CSE 5004

COMPUTER NETWORKS

Assessment – 2

L1+L2 | SJT418

WINTER SEMESTER 2020-21

by

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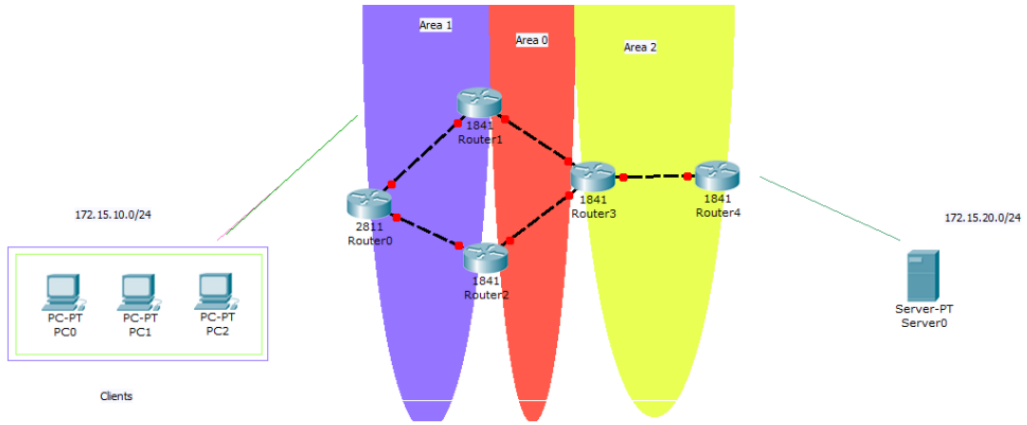
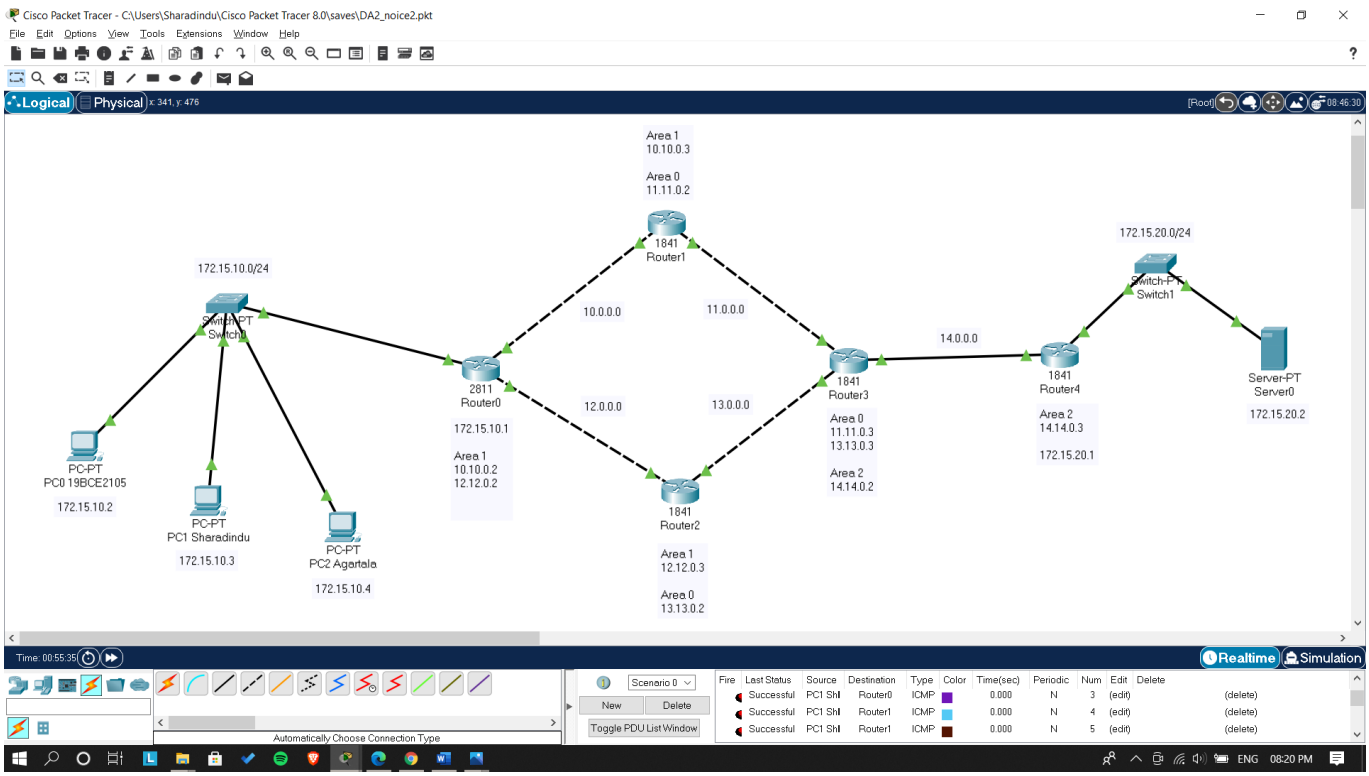
19BCE2105

Question



a) Enable OSPF on all routers
b) Enable area 0 on router 1,2 & 3
c) Enable area 1 on router 0,1 & 2
d) Enable area 2 on router 3 & 4
e) Verify the neighbour routing on all routers
f) Verify that the clients can successfully access the server.
g) Rename the client name as given below.
PC Name 1 :- Your Reg.No; **PC Name 2**:- Your Name; **PC Name 3**:- Your location
h) Assume the router ip address and assign PC & server ip address as per given in above figure.

