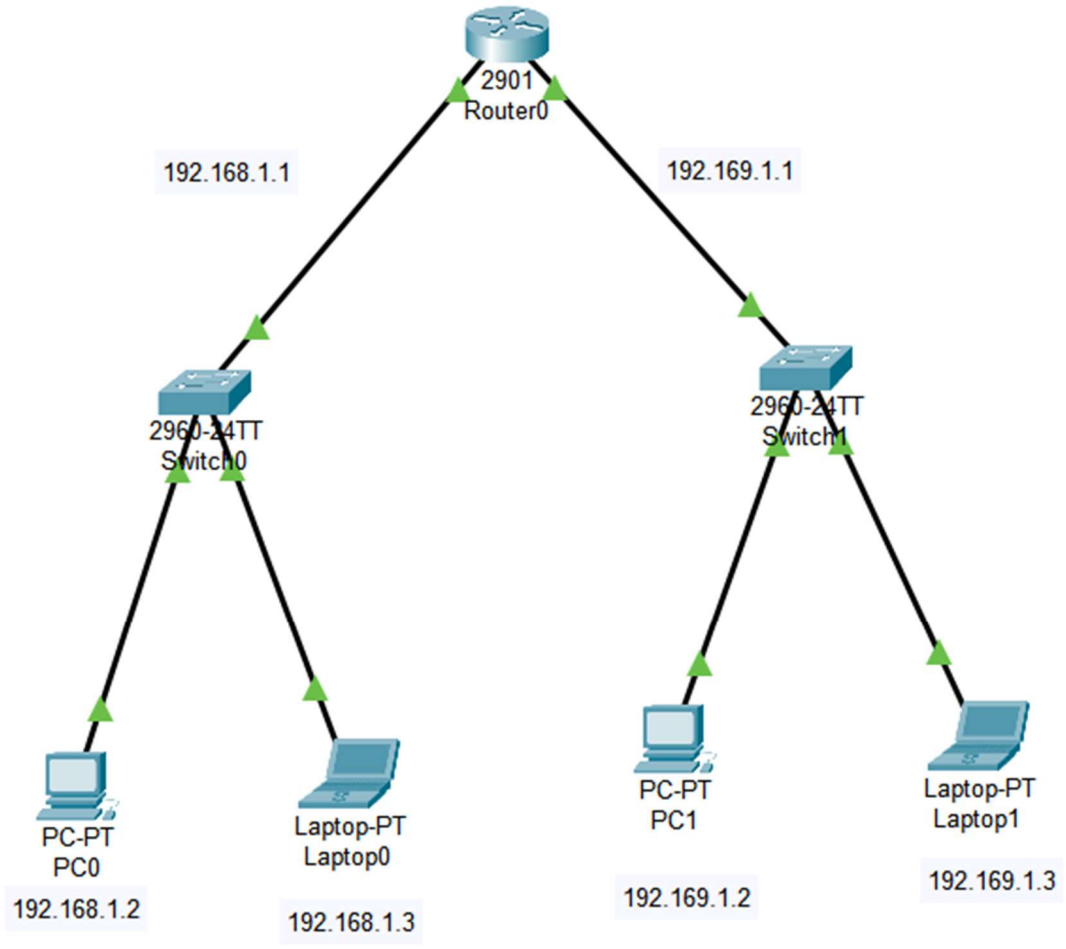
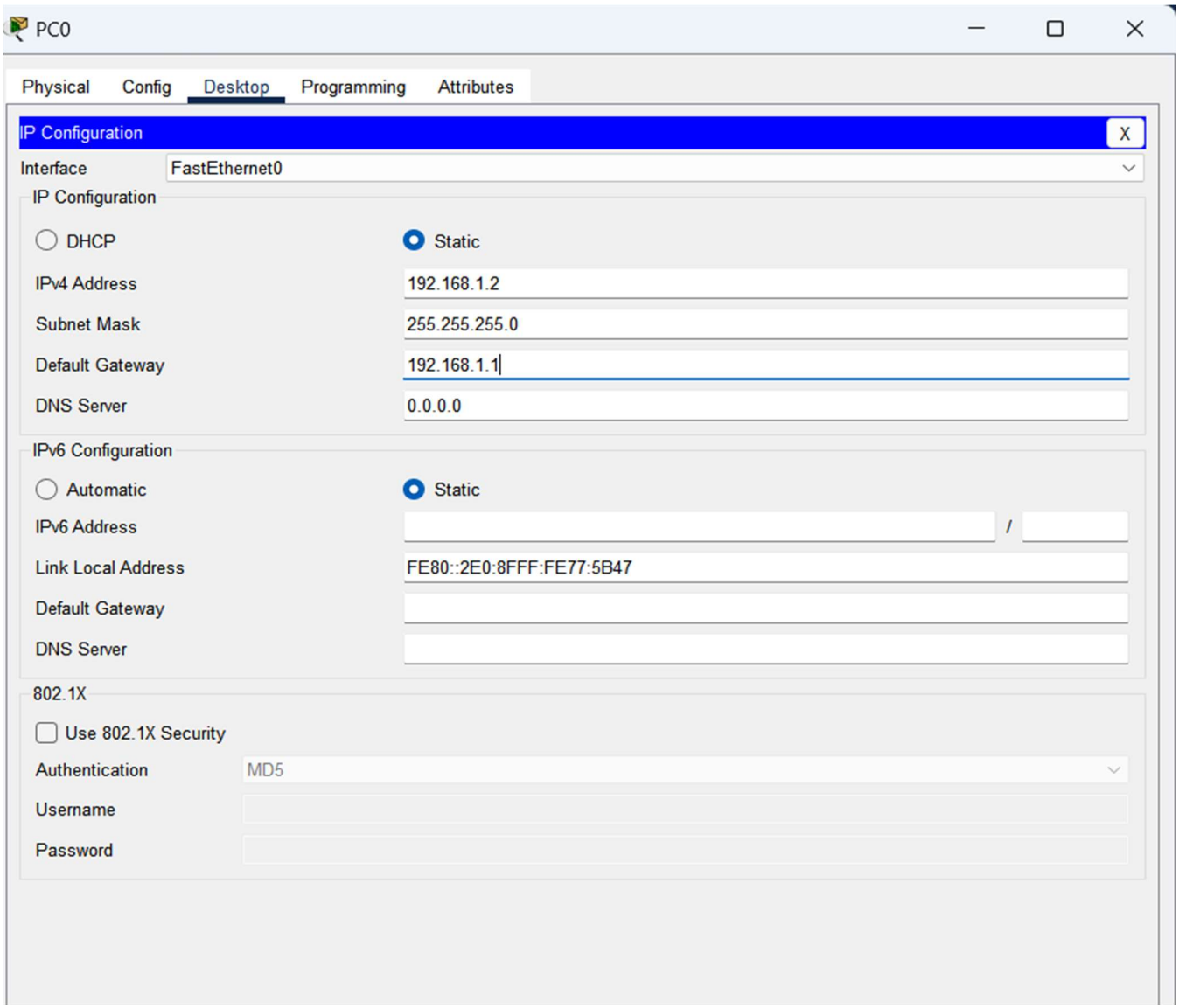
Ipv4(static)


2901
Router0
192.168.1.1
192.169.1.1
2960-24TT
Switch0
2960-24TT
Switch1
PC-PT
PC0
192.168.1.2
Laptop-PT
Laptop0
192.168.1.3
PC-PT
PC1
192.169.1.2
Laptop-PT
Laptop1
192.169.1.3


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::2E0:8FFF:FE77:5B47
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

Physical Config CLI Attributes

IOS Command Line Interface

```
Cisco CISCO2901/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
2 Gigabit Ethernet interfaces
2 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)


         --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: n


Press RETURN to get started!



Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.169.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

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

Router(config-if)#exit
Router(config)#
```

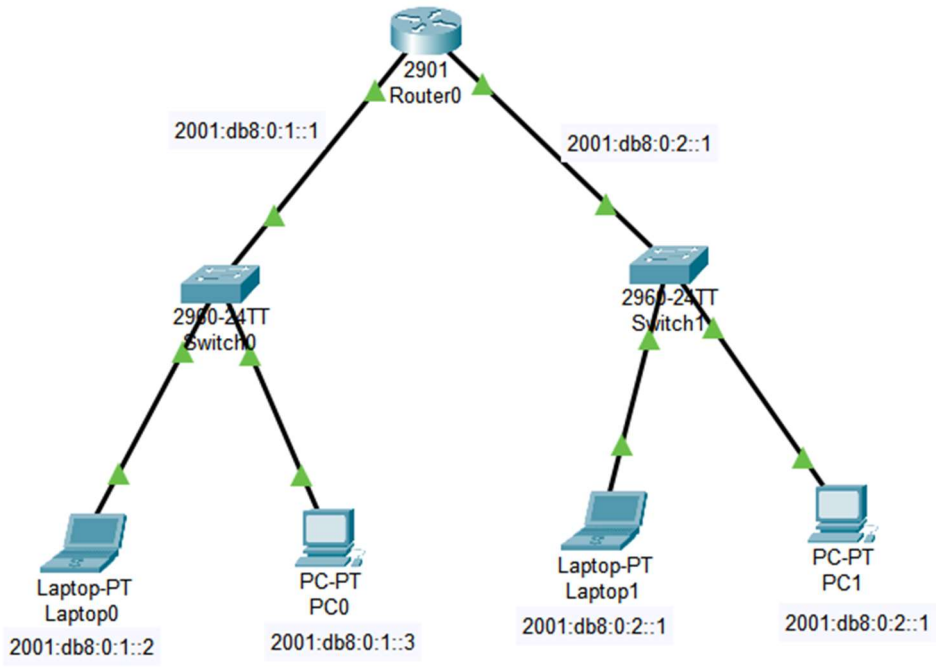
Copy Paste

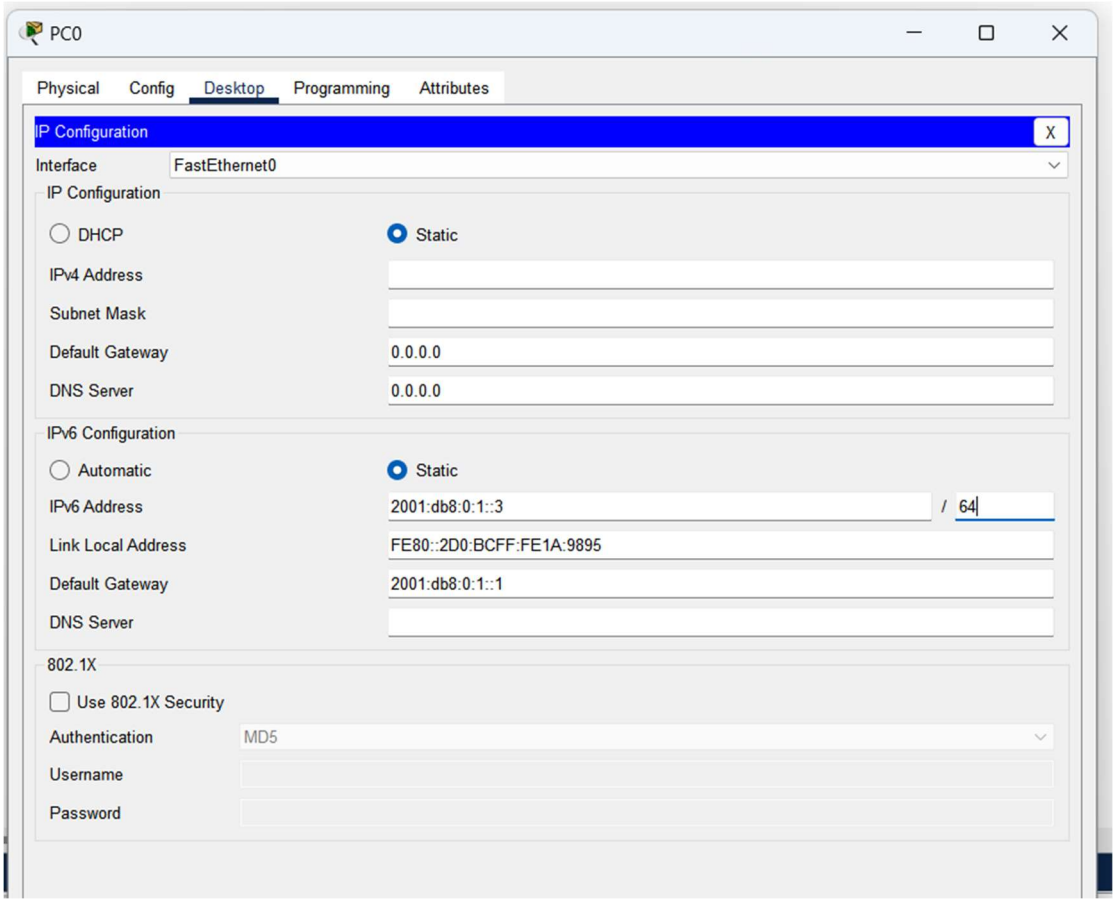
Physical Config Desktop Programming Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=8ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 8ms, Average = 2ms

C:\>ping 192.169.1.2

Pinging 192.169.1.2 with 32 bytes of data:

Request timed out.
Reply from 192.169.1.2: bytes=32 time<1ms TTL=127
Reply from 192.169.1.2: bytes=32 time<1ms TTL=127
Reply from 192.169.1.2: bytes=32 time<1ms TTL=127

Ping statistics for 192.169.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.169.1.1

Pinging 192.169.1.1 with 32 bytes of data:

Reply from 192.169.1.1: bytes=32 time<1ms TTL=255
Reply from 192.169.1.1: bytes=32 time=18ms TTL=255
Reply from 192.169.1.1: bytes=32 time<1ms TTL=255
Reply from 192.169.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.169.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 18ms, Average = 4ms
```

ipv6(static)

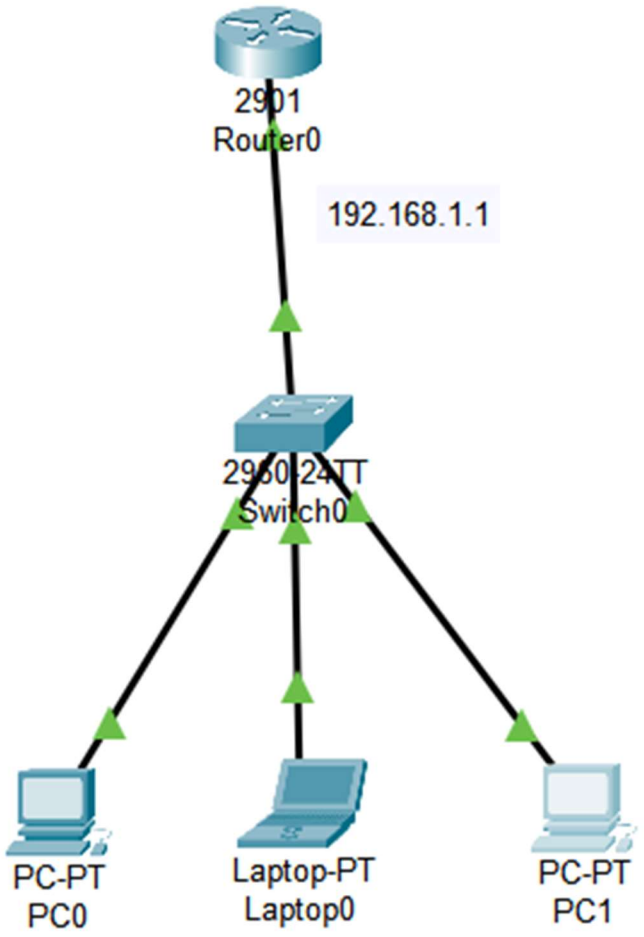

2901
Router0
2001:db8:0:1::1
2001:db8:0:2::1
2960-24TT
Switch0
2960-24TT
Switch1
Laptop-PT
Laptop0
2001:db8:0:1::2
PC-PT
PC0
2001:db8:0:1::3
Laptop-PT
Laptop1
2001:db8:0:2::1
PC-PT
PC1
2001:db8:0:2::1


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
Subnet Mask
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
2001:db8:0:1::3
/ 64
Link Local Address
FE80::2D0:BCFF:FE1A:9895
Default Gateway
2001:db8:0:1::1
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

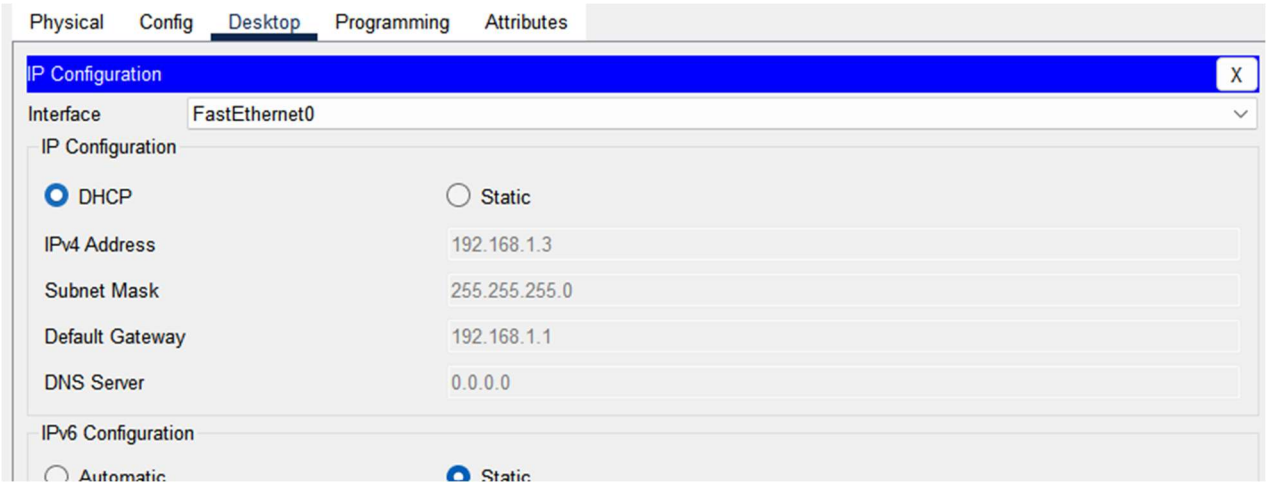
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/0
Router(config-if)#ipv6 add 2001:db8:0:1::1/64
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/1
Router(config-if)#ipv6 add 2001:db8:0:2::1/64
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

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

Router(config-if)#exit
Router(config)#
```

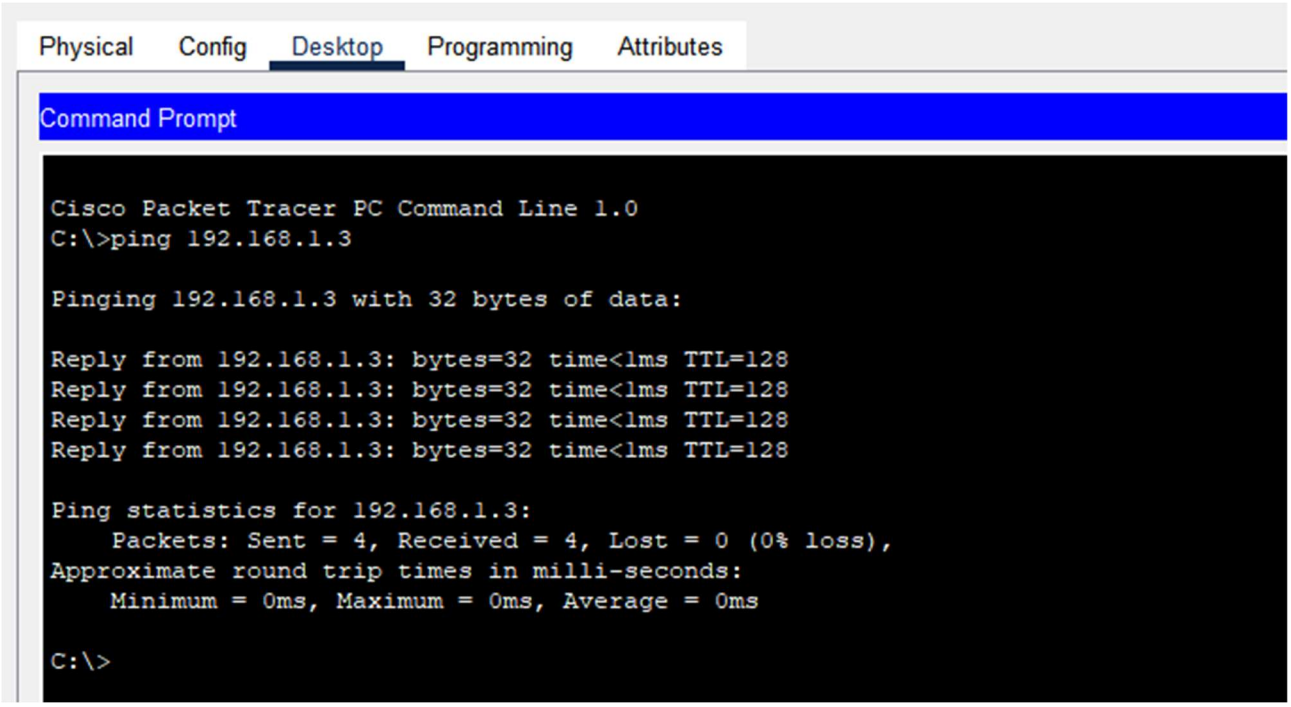
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 2001:db8:0:2::1

Pinging 2001:db8:0:2::1 with 32 bytes of data:

Reply from 2001:DB8:0:2::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:0:2::1: bytes=32 time=1ms TTL=255
Reply from 2001:DB8:0:2::1: bytes=32 time<1ms TTL=255
Reply from 2001:DB8:0:2::1: bytes=32 time<1ms TTL=255

Ping statistics for 2001:DB8:0:2::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 2001:db8:0:2::2

Pinging 2001:db8:0:2::2 with 32 bytes of data:

Reply from 2001:DB8:0:2::2: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time<1ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time<1ms TTL=127

Ping statistics for 2001:DB8:0:2::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

IPv4(DHCP)

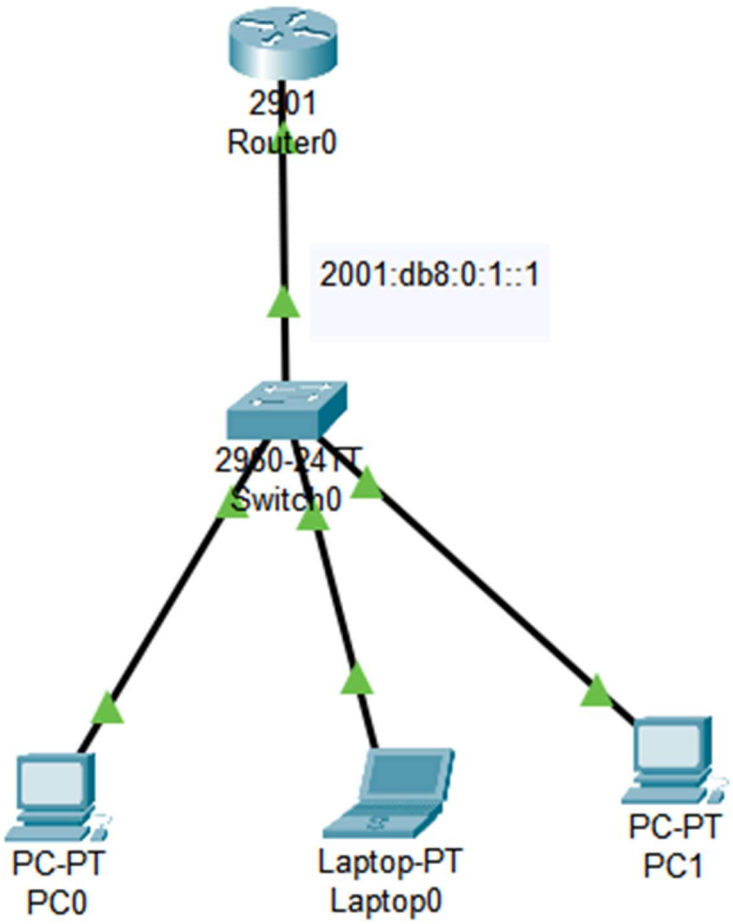



```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#ip dhcp pool Tarun
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#exit
Router(config)#
```


Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static


Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3
Pinging 192.168.1.3 with 32 bytes of data:
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.1.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>

IPV6(automatic)

