Lab Exercise – III

Implement the topology given below on cisco packet tracer:

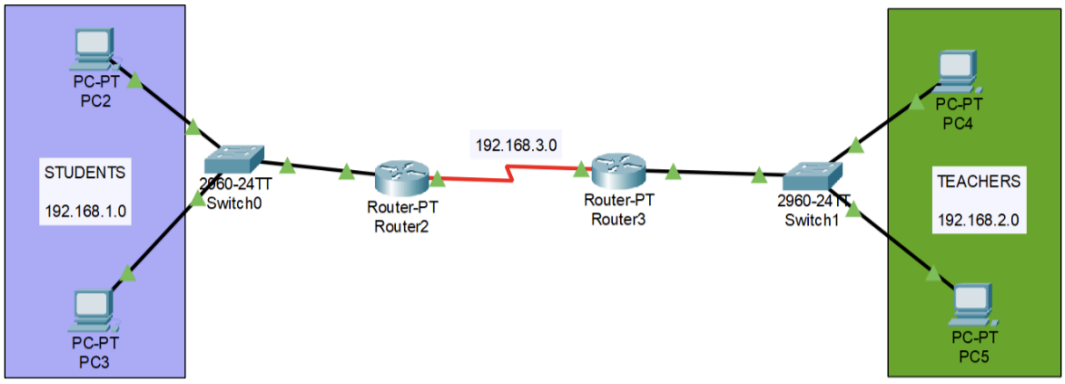
