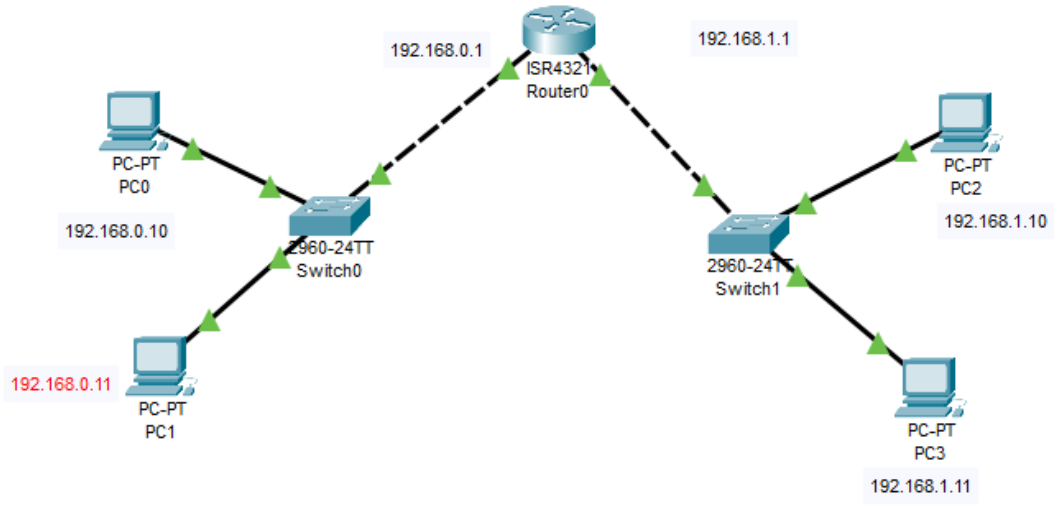
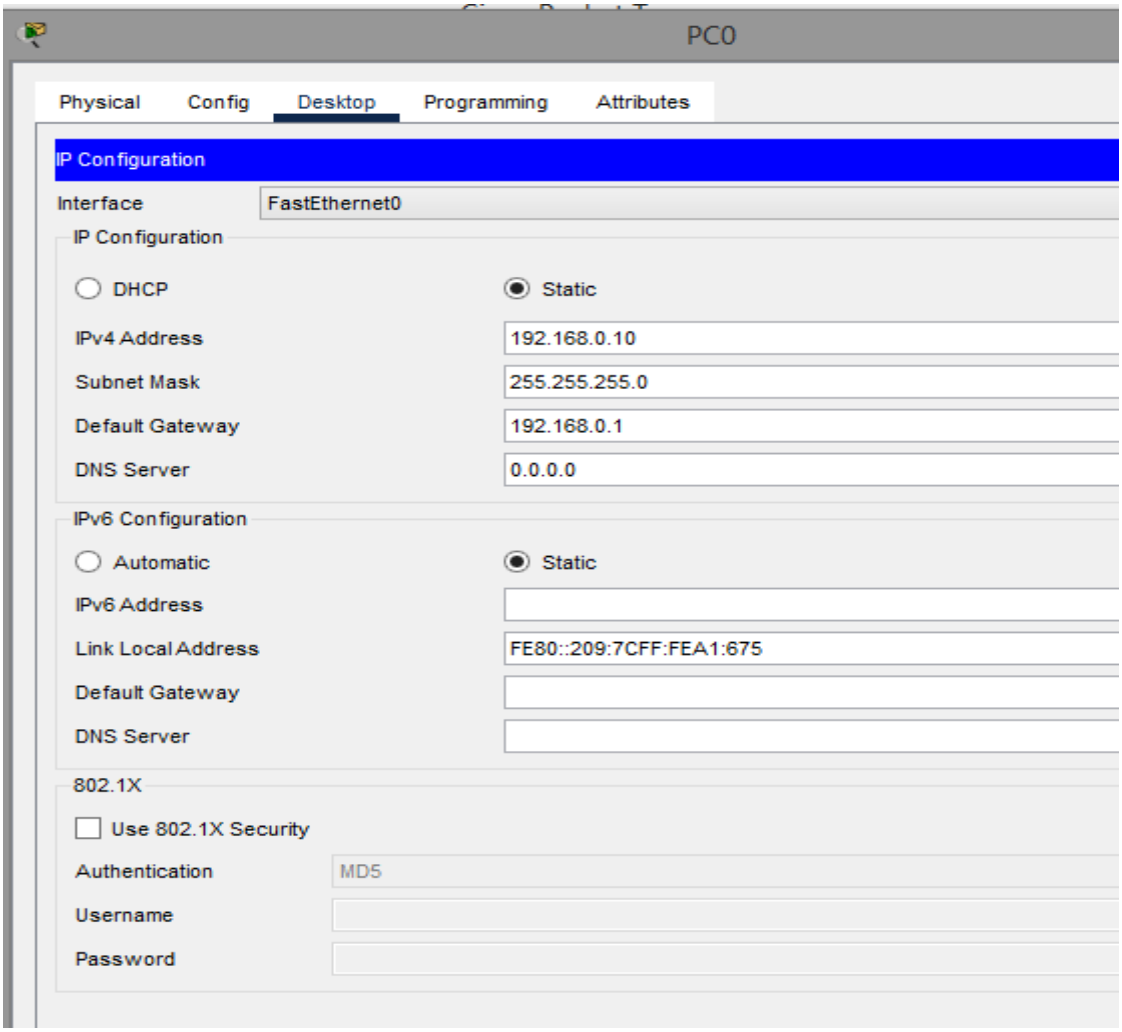
