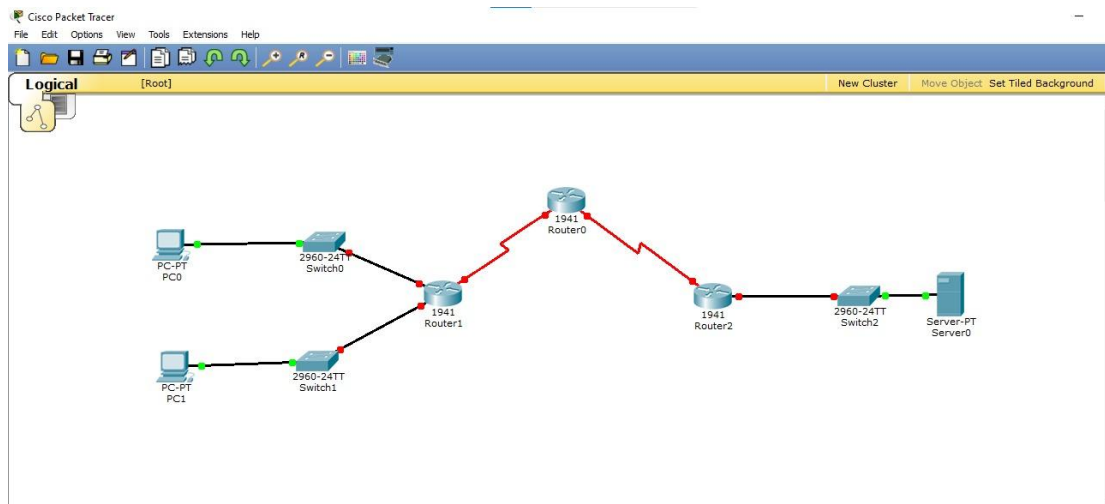


Practical 5

Aim:Configuring IPv6 ACLs

TOPOLOGY DIAGRAM



ASSIGNNING IP ADRESSES

PC1

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address

IPv6 Gateway

IPv6 DNS Server

PC2

IP Configuration

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address

IPv6 Gateway

IPv6 DNS Server

server1

Physical Config Desktop Custom Interface

IP Configuration

Interface

IP Configuration

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

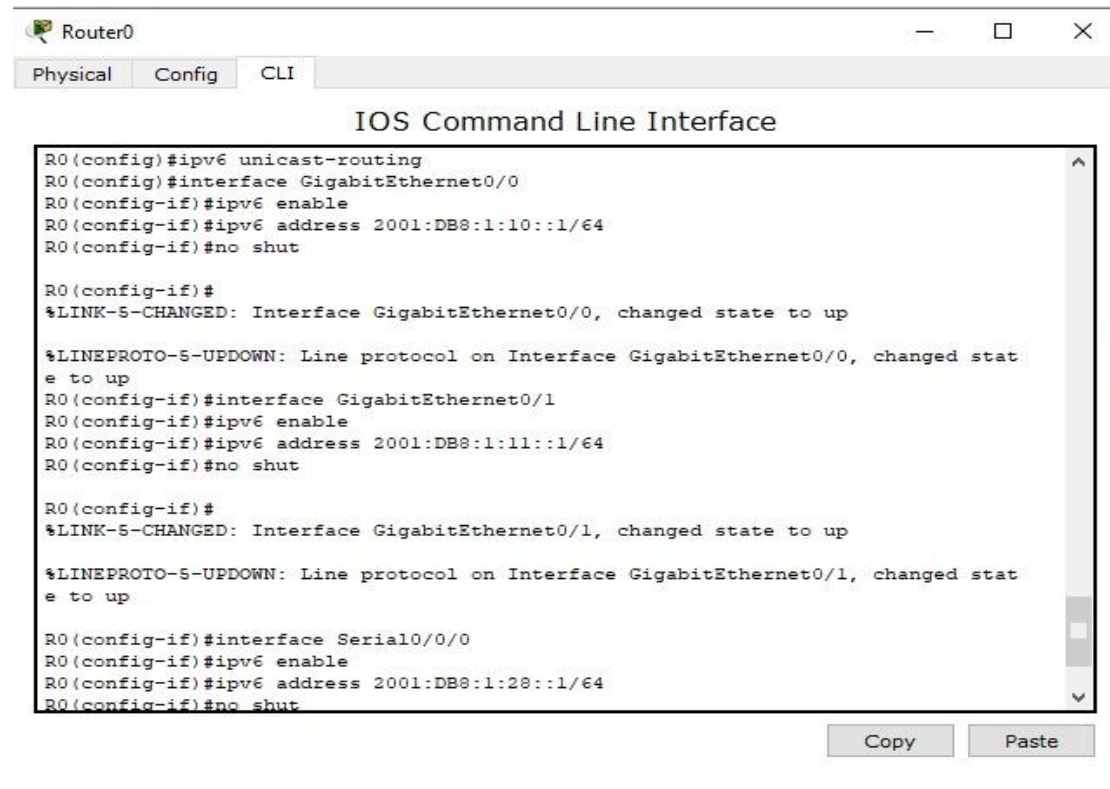
☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address

IPv6 Gateway

IPv6 DNS Server



Router0

Physical Config CLI

IOS Command Line Interface

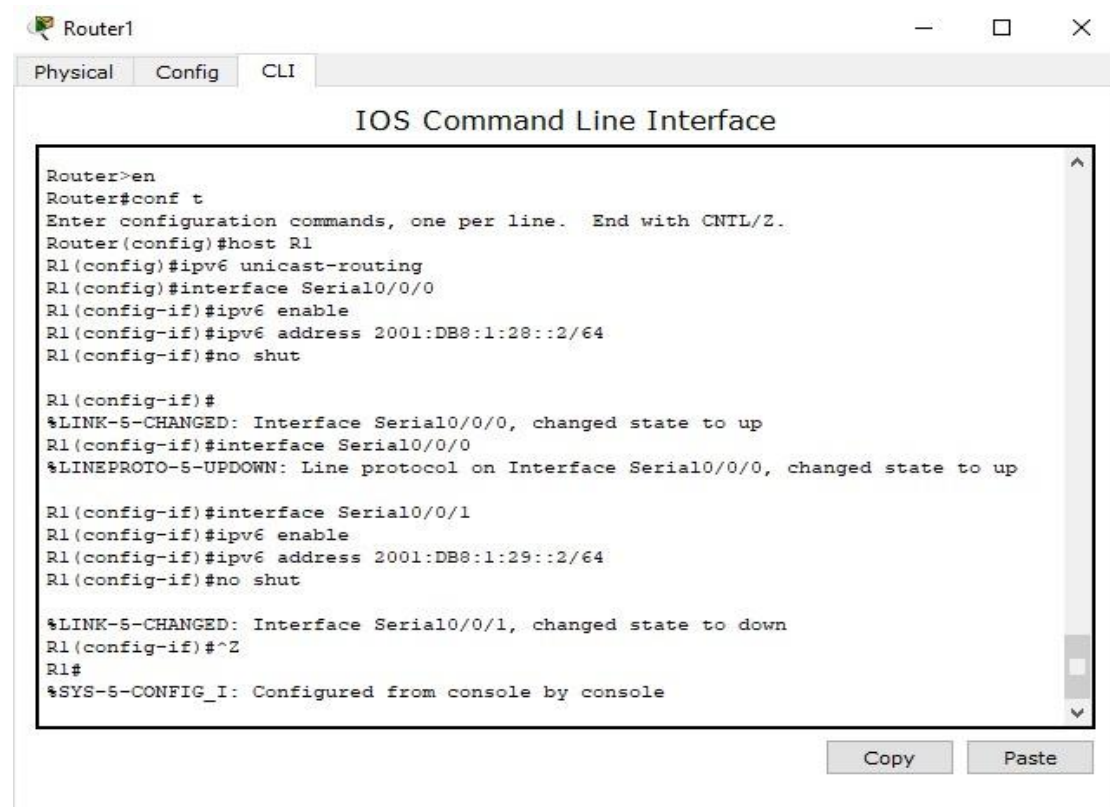
```
R0(config)#ipv6 unicast-routing
R0(config)#interface GigabitEthernet0/0
R0(config-if)#ipv6 enable
R0(config-if)#ipv6 address 2001:DB8:1:10::1/64
R0(config-if)#no shut

R0(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
R0(config-if)#interface GigabitEthernet0/1
R0(config-if)#ipv6 enable
R0(config-if)#ipv6 address 2001:DB8:1:11::1/64
R0(config-if)#no shut

R0(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

R0(config-if)#interface Serial0/0/0
R0(config-if)#ipv6 enable
R0(config-if)#ipv6 address 2001:DB8:1:28::1/64
R0(config-if)#no shut
```

Copy Paste



Router1

Physical Config CLI

IOS Command Line Interface

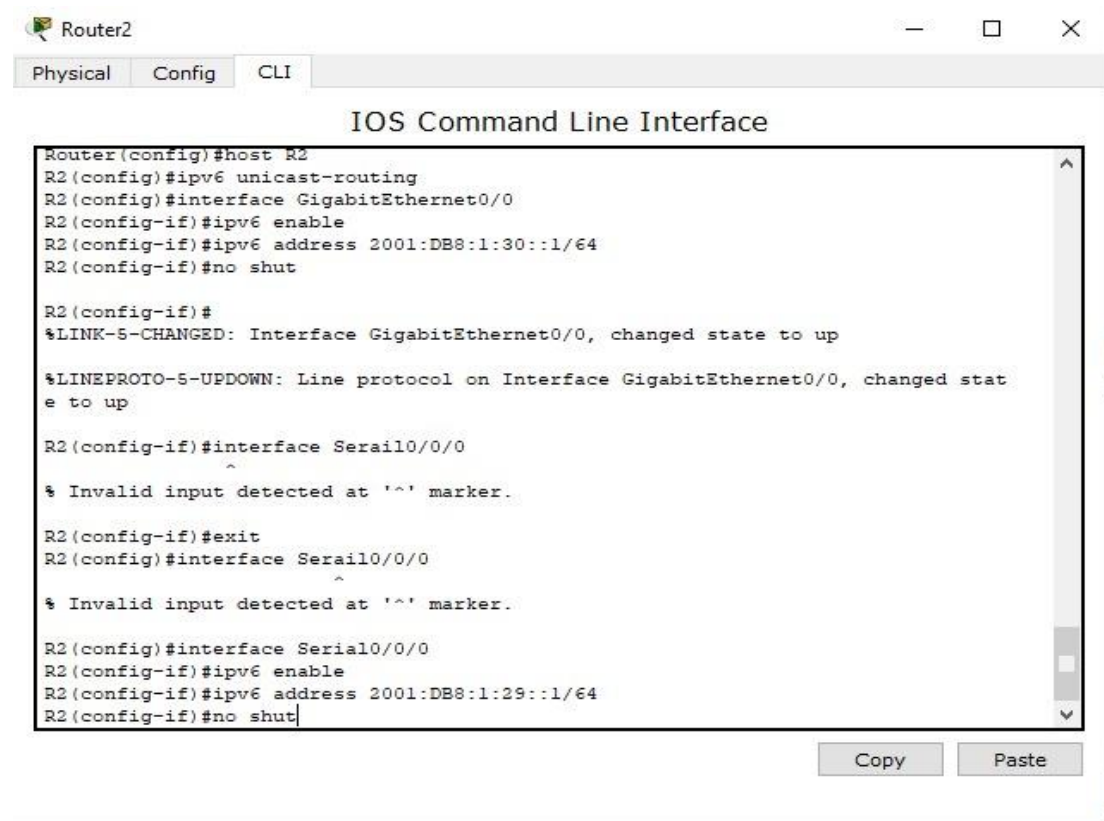
```
Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#host R1
R1(config)#ipv6 unicast-routing
R1(config)#interface Serial0/0/0
R1(config-if)#ipv6 enable
R1(config-if)#ipv6 address 2001:DB8:1:28::2/64
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
R1(config-if)#interface Serial0/0/0
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

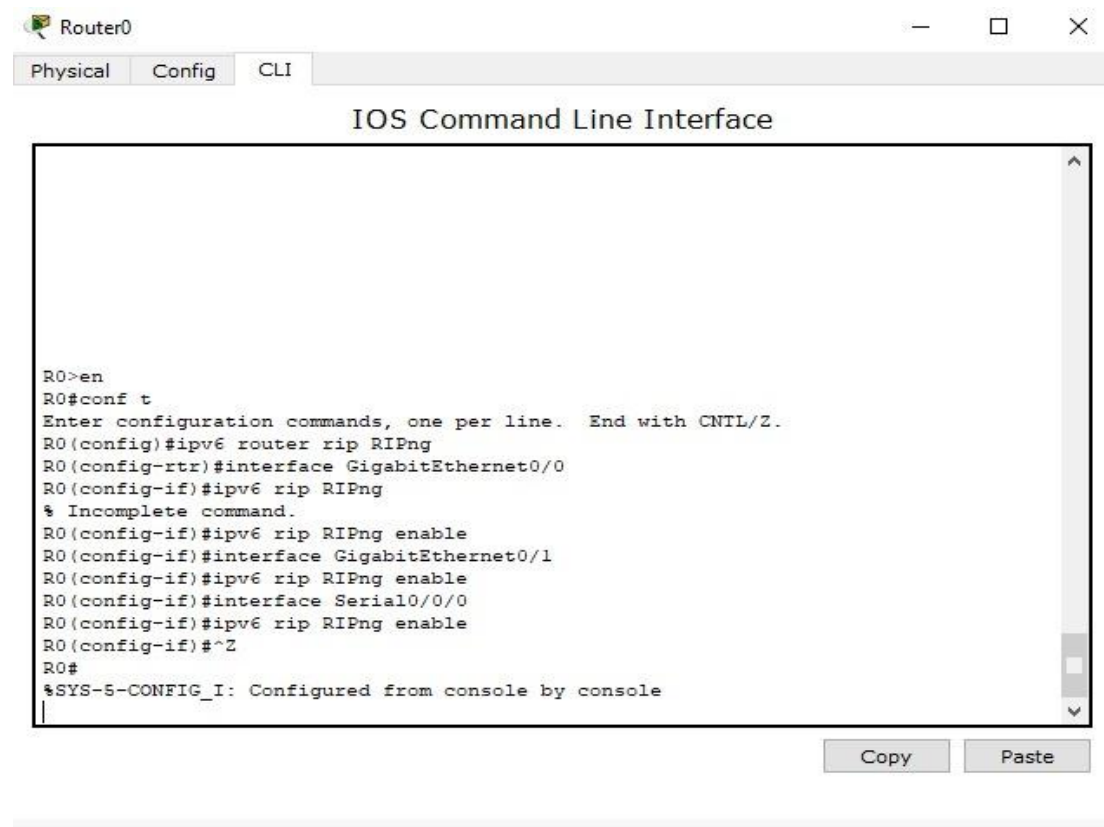
R1(config-if)#interface Serial0/0/1
R1(config-if)#ipv6 enable
R1(config-if)#ipv6 address 2001:DB8:1:29::2/64
R1(config-if)#no shut

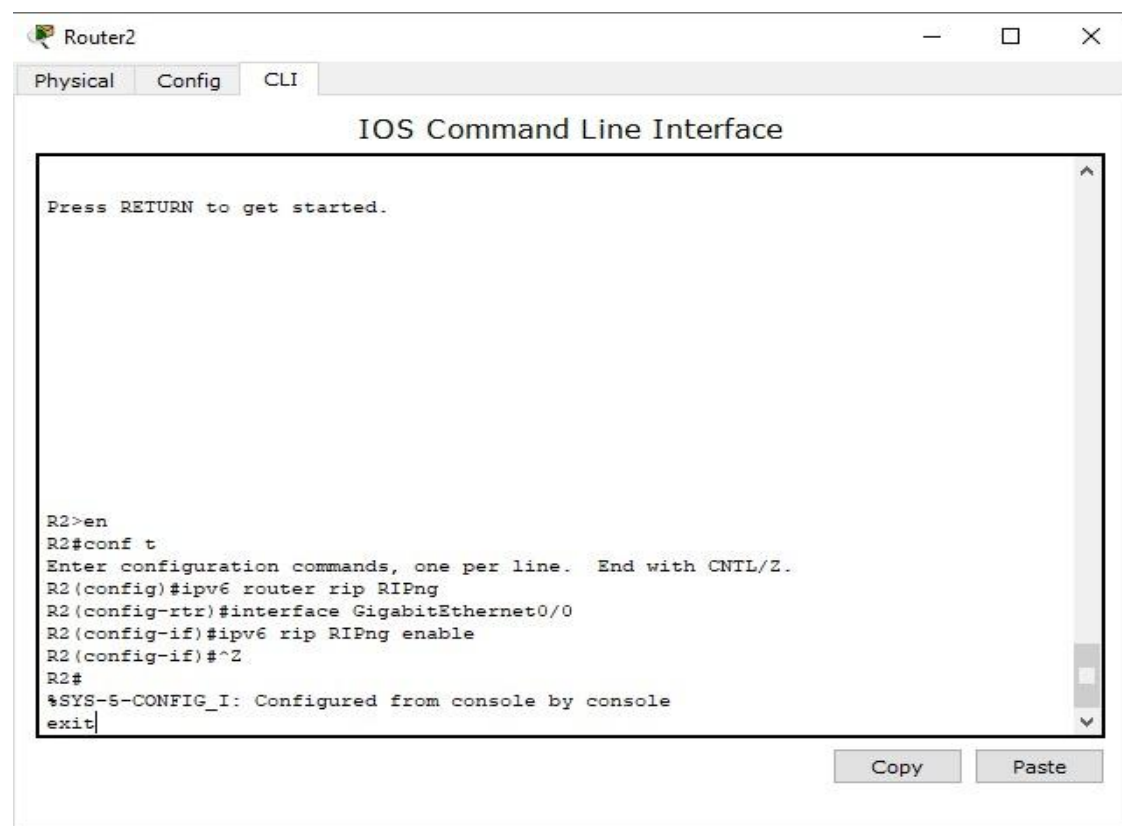