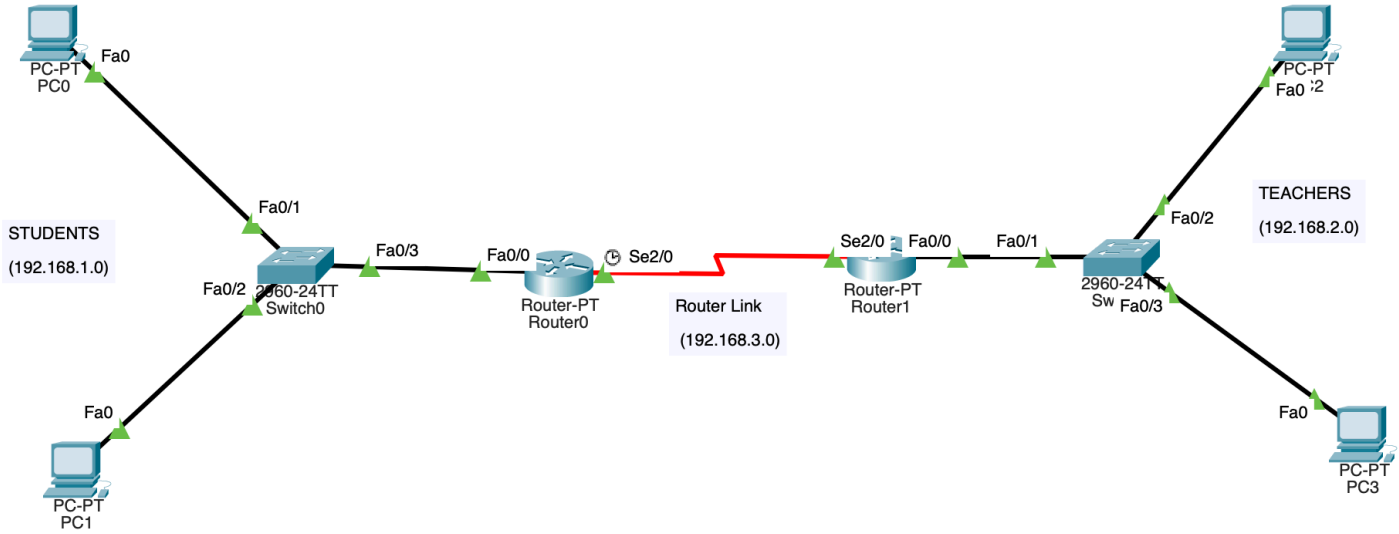
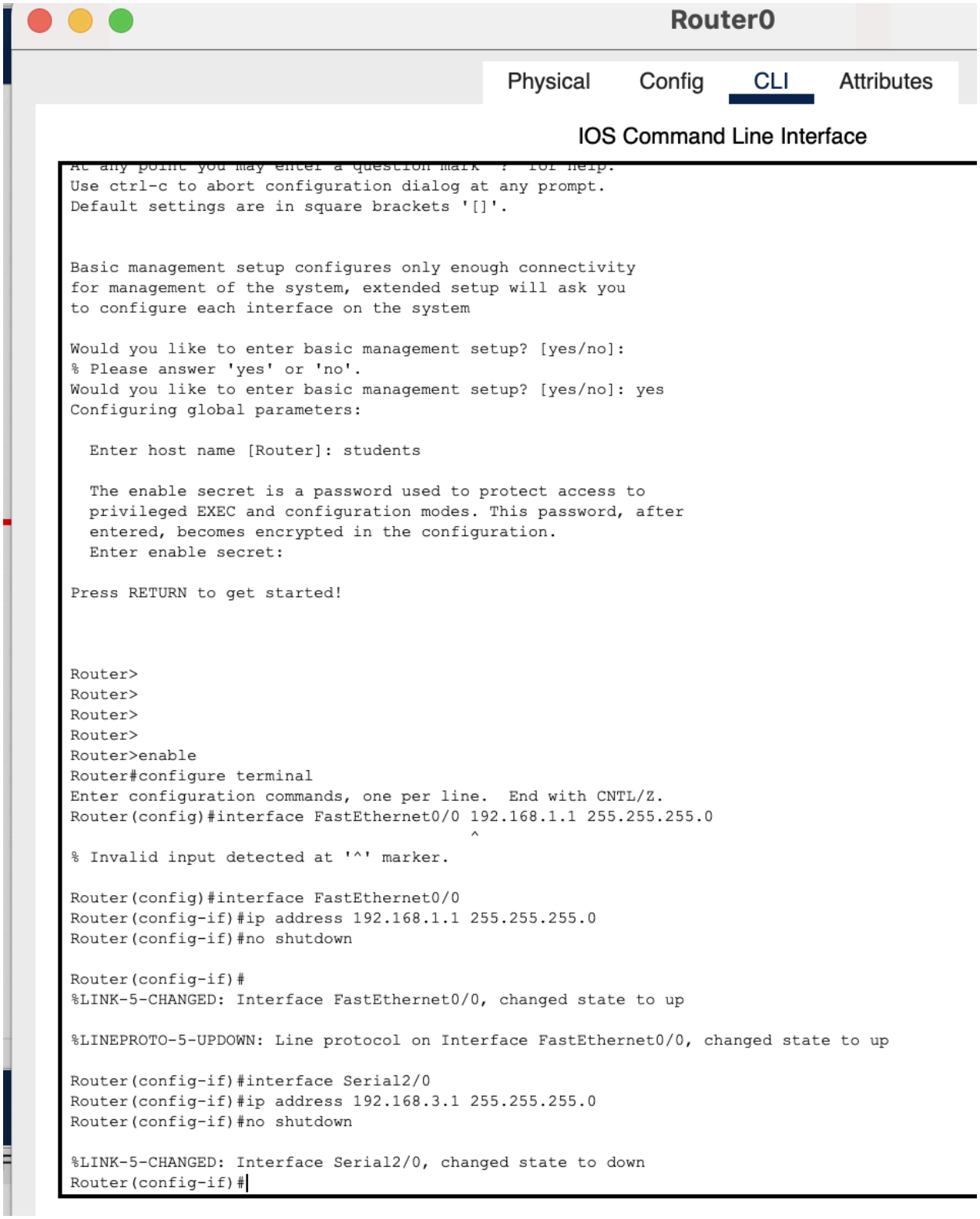


Figure 35

1. Prevent PCs in the STUDENTS network from communicating with any device in the TEACHERS network. But, TEACHERS should be able to communicate with the STUDENTS.

2. Only allow any one PC in the STUDENTS network (for example: as a CR communicates with teachers) to access and communicate with the TEACHERS network, blocking every other device in the STUDENTS network.




Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.
Basic management setup configures only enough connectivity
for management of the system, extended setup will ask you
to configure each interface on the system
Would you like to enter basic management setup? [yes/no]:
% Please answer 'yes' or 'no'.
Would you like to enter basic management setup? [yes/no]: yes
Configuring global parameters:
Enter host name [Router]: students
The enable secret is a password used to protect access to
privileged EXEC and configuration modes. This password, after
entered, becomes encrypted in the configuration.
Enter enable secret:
Press RETURN to get started!
Router>
Router>
Router>
Router>
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0 192.168.1.1 255.255.255.0
^
% Invalid input detected at '^' marker.
Router(config)#interface FastEthernet0/0
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)#interface Serial2/0
Router(config-if)#ip address 192.168.3.1 255.255.255.0
Router(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#

Router1

```
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#enable
% Incomplete command.
Router(config)#configure terminal
                     ^
% Invalid input detected at '^' marker.

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

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 192.168.2.1 255.255.255.0
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

Router#enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#ip address 192.168.3.2 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

CR-PC0

Physical | Config | Desktop | Programming | Attributes

GLOBAL
- Settings
- Algorithm Settings

INTERFACE
- FastEthernet0
- Bluetooth

FastEthernet0

Port Status: On

Bandwidth: 100 Mbps / 10 Mbps / Auto

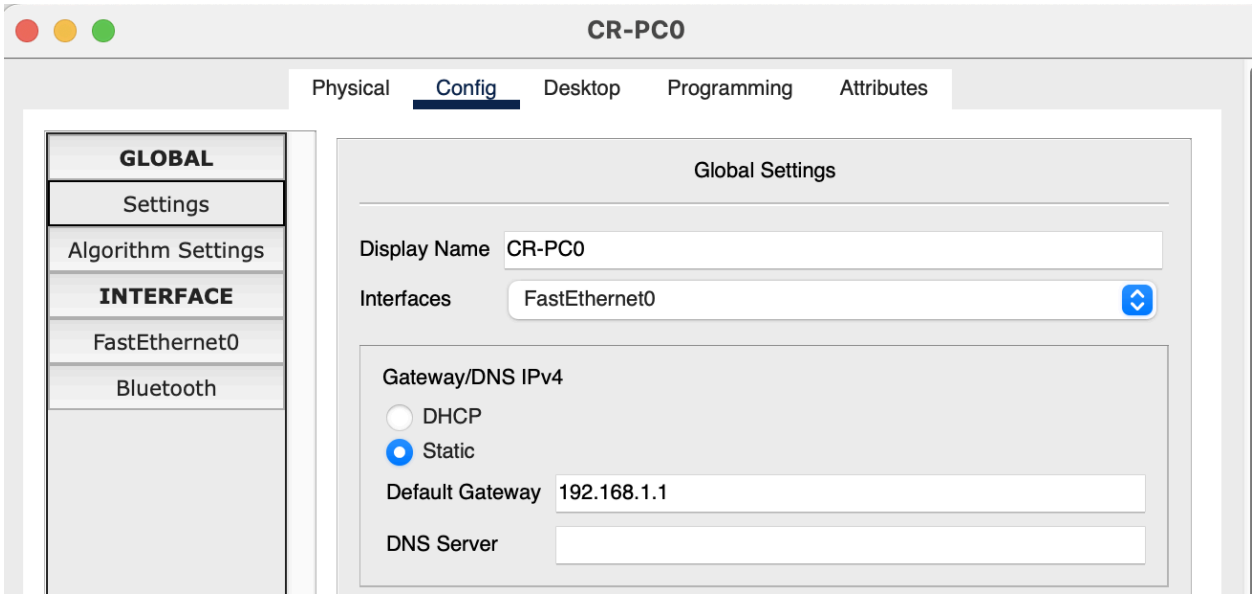
Duplex: Half Duplex / Full Duplex / Auto

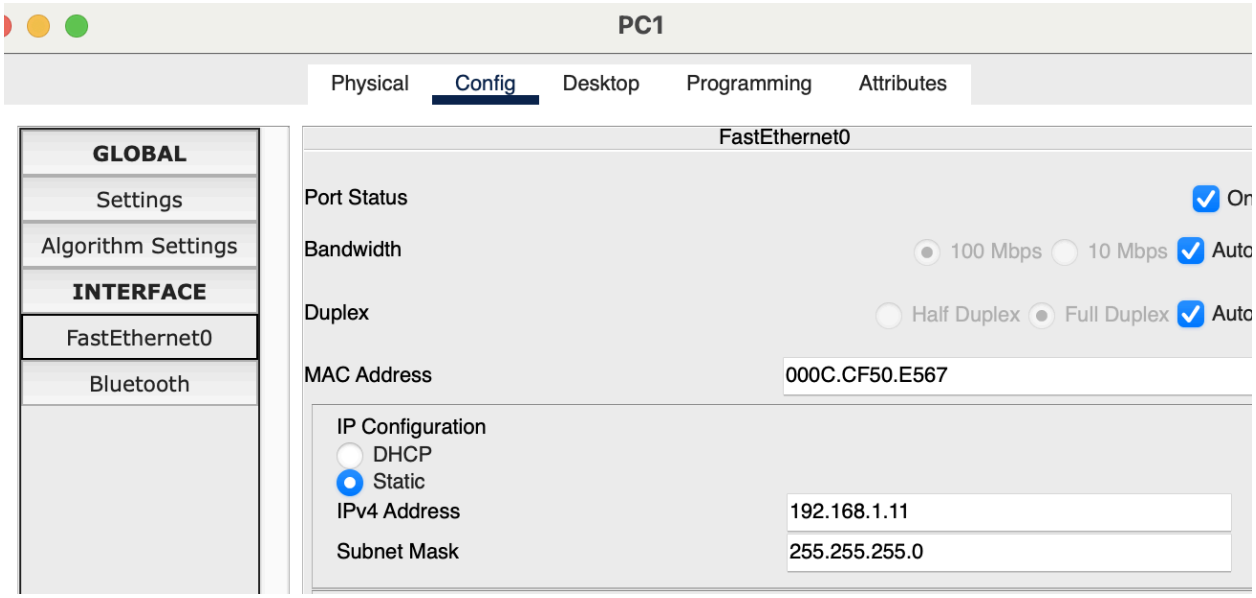
MAC Address: 000C.85BA.6916

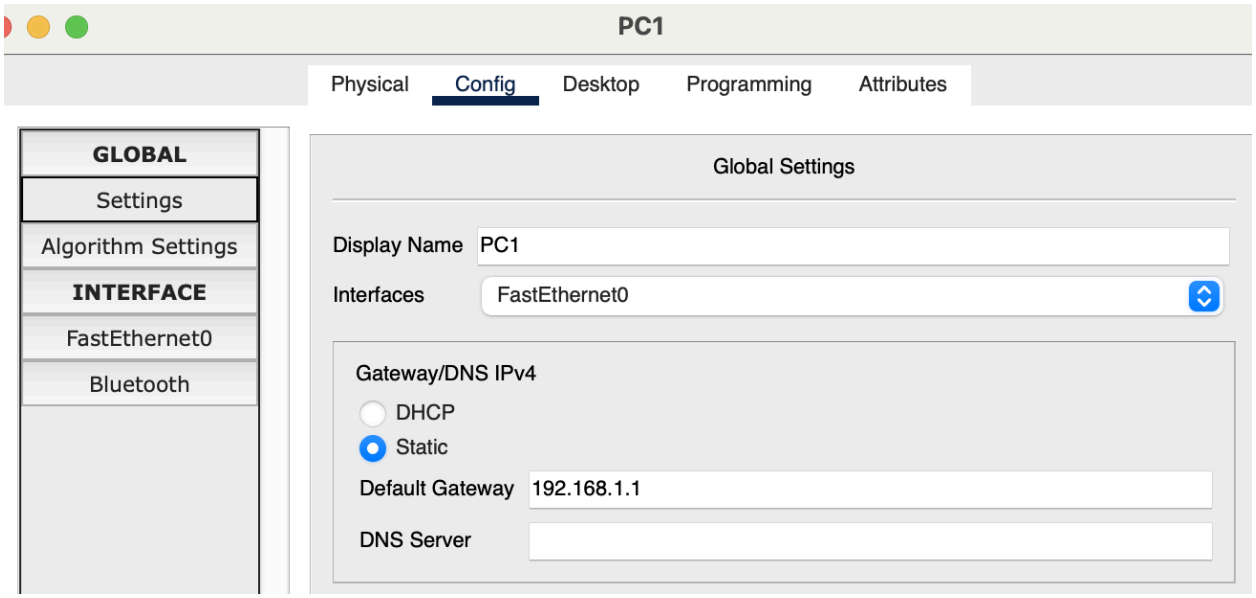
IP Configuration
- DHCP
- Static

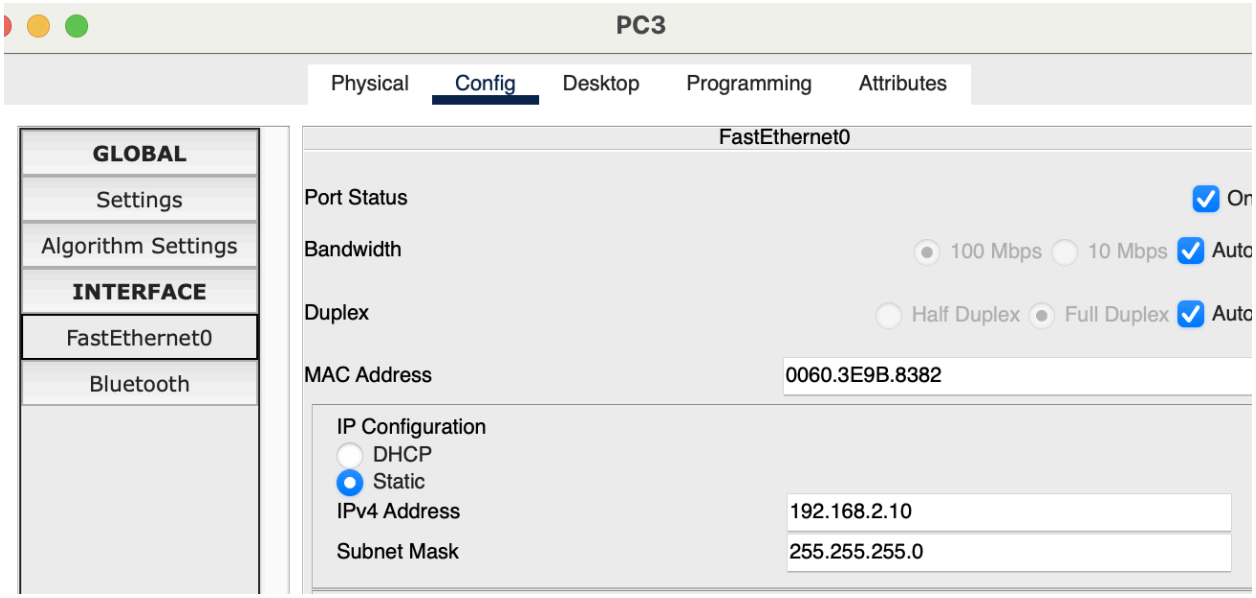
IPv4 Address: 192.168.1.10

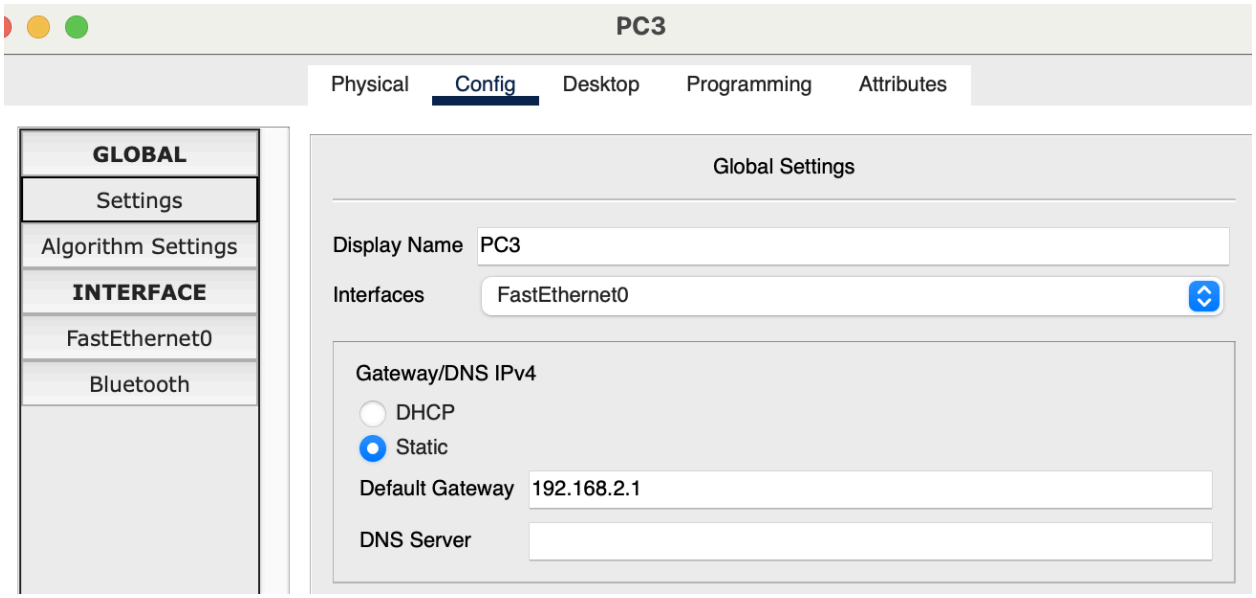
Subnet Mask: 255.255.255.0

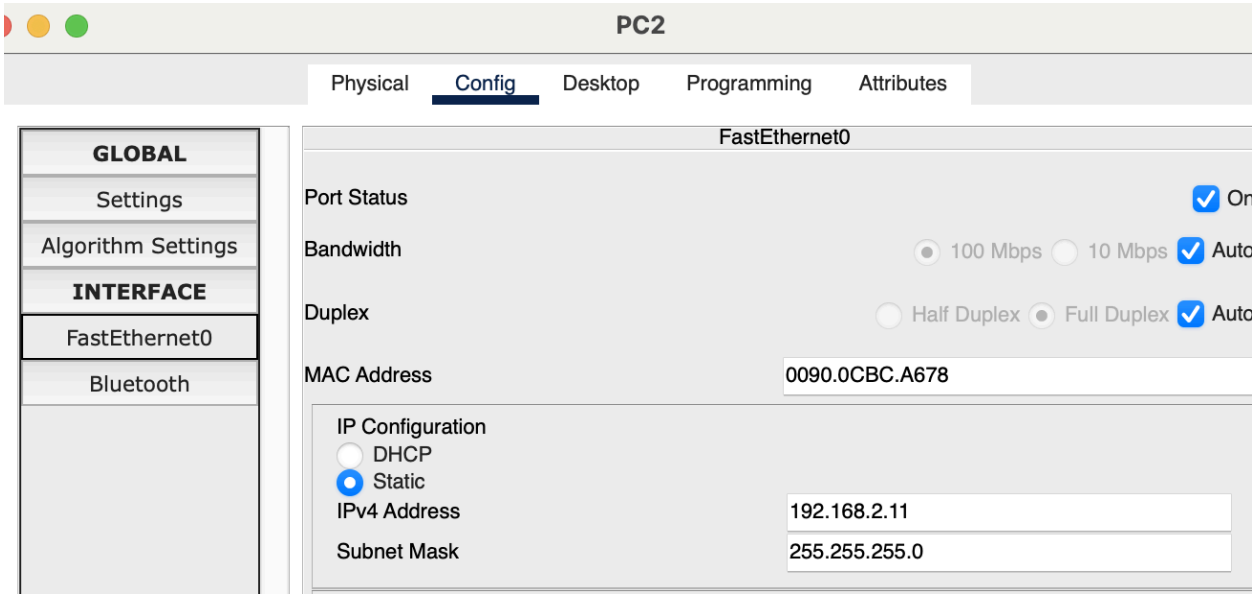

CR-PC0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
CR-PC0
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.1.1
DNS Server

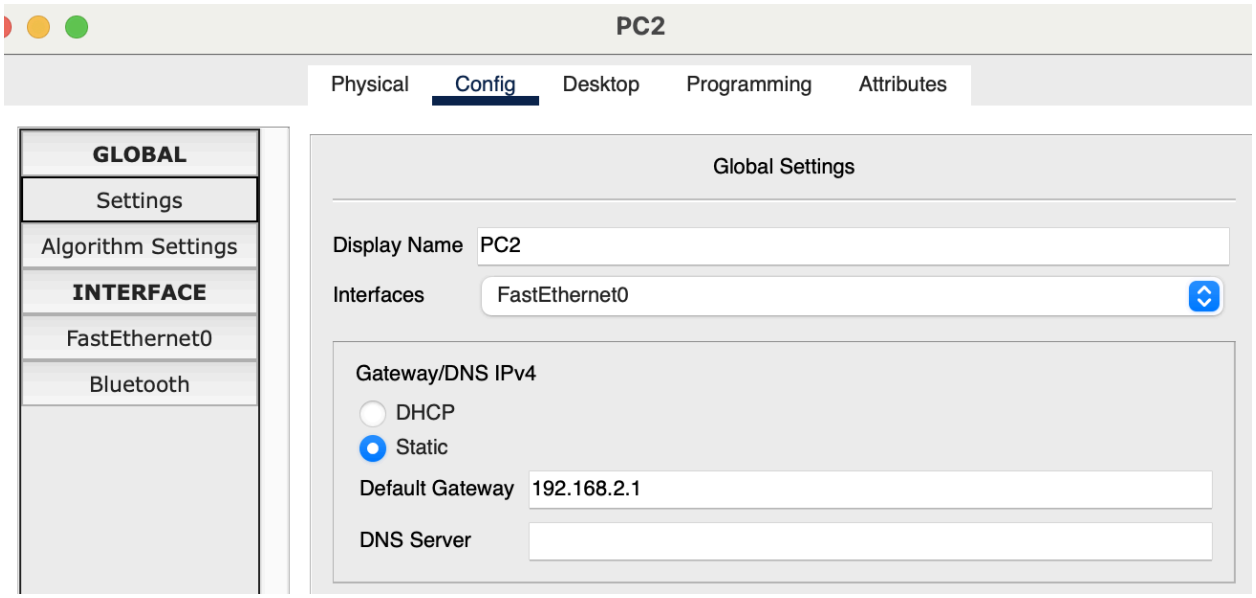

PC1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
Bandwidth
100 Mbps
10 Mbps
Duplex
Half Duplex
Full Duplex
MAC Address
000C.CF50.E567
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.11
Subnet Mask
255.255.255.0

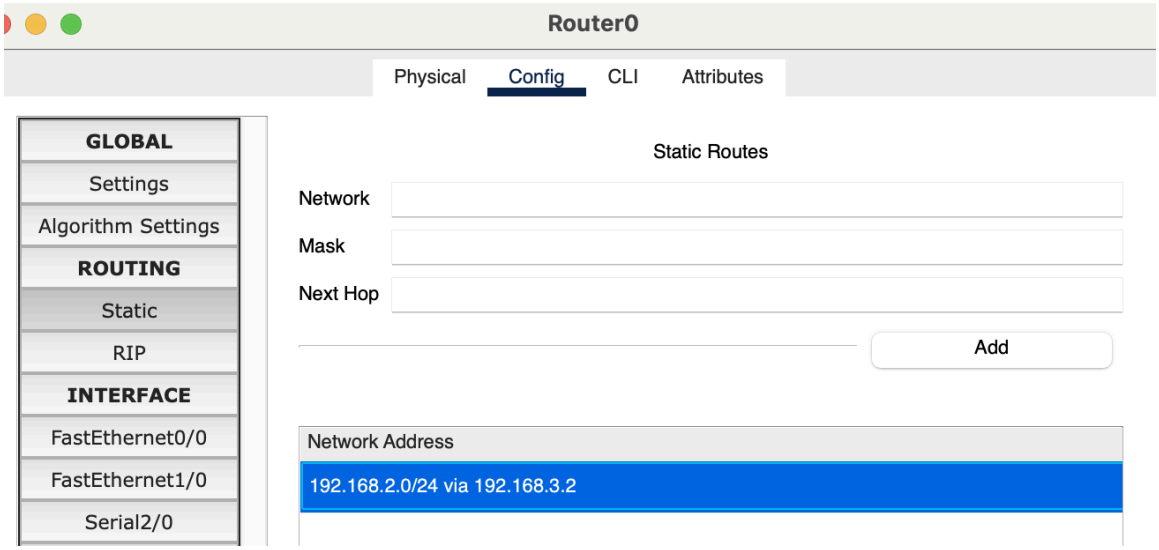

PC1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC1
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.1.1
DNS Server

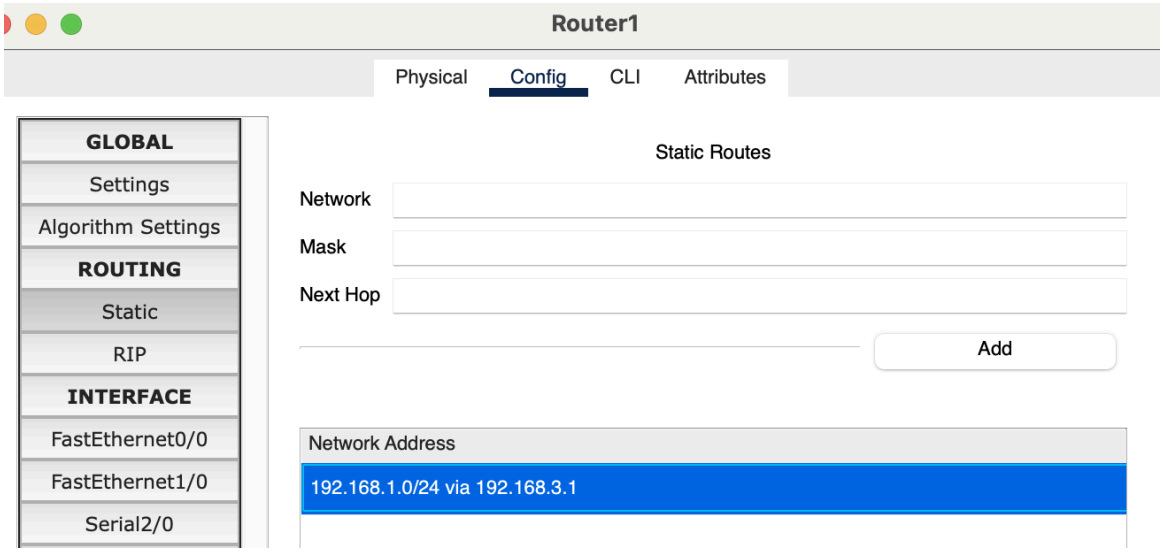

PC3
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
Bandwidth
100 Mbps
10 Mbps
Duplex
Half Duplex
Full Duplex
MAC Address
0060.3E9B.8382
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.10
Subnet Mask
255.255.255.0


PC3
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC3
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.2.1
DNS Server


PC2
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
Bandwidth
100 Mbps
10 Mbps
Duplex
Half Duplex
Full Duplex
MAC Address
0090.0CBC.A678
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.11
Subnet Mask
255.255.255.0


PC2
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
PC2
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.2.1
DNS Server


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Static Routes
Network
Mask
Next Hop
Add
Network Address
192.168.2.0/24 via 192.168.3.2


Router1
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet0/0
FastEthernet1/0
Serial2/0
Static Routes
Network
Mask
Next Hop
Add
Network Address
192.168.1.0/24 via 192.168.3.1

Router0

