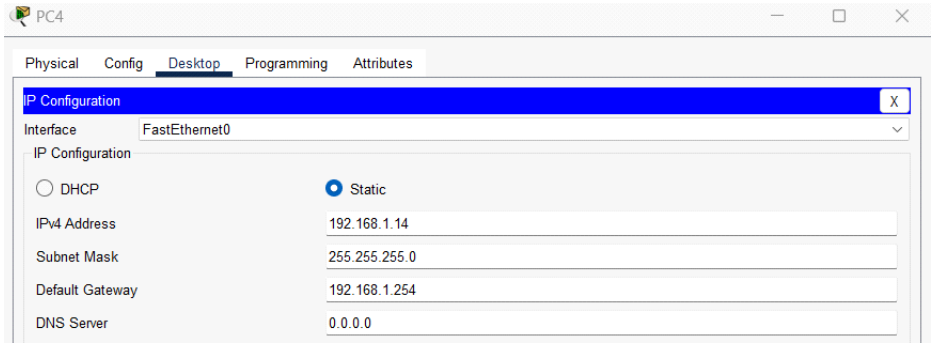
Pc2:



Pc3:

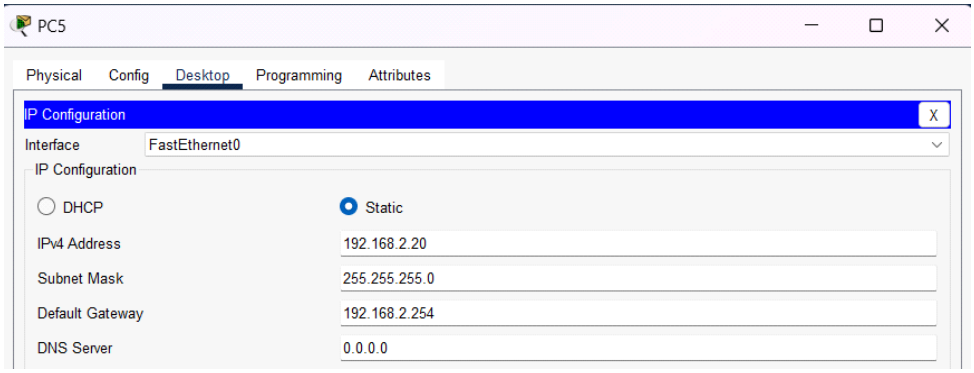


Pc4:

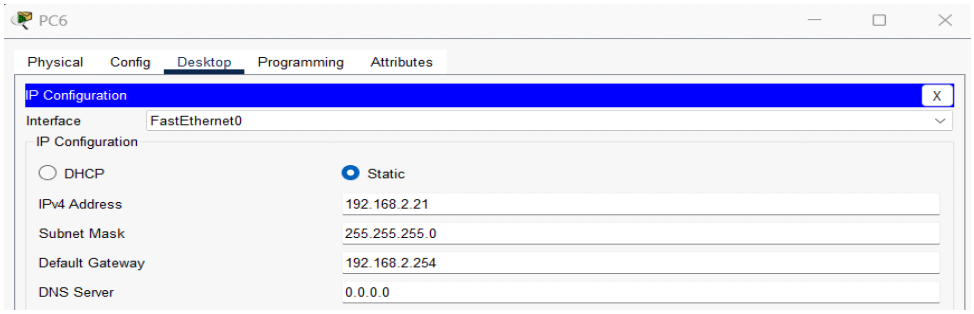


Step07: Configure IP address of all PCs of Star topology and default gateway as 192.168.2.254

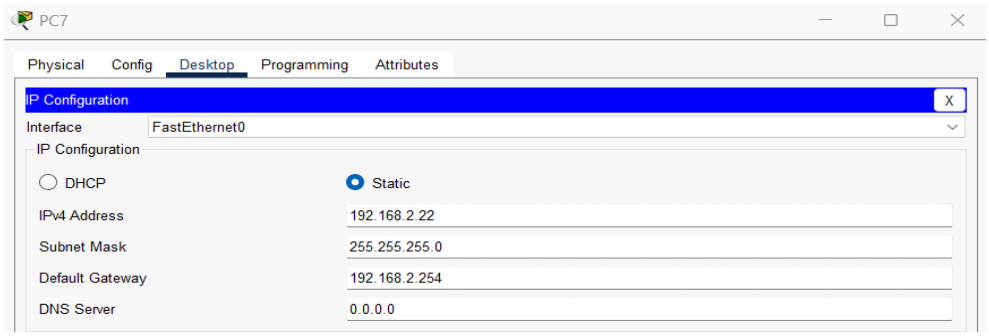
Pc5:



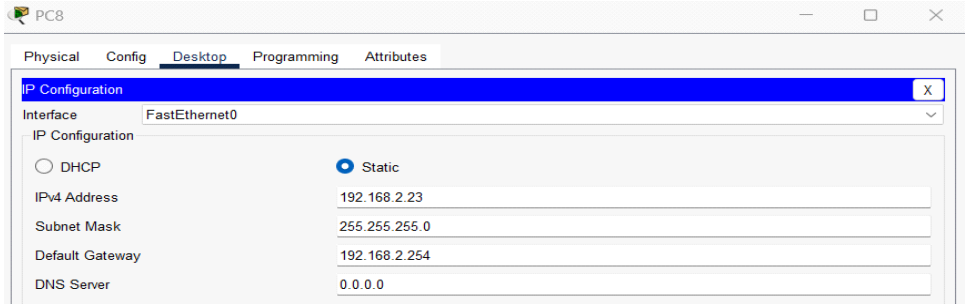
Pc6:



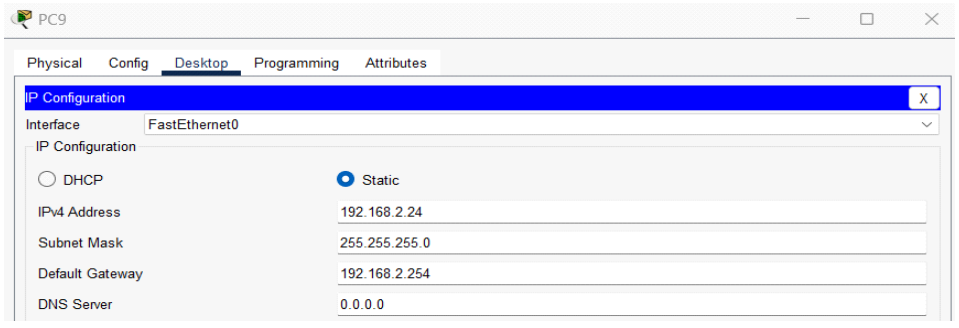
Pc7:



Pc8:



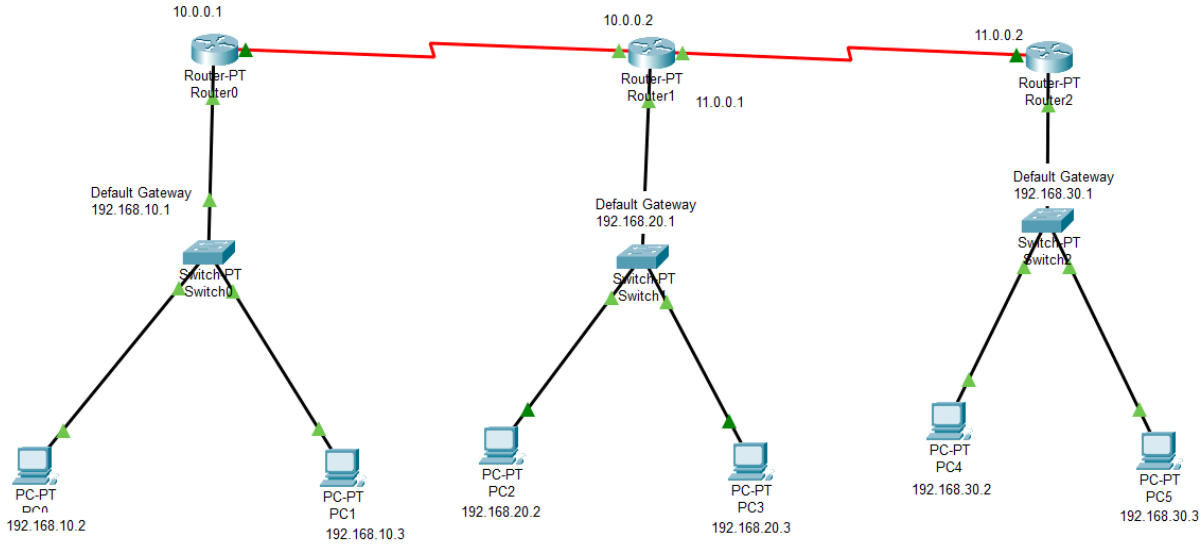
Pc9:



Step08: Sending Packet from PC0 to PC5

```
Cisco Packet Tracer PC Command Line 1.0
C:\>oing 192.168.2.20
Invalid Command.

C:\>ping 192.168.2.20

Pinging 192.168.2.20 with 32 bytes of data:

Reply from 192.168.2.20: bytes=32 time=15ms TTL=126
Reply from 192.168.2.20: bytes=32 time=10ms TTL=126
Reply from 192.168.2.20: bytes=32 time=10ms TTL=126
Reply from 192.168.2.20: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.2.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 15ms, Average = 11ms
```

Exp-3) RIP with 3 Routers



Step01: Create Connection using 3 Routers, 3 Switches and 6 PCs

Step02:Configure IP address of PCs

PC0- 192.168.10.2 Default Gateway-192.168.10.1

PC1-192.168.10.3 Default Gateway-192.168.10.1

PC2-192.168.20.2 Default Gateway-192.168.20.1

PC3-192.168.20.3 Default Gateway-192.168.20.1

PC4-192.168.30.2 Default Gateway-192.168.30.1

PC5-192.168.30.3 Default Gateway-192.168.30.1

Step03:Configure IP address to router0 at its fastEthernet0/0 and Serial 2/0 port

FastEthernet0/0 –

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastEthernet0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Serial2/0 –

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Serial2/0
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Step04: Configure IP address to router1 at its fastEthernet0/0 and Serial 2/0 port and Serial 3/0 port

FastEthernet 0/0 –

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fastethernet0/0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#exit
```

Serial 2/0 –

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial2/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Serial 3/0

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial3/0
Router(config-if)#ip address 11.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Step-5) Configure RIP protocol In Routers

Router0-

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.10.0
Router(config-router)#network 10.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Router1-

```
Router>
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.20.0
Router(config-router)#network 10.0.0.0
Router(config-router)#network 11.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Router2-

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#network 192.168.30.0
Router(config-router)#network 11.0.0.0
Router(config-router)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
exit
```

Step06: Sending Package from PC1 to PC4

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.30.2

Pinging 192.168.30.2 with 32 bytes of data:

Reply from 192.168.30.2: bytes=32 time=12ms TTL=125
Reply from 192.168.30.2: bytes=32 time=12ms TTL=125
Reply from 192.168.30.2: bytes=32 time=12ms TTL=125
Reply from 192.168.30.2: bytes=32 time=12ms TTL=125

Ping statistics for 192.168.30.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 12ms, Average = 12ms

C:\>
```

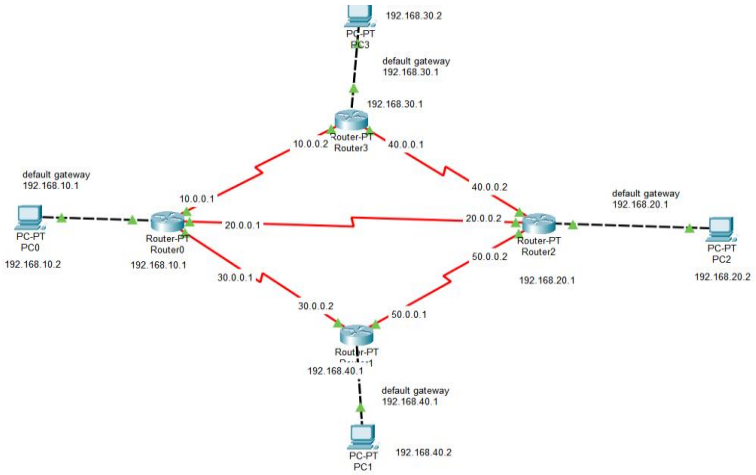
Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.001	PC1	Switch0	ICMP
	0.002	Switch0	Router0	ICMP
	0.003	Router0	Router1	ICMP
	0.004	Router1	Router2	ICMP
	0.005	Router2	Switch2	ICMP
	0.006	Switch2	PC4	ICMP
	0.007	PC4	Switch2	ICMP
	0.008	Switch2	Router2	ICMP
	0.009	Router2	Router1	ICMP
	0.010	Router1	Router0	ICMP
	0.011	Router0	Switch0	ICMP
	0.012	Switch0	PC1	ICMP
	1.012	--	PC1	ICMP
	1.013	PC1	Switch0	ICMP
	1.014	Switch0	Router0	ICMP
	1.015	Router0	Router1	ICMP
	1.016	Router1	Router2	ICMP
	1.017	Router2	Switch2	ICMP
	1.018	Switch2	PC4	ICMP
	1.019	PC4	Switch2	ICMP
	1.020	Switch2	Router2	ICMP
	1.021	Router2	Router1	ICMP
	1.022	Router1	Router0	ICMP
	1.023	Router0	Switch0	ICMP
	1.024	Switch0	PC1	ICMP
	1.306	--	Router2	RIPv1
	1.306	--	Router2	RIPv1
	1.307	Router2	Switch2	RIPv1
	1.307	Router2	Router1	RIPv1
	1.308	Switch2	PC4	RIPv1
	1.308	Switch2	PC5	RIPv1
	1.353	--	Switch1	STP
	1.354	Switch1	PC2	STP
	2.031	PC4	Switch2	ICMP
	2.032	Switch2	Router2	ICMP
	2.033	Router2	Router1	ICMP
	2.034	Router1	Router0	ICMP
	2.035	Router0	Switch0	ICMP
	2.036	Switch0	PC1	ICMP
	3.040	--	PC1	ICMP
	3.041	PC1	Switch0	ICMP
	3.042	Switch0	Router0	ICMP
	3.043	Router0	Router1	ICMP
	3.044	Router1	Router2	ICMP
	3.045	Router2	Switch2	ICMP
	3.046	Switch2	PC4	ICMP
	3.047	PC4	Switch2	ICMP
	3.048	Switch2	Router2	ICMP
	3.049	Router2	Router1	ICMP
	3.050	Router1	Router0	ICMP
	3.052	Switch0	PC1	ICMP
	1.354	Switch1	PC3	STP
	1.354	Switch1	Router1	STP
	1.550	--	Switch0	STP
	1.551	Switch0	PC0	STP
	1.551	Switch0	PC1	STP
	1.551	Switch0	Router0	STP
	1.998	--	Switch2	STP
	1.999	Switch2	PC4	STP
	1.999	Switch2	Router2	STP
	1.999	Switch2	PC5	STP
	2.024	--	PC1	ICMP
	2.025	PC1	Switch0	ICMP
	2.026	Switch0	Router0	ICMP
	2.027	Router0	Router1	ICMP
	2.028	Router1	Router2	ICMP
	2.029	Router2	Switch2	ICMP
	2.030	Switch2	PC4	ICMP

Exp-4) RIP with 4 Routers

Step01: Connections



Step02: Provide IP address to all PCs

PC0 – 192.168.10.2

PC1- 192.168.40.2

PC3- 192.168.20.2

PC4- 192.168.30.2

Step03: RIP Configuration in all Routers Routing table

Router0-

```
Router>en
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     10.0.0.0/8 is directly connected, Serial2/0
C     20.0.0.0/8 is directly connected, Serial6/0
C     30.0.0.0/8 is directly connected, Serial3/0
R     40.0.0.0/8 [120/1] via 10.0.0.2, 00:00:11, Serial2/0
                 [120/1] via 20.0.0.2, 00:00:05, Serial6/0
R     50.0.0.0/8 [120/1] via 30.0.0.2, 00:00:25, Serial3/0
                 [120/1] via 20.0.0.2, 00:00:05, Serial6/0
C     192.168.10.0/24 is directly connected, FastEthernet0/0
R     192.168.20.0/24 [120/1] via 20.0.0.2, 00:00:05, Serial6/0
R     192.168.30.0/24 [120/1] via 10.0.0.2, 00:00:11, Serial2/0
R     192.168.40.0/24 [120/1] via 30.0.0.2, 00:00:25, Serial3/0

Router#
```