Solution



a) Enable OSPF on all routers

after enabling:

```
Router>show ip ospf neighbor

Neighbor ID     Pri   State           Dead Time   Address         Interface
11.11.0.2         1   FULL/BDR        00:00:32    10.10.0.3       FastEthernet0/1
13.13.0.2         1   FULL/BDR        00:00:30    12.12.0.3       FastEthernet1/0
Router>
```

Ctrl+F6 to exit CLI focus Copy Paste

Top

```
Router#show ip ospf neighbor

Neighbor ID     Pri   State           Dead Time   Address         Interface
172.15.10.1       1   FULL/DR         00:00:35    10.10.0.2       FastEthernet0/0
13.13.0.3         1   FULL/DR         00:00:38    11.11.0.3       FastEthernet0/1
Router#
```

Ctrl+F6 to exit CLI focus Copy Paste

Top

```
Router#show ip ospf neighbor

Neighbor ID     Pri   State           Dead Time   Address         Interface
172.15.10.1       1   FULL/DR         00:00:32    12.12.0.2       FastEthernet0/1
13.13.0.3         1   FULL/DR         00:00:39    13.13.0.3       FastEthernet0/0
Router#
```

Ctrl+F6 to exit CLI focus Copy Paste

Top

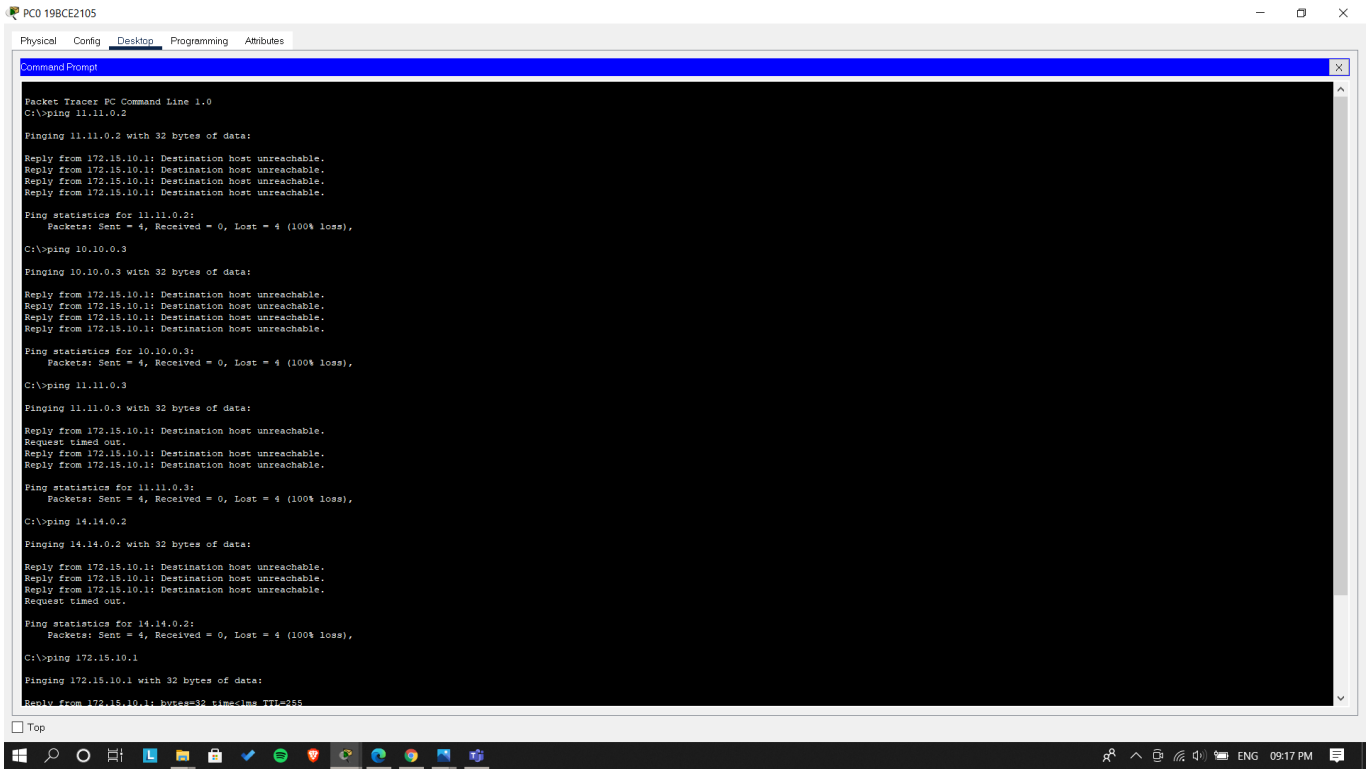
```
Neighbor ID     Pri   State           Dead Time   Address         Interface
13.13.0.2         1   FULL/BDR        00:00:30    13.13.0.2       FastEthernet0/1
11.11.0.2         1   FULL/BDR        00:00:38    11.11.0.2       FastEthernet0/0
Router#
```