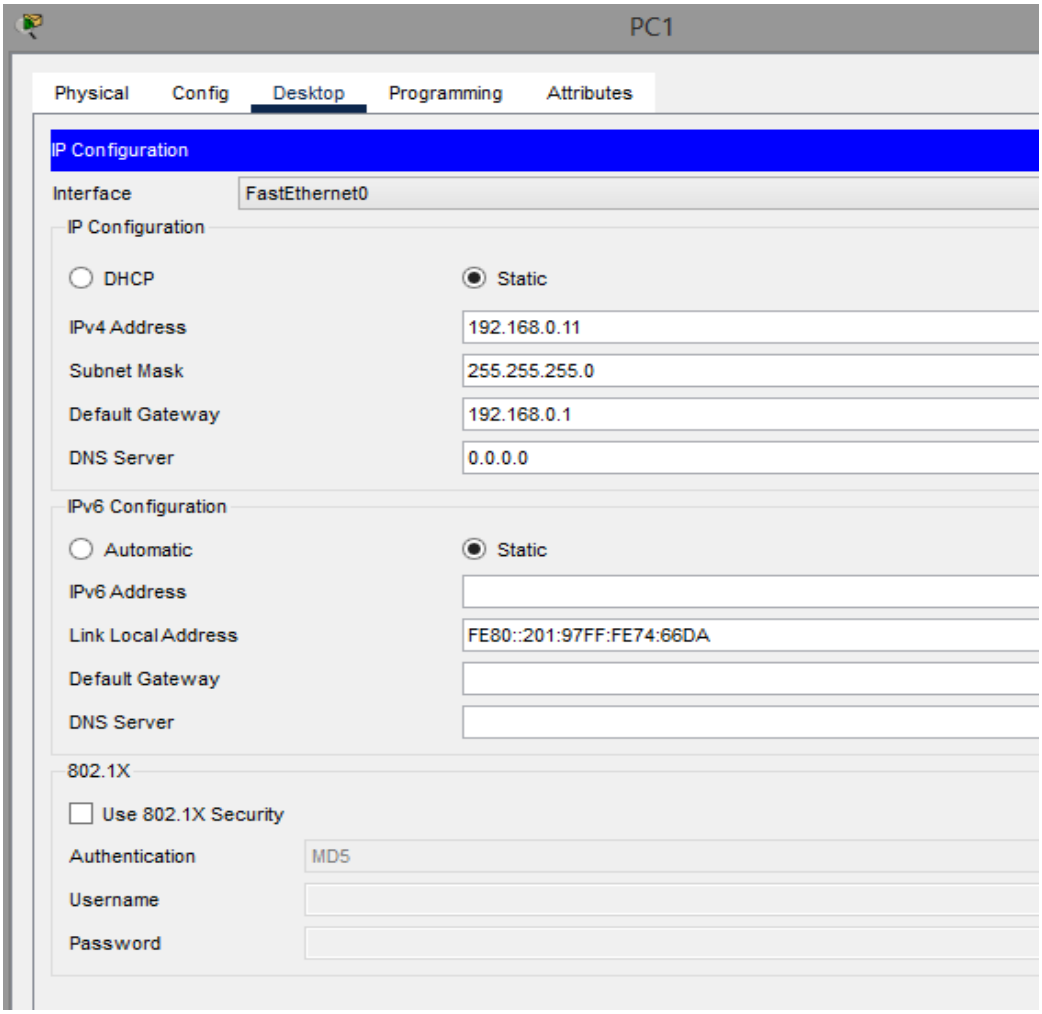
Router CONFIGURATION