Router1-

```
Router>en
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

R    10.0.0.0/8 [120/1] via 30.0.0.1, 00:00:05, Serial2/0
R    20.0.0.0/8 [120/1] via 30.0.0.1, 00:00:05, Serial2/0
                [120/1] via 50.0.0.2, 00:00:12, Serial3/0
C    30.0.0.0/8 is directly connected, Serial2/0
R    40.0.0.0/8 [120/1] via 50.0.0.2, 00:00:12, Serial3/0
C    50.0.0.0/8 is directly connected, Serial3/0
R    192.168.10.0/24 [120/1] via 30.0.0.1, 00:00:05, Serial2/0
R    192.168.20.0/24 [120/1] via 50.0.0.2, 00:00:12, Serial3/0
R    192.168.30.0/24 [120/2] via 30.0.0.1, 00:00:05, Serial2/0
                     [120/2] via 50.0.0.2, 00:00:12, Serial3/0
C    192.168.40.0/24 is directly connected, FastEthernet0/0
```

Router2-

```
Router>en
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

R    10.0.0.0/8 [120/1] via 20.0.0.1, 00:00:11, Serial6/0
                [120/1] via 40.0.0.1, 00:00:06, Serial2/0
C    20.0.0.0/8 is directly connected, Serial6/0
R    30.0.0.0/8 [120/1] via 20.0.0.1, 00:00:11, Serial6/0
                [120/1] via 50.0.0.1, 00:00:12, Serial3/0
C    40.0.0.0/8 is directly connected, Serial2/0
C    50.0.0.0/8 is directly connected, Serial3/0
R    192.168.10.0/24 [120/1] via 20.0.0.1, 00:00:11, Serial6/0
C    192.168.20.0/24 is directly connected, FastEthernet0/0
R    192.168.30.0/24 [120/1] via 40.0.0.1, 00:00:06, Serial2/0
R    192.168.40.0/24 [120/1] via 50.0.0.1, 00:00:12, Serial3/0
```

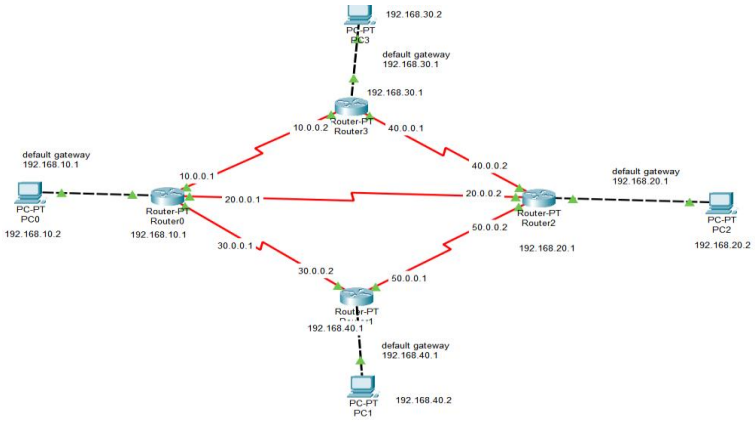
Router3-

```
Router>en
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    10.0.0.0/8 is directly connected, Serial2/0
R    20.0.0.0/8 [120/1] via 10.0.0.1, 00:00:01, Serial2/0
                [120/1] via 40.0.0.2, 00:00:00, Serial3/0
R    30.0.0.0/8 [120/1] via 10.0.0.1, 00:00:01, Serial2/0
C    40.0.0.0/8 is directly connected, Serial3/0
R    50.0.0.0/8 [120/1] via 40.0.0.2, 00:00:00, Serial3/0
R    192.168.10.0/24 [120/1] via 10.0.0.1, 00:00:01, Serial2/0
R    192.168.20.0/24 [120/1] via 40.0.0.2, 00:00:00, Serial3/0
C    192.168.30.0/24 is directly connected, FastEthernet0/0
R    192.168.40.0/24 [120/2] via 10.0.0.1, 00:00:01, Serial2/0
                     [120/2] via 40.0.0.2, 00:00:00, Serial3/0
```

Message Transfer Successful.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Failed	PC0	PC2	IC...		0.000	N	0	(...	(delete)
	Successful	PC0	PC2	IC...		0.000	N	1	(...	(delete)

Exp-5) OSPF Protocol



Command line for Router 0 :

```
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 192.168.7.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
```

Command line for Router 2 :

```
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#network 192.168.3.0 0.0.0.255 area 0
                ^
% Invalid input detected at '^' marker.

Router(config)#router ospf 2
Router(config-router)#network 192.168.3.0 0.0.0.255 area 0
Router(config-router)#network 192.168.7.0 0.0.0.255 area 0
Router(config-router)#exit
01:06:44: %OSPF-5-ADJCHG: Process 2, Nbr 192.168.7.2 on Serial7/0 from LOADING to FULL, Loading Done
```

Packet dropped successfully :

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC2	IC...		0.000	N	0	(...	(delete)

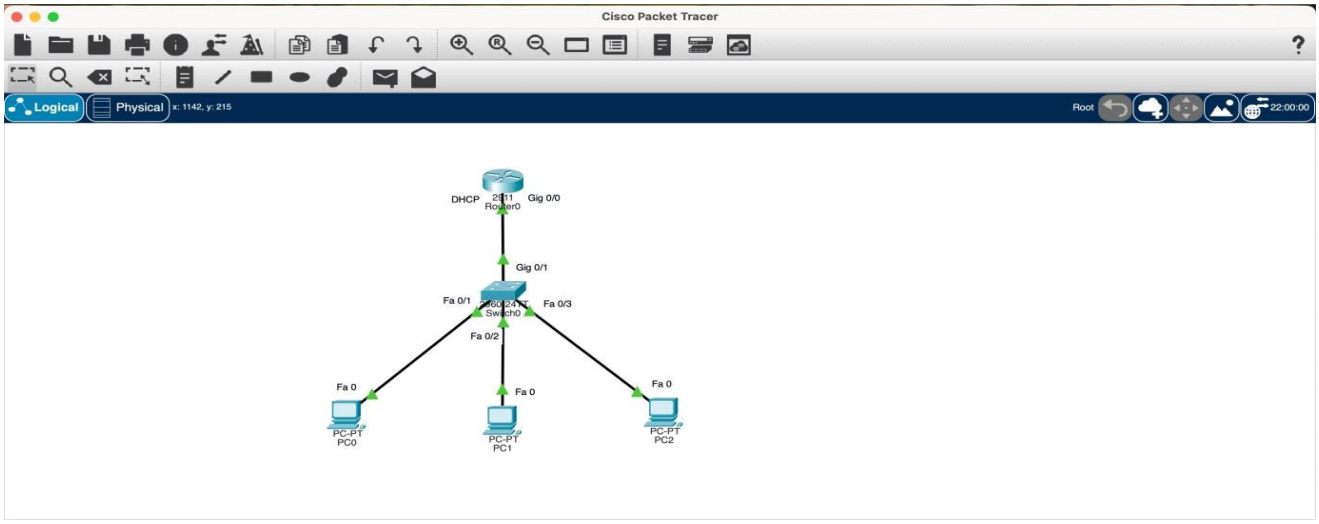
IP Route Table for router 0 :

```
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

O    192.168.1.0/24 [110/65] via 192.168.7.2, 00:02:41, Serial7/0
C    192.168.3.0/24 is directly connected, FastEthernet0/0
C    192.168.7.0/24 is directly connected, Serial7/0
C    192.168.8.0/24 is directly connected, Serial3/0
C    192.168.9.0/24 is directly connected, Serial2/0

Router#
```

IP Route Table for router 2:

```
Router>enable
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
O    192.168.3.0/24 [110/65] via 192.168.7.3, 00:02:14, Serial7/0
C    192.168.5.0/24 is directly connected, Serial2/0
C    192.168.6.0/24 is directly connected, Serial3/0
C    192.168.7.0/24 is directly connected, Serial7/0

Router#
```

Exp-6) DHCP Protocol



Command Line Interface :

```
DHCP_Router#en
DHCP_Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
DHCP_Router(config)#hostname DHCP_Router
DHCP_Router(config)#ip dhcp pool DHCP
DHCP_Router(dhcp-config)#network 10.0.0.0 255.0.0.0
DHCP_Router(dhcp-config)#default-router 10.0.0.1
DHCP_Router(dhcp-config)#exit
DHCP_Router(config)#
```

A range of IP addresses is excluded from the addresses defined in the subnet mask of the DHCP pool.

