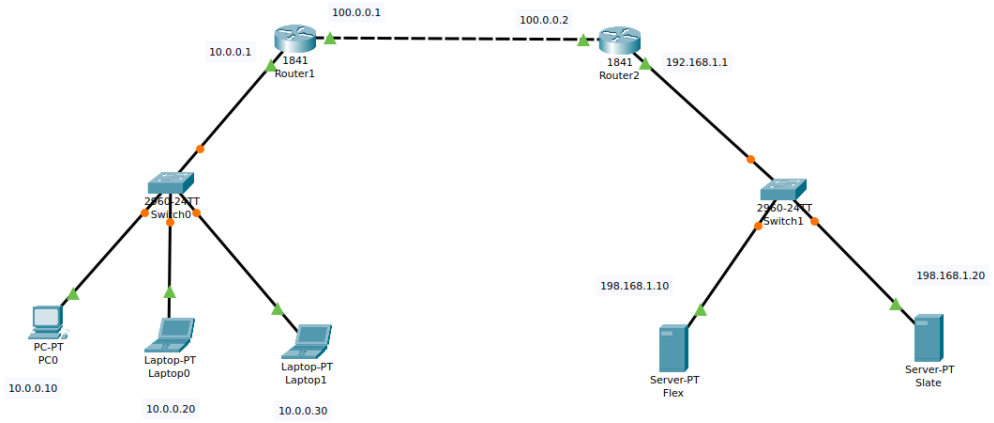
Computer Networks
Lab Task #12
Saad Ahmad
20P-0051

Add 1x PC, 2x Laptops, 2x switch, 2x routers and 2x servers and connect them all.

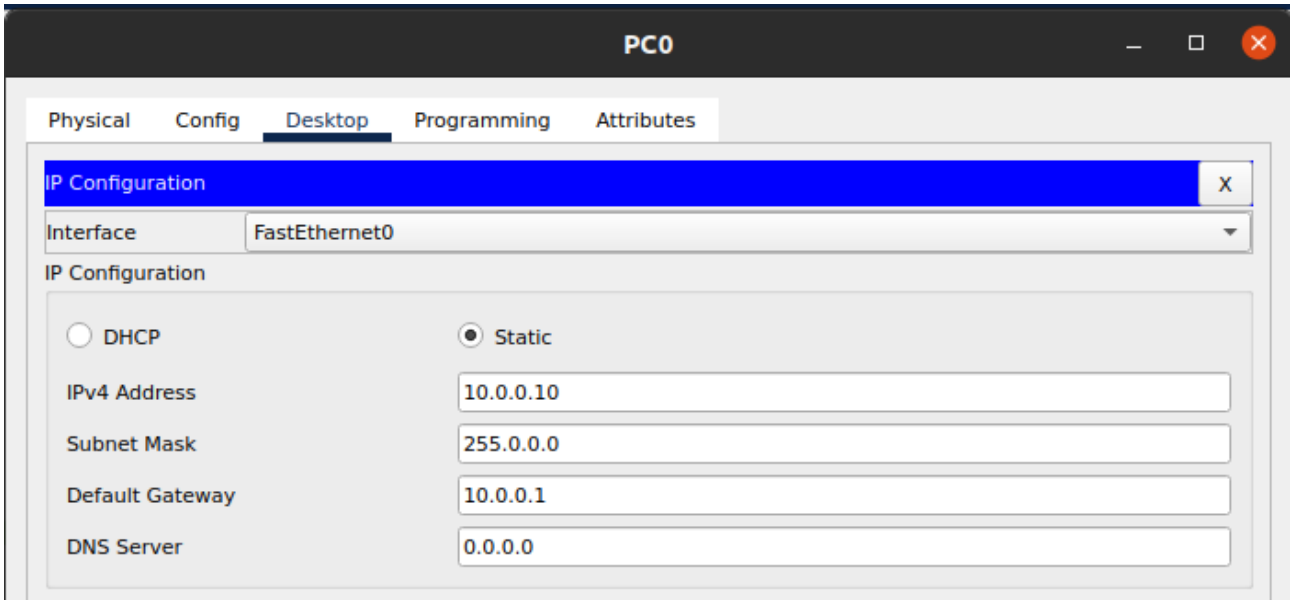


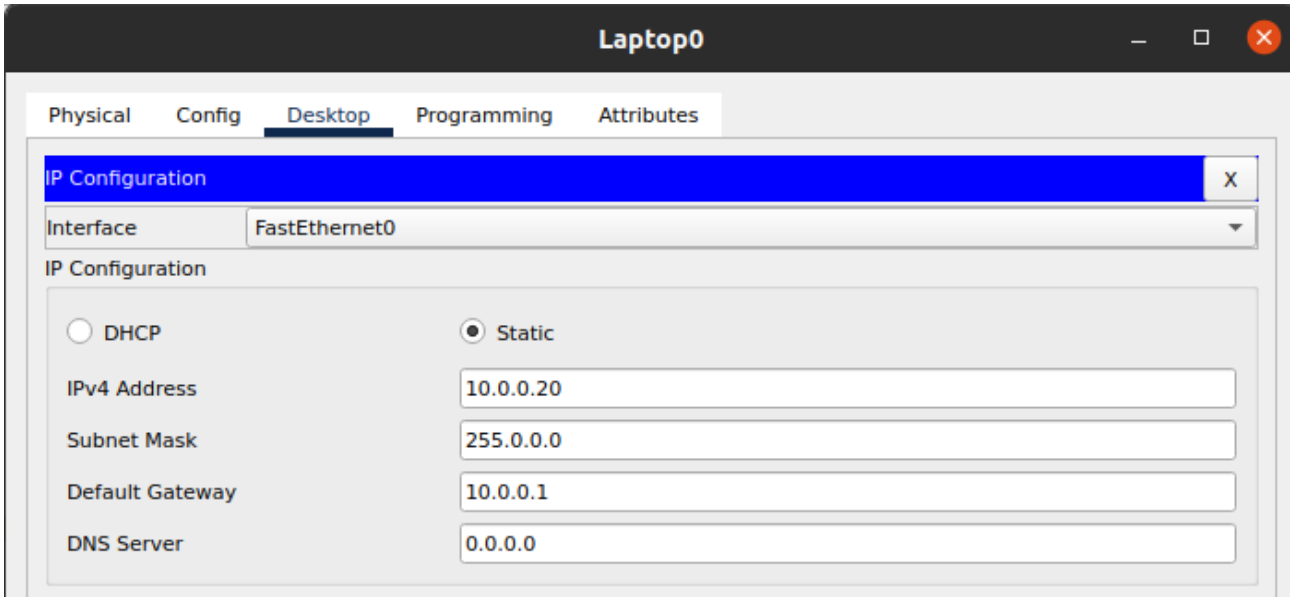
Now assign the IP addresses to the PC, laptops, servers and the routers:

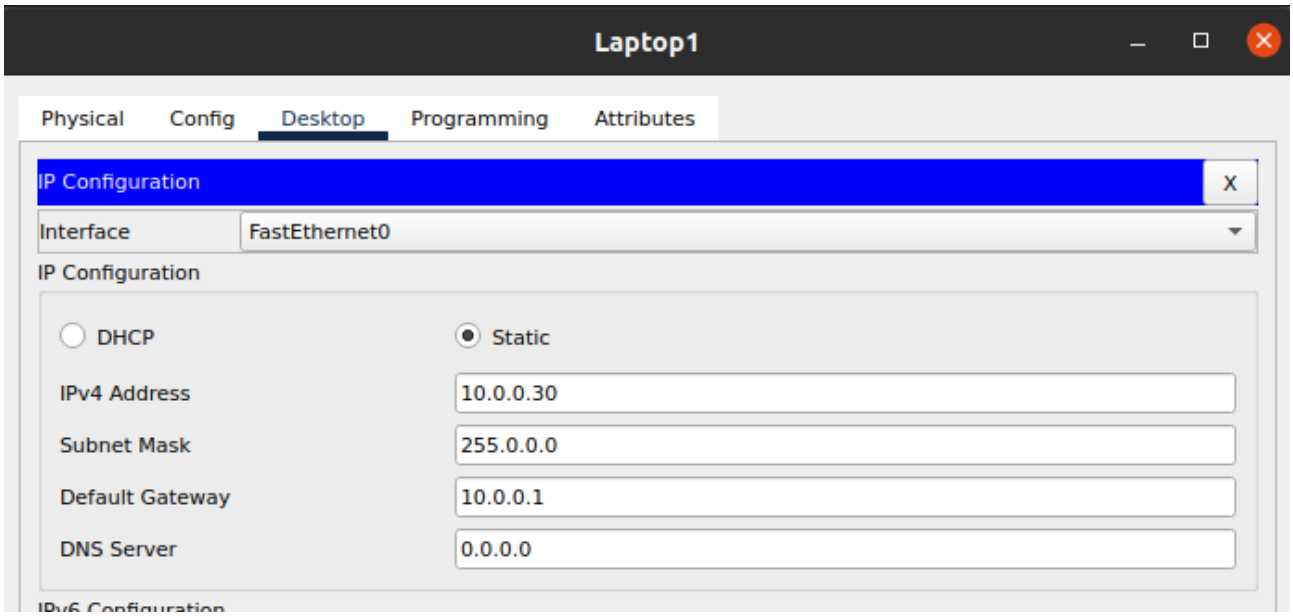
PC: 10.0.0.10
Laptop0: 10.0.0.20
Laptop1: 10.0.0.30

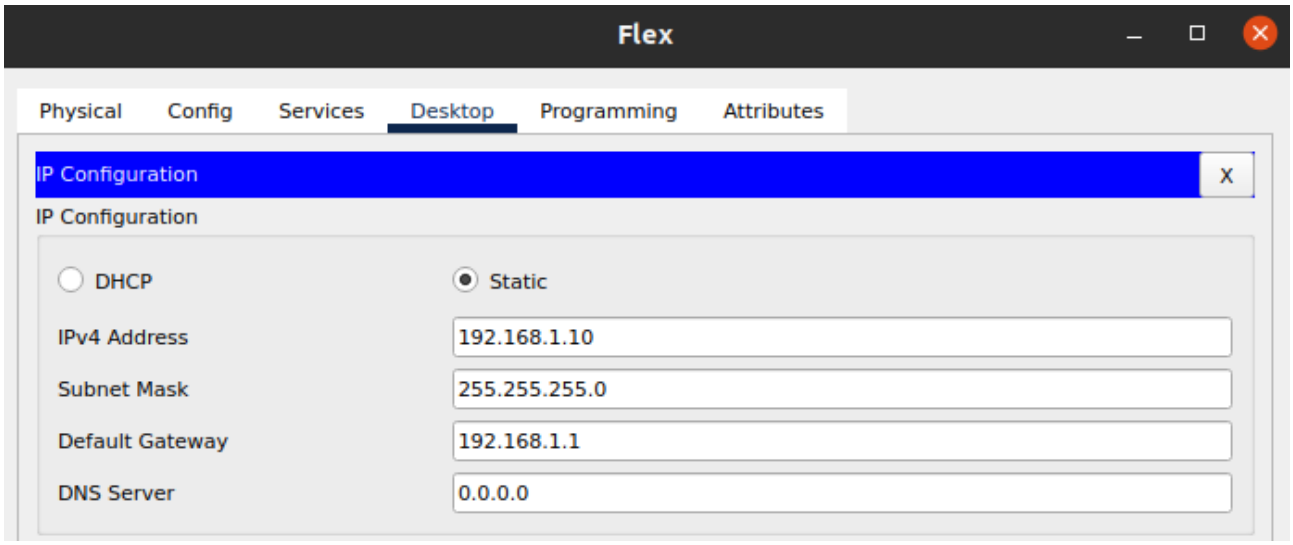
Server1: 192.168.1.10
Server2: 192.168.1.10

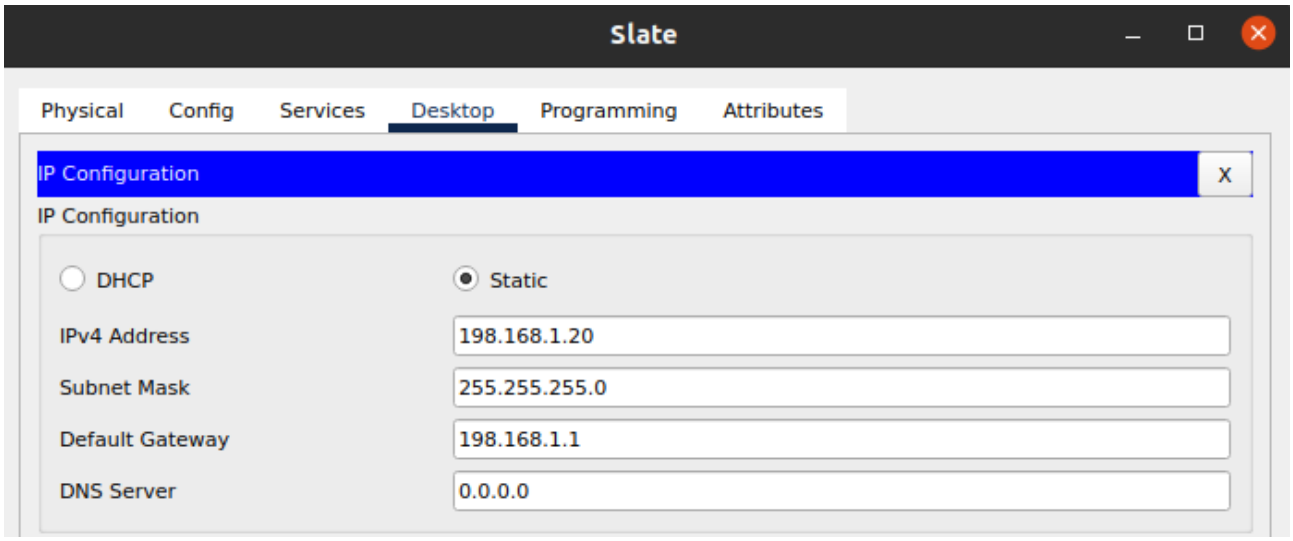
F0/1 of R1: 100.0.0.1
F 0/1of R2: 100.0.0.2


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.10
Subnet Mask
255.0.0.0
Default Gateway
10.0.0.1
DNS Server
0.0.0.0


Laptop0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.20
Subnet Mask
255.0.0.0
Default Gateway
10.0.0.1
DNS Server
0.0.0.0


Laptop1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
10.0.0.30
Subnet Mask
255.0.0.0
Default Gateway
10.0.0.1
DNS Server
0.0.0.0


Flex
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.10
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0


Slate
Physical
Config
Services
Desktop
Programming
Attributes
IP Configuration
X
IP Configuration
DHCP
Static
IPv4 Address
198.168.1.20
Subnet Mask
255.255.255.0
Default Gateway
198.168.1.1
DNS Server
0.0.0.0

Configuring Router 1:

```
Router>
Router>
Router>
Router>
Router>en
Router>enable
Router#conf
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#host
Router(config)#hostname R1
R1(config)#inter
R1(config)#interface Fat
R1(config)#interface Fas
R1(config)#interface FastEthernet 0/0
R1(config-if)#ip address 10.0.0.1 255.0.0.0
R1(config-if)#no shu
R1(config-if)#no shutdown

R1(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

R1(config-if)#exi
R1(config-if)#exit
R1(config)#exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#confi
R1#configure ter
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#inter
R1(config)#interface Fas
R1(config)#interface FastEthernet 0/1
R1(config-if)#ip address 100.0.0.1 255.0.0.0
R1(config-if)#no shu
R1(config-if)#no shutdown

R1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

R1(config-if)#exi
R1(config-if)#exit
R1(config)#
```

Configuring Router 2:

```
R2>
R2>
R2>
R2>
R2>
R2>
R2>enb
R2>enbab
R2>enab
R2>enable
R2#confg
R2#conf
R2#configure ter
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#inter
R2(config)#interface Fas
R2(config)#interface FastEthernet 0/0
R2(config-if)#ip address 192.168.1.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#exi
R2(config-if)#exit
R2(config)#interface FastEthernet0/1
R2(config-if)#ip address 100.0.0.2 255.0.0.0
R2(config-if)#no sh
R2(config-if)#no shutdown
R2(config-if)#exi
R2(config-if)#exit
R2(config)#
```

Configure Static NAT:

Router 1:

```
R1>
R1>
R1>
R1>ena
R1>enable
R1#confi
R1#configure ter
R1#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip nat inside source static 10.0.0.10 50.0.0.10
R1(config)#ip nat inside source static 10.0.0.20 50.0.0.20
R1(config)#ip nat inside source static 10.0.0.30 50.0.0.30
R1(config)#inte
R1(config)#interfaceFas
R1(config)#interfa
R1(config)#interface Fas
R1(config)#interface FastEthernet 0/0
R1(config-if)#ip nat inside
R1(config-if)#exi
R1(config-if)#exit
R1(config)#inter
R1(config)#interface Fat
R1(config)#interface Fa
R1(config)#interface FastEthernet 0/1
R1(config-if)#ip nat outside
R1(config-if)#exit
R1(config)#exit
R1#
%SYS-5-CONFIG_I: Configured from console by console
```

```
R1>
R1>
R1>
R1>
R1>en
R1>enable
R1#conf
R1#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#
R1(config)#ip route 200.0.0.0 255.255.255.0 100.0.0.2
R1(config)#
R1(config)#
```