Ctrl+F6 to exit CLI focus Copy Paste

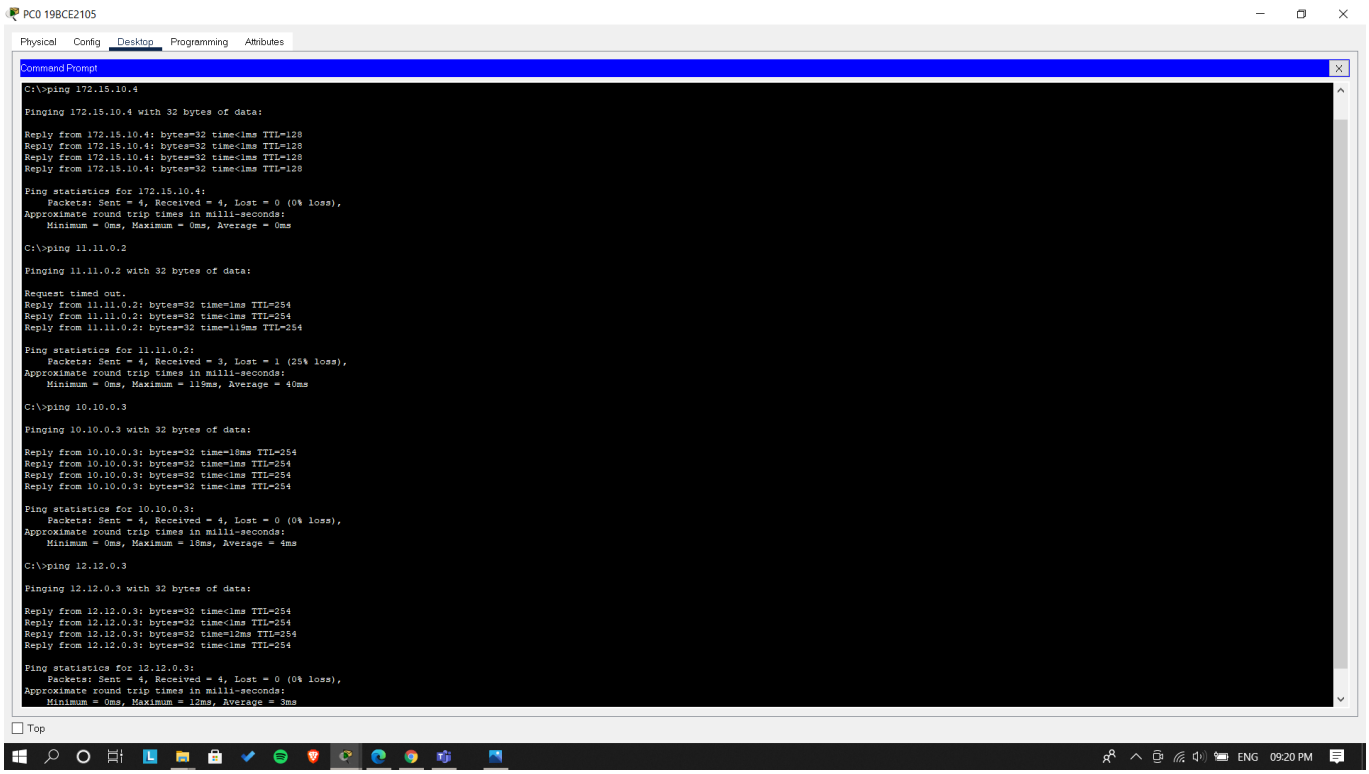
Top

Since for all PCs the input IPs and processes are similar, snaps of ping command performed from 1 PC are enclosed to keep everything clusterfree:

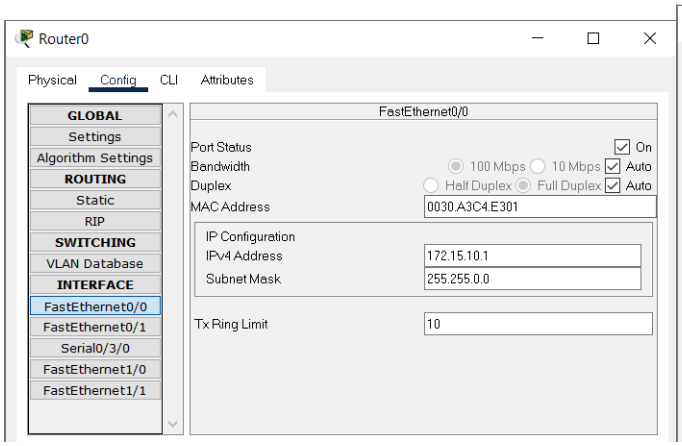
before OSPF:

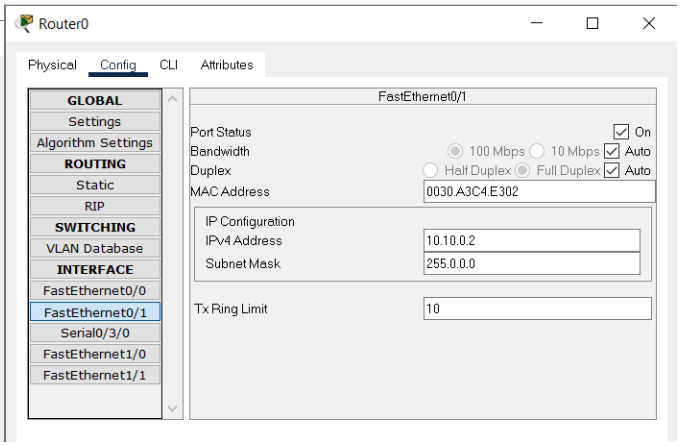


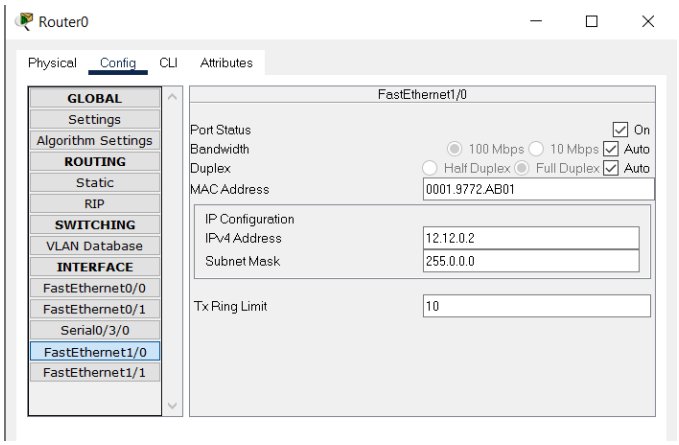
after OSPF:

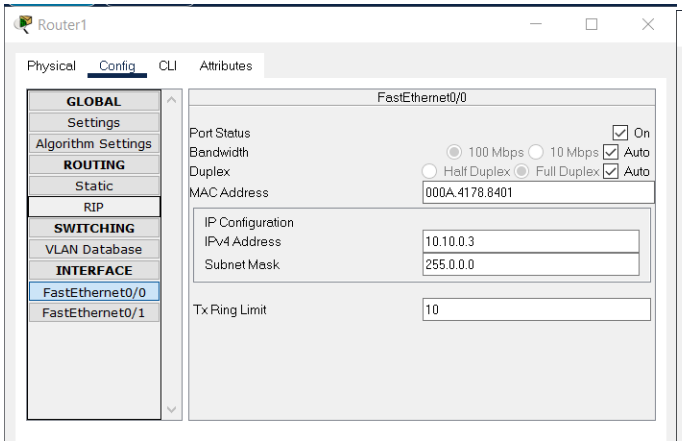


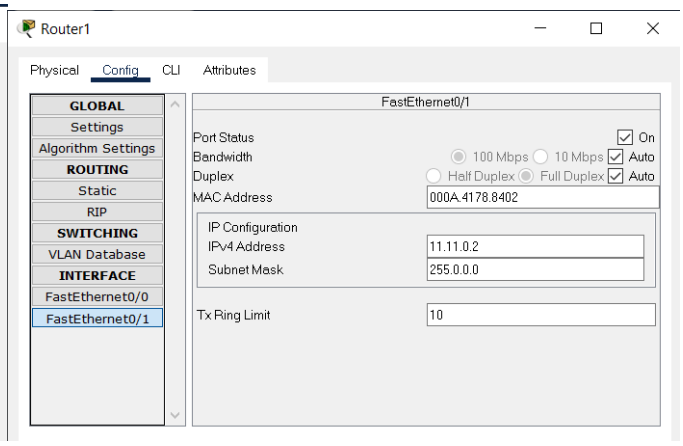
- **Router configurations**

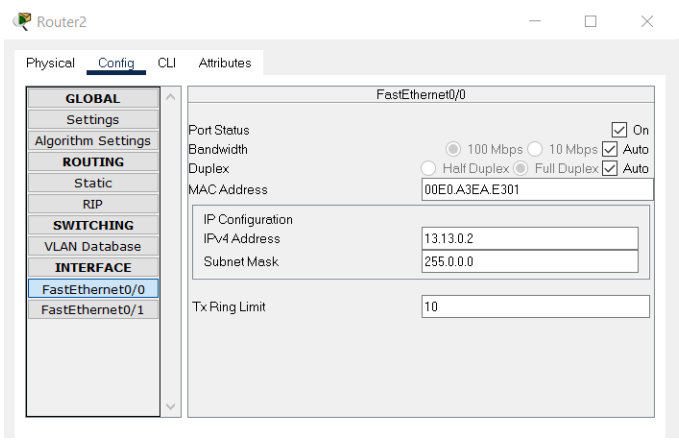


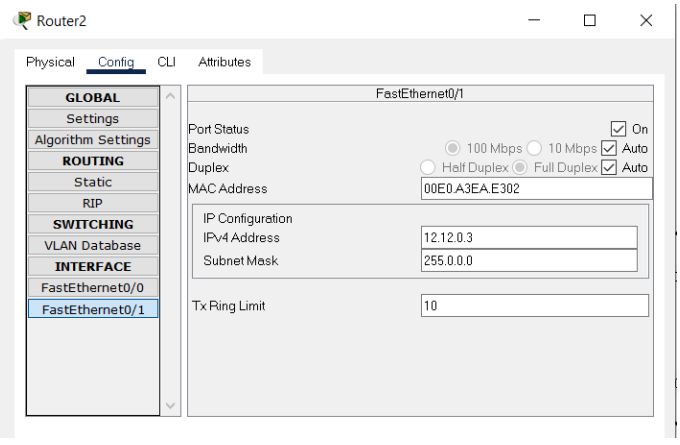


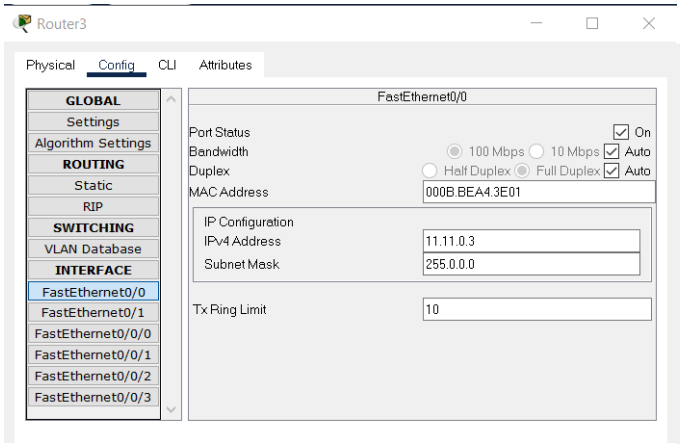


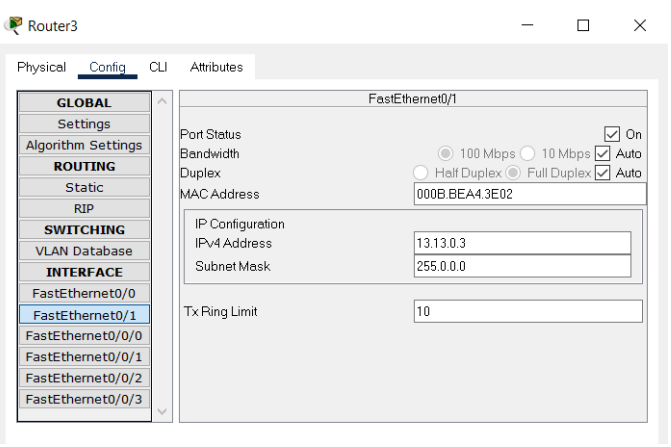


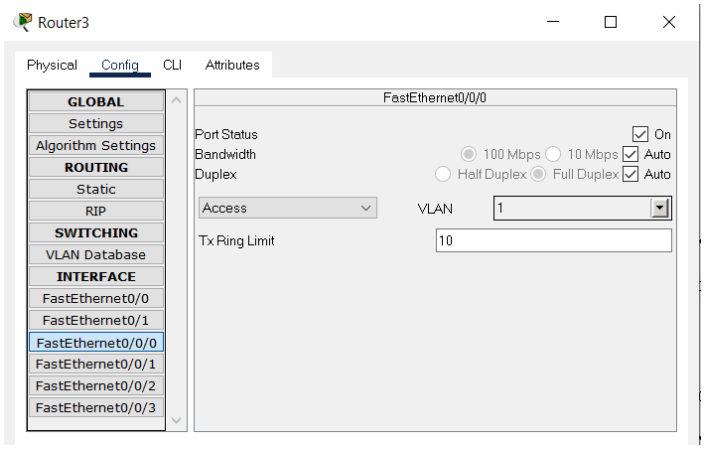


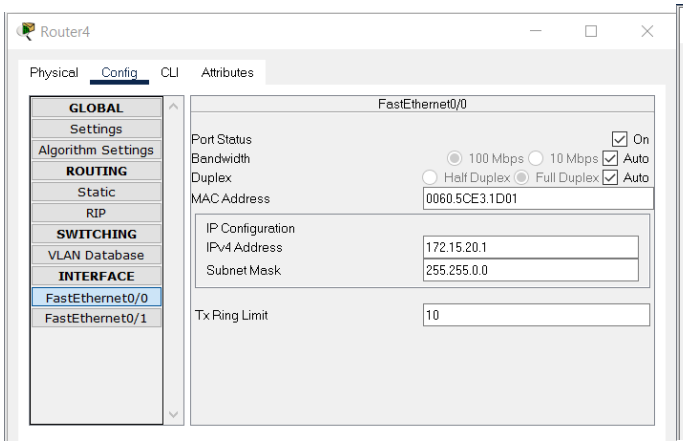


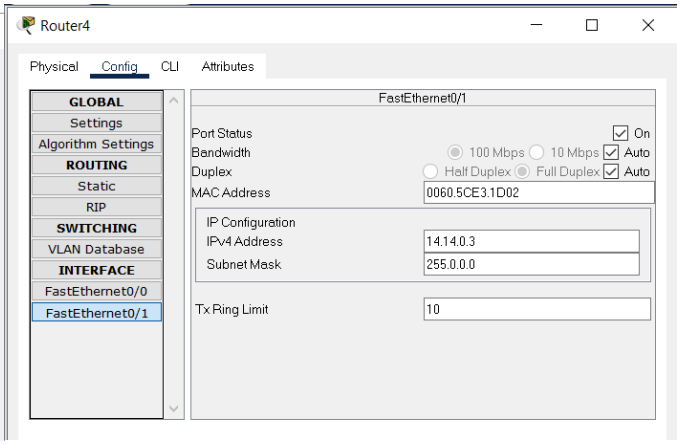



Router3
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/0/0
FastEthernet0/0/1
FastEthernet0/0/2
FastEthernet0/0/3
FastEthernet0/0
Port Status On
Bandwidth 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
MAC Address 000B.BEA4.3E01
IP Configuration
IPv4 Address 11.11.0.3
Subnet Mask 255.0.0.0
Tx Ring Limit 10

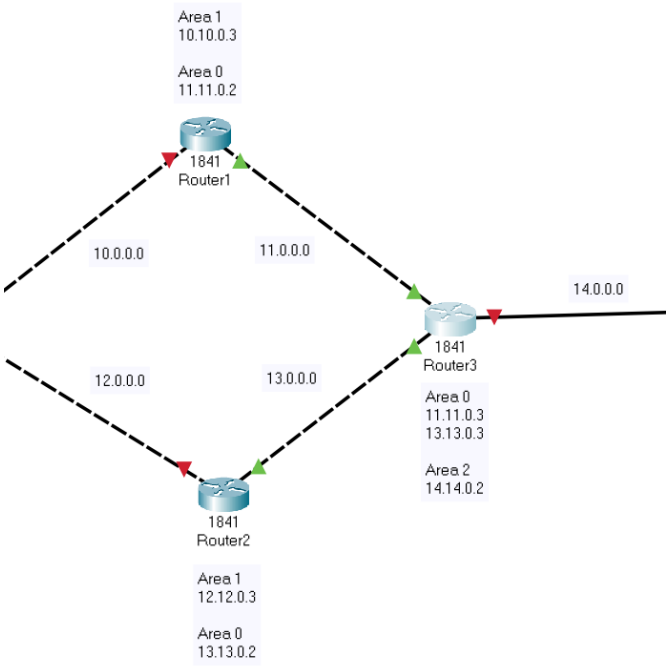

Router3
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/0/0
FastEthernet0/0/1
FastEthernet0/0/2
FastEthernet0/0/3
FastEthernet0/1
Port Status On
Bandwidth 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