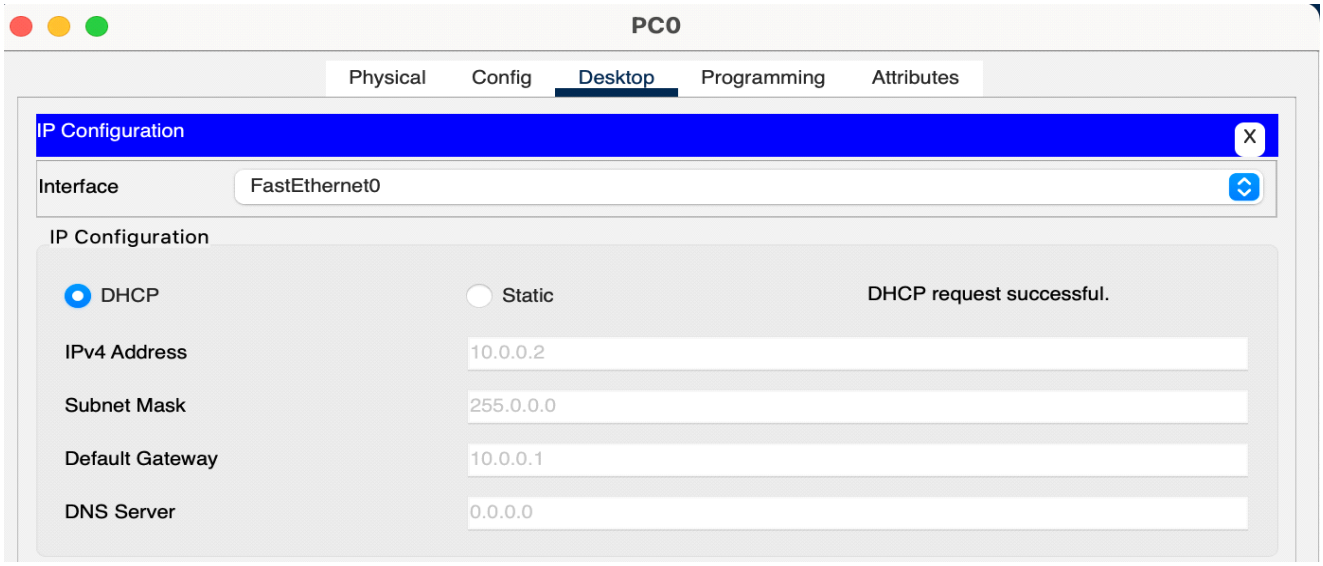
```
DHCP_Router(config)#ip dhcp excluded-address 10.0.0.2 10.0.255.7
DHCP_Router(config)#
```

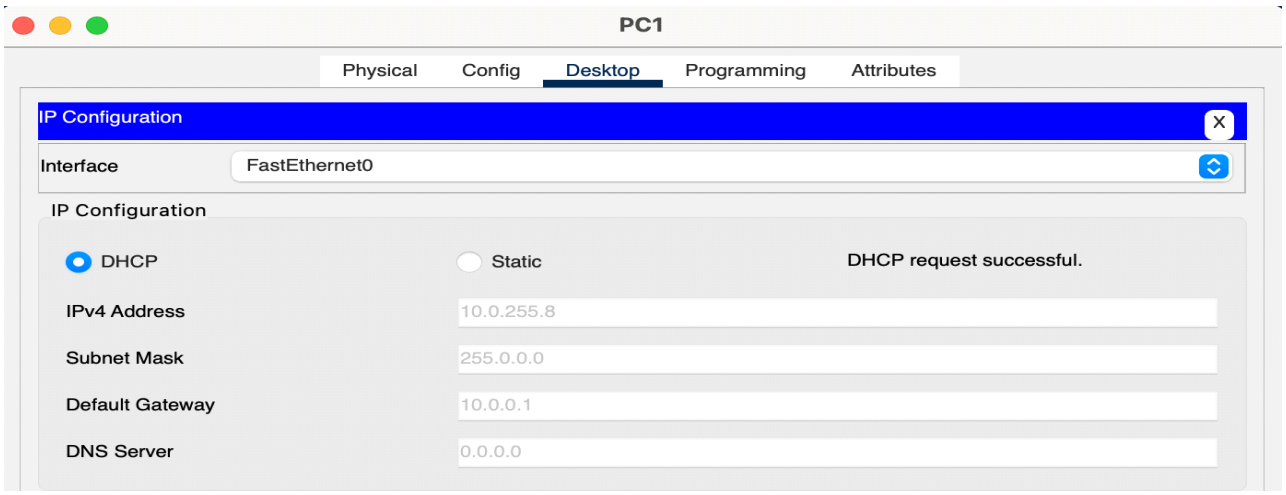
The interface of the router connected with theswitch is assigned with the IP address

defined as the default router during the DHCP configuration.

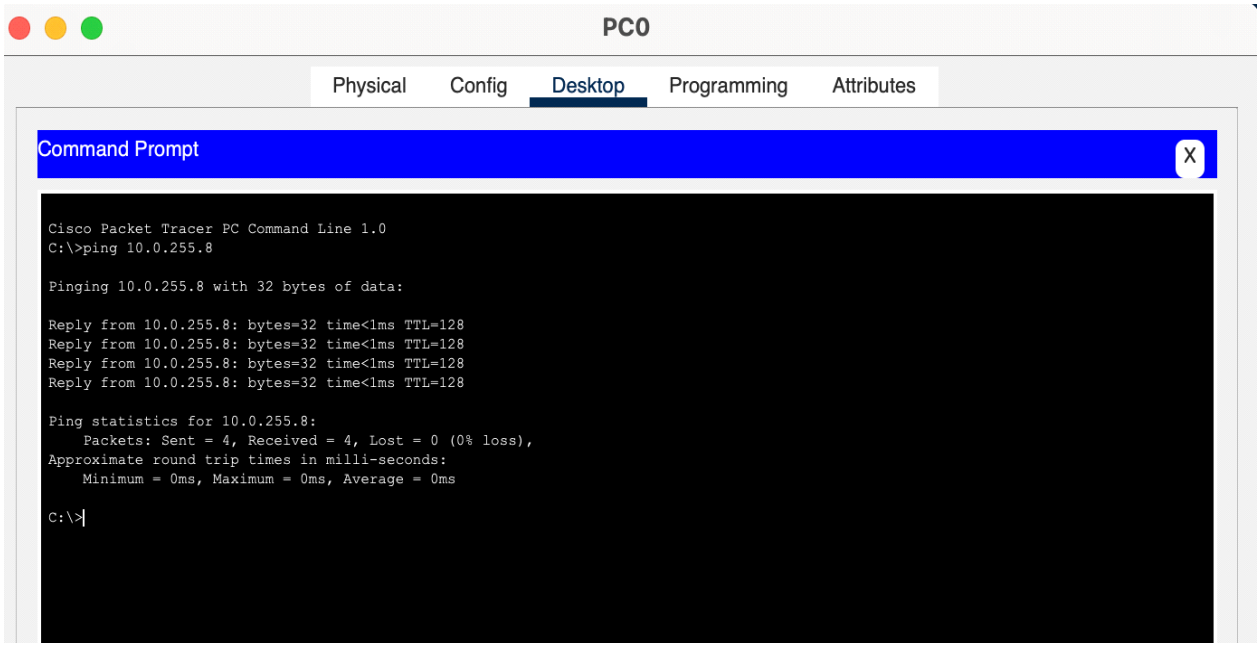
```
DHCP_Router(config)#interface GigabitEthernet 0/0
DHCP_Router(config-if)#ip address 10.0.0.1 255.0.0.0
DHCP_Router(config-if)#no shutdown
```

Desktop settings of a host system are accessed and the DHCP option is selected.

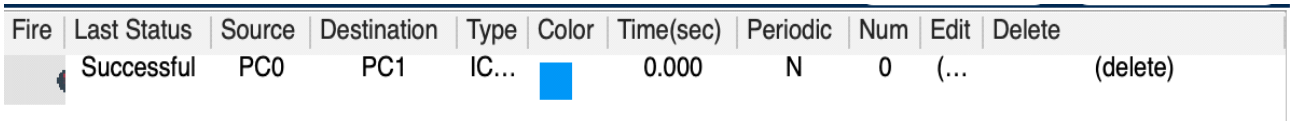




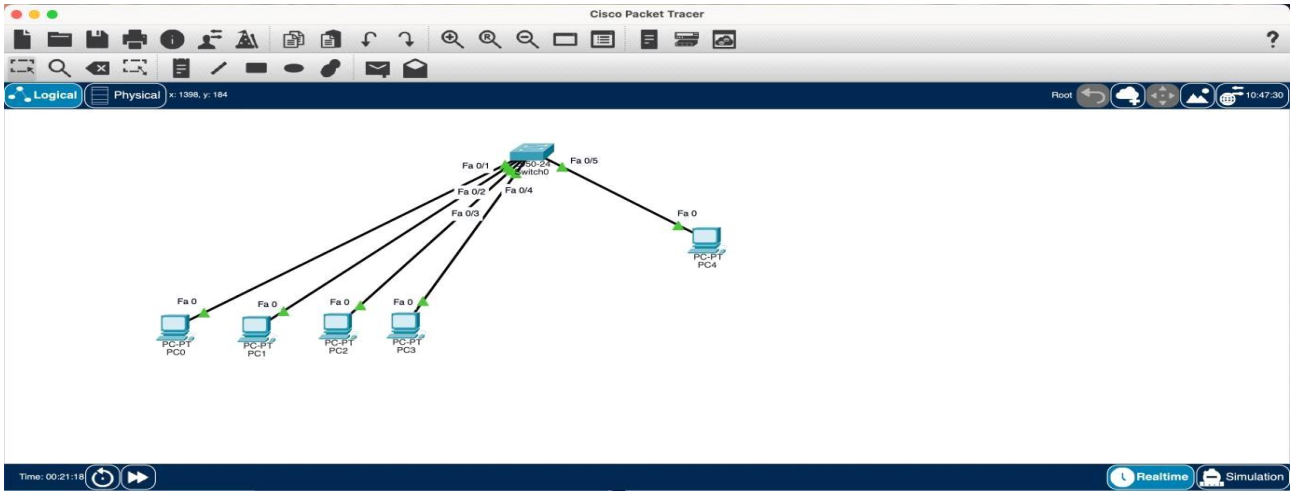
To check the connectivity between the host systems, the ‘ping’ command is used to exchangedata packets.



Packet dropped successfully :



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC1	IC...		0.000	N	0	(...	(delete)