```
Router#enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#access-list 1 deny 192.168.1.0 0.0.0.255
Router(config)#access-list 1 permit any
Router(config)#interface serial 2/0
Router(config-if)#ip access-group 1 out
Router(config-if)#exit
Router(config)#show access-lists
                ^
% Invalid input detected at '^' marker.

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

Router#show access-lists
Standard IP access list 1
    10 deny 192.168.1.0 0.0.0.255
    20 permit any
```

```
Router#show ip interface serial2/0
Serial2/0 is up, line protocol is up (connected)
  Internet address is 192.168.3.1/24
  Broadcast address is 255.255.255.255
  Address determined by setup command
  MTU is 1500
  Helper address is not set
  Directed broadcast forwarding is disabled
  Outgoing access list is 1
  Inbound  access list is not set
  Proxy ARP is enabled
  Security level is default
  Split horizon is enabled
  ICMP redirects are always sent
  ICMP unreachables are always sent
  ICMP mask replies are never sent
  IP fast switching is disabled
  IP fast switching on the same interface is disabled
  IP Flow switching is disabled
  IP Fast switching turbo vector
  IP multicast fast switching is disabled
  IP multicast distributed fast switching is disabled
  Router Discovery is disabled
 --More--
```

PC0

```
C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

PC3

```
Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=2ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

Part 2

Router0

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#no access-list
% Incomplete command.
Router(config)#no access-list 1
Router(config)#
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
```

```
Router(config)#access-list 1 permit host 192.168.1.10
Router(config)#access-list 1 deny 192.168.1.0 0.0.0.255
Router(config)#permit any
                ^
% Invalid input detected at '^' marker.

Router(config)#access-list 1 permit any
Router(config)#interface serial2/0
Router(config-if)#ip access-group 1 out
Router(config-if)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

CR-PC0

```
C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time=19ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 19ms, Average = 5ms

C:\>
```

PC1

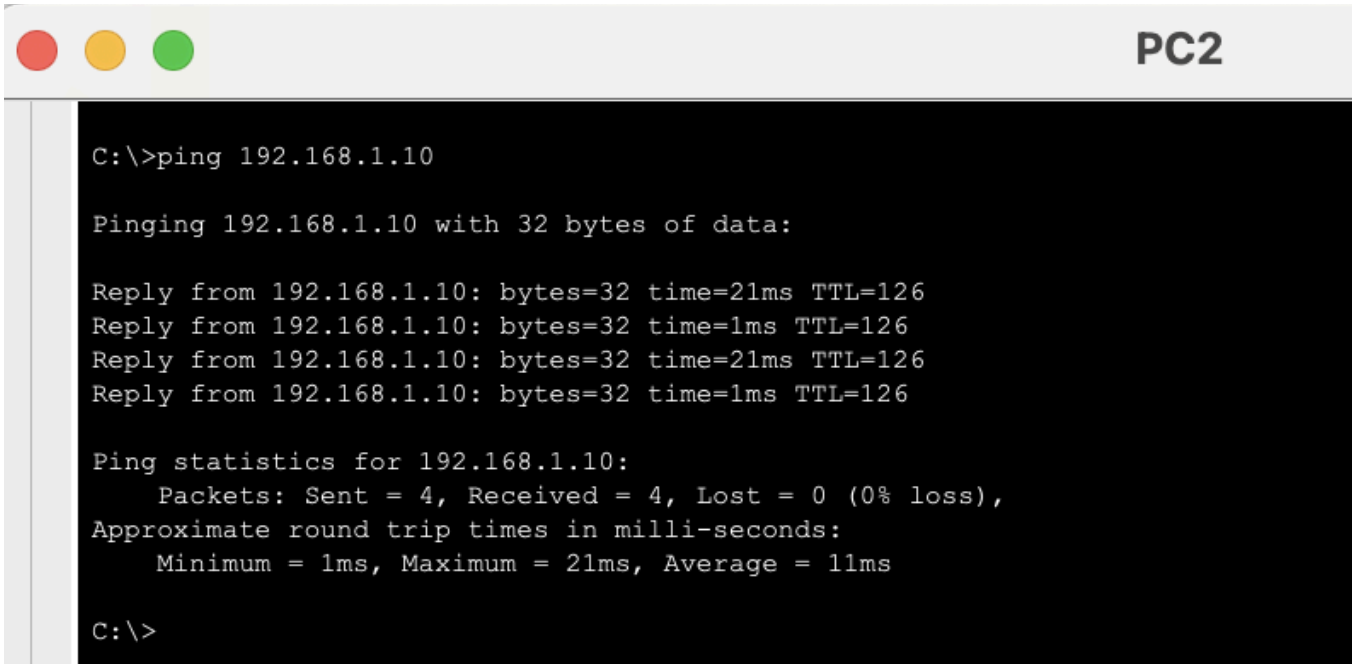
```
C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.
Reply from 192.168.1.1: Destination host unreachable.

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```


PC2
C:\>ping 192.168.1.10
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time=21ms TTL=126
Reply from 192.168.1.10: bytes=32 time=1ms TTL=126
Reply from 192.168.1.10: bytes=32 time=21ms TTL=126
Reply from 192.168.1.10: bytes=32 time=1ms TTL=126
Ping statistics for 192.168.1.10:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 21ms, Average = 11ms
C:\>