MAC Address 000B.BEA4.3E02
IP Configuration
IPv4 Address 13.13.0.3
Subnet Mask 255.0.0.0
Tx Ring Limit 10


Router3
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/0/0
FastEthernet0/0/1
FastEthernet0/0/2
FastEthernet0/0/3
FastEthernet0/0/0
Port Status On
Bandwidth 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
Access
VLAN 1
Tx Ring Limit 10

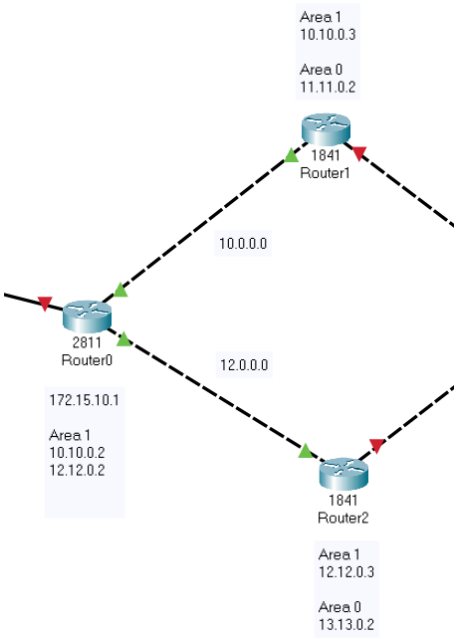

Router4
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/0
Port Status On
Bandwidth 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
MAC Address 0060.5CE3.1D01
IP Configuration
IPv4 Address 172.15.20.1
Subnet Mask 255.255.0.0
Tx Ring Limit 10


Router4
Physical Config CLI Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
FastEthernet0/1
Port Status On
Bandwidth 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
MAC Address 0060.5CE3.1D02
IP Configuration
IPv4 Address 14.14.0.3
Subnet Mask 255.0.0.0
Tx Ring Limit 10