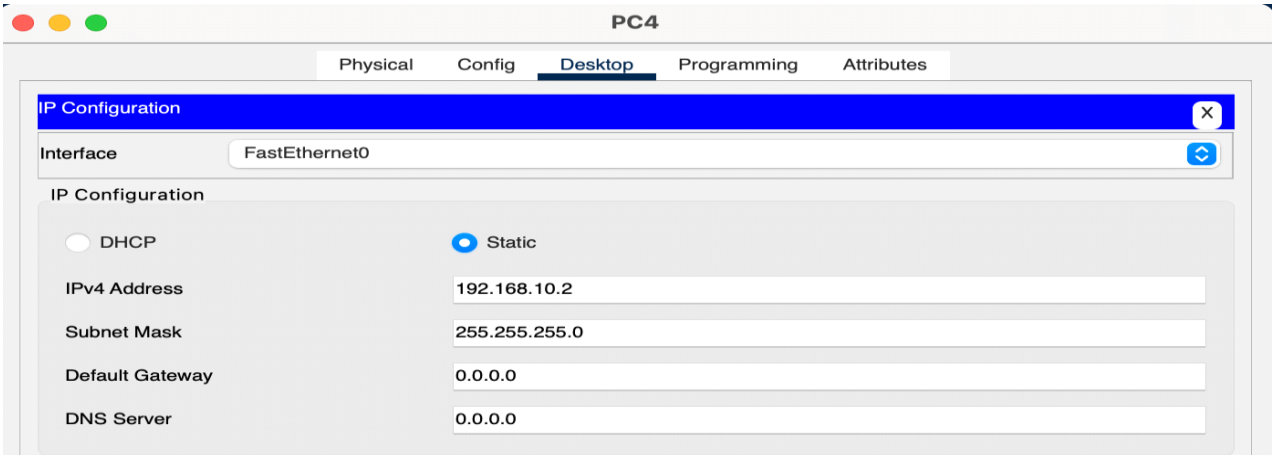


Exp-7) Telnet Configuration

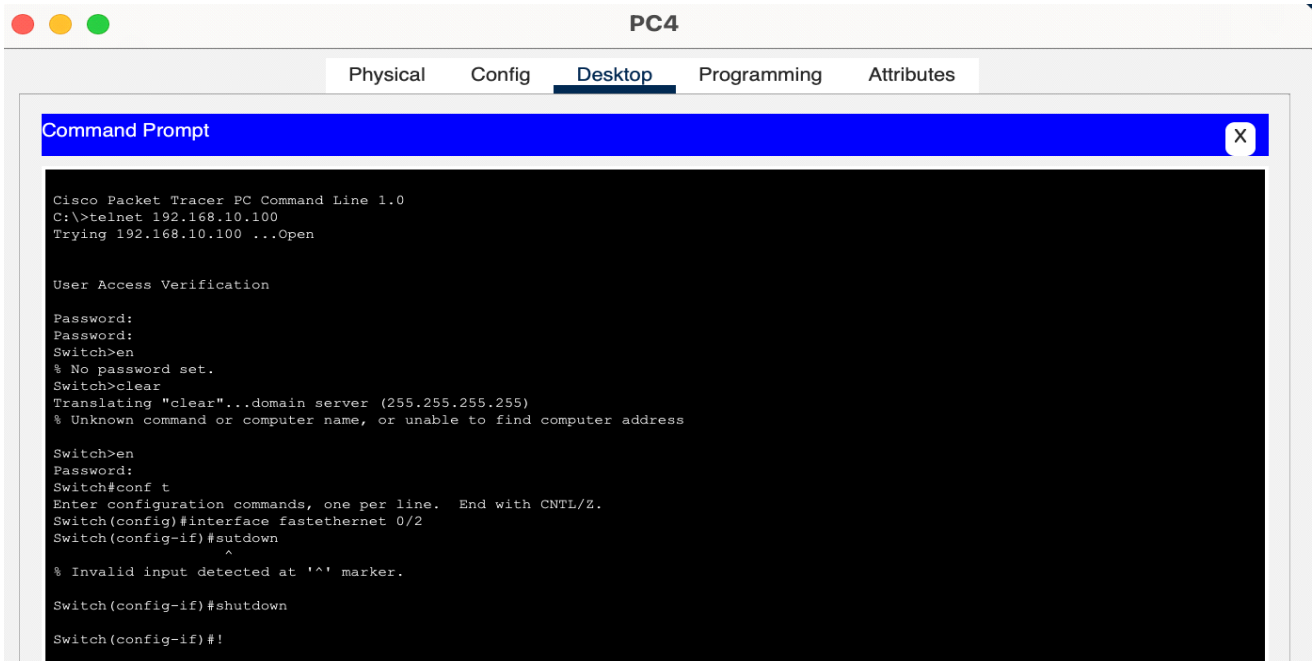
Command Line Interface for Switch :

```
Switch>
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface vlan 1
Switch(config-if)#ip address 192.168.10.100 255.255.255.0
Switch(config-if)#no shutdown

Switch(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

Switch(config-if)#exit
Switch(config)#line vty 0 15
Switch(config-line)#password telnet@1234
Switch(config-line)#login
Switch(config-line)#exit
Switch(config)#
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

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

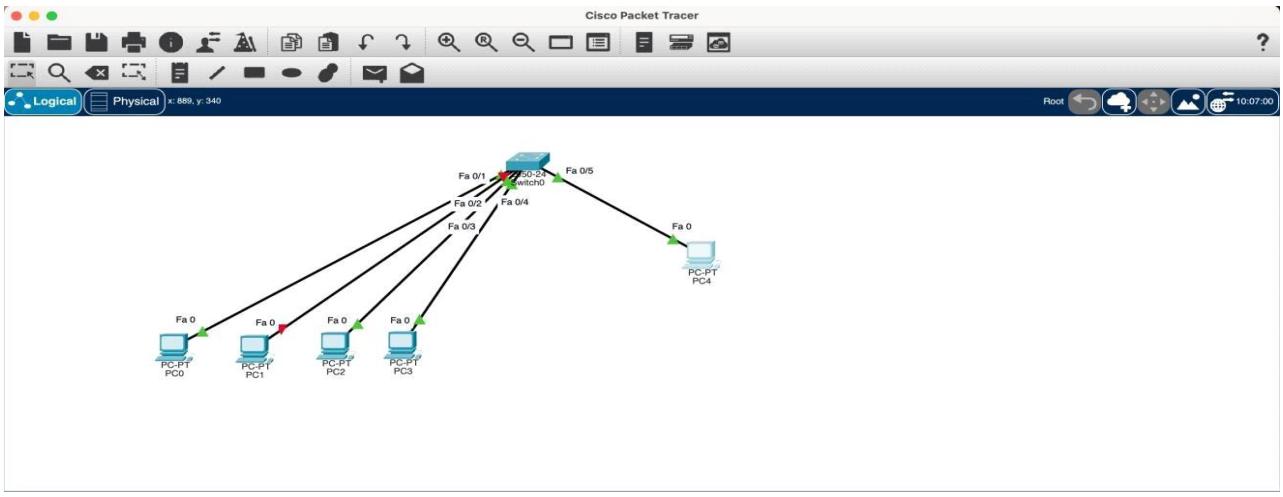
Assigning IP address for PC 4 as it the administrator PC :

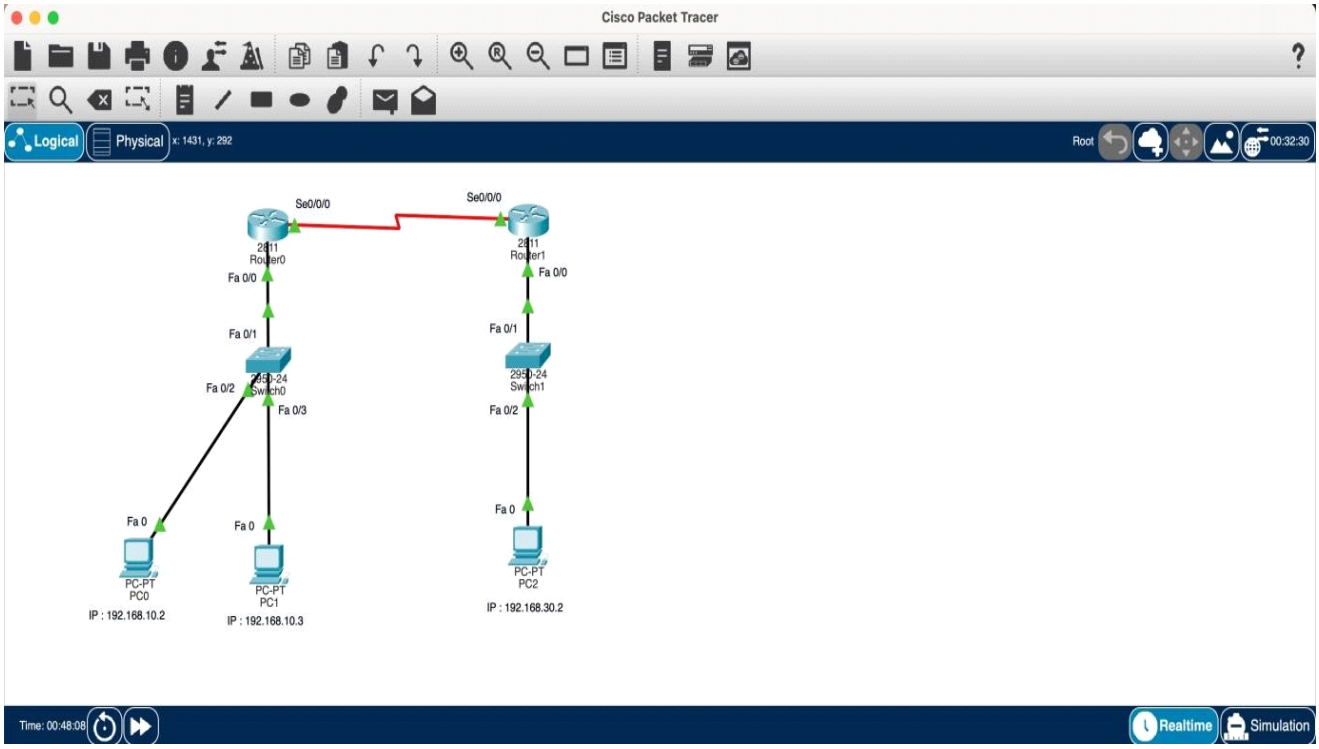