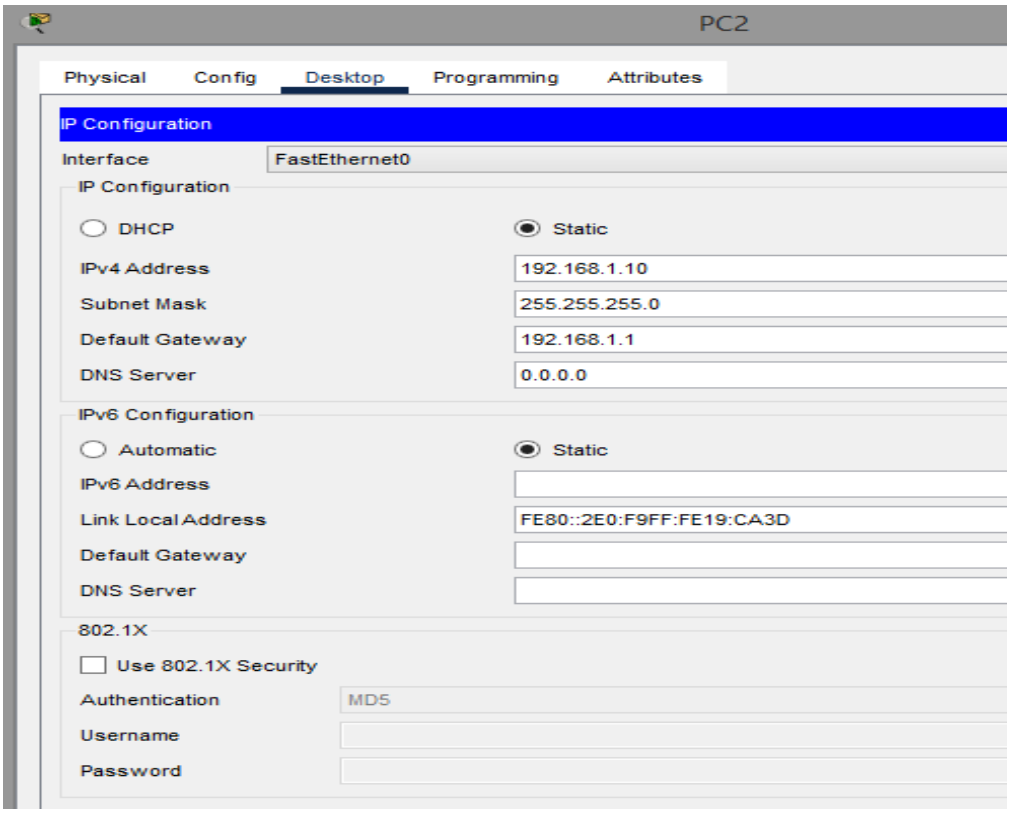
Configure PC0



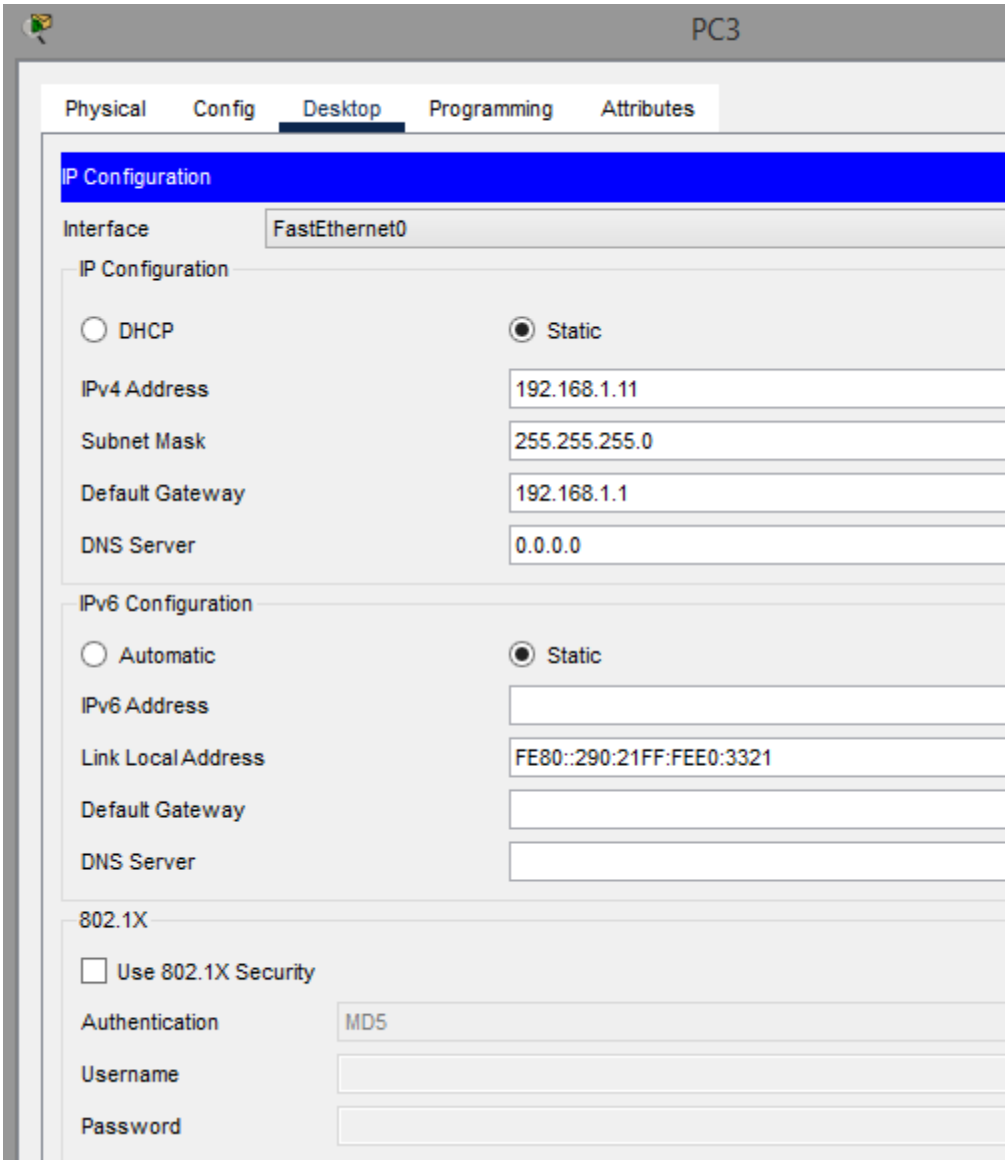
Configure PC1



Configure PC2



Configure PC3



Router>enable

Router#config t

Enter configuration commands, one per line. End with CNTL/Z.

The first configuration command on any device should be to give it a unique hostname.

Note: To return the Router to the default prompt, use the **no hostname** global config command.

Router(config)#hostname lab1

lab1(config)#

Context-sensitive (?)help enables you to quickly find answers to these questions:

- **Which commands are available in each command mode?**
- **Which commands start with specific characters or group of characters?**
- **Which arguments and keywords are available to particular commands?**

A banner message is important to warn unauthorized personnel from attempting to access the device.

To create a banner message of the day on a network device, use the banner motd # the message of the day # global config command.

Enter configuration commands, one per line. End with CNTL/Z.

lab1(config)#banner motd #authorized access only#

lab1(config)#

Line Configuration Mode:

> *To move in and out of line configuration mode, use the **line** command followed by the management line type. To return to global configuration mode, use the **exit** command.*

lab1(config)#line console 0

Securing user EXEC mode access:

- First enter line console configuration mode using the **line console 0** command in global configuration mode.
- Next, specify the user EXEC mode password using the **password** *password* command.
- Finally, enable user EXEC access using the **login** command.

lab1(config-line)#password cisco

lab1(config-line)#login

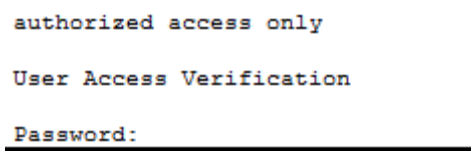
lab1(config-line)#exit

lab1(config)#exit

lab1#

%SYS-5-CONFIG_I: Configured from console by console

lab1#exit



lab1>enable

lab1#config t

Enter configuration commands, one per line. End with CNTL/Z.

lab1(config)#interface GigabitEthernet0/0/0

lab1(config-if)#ip address 192.168.0.1 255.255.255.0

lab1(config-if)#no shutdown

lab1(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

exit

lab1(config)#exit

lab1#

%SYS-5-CONFIG_I: Configured from console by console

lab1#config t

Enter configuration commands, one per line. End with CNTL/Z.

lab1(config)#interface GigabitEthernet0/0/1

lab1(config-if)#ip address 192.168.1.1 255.255.255.0

lab1(config-if)#no shutdown

lab1(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

lab1(config-if)#exit

lab1(config)#exit

lab1#

%SYS-5-CONFIG_I: Configured from console by console

lab1#

lab1(config)#ip routing

lab1(config)#exit

lab1#

%SYS-5-CONFIG_I: Configured from console by console

lab1#

Securing VTY line access:

- First enter line VTY configuration mode using the line vty 0 15 command in global configuration mode.
- Next, specify the VTY password using the password *password* command.
- Finally, enable VTY access using the login command.

VTY lines enable remote access using Telnet or SSH to the device

lab1#

lab1#config t

Enter configuration commands, one per line. End with CNTL/Z.

lab1(config)#line vty 0 15

lab1(config-line)#password cisco

lab1(config-line)#login

lab1(config-line)#exit

lab1(config)#exit

lab1#

%SYS-5-CONFIG_I: Configured from console by console

The startup-config and running-config files display most passwords in plaintext.

To encrypt all plaintext passwords, use the service password-encryption global config command.

lab1#show running-config
Building configuration...

Current configuration : 698 bytes
!
version 15.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname lab1
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!

```
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface GigabitEthernet0/0/0
ip address 192.168.0.1 255.255.255.0
duplex auto
speed auto
!
interface GigabitEthernet0/0/1
ip address 192.168.1.1 255.255.255.0
duplex auto
speed auto
!
interface Vlan1
no ip address
shutdown
!
ip classless
!
ip flow-export version 9
!
!
!
banner motd ^Cauthorized access only^C
!
!
!
!
line con 0
password cisco
login
!
line aux 0
!
line vty 0 4
password cisco
login
line vty 5 15
password cisco
login
!
```

!
!
end

To encrypt all plaintext passwords, use the service password-encryption global config command.

lab1#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

lab1(config)#service password-encryption

lab1(config)#exit

lab1#

lab1#

%SYS-5-CONFIG_I: Configured from console by console

Use the show running-config command to verify that the passwords on the device are now encrypted

lab1#show running-config
Building configuration...

Current configuration : 722 bytes
!
version 15.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname lab1
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
!
!

```
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface GigabitEthernet0/0/0
ip address 192.168.0.1 255.255.255.0
duplex auto
speed auto
!
interface GigabitEthernet0/0/1
ip address 192.168.1.1 255.255.255.0
duplex auto
speed auto
!
interface Vlan1
no ip address
shutdown
!
ip classless
!
ip flow-export version 9
!
!
!
banner motd ^Cauthorized access only^C
!
!
!
!
line con 0
password 7 0822455D0A16
login
!
line aux 0
!
line vty 0 4
password 7 0822455D0A16
login
line vty 5 15
password 7 0822455D0A16
login
!
!
```

!
end

lab1#copy running-config startup-config

Destination filename [startup-config]?

Building configuration...

[OK]

lab1#

Reload the device using the reload command in privilege EXEC mode. Note: This will cause the device to briefly go offline, leading to network downtime.

```
Router# reload
Proceed with reload? [confirm]
Initializing Hardware ...
```

If the undesired changes were saved to the startup-config, it may be necessary to clear all the configurations using the erase startup-config command in privilege EXEC mode.

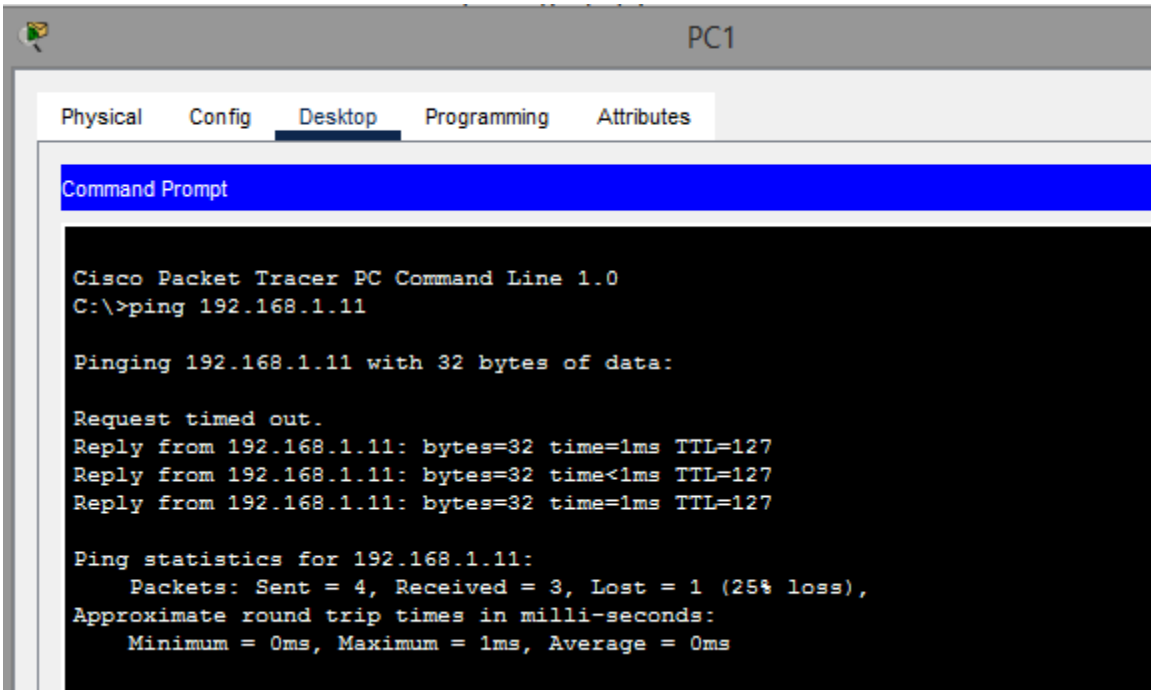
- **After erasing the startup-config, reload the device to clear the running-config file from RAM.**

```
Router# erase startup-config
Erasing the nvram filesystem will remove all configuration files! Continue? [confirm]
[OK]
Erase of nvram: complete
%SYS-7-NV_BLOCK_INIT: Initialized the geometry of nvram
Router#
```

Ping from PC0 to 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<1ms TTL=127
Reply from 192.168.1.10: bytes=32 time<1ms TTL=127
Reply from 192.168.1.10: bytes=32 time=3ms TTL=127
Reply from 192.168.1.10: bytes=32 time=1ms TTL=127

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 1ms

C:\>
```

Ping from PC1 to PC3



Access Router through telnet from PC1