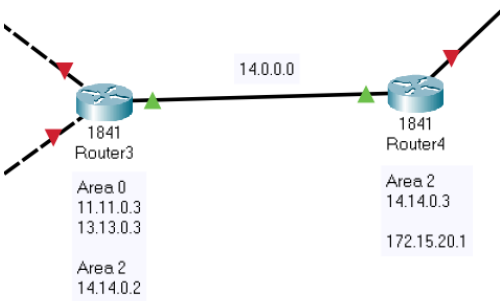
b) Enable area 0 on routers 1, 2 & 3



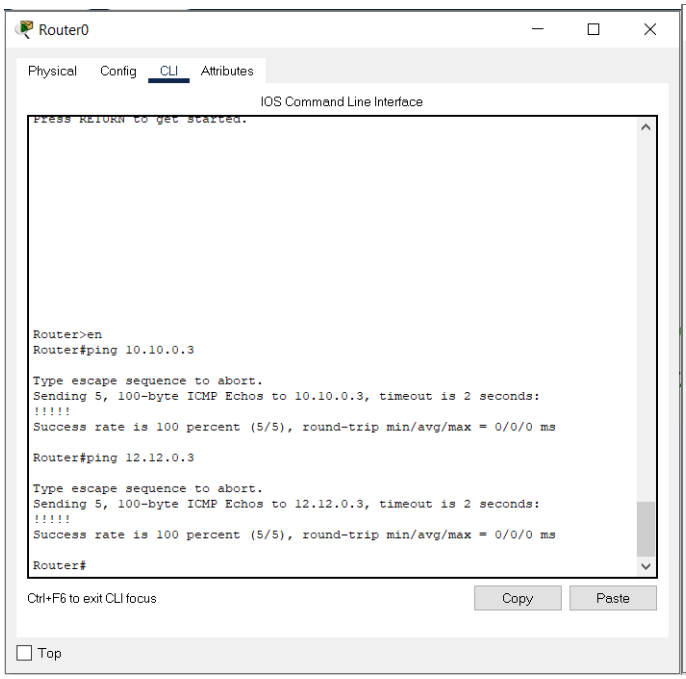
c) Enable area 1 on routers 0, 1 & 2

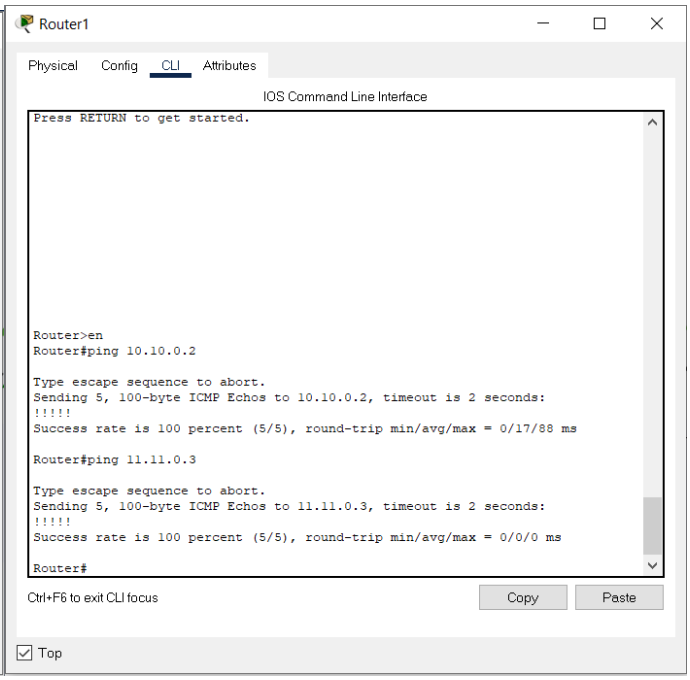


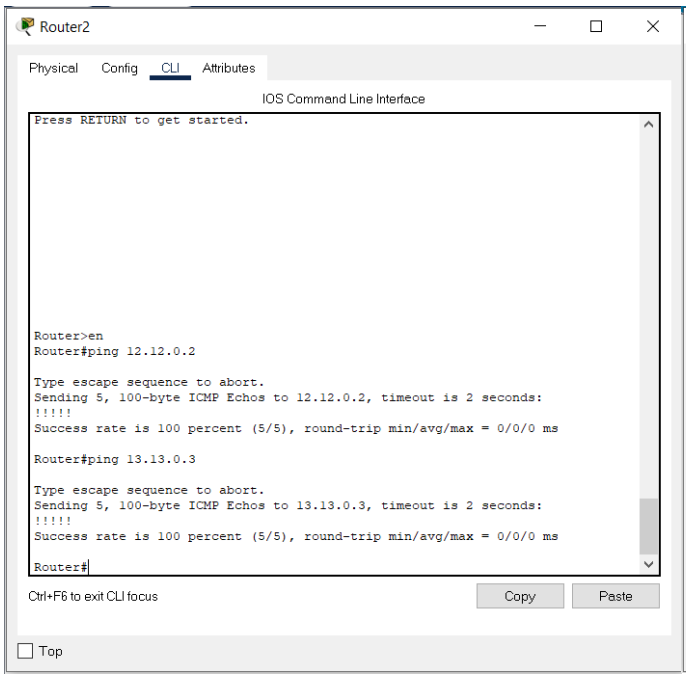
d) Enable area 2 on routers 3 & 4

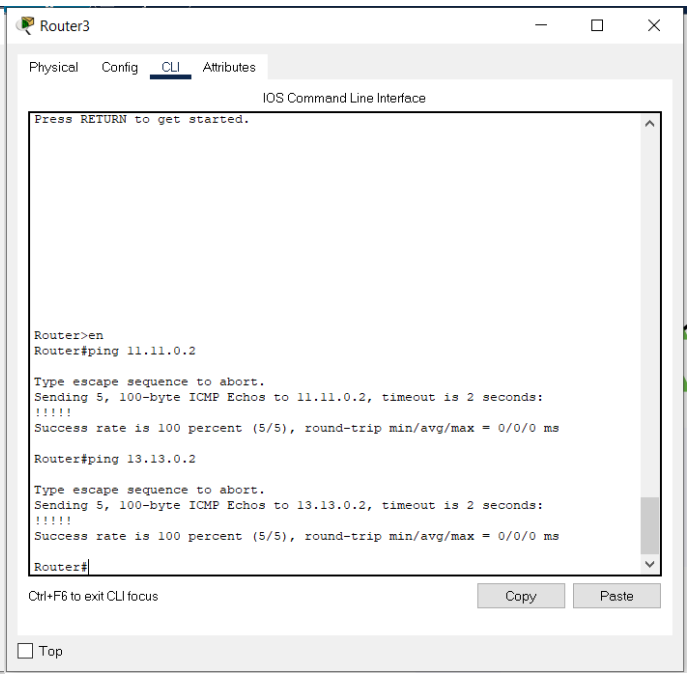


e) Verify the neighbour routing on all routers

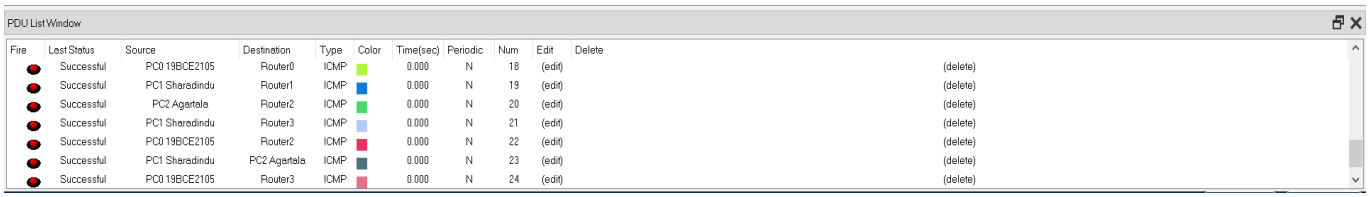