Command Prompt of Administrator PC(PC-4): It shows Telnet has been configured.



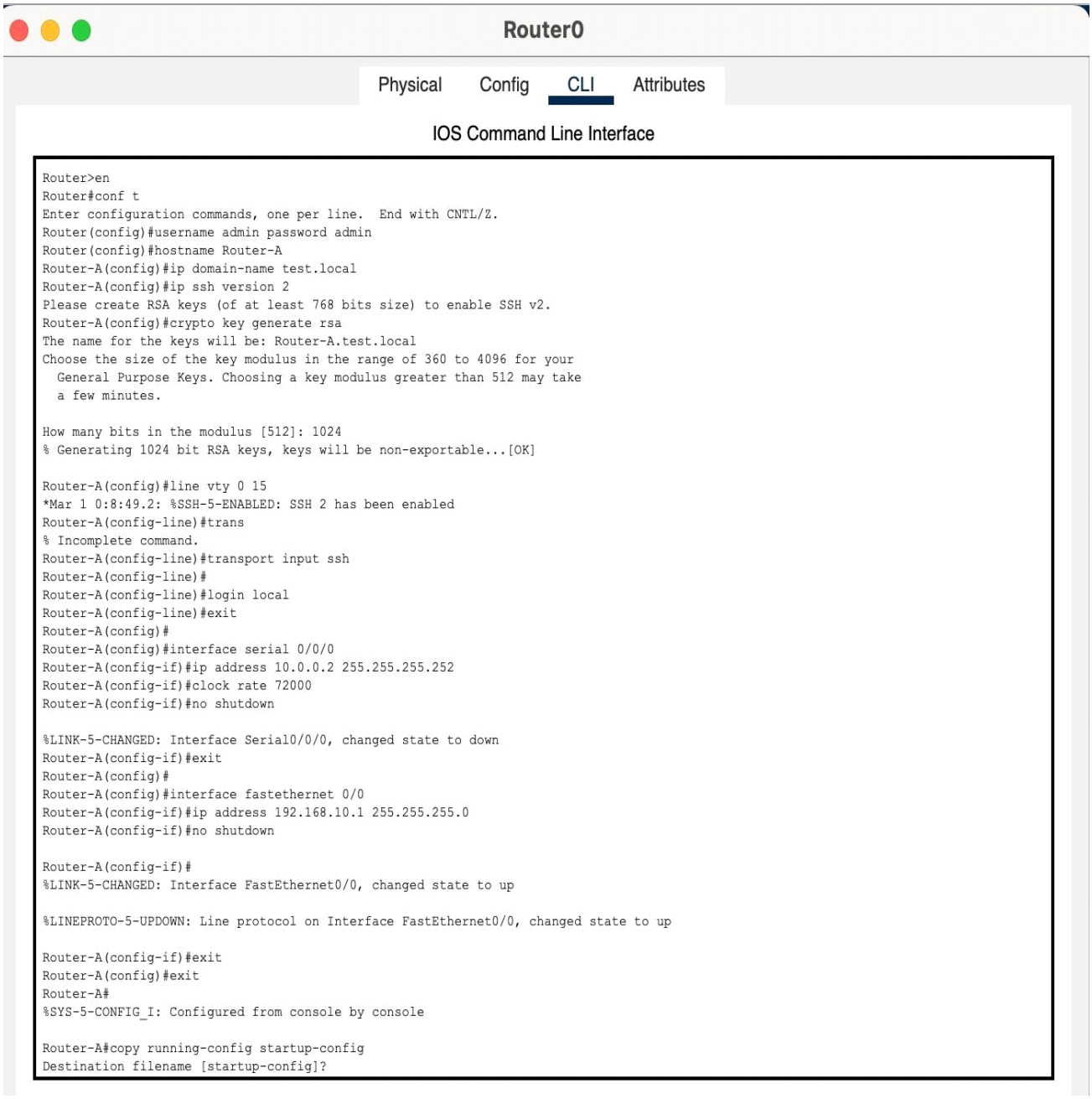
When “shutdown” program ran for FastEthernet 0/2.



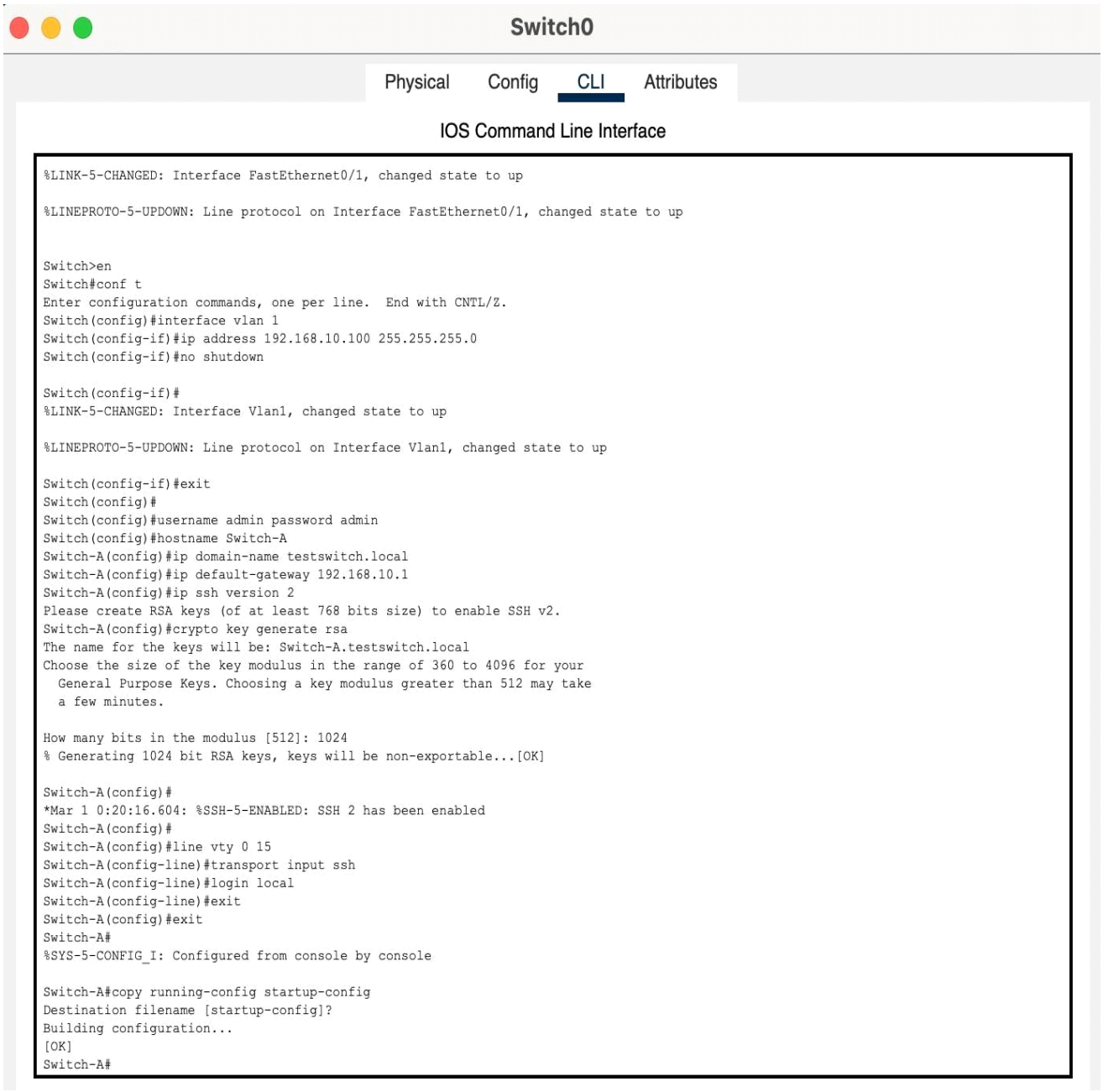

Cisco Packet Tracer
Logical
Physical
x: 1431, y: 292
Root
00:32:30
Se0/0/0
Se0/0/0
2811
Router0
2811
Router1
Fa 0/0
Fa 0/0
Fa 0/1
Fa 0/1
2950-24
Switch0
2950-24
Switch1
Fa 0/2
Fa 0/3
Fa 0/2
Fa 0
Fa 0
Fa 0
PC-PT
PC0
PC-PT
PC1
PC-PT
PC2
IP : 192.168.10.2
IP : 192.168.10.3
IP : 192.168.30.2
Time: 00:48:08
Realtime
Simulation

Exp-8) SSH Configuration

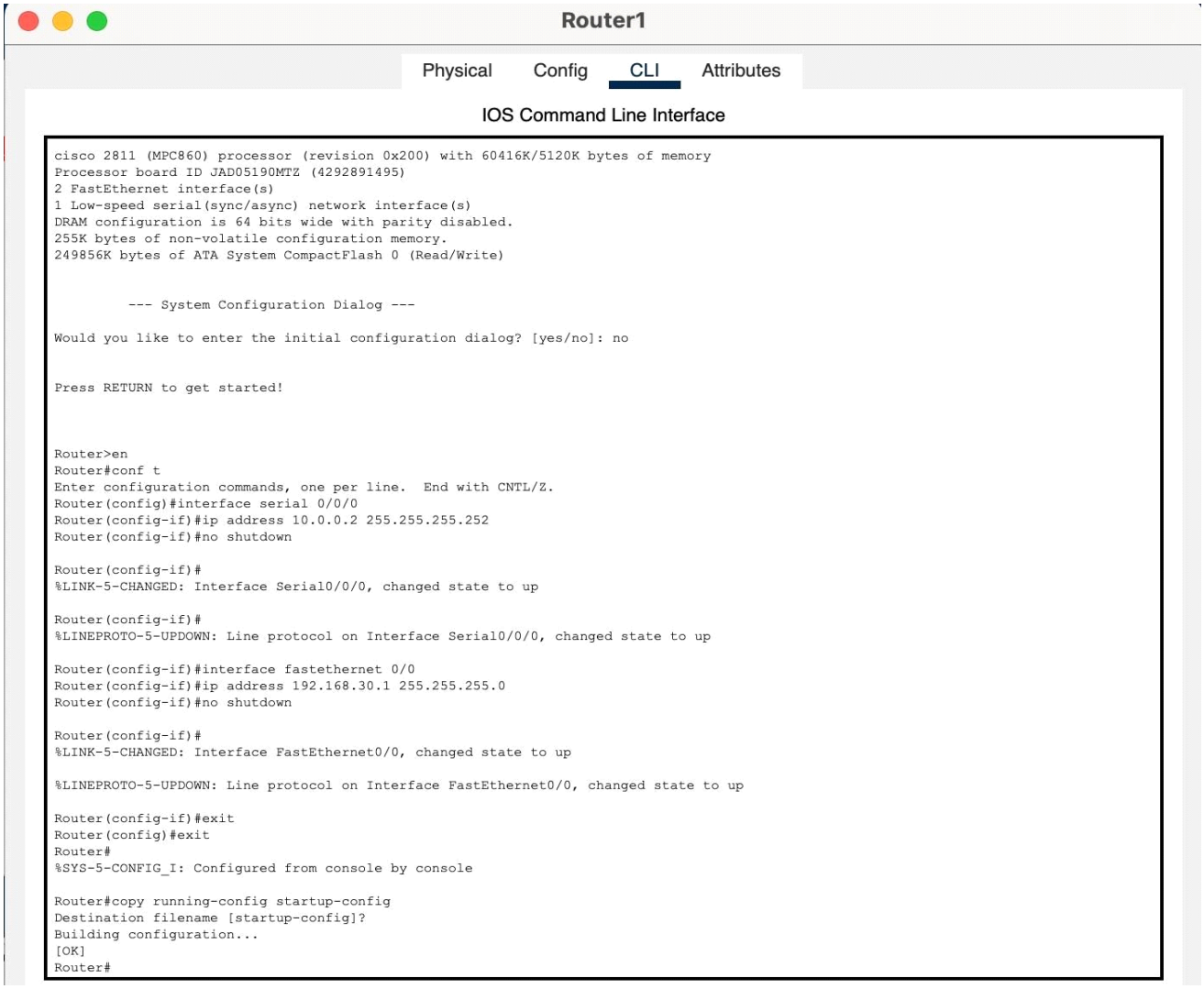
Command Line Interface for Router 0 :



Command Line Interface for Switch 0 :



Command Line Interface for Router 1 :



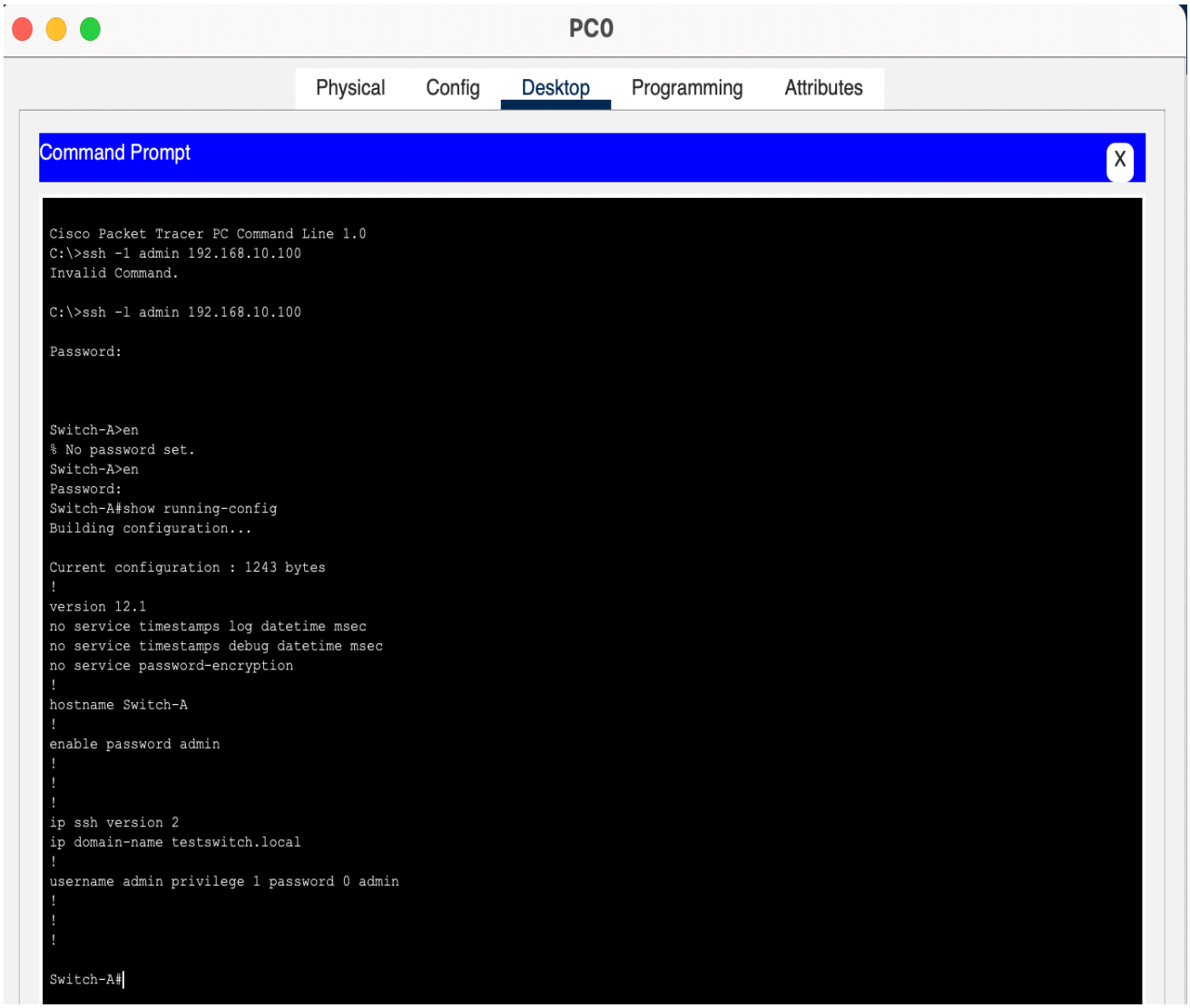
Enable Password for Router 0 :