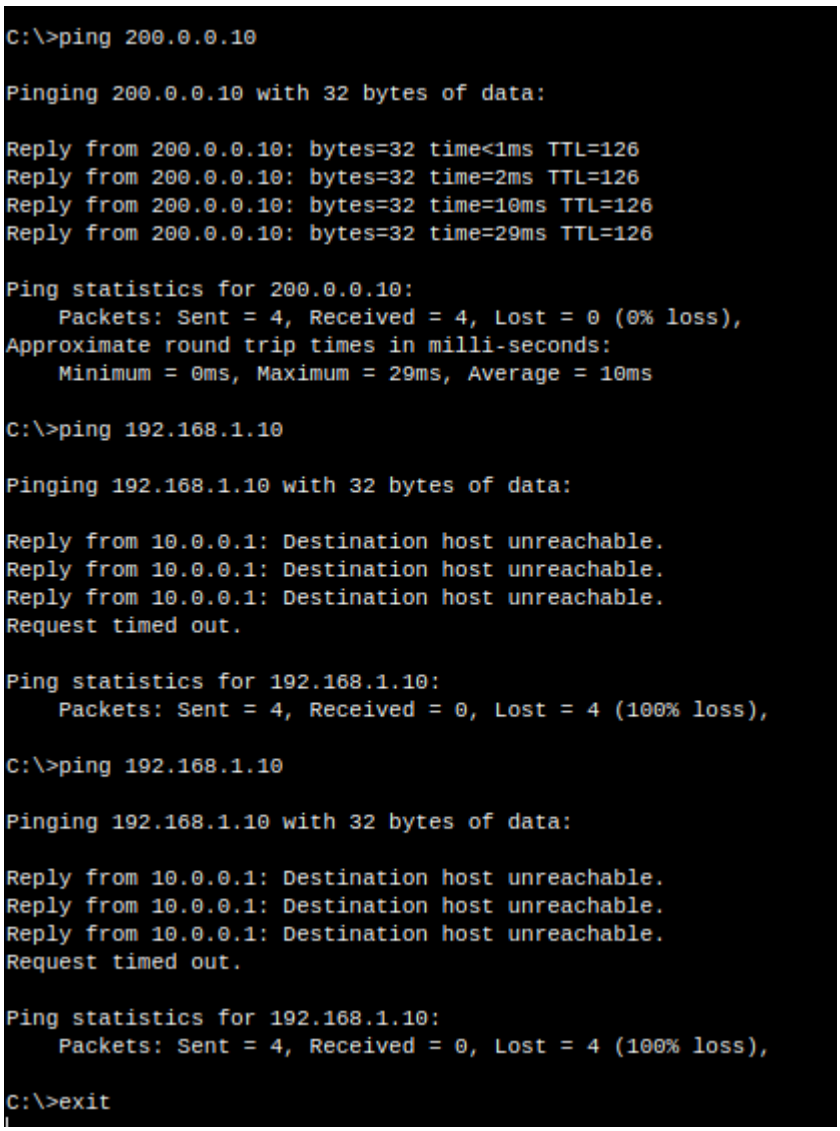
Router 2:

```
R2>
R2>
R2>
R2>
R2>ena
R2>enable
R2#con
R2#confi
R2#configure ter
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip nat inside source static 192.168.1.10 200.0.0.10
R2(config)#ip nat inside source static 192.168.1.20 200.0.0.20
R2(config)#interface FastEthernet 0/1
R2(config-if)#interface FastEthernet 0/0
R2(config-if)#ip nat inside
R2(config-if)#exi
R2(config-if)#exit
R2(config)#interface FastEthernet 0/1
R2(config-if)#ip nat outside
R2(config-if)#exi
R2(config-if)#exit
R2(config)#
R2(config)#
R2(config)#
R2(config)#
```

```
R2>ena
R2>enable
R2#conf
R2#configure ter
R2#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#ip rou
R2(config)#ip rout
R2(config)#ip route 50.0.0.0 255.0.0.0 100.0.0.1
R2(config)#exit
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#
```

Checking the connection:

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.....: FE80::209:7CFF:FEAA:1137
   IPv6 Address....................: ::
   IPv4 Address....................: 10.0.0.10
   Subnet Mask.....................: 255.0.0.0
   Default Gateway.................: ::
                                     10.0.0.1

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

C:\>ping 200.0.0.10

Pinging 200.0.0.10 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 200.0.0.10: bytes=32 time=10ms TTL=126
Reply from 200.0.0.10: bytes=32 time=18ms TTL=126

Ping statistics for 200.0.0.10:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 10ms, Maximum = 18ms, Average = 14ms

C:\>ping 200.0.0.10

Pinging 200.0.0.10 with 32 bytes of data:

Reply from 200.0.0.10: bytes=32 time=10ms TTL=126
Reply from 200.0.0.10: bytes=32 time<1ms TTL=126
Reply from 200.0.0.10: bytes=32 time=14ms TTL=126
Reply from 200.0.0.10: bytes=32 time=1ms TTL=126

Ping statistics for 200.0.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 14ms, Average = 6ms

C:\>ping 200.0.0.10
```



Note:

I have tried again and again to ping the slate server but I am receiving the same message of request time out and this issue was already discussed with you in the lab.