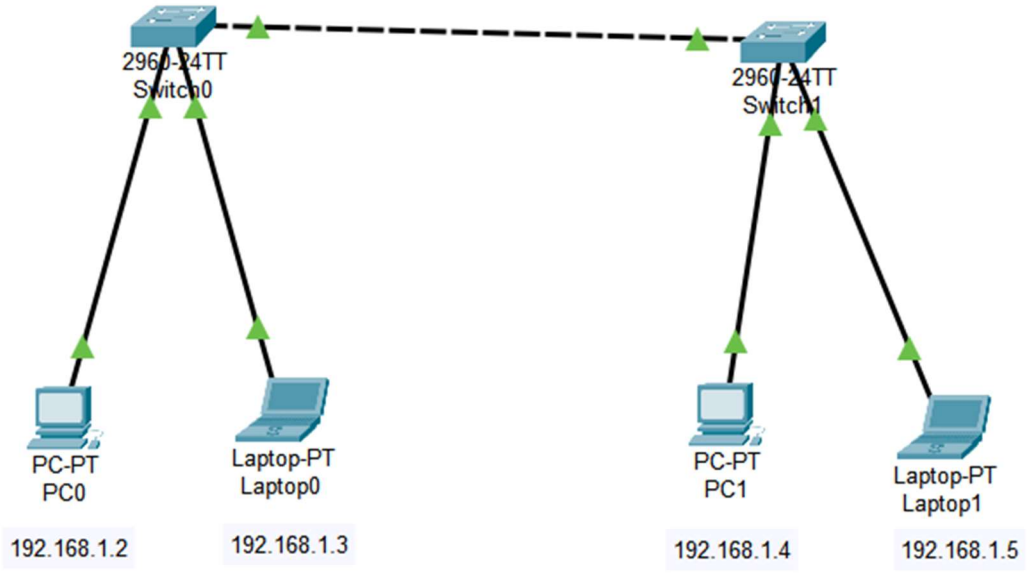


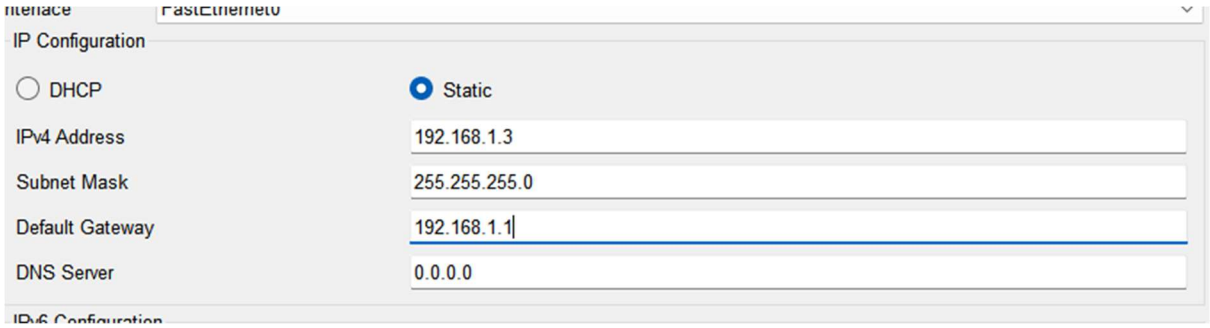

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/0
Router(config-if)#ipv6 add 2001:db8:0:1::1/64
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#
```

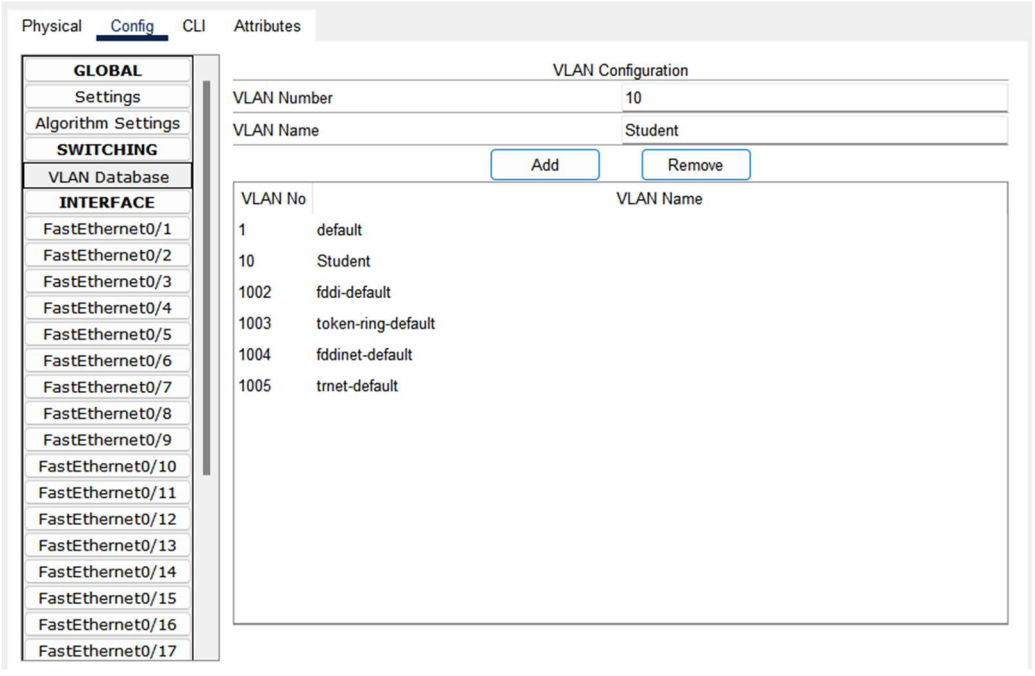
Command Prompt

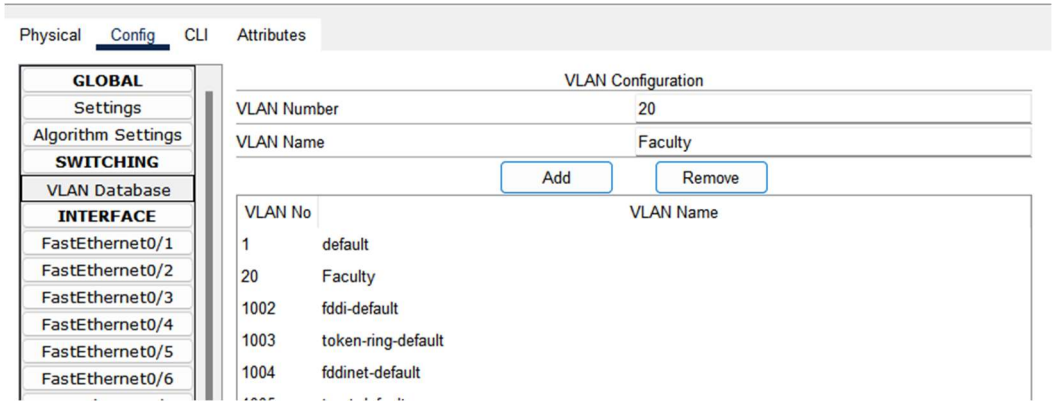
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 2001:db8:0:1:205:5eff:fe46:bc80

Pinging 2001:db8:0:1:205:5eff:fe46:bc80 with 32 bytes of data:

Reply from 2001:DB8:0:1:205:5EFF:FE46:BC80: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:0:1:205:5EFF:FE46:BC80: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:0:1:205:5EFF:FE46:BC80: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:0:1:205:5EFF:FE46:BC80: bytes=32 time<1ms TTL=128

Ping statistics for 2001:DB8:0:1:205:5EFF:FE46:BC80:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

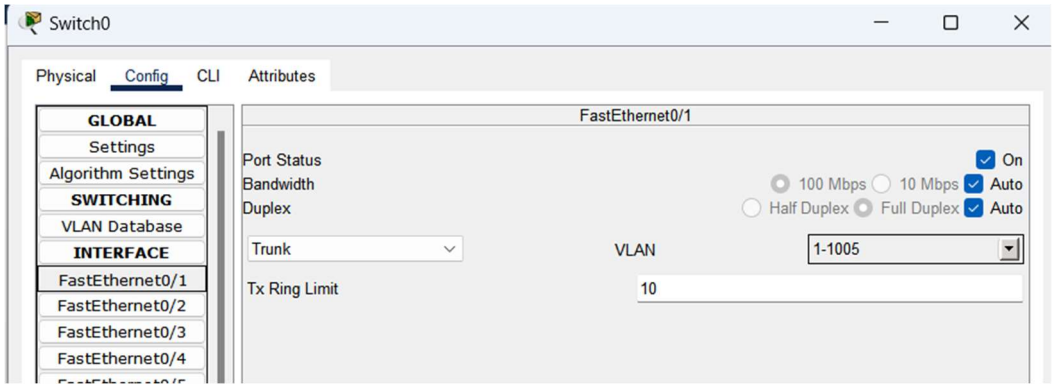
Vlan

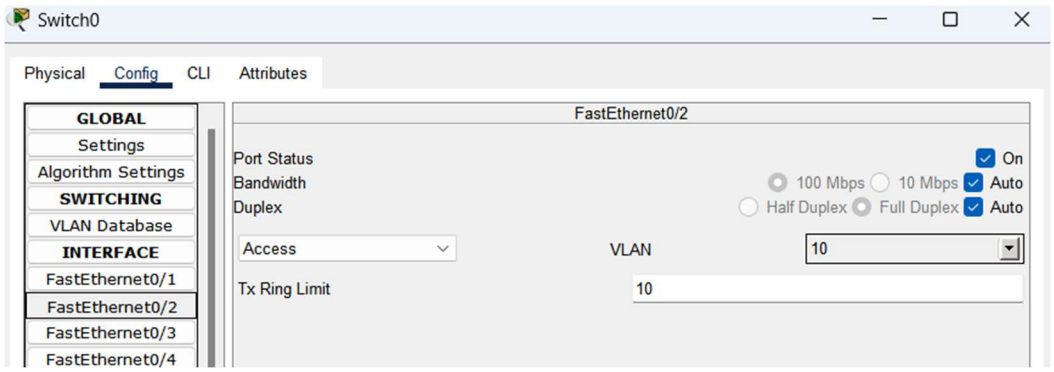

2960-24TT
Switch0
2960-24TT
Switch1
PC-PT
PC0
Laptop-PT
Laptop0
PC-PT
PC1
Laptop-PT
Laptop1
192.168.1.2
192.168.1.3
192.168.1.4
192.168.1.5


IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0


Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/1
FastEthernet0/2
FastEthernet0/3
FastEthernet0/4
FastEthernet0/5
FastEthernet0/6
FastEthernet0/7
FastEthernet0/8
FastEthernet0/9
FastEthernet0/10
FastEthernet0/11
FastEthernet0/12
FastEthernet0/13
FastEthernet0/14
FastEthernet0/15
FastEthernet0/16
FastEthernet0/17
VLAN Configuration
VLAN Number
10
VLAN Name
Student
Add
Remove
VLAN No
VLAN Name
1
default
10
Student
1002
fddi-default
1003
token-ring-default
1004
fddinet-default
1005
trnet-default

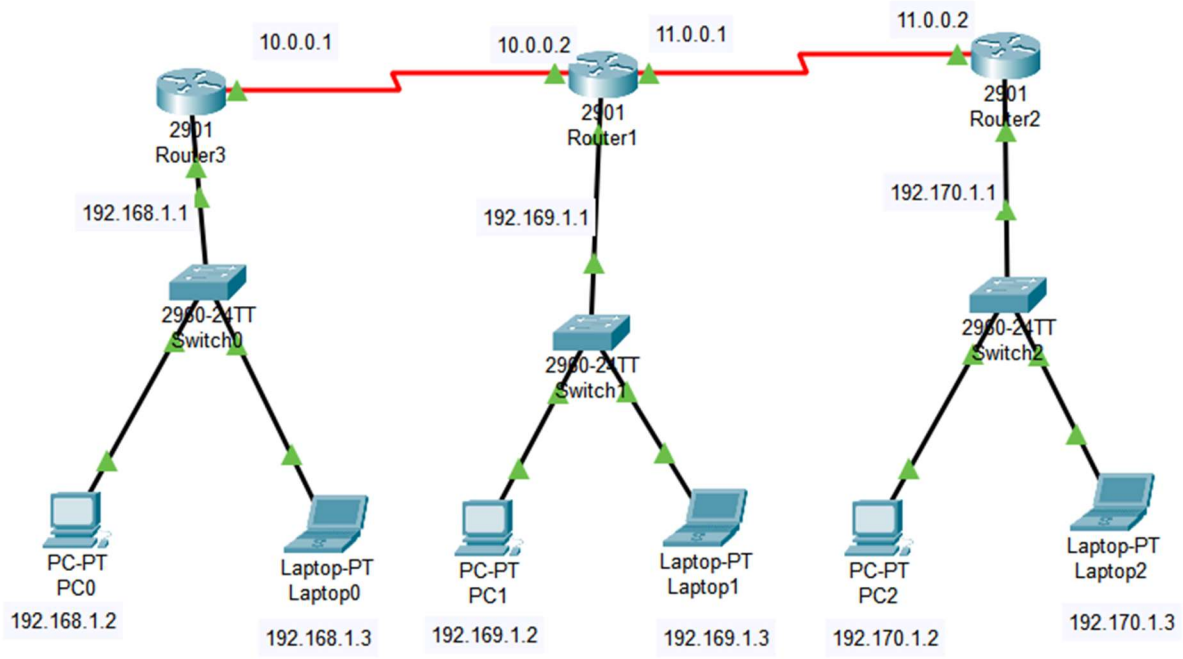


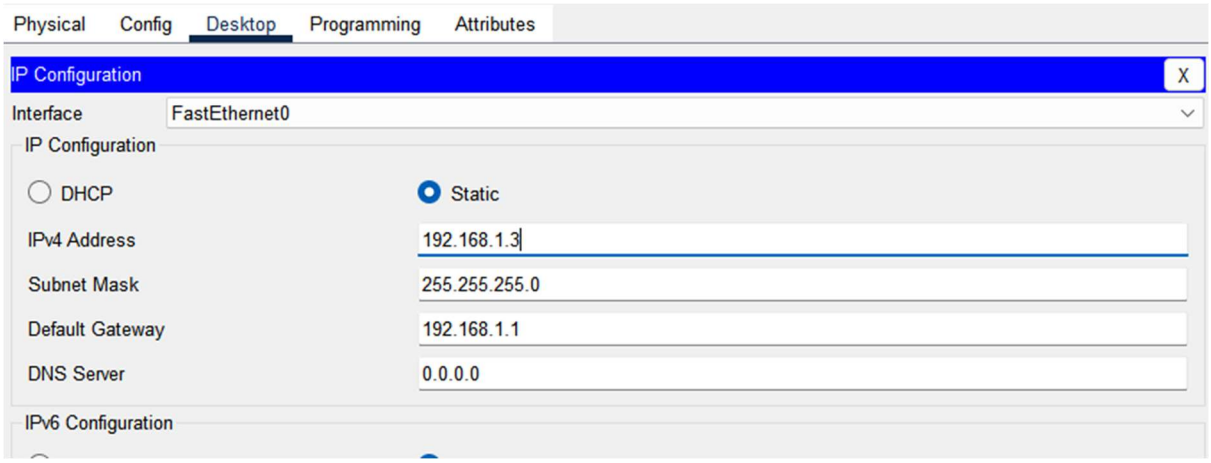


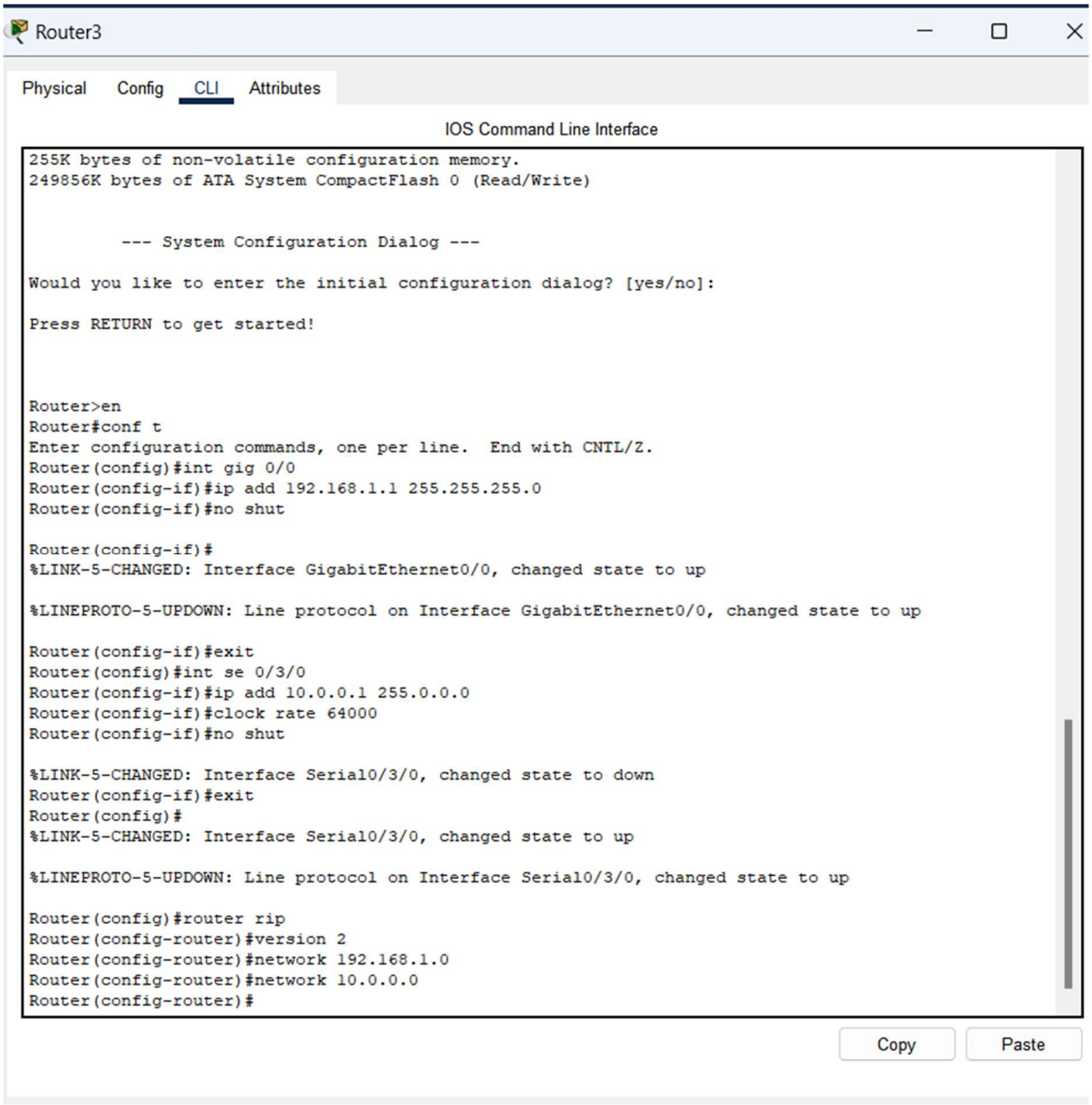


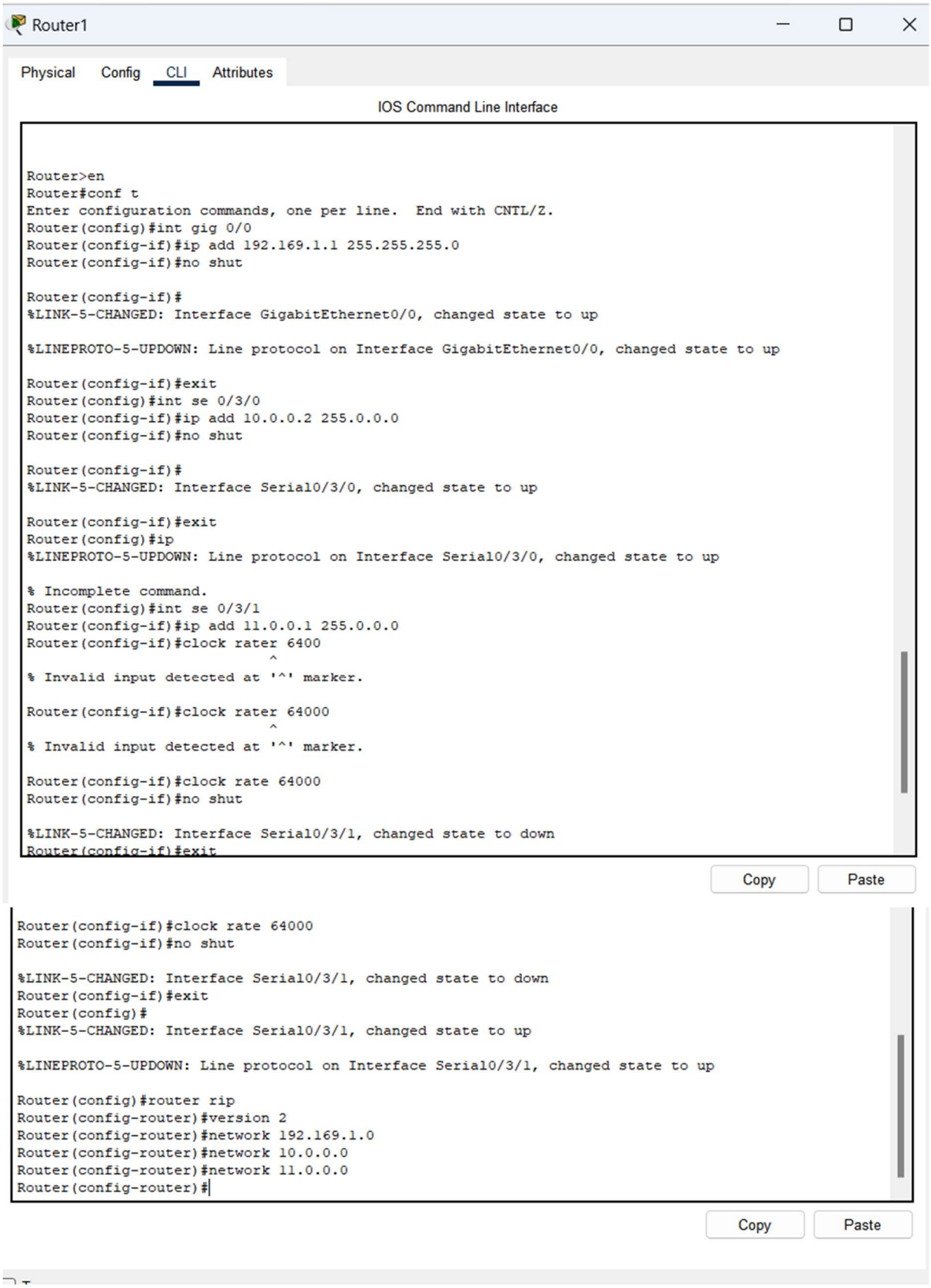

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

Ipv4(rip)


10.0.0.1
10.0.0.2
11.0.0.1
11.0.0.2
2901
Router3
2901
Router1
2901
Router2
192.168.1.1
192.169.1.1
192.170.1.1
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
PC-PT
PC0
192.168.1.2
Laptop-PT
Laptop0
192.168.1.3
PC-PT
PC1
192.169.1.2
Laptop-PT
Laptop1
192.169.1.3
PC-PT
PC2
192.170.1.2
Laptop-PT
Laptop2
192.170.1.3


Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]:
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 10.0.0.1 255.0.0.0
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.1.0
Router(config-router)#network 10.0.0.0
Router(config-router)#
Copy
Paste


Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.169.1.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 10.0.0.2 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
Router(config-if)#exit
Router(config)#ip
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
% Incomplete command.
Router(config)#int se 0/3/1
Router(config-if)#ip add 11.0.0.1 255.0.0.0
Router(config-if)#clock rater 6400
^
% Invalid input detected at '^' marker.
Router(config-if)#clock rater 64000
^
% Invalid input detected at '^' marker.
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to down
Router(config-if)#exit
Copy
Paste
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.169.1.0
Router(config-router)#network 10.0.0.0
Router(config-router)#network 11.0.0.0
Router(config-router)#
Copy
Paste

```
Router#
Router#sh ip route
Codes: L - local, C - connected, S - static, 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

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.0.0/8 is directly connected, Serial0/3/0
L       10.0.0.2/32 is directly connected, Serial0/3/0
     11.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       11.0.0.0/8 is directly connected, Serial0/3/1
L       11.0.0.1/32 is directly connected, Serial0/3/1
R    192.168.1.0/24 [120/1] via 10.0.0.1, 00:00:16, Serial0/3/0
     192.169.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.169.1.0/24 is directly connected, GigabitEthernet0/0
L       192.169.1.1/32 is directly connected, GigabitEthernet0/0
R    192.170.1.0/24 [120/1] via 11.0.0.2, 00:00:16, Serial0/3/1

Router#
```

Copy Paste

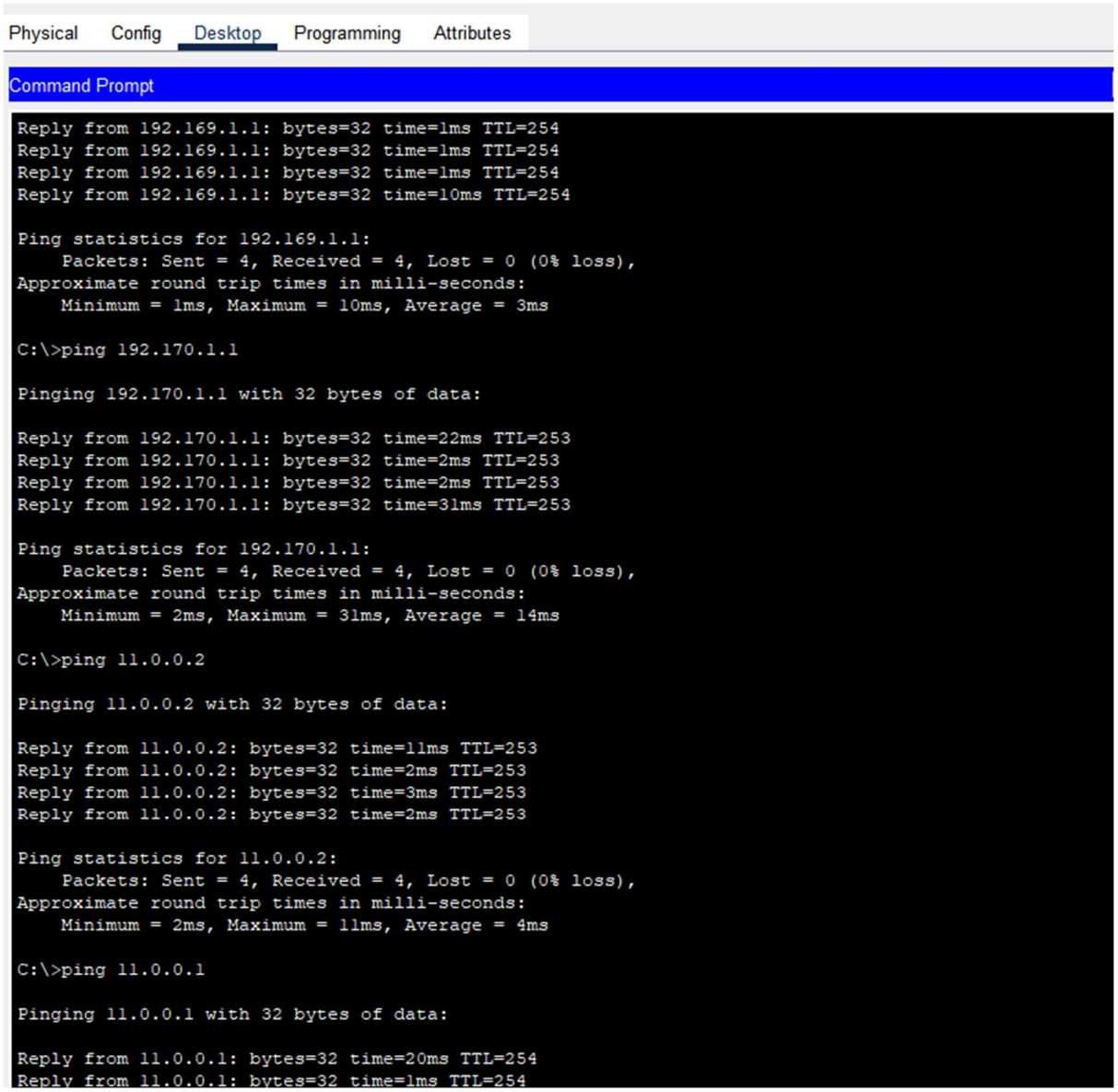
Router2

Physical Config CLI Attributes

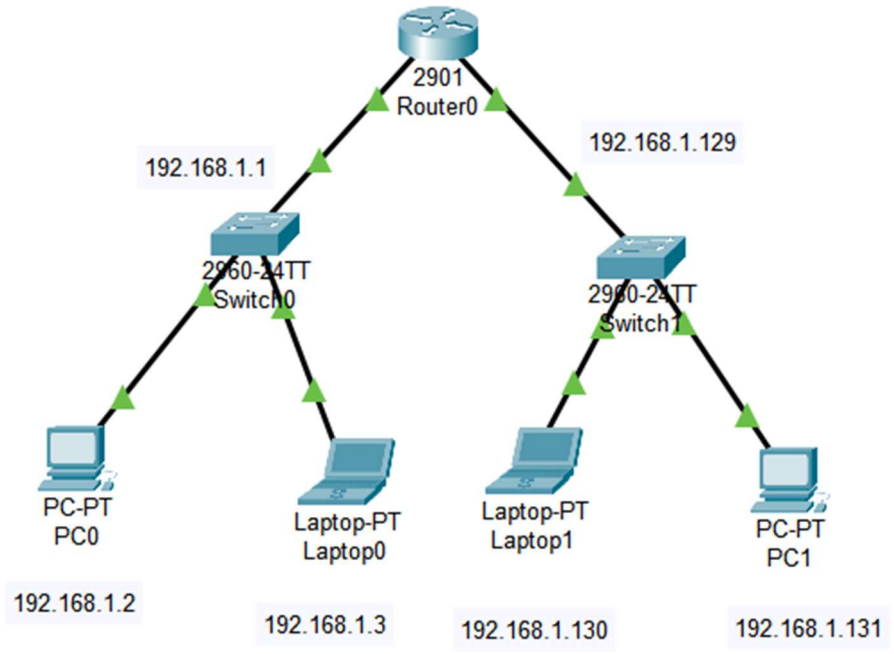
IOS Command Line Interface

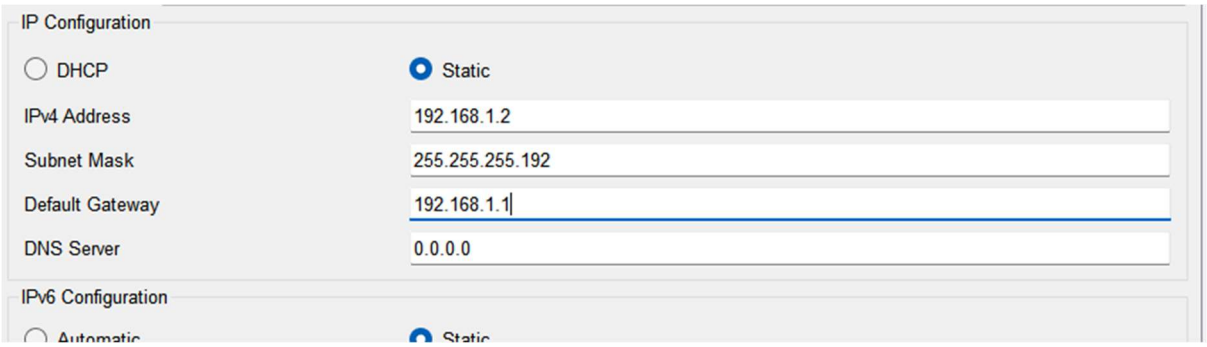
```
2 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)


         --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]:

Press RETURN to get started!



Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.170.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#int se 0/3/1
Router(config-if)#ip add 11.0.0.2 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up

Router(config-if)#ex
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up

Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.170.1.0
Router(config-router)#network 11.0.0.0
Router(config-router)#
```

Copy Paste


Physical
Config
Desktop
Programming
Attributes
Command Prompt
Reply from 192.169.1.1: bytes=32 time=1ms TTL=254
Reply from 192.169.1.1: bytes=32 time=1ms TTL=254
Reply from 192.169.1.1: bytes=32 time=1ms TTL=254
Reply from 192.169.1.1: bytes=32 time=10ms TTL=254
Ping statistics for 192.169.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 10ms, Average = 3ms
C:\>ping 192.170.1.1
Pinging 192.170.1.1 with 32 bytes of data:
Reply from 192.170.1.1: bytes=32 time=22ms TTL=253
Reply from 192.170.1.1: bytes=32 time=2ms TTL=253
Reply from 192.170.1.1: bytes=32 time=2ms TTL=253
Reply from 192.170.1.1: bytes=32 time=31ms TTL=253
Ping statistics for 192.170.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 31ms, Average = 14ms
C:\>ping 11.0.0.2
Pinging 11.0.0.2 with 32 bytes of data:
Reply from 11.0.0.2: bytes=32 time=11ms TTL=253
Reply from 11.0.0.2: bytes=32 time=2ms TTL=253
Reply from 11.0.0.2: bytes=32 time=3ms TTL=253
Reply from 11.0.0.2: bytes=32 time=2ms TTL=253
Ping statistics for 11.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 11ms, Average = 4ms
C:\>ping 11.0.0.1
Pinging 11.0.0.1 with 32 bytes of data:
Reply from 11.0.0.1: bytes=32 time=20ms TTL=254
Reply from 11.0.0.1: bytes=32 time=1ms TTL=254

Subneting


2901
Router0
192.168.1.1
192.168.1.129
2960-24TT
Switch0
2960-24TT
Switch1
PC-PT
PC0
Laptop-PT
Laptop0
Laptop-PT
Laptop1
PC-PT
PC1
192.168.1.2
192.168.1.3
192.168.1.130
192.168.1.131

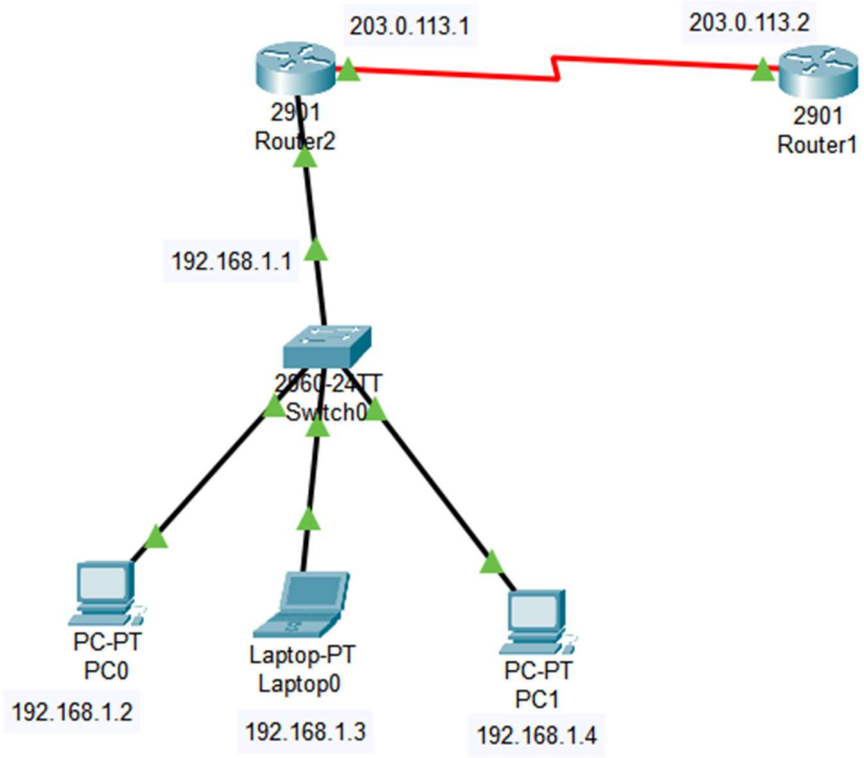

IP Configuration
DHCP
Static
IPv4 Address
192.168.1.2
Subnet Mask
255.255.255.192
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static

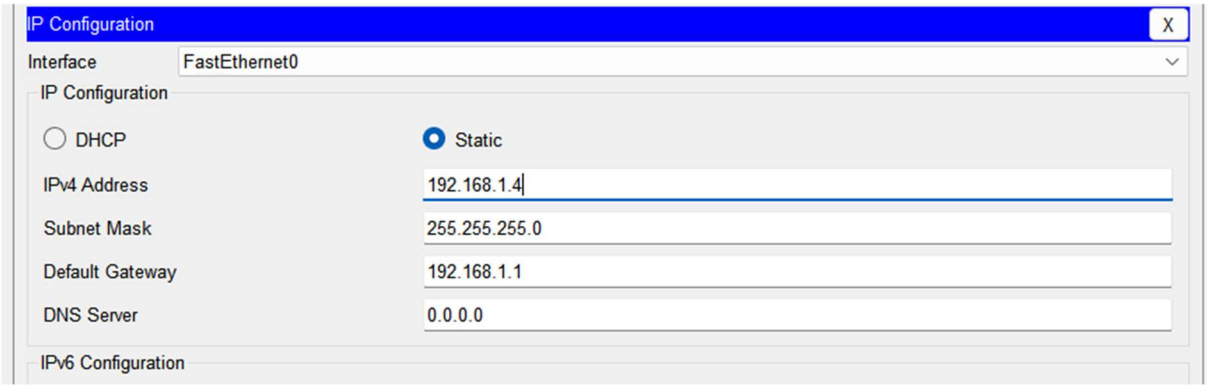
```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.192
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#int gig 0/1
Router(config-if)#ip add 192.168.1.129 255.255.255.192
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

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

Router(config-if)#exit
Router(config)#
```

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.129

Pinging 192.168.1.129 with 32 bytes of data:

Reply from 192.168.1.129: bytes=32 time=12ms TTL=255
Reply from 192.168.1.129: bytes=32 time<1ms TTL=255
Reply from 192.168.1.129: bytes=32 time=1ms TTL=255
Reply from 192.168.1.129: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.129:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 12ms, Average = 3ms

C:\>ping 192.168.1.131

Pinging 192.168.1.131 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.131: bytes=32 time<1ms TTL=127
Reply from 192.168.1.131: bytes=32 time<1ms TTL=127
Reply from 192.168.1.131: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.1.131:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.130

Pinging 192.168.1.130 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.130: bytes=32 time=1ms TTL=127
Reply from 192.168.1.130: bytes=32 time<1ms TTL=127
Reply from 192.168.1.130: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.1.130:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Static nat


203.0.113.1
203.0.113.2
2901
Router2
2901
Router1
192.168.1.1
2960-24TT
Switch0
PC-PT
PC0
192.168.1.2
Laptop-PT
Laptop0
192.168.1.3
PC-PT
PC1
192.168.1.4


IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.4
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0
IPv6 Configuration

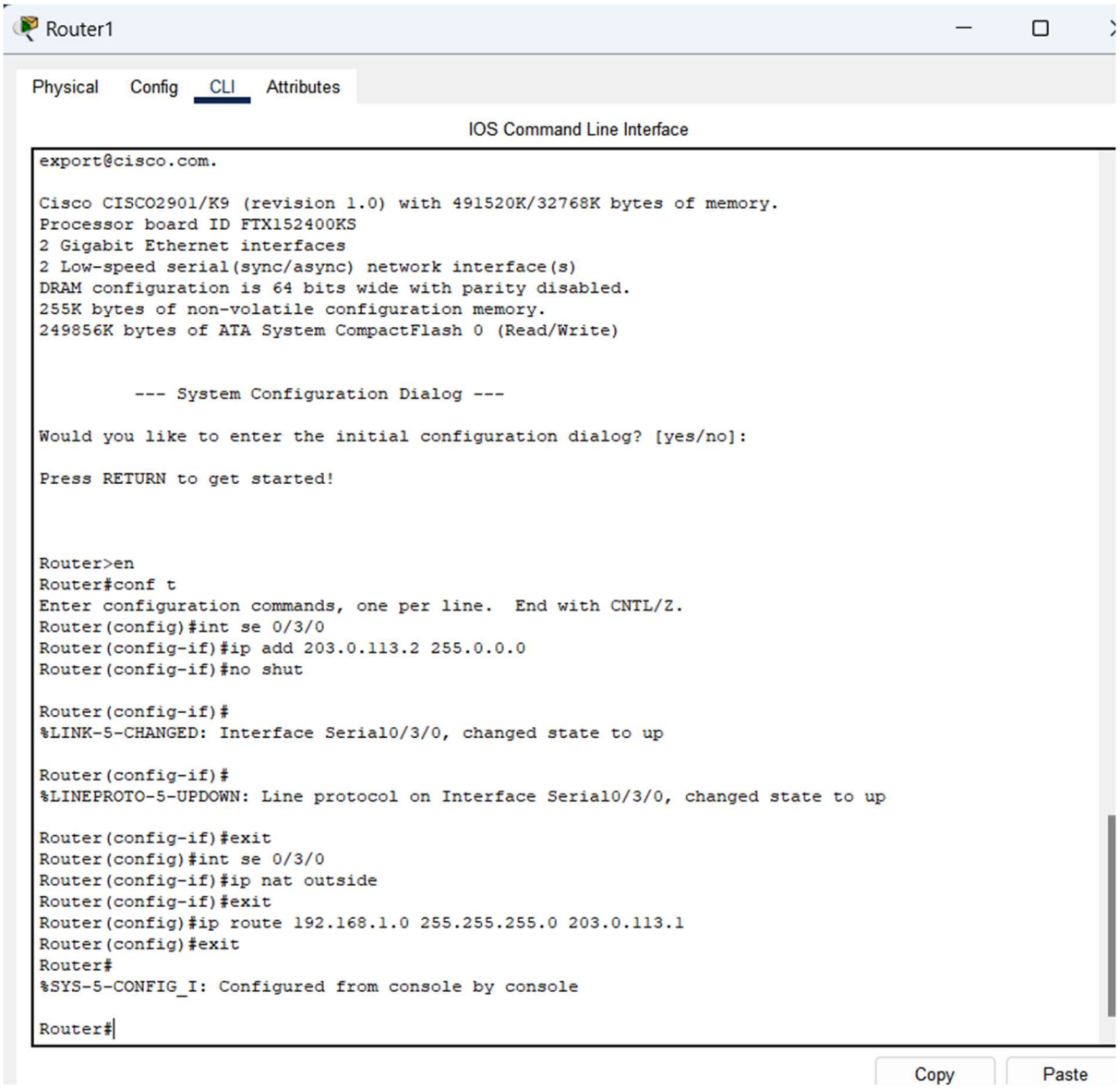
IOS Command Line Interface

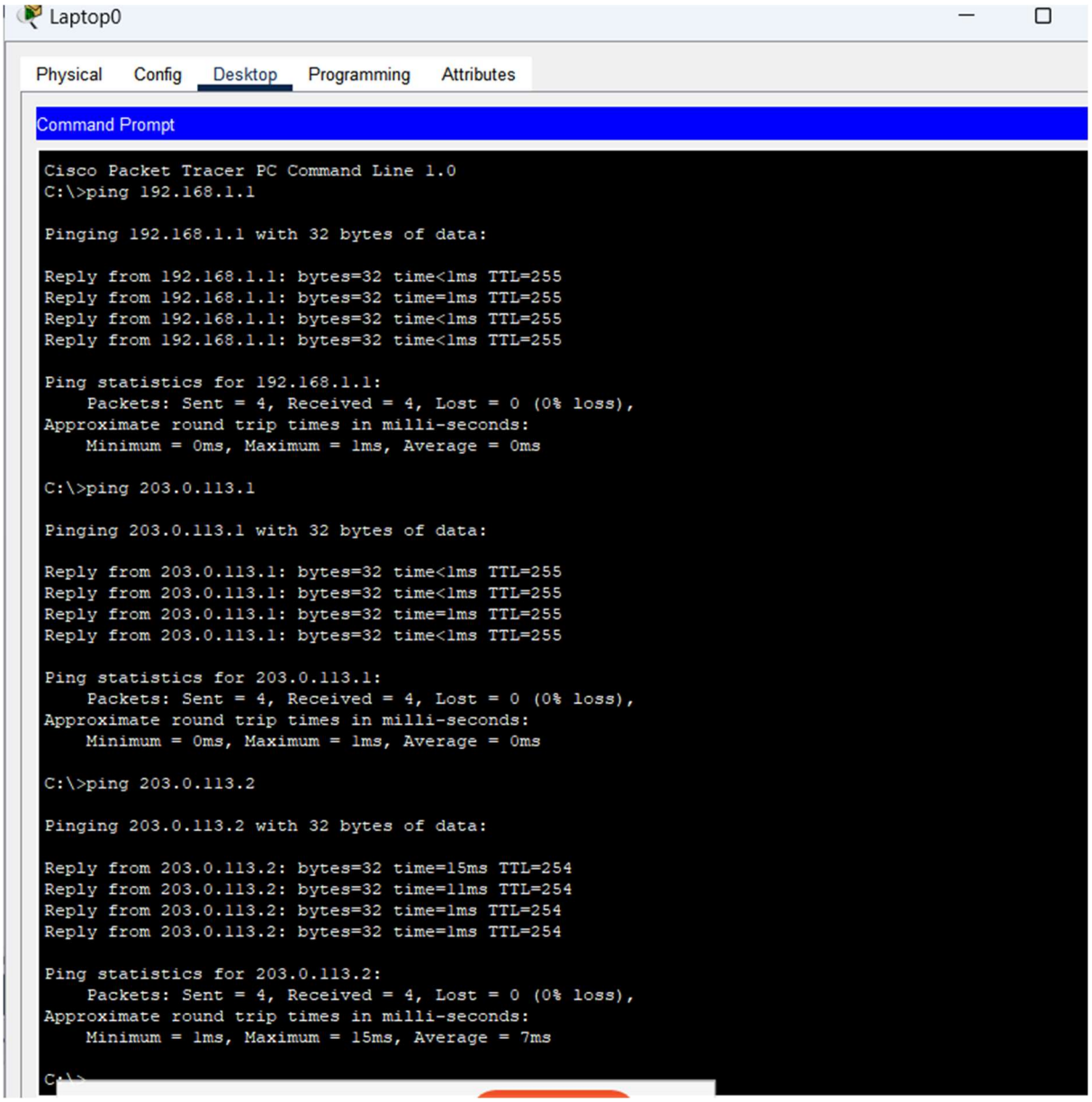
```
Press RETURN to get started!



Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

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

Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 203.0.113.1 255.0.0.0
Router(config-if)#clock rate 64000
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/3/0, changed state to down
Router(config-if)#
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router(config-if)#exit
Router(config)#int gig 0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 192.168.1.0 255.255.255.0 203.0.113.1
%Invalid next hop address (it's this router)
Router(config)#ip nat inside source static 192.168.1.2 203.0.113.3
Router(config)#ip nat inside source static 192.168.1.3 203.0.113.4
Router(config)#ip nat inside source static 192.168.1.4 203.0.113.5
Router(config)#exit
```

Physical Config CLI Attributes

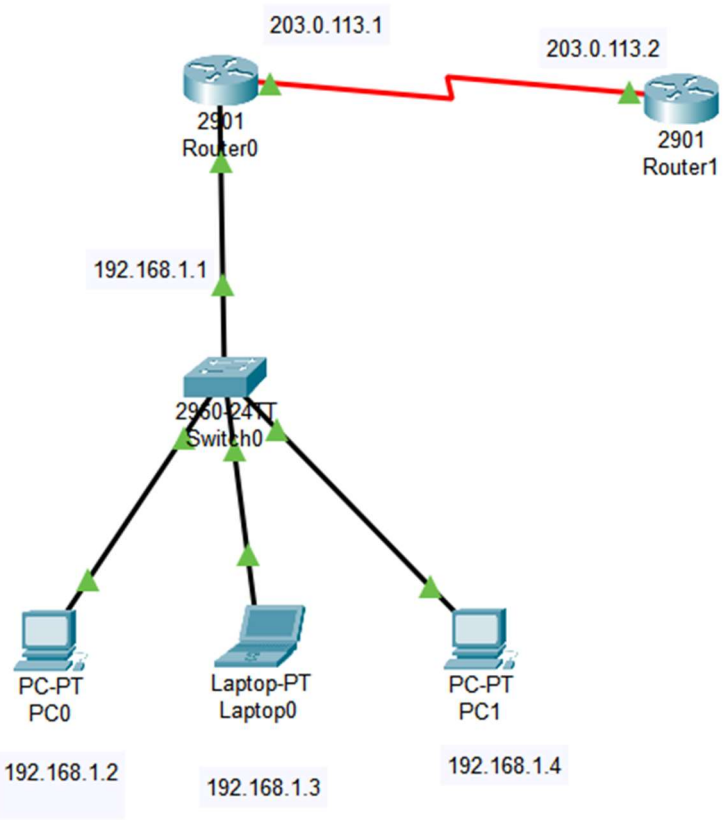
IOS Command Line Interface

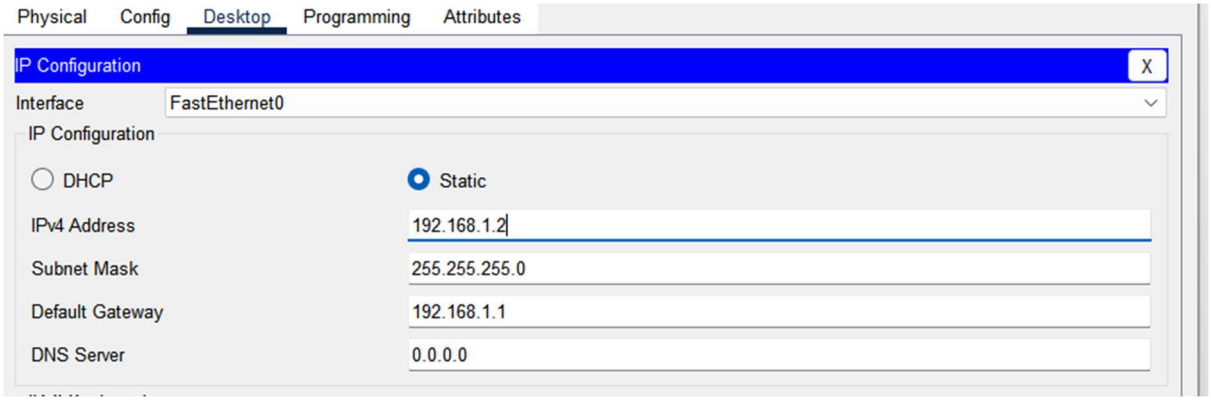
```
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 192.168.1.0 255.255.255.0 203.0.113.1
%Invalid next hop address (it's this router)
Router(config)#ip nat inside source static 192.168.1.2 203.0.113.3
Router(config)#ip nat inside source static 192.168.1.3 203.0.113.4
Router(config)#ip nat inside source static 192.168.1.4 203.0.113.5
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
Router#sh ip nat tr
Pro  Inside global     Inside local       Outside local      Outside global
---  203.0.113.3       192.168.1.2        ---                ---
---  203.0.113.4       192.168.1.3        ---                ---
---  203.0.113.5       192.168.1.4        ---                ---

Router#sh ip nat tr
Pro  Inside global     Inside local       Outside local      Outside global
---  203.0.113.3       192.168.1.2        ---                ---
---  203.0.113.4       192.168.1.3        ---                ---
---  203.0.113.5       192.168.1.4        ---                ---

Router#sh ip nat tr
Pro  Inside global     Inside local       Outside local      Outside global
icmp 203.0.113.4:10    192.168.1.3:10     203.0.113.2:10     203.0.113.2:10
icmp 203.0.113.4:11    192.168.1.3:11     203.0.113.2:11     203.0.113.2:11
icmp 203.0.113.4:12    192.168.1.3:12     203.0.113.2:12     203.0.113.2:12
icmp 203.0.113.4:9     192.168.1.3:9      203.0.113.2:9      203.0.113.2:9
---  203.0.113.3       192.168.1.2        ---                ---
---  203.0.113.4       192.168.1.3        ---                ---
---  203.0.113.5       192.168.1.4        ---                ---

Router#sh ip nat statistics
Total translations: 7 (3 static, 4 dynamic, 4 extended)
Outside Interfaces: Serial0/3/0
Inside Interfaces: GigabitEthernet0/0
Hits: 8  Misses: 8
Expired translations: 4
Dynamic mappings:
Router#S
```

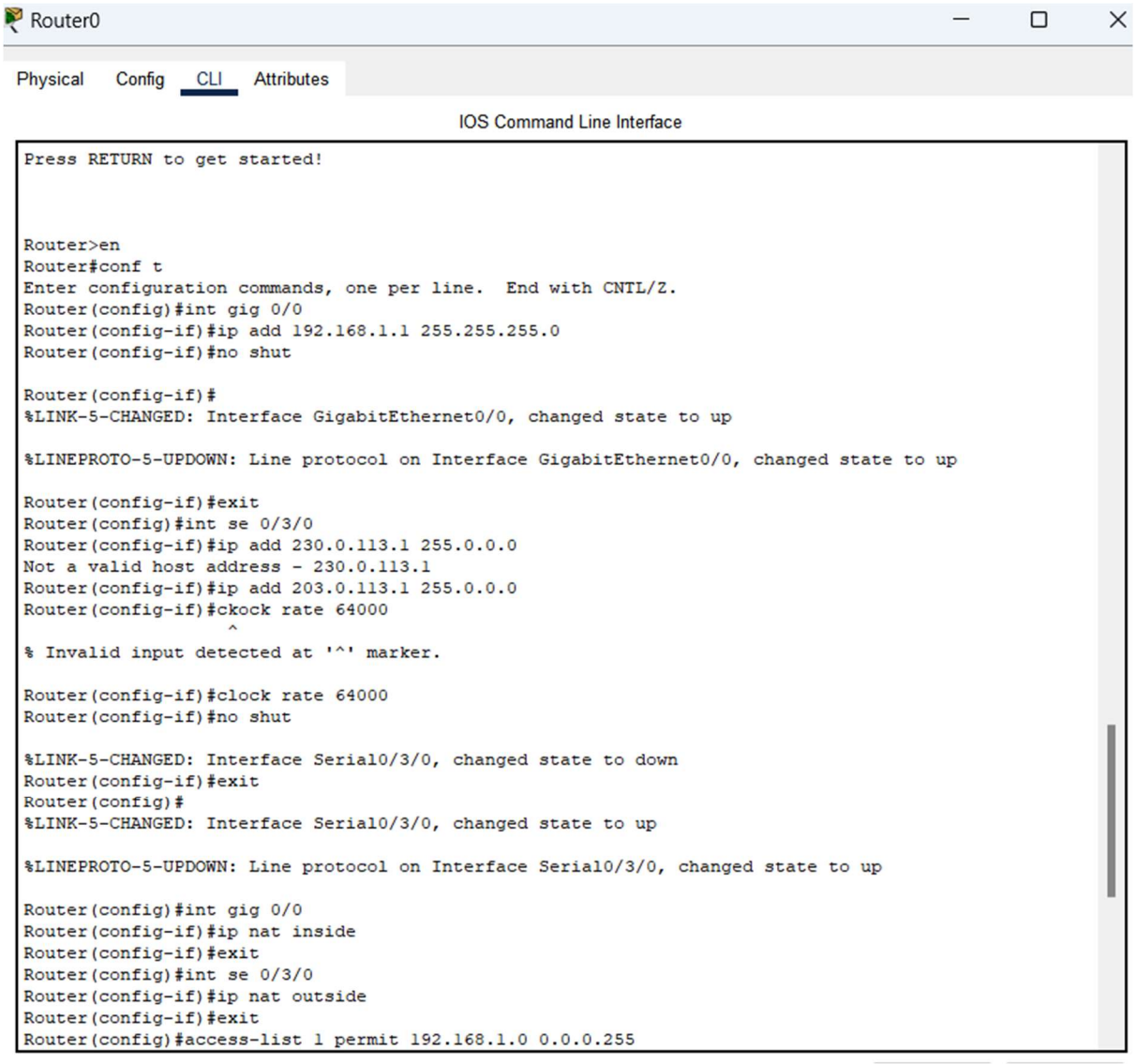

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
export@cisco.com.
Cisco CISCO2901/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
2 Gigabit Ethernet interfaces
2 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]:
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int se 0/3/0
Router(config-if)#ip add 203.0.113.2 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 192.168.1.0 255.255.255.0 203.0.113.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#
Copy
Paste


Laptop0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.1.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>ping 203.0.113.1
Pinging 203.0.113.1 with 32 bytes of data:
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time=1ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Ping statistics for 203.0.113.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>ping 203.0.113.2
Pinging 203.0.113.2 with 32 bytes of data:
Reply from 203.0.113.2: bytes=32 time=15ms TTL=254
Reply from 203.0.113.2: bytes=32 time=11ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254
Ping statistics for 203.0.113.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 15ms, Average = 7ms
C:\>

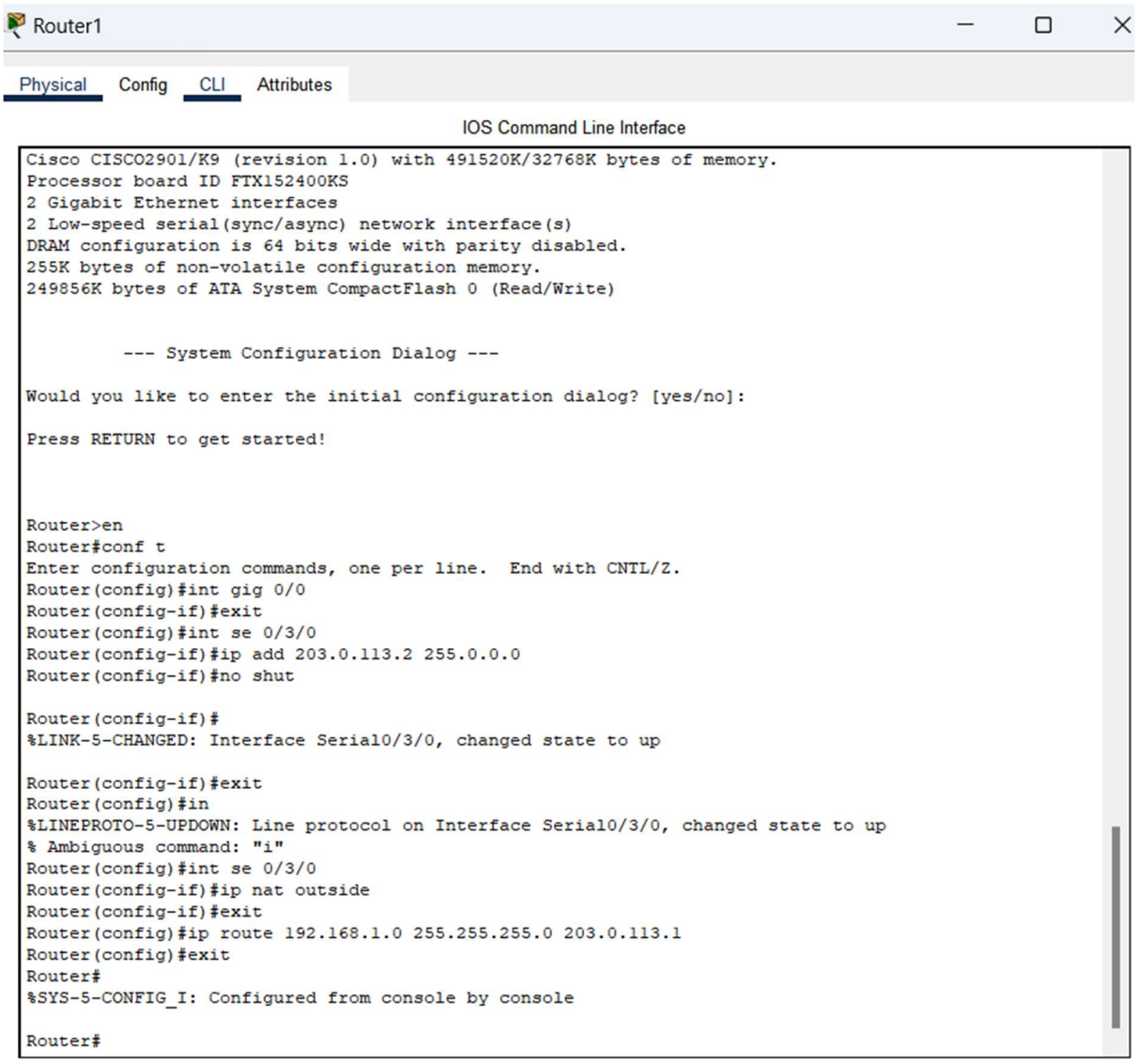
Pat


203.0.113.1
203.0.113.2
2901
Router0
2901
Router1
192.168.1.1
2950-24TT
Switch0
PC-PT
PC0
Laptop-PT
Laptop0
PC-PT
PC1
192.168.1.2
192.168.1.3
192.168.1.4


Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.1.1
DNS Server
0.0.0.0

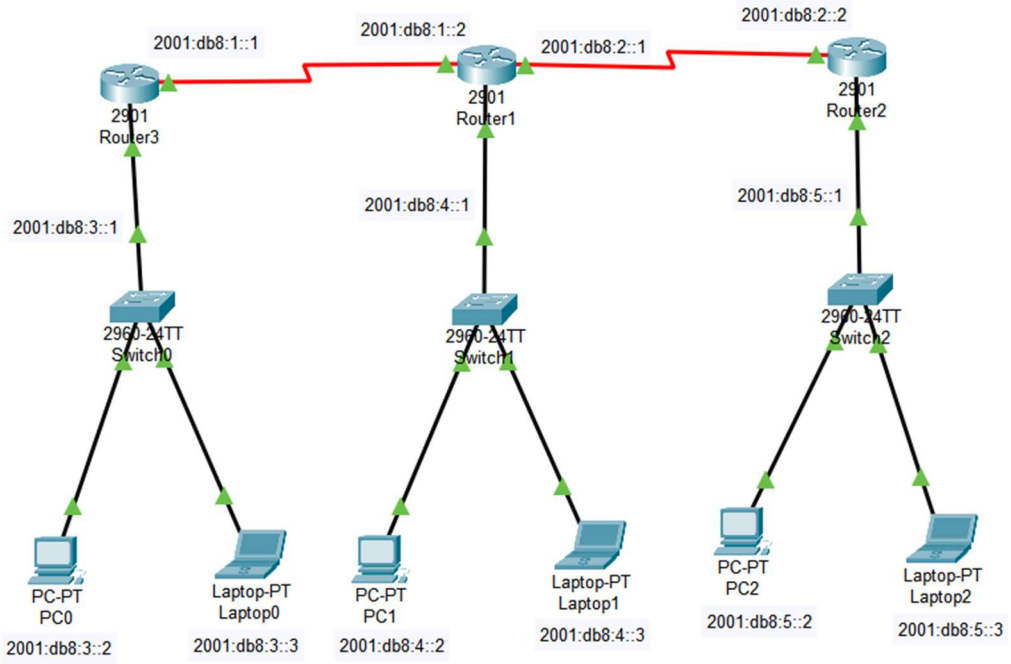

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 230.0.113.1 255.0.0.0
Not a valid host address - 230.0.113.1
Router(config-if)#ip add 203.0.113.1 255.0.0.0
Router(config-if)#ckock rate 64000
^
% Invalid input detected at '^' marker.
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
Router(config)#int gig 0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255

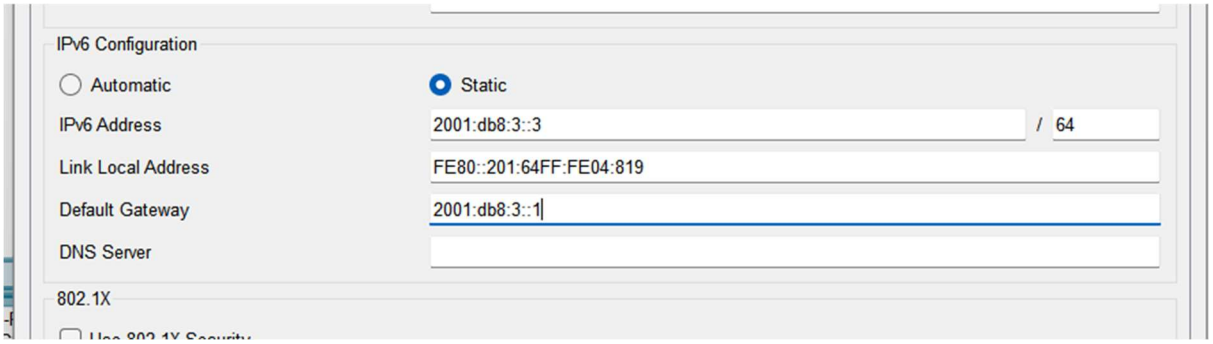
```
Router(config)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router(config)#int gig 0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255
Router(config)#ip nat inside source list 1 int se 0/3/0 overload
Router(config)#rxit
               ^
% Invalid input detected at '^' marker.

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

Router#
Router#sh ip nat tr
Router#sh ip nat tr
Pro  Inside global     Inside local       Outside local      Outside global
icmp 203.0.113.1:10    192.168.1.3:10     203.0.113.2:10     203.0.113.2:10
icmp 203.0.113.1:11    192.168.1.3:11     203.0.113.2:11     203.0.113.2:11
icmp 203.0.113.1:12    192.168.1.3:12     203.0.113.2:12     203.0.113.2:12
icmp 203.0.113.1:9     192.168.1.3:9      203.0.113.2:9      203.0.113.2:9

Router#sh ip nat statistics
Total translations: 4 (0 static, 4 dynamic, 4 extended)
Outside Interfaces: Serial0/3/0
Inside Interfaces: GigabitEthernet0/0
Hits: 4  Misses: 4
Expired translations: 0
Dynamic mappings:
Router#show access-list
Standard IP access list 1
    10 permit 192.168.1.0 0.0.0.255 (8 match(es))

Router#
```

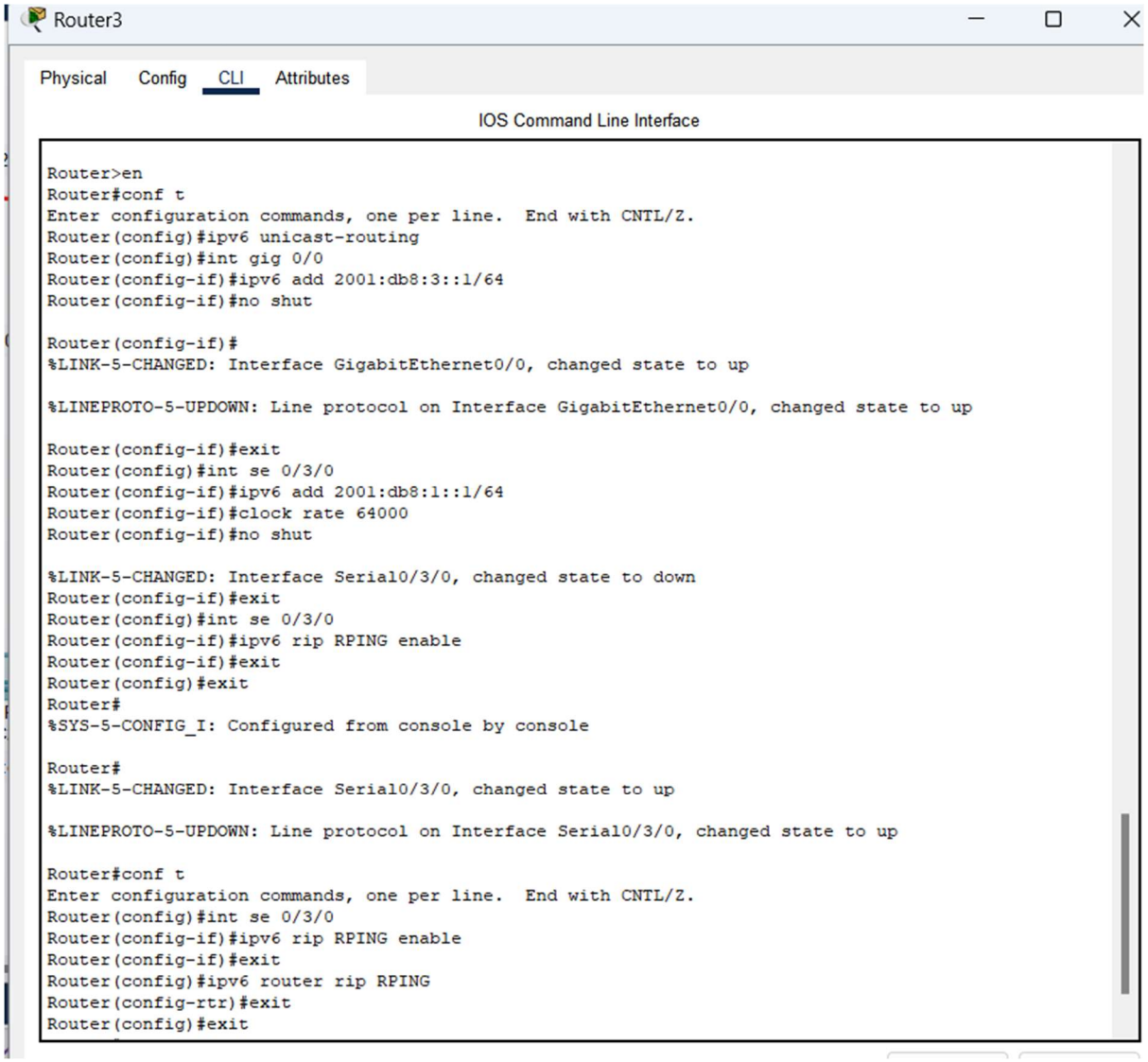

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Cisco CISCO2901/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
2 Gigabit Ethernet interfaces
2 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]:
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 203.0.113.2 255.0.0.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
Router(config-if)#exit
Router(config)#in
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
% Ambiguous command: "i"
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 192.168.1.0 255.255.255.0 203.0.113.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#

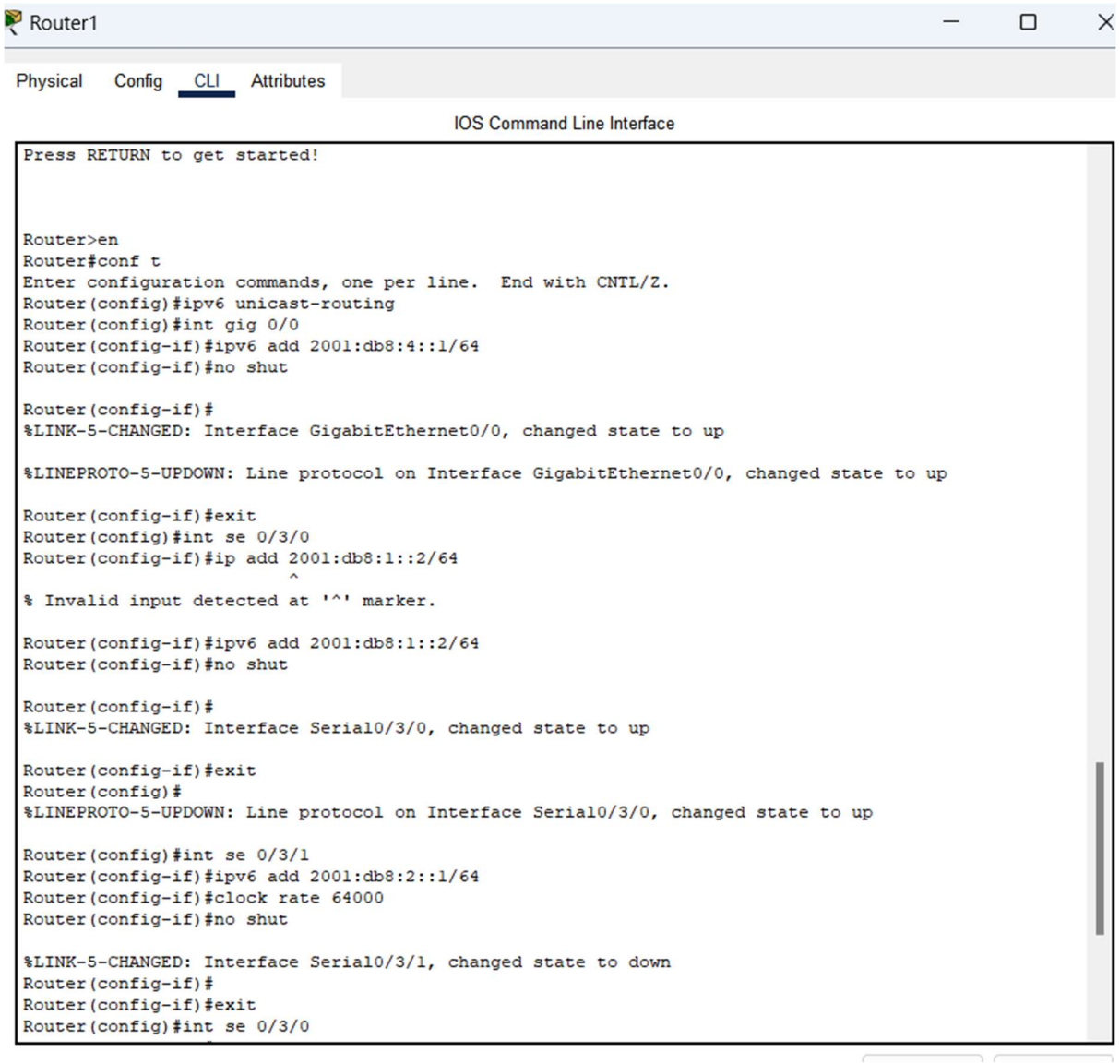
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 203.0.113.1

Pinging 203.0.113.1 with 32 bytes of data:

Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time=1ms TTL=255

Ping statistics for 203.0.113.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 203.0.113.2

Pinging 203.0.113.2 with 32 bytes of data:

Reply from 203.0.113.2: bytes=32 time=16ms TTL=254
Reply from 203.0.113.2: bytes=32 time=2ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254

Ping statistics for 203.0.113.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 16ms, Average = 5ms
```

Ipv6 rip


2001:db8:1::1
2001:db8:1::2
2001:db8:2::1
2001:db8:2::2
2901
Router3
2901
Router1
2901
Router2
2001:db8:3::1
2001:db8:4::1
2001:db8:5::1
2960-24TT
Switch0
2960-24TT
Switch1
2960-24TT
Switch2
PC-PT
PC0
2001:db8:3::2
Laptop-PT
Laptop0
2001:db8:3::3
PC-PT
PC1
2001:db8:4::2
Laptop-PT
Laptop1
2001:db8:4::3
PC-PT
PC2
2001:db8:5::2
Laptop-PT
Laptop2
2001:db8:5::3


IPv6 Configuration
Automatic
Static
IPv6 Address
2001:db8:3::3
/ 64
Link Local Address
FE80::201:64FF:FE04:819
Default Gateway
2001:db8:3::1
DNS Server
802.1X


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/0
Router(config-if)#ipv6 add 2001:db8:3::1/64
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ipv6 add 2001:db8:1::1/64
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to down
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ipv6 rip RPING enable
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int se 0/3/0
Router(config-if)#ipv6 rip RPING enable
Router(config-if)#exit
Router(config)#ipv6 router rip RPING
Router(config-rtr)#exit
Router(config)#exit

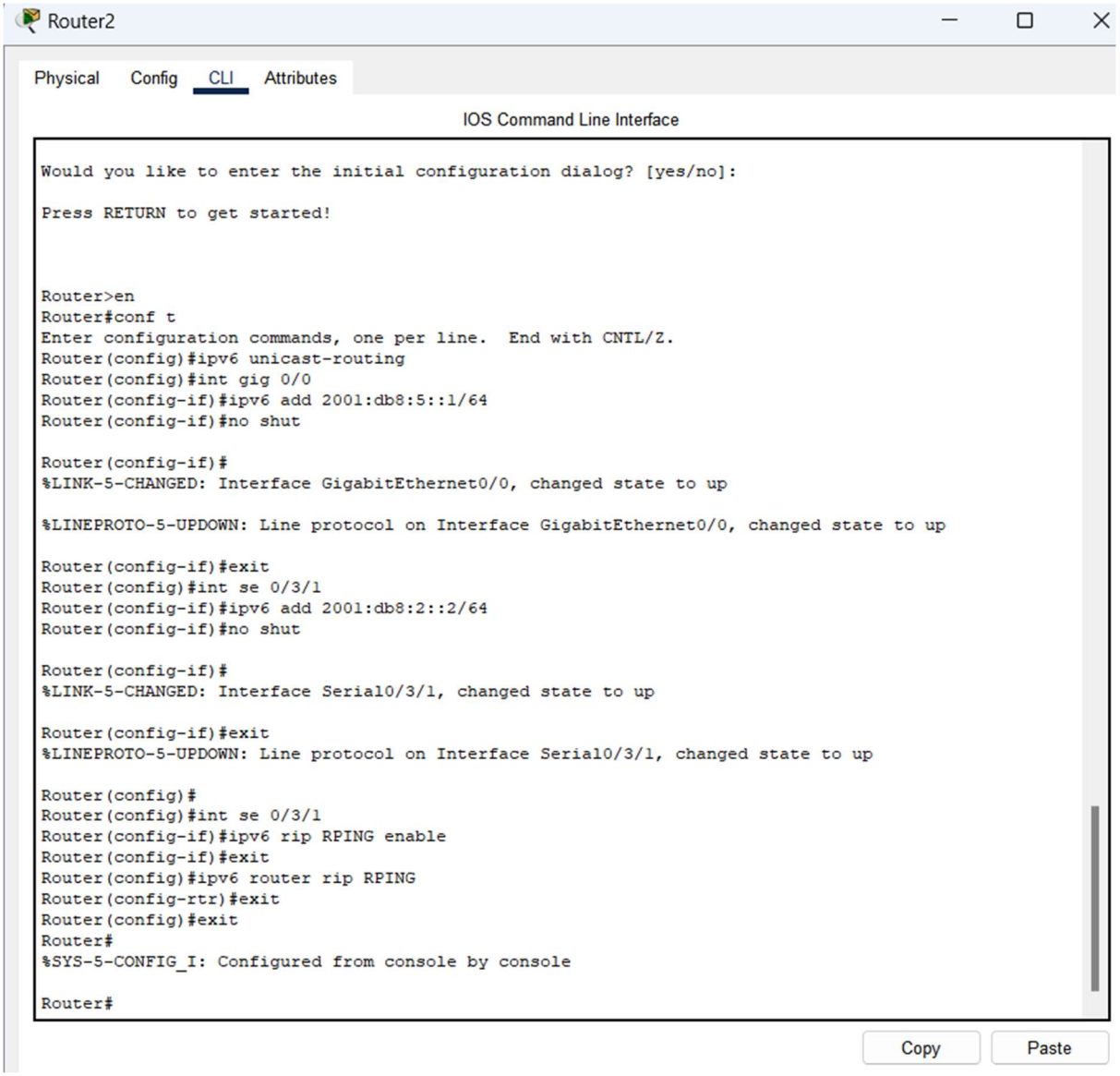

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/0
Router(config-if)#ipv6 add 2001:db8:4::1/64
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 2001:db8:1::2/64
^
% Invalid input detected at '^' marker.
Router(config-if)#ipv6 add 2001:db8:1::2/64
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
Router(config)#int se 0/3/1
Router(config-if)#ipv6 add 2001:db8:2::1/64
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to down
Router(config-if)#
Router(config-if)#exit
Router(config)#int se 0/3/0

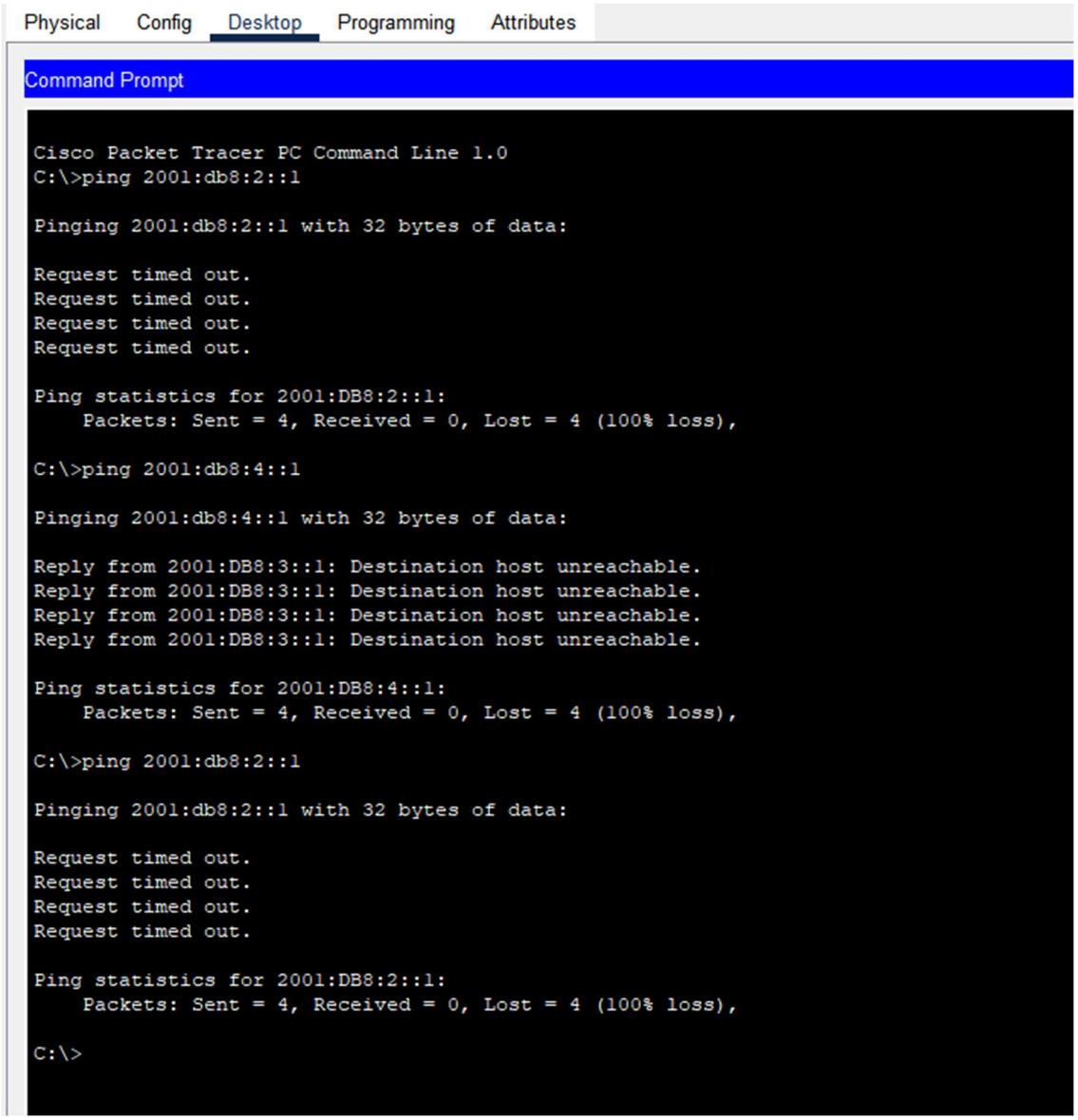
IOS Command Line Interface

```
Router(config-if)#ip add 2001:db8:1::2/64
                     ^
% Invalid input detected at '^' marker.

Router(config-if)#ipv6 add 2001:db8:1::2/64
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up

Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router(config)#int se 0/3/1
Router(config-if)#ipv6 add 2001:db8:2::1/64
Router(config-if)#clock rate 64000
Router(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/3/1, changed state to down
Router(config-if)#
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ipv6 rip RPING enable
Router(config-if)#exit
Router(config)#ipv6 router rip RPING
Router(config-rtr)#exit
Router(config)#
Router(config)#int se 0/3/1
Router(config-if)#ipv6 rip RPING enable
Router(config-if)#exit
Router(config)#ipv6 router rip RPING
Router(config-rtr)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
```

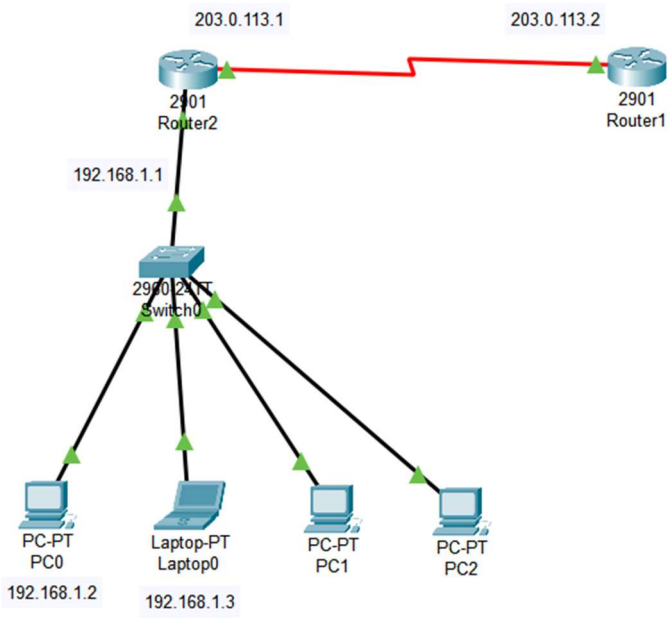
Copy Paste

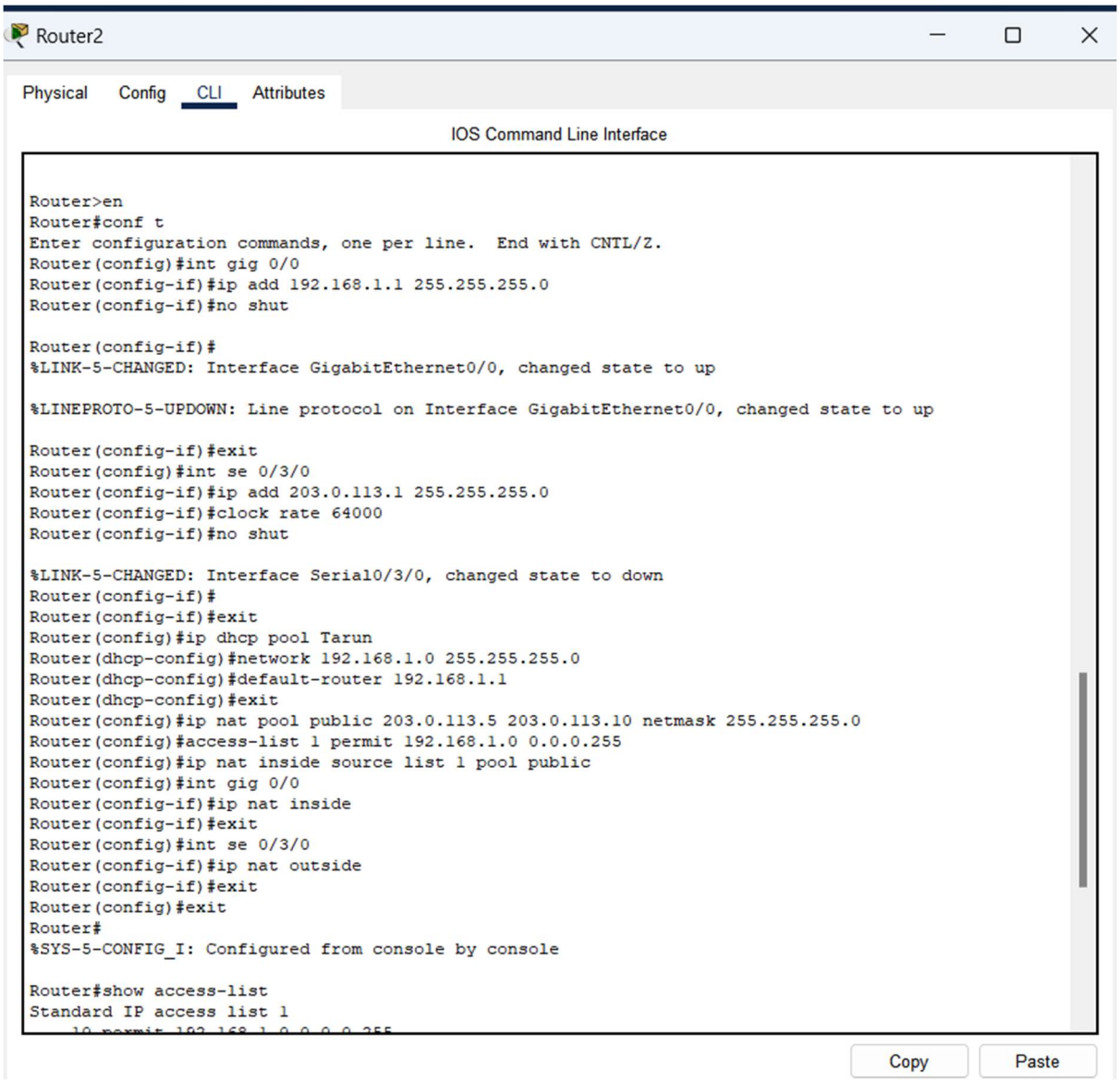
```
outer>en
outer#sh ipv6 route
Pv6 Routing Table - 7 entries
odes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
      U - Per-user Static route, M - MIPv6
      I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
      ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
      O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
      ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
      D - EIGRP, EX - EIGRP external
  2001:DB8:1::/64 [0/0]
     via Serial0/3/0, directly connected
  2001:DB8:1::2/128 [0/0]
     via Serial0/3/0, receive
  2001:DB8:2::/64 [0/0]
     via Serial0/3/1, directly connected
  2001:DB8:2::1/128 [0/0]
     via Serial0/3/1, receive
  2001:DB8:4::/64 [0/0]
     via GigabitEthernet0/0, directly connected
  2001:DB8:4::1/128 [0/0]
     via GigabitEthernet0/0, receive
  FF00::/8 [0/0]
     via Null0, receive
outer#
```


Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Would you like to enter the initial configuration dialog? [yes/no]:
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int gig 0/0
Router(config-if)#ipv6 add 2001:db8:5::1/64
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/1
Router(config-if)#ipv6 add 2001:db8:2::2/64
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/1, changed state to up
Router(config-if)#exit
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/1, changed state to up
Router(config)#
Router(config)#int se 0/3/1
Router(config-if)#ipv6 rip RPING enable
Router(config-if)#exit
Router(config)#ipv6 router rip RPING
Router(config-rtr)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#
Copy
Paste


Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 2001:db8:2::1
Pinging 2001:db8:2::1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 2001:DB8:2::1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 2001:db8:4::1
Pinging 2001:db8:4::1 with 32 bytes of data:
Reply from 2001:DB8:3::1: Destination host unreachable.
Reply from 2001:DB8:3::1: Destination host unreachable.
Reply from 2001:DB8:3::1: Destination host unreachable.
Reply from 2001:DB8:3::1: Destination host unreachable.
Ping statistics for 2001:DB8:4::1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>ping 2001:db8:2::1
Pinging 2001:db8:2::1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 2001:DB8:2::1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>

Dynamic nat


203.0.113.1
203.0.113.2
2901
Router2
2901
Router1
192.168.1.1
2960-24TT
Switch0
PC-PT
PC0
192.168.1.2
Laptop-PT
Laptop0
192.168.1.3
PC-PT
PC1
PC-PT
PC2


Router2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int gig 0/0
Router(config-if)#ip add 192.168.1.1 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip add 203.0.113.1 255.255.255.0
Router(config-if)#clock rate 64000
Router(config-if)#no shut
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to down
Router(config-if)#
Router(config-if)#exit
Router(config)#ip dhcp pool Tarun
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#exit
Router(config)#ip nat pool public 203.0.113.5 203.0.113.10 netmask 255.255.255.0
Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255
Router(config)#ip nat inside source list 1 pool public
Router(config)#int gig 0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#show access-list
Standard IP access list 1
Copy
Paste

```
Router(dhcp-config)#exit
Router(config)#ip nat pool public 203.0.113.5 203.0.113.10 netmask 255.255.255.0
Router(config)#access-list 1 permit 192.168.1.0 0.0.0.255
Router(config)#ip nat inside source list 1 pool public
Router(config)#int gig 0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#int se 0/3/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show access-list
Standard IP access list 1
    10 permit 192.168.1.0 0.0.0.255

Router#
Router#
Router#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up

Router#sh ip nat tr
Pro  Inside global     Inside local       Outside local      Outside global
icmp 203.0.113.5:10    192.168.1.3:10     203.0.113.2:10     203.0.113.2:10
icmp 203.0.113.5:11    192.168.1.3:11     203.0.113.2:11     203.0.113.2:11
icmp 203.0.113.5:12    192.168.1.3:12     203.0.113.2:12     203.0.113.2:12
icmp 203.0.113.5:9     192.168.1.3:9      203.0.113.2:9      203.0.113.2:9

Router#%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged 192.168.1.2.
%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged 192.168.1.3.

Router#sh ip nat tr
Router#sh ip nat tr
Router#sh ip nat tr
Router#
```

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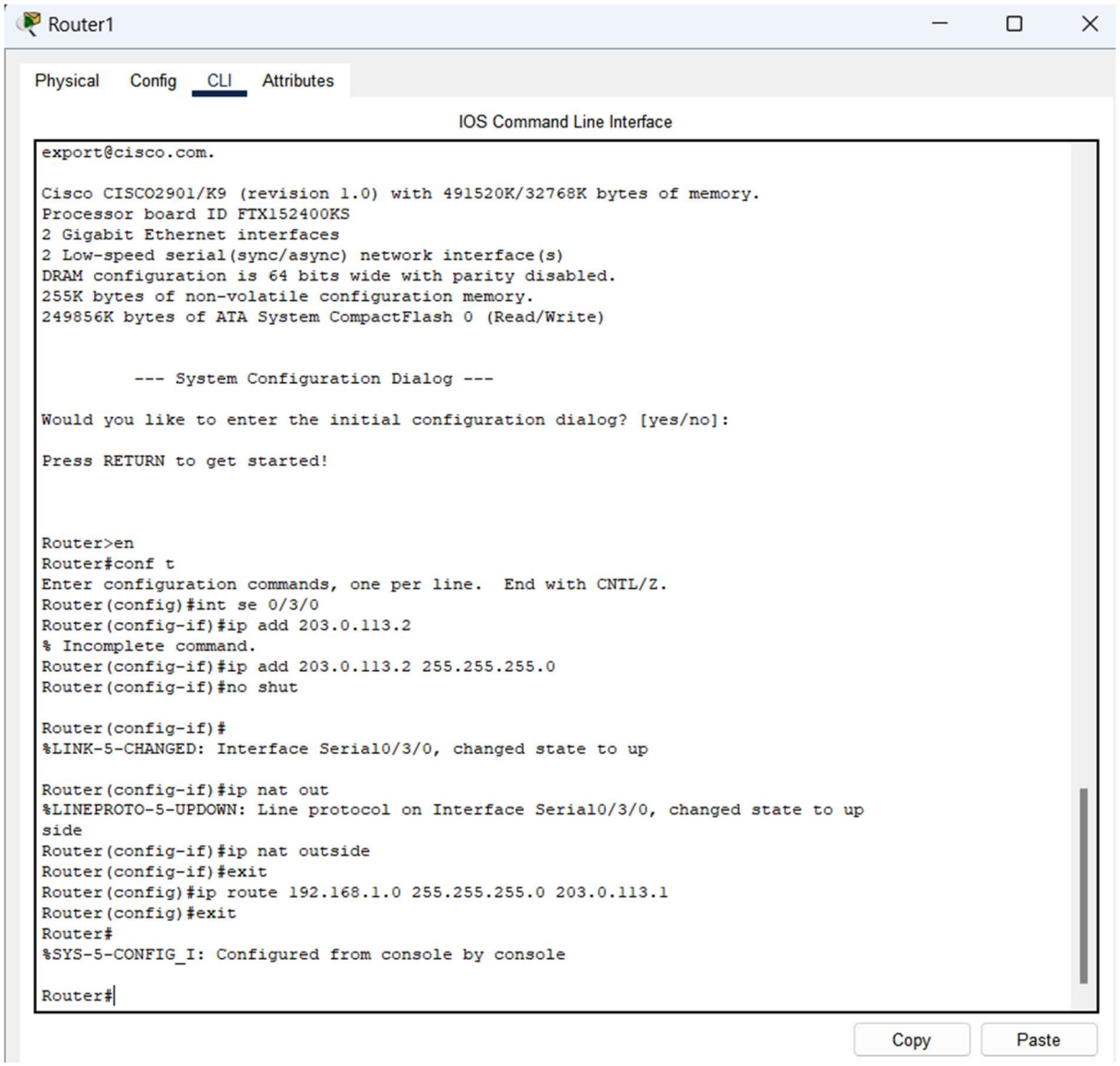
Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
export@cisco.com.
Cisco CISCO2901/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
2 Gigabit Ethernet interfaces
2 Low-speed serial(sync/async) network interface(s)
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)
--- System Configuration Dialog ---
Would you like to enter the initial configuration dialog? [yes/no]:
Press RETURN to get started!
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int se 0/3/0
Router(config-if)#ip add 203.0.113.2
% Incomplete command.
Router(config-if)#ip add 203.0.113.2 255.255.255.0
Router(config-if)#no shut
Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/3/0, changed state to up
Router(config-if)#ip nat out
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed state to up
side
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip route 192.168.1.0 255.255.255.0 203.0.113.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
Router#
Copy
Paste

```
C:\>ping 203.0.113.1

Pinging 203.0.113.1 with 32 bytes of data:

Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time=16ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255
Reply from 203.0.113.1: bytes=32 time<1ms TTL=255

Ping statistics for 203.0.113.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 16ms, Average = 4ms

C:\>ping 203.0.113.2

Pinging 203.0.113.2 with 32 bytes of data:

Reply from 203.0.113.2: bytes=32 time=15ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254
Reply from 203.0.113.2: bytes=32 time=1ms TTL=254

Ping statistics for 203.0.113.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 15ms, Average = 4ms

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=9ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms
```