```
Router-A>
Router-A>en
Router-A#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router-A(config)#enable password admin
Router-A(config)#exit
Router-A#
%SYS-5-CONFIG_I: Configured from console by console

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

Enable Password for Switch 0 :

```
Switch-A>en
Switch-A#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch-A(config)#enable password admin
Switch-A(config)#exit
Switch-A#
%SYS-5-CONFIG_I: Configured from console by console

Switch-A#exit
```

Establishing connection between Router 0 and Switch 0 using PC 0 and PC 1 :



Static Configuration between Router 0 and Router 1 :

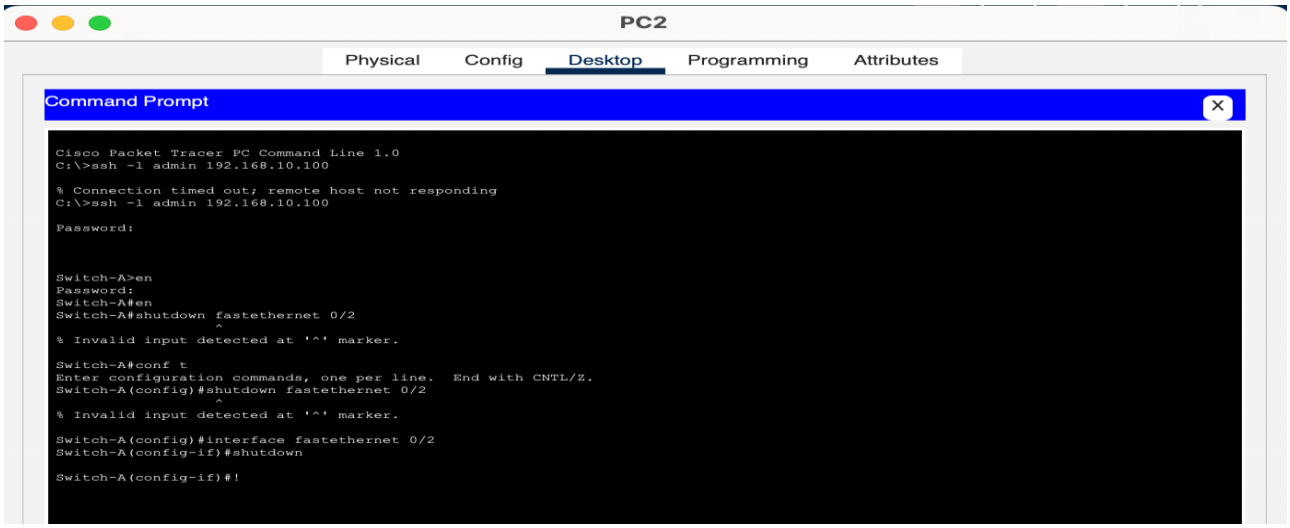
For Router 0

```
Router-A#
Router-A#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router-A(config)#ip route 192.168.30.0 255.255.255.0 10.0.0.2
%Invalid next hop address (it's this router)
Router-A(config)#interface serial 0/0/0
Router-A(config-if)#ip address 10.0.0.1 255.255.255.252
Router-A(config-if)#exit
Router-A(config)#exit
Router-A#
%SYS-5-CONFIG_I: Configured from console by console

Router-A#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router-A(config)#ip route 192.168.30.0 255.255.255.0 10.0.0.2
Router-A(config)#exit
Router-A#
%SYS-5-CONFIG_I: Configured from console by console
```

For Router 1

```
Router>
Router>en
Router#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 192.168.10.0 255.255.255.0 10.0.0.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

SSH is successfully configured :



Packet dropped successfully :

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Failed	PC0	PC2	IC...		0.000	N	0	(...	(delete)
	Failed	PC0	PC2	IC...		0.000	N	1	(...	(delete)
	Successful	PC0	PC2	IC...		0.000	N	2	(...	(delete)

----------Thank you sir--------