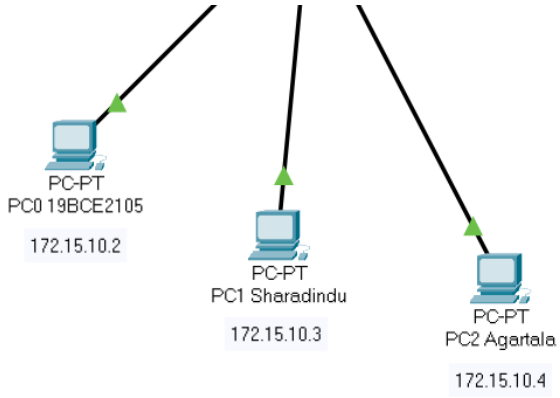




f) Verify that the clients can successfully access the server

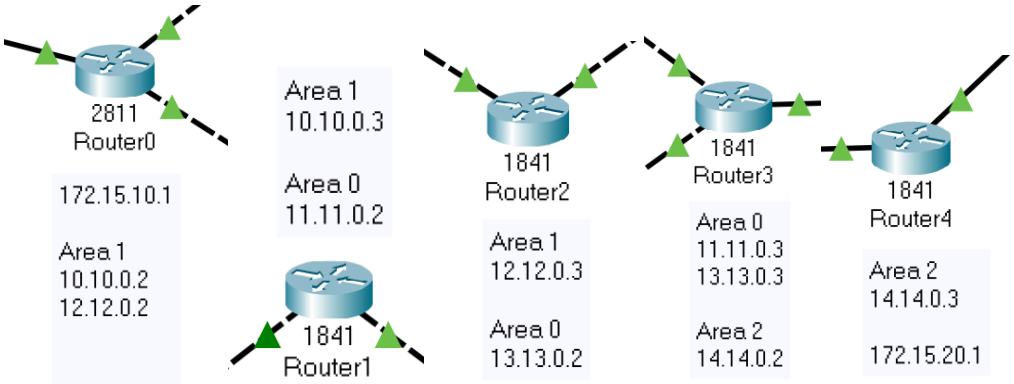


g) Rename the client name as given: PC Name 1: Your Reg. No.; PC Name 2: Your Name; PC Name 3: Your Location



h) Assume the router IP address and assign PC & server IP address as per given in the figure.

Given, the IP addresses of PCs and Server, the IPs of Routers are assumed as:



with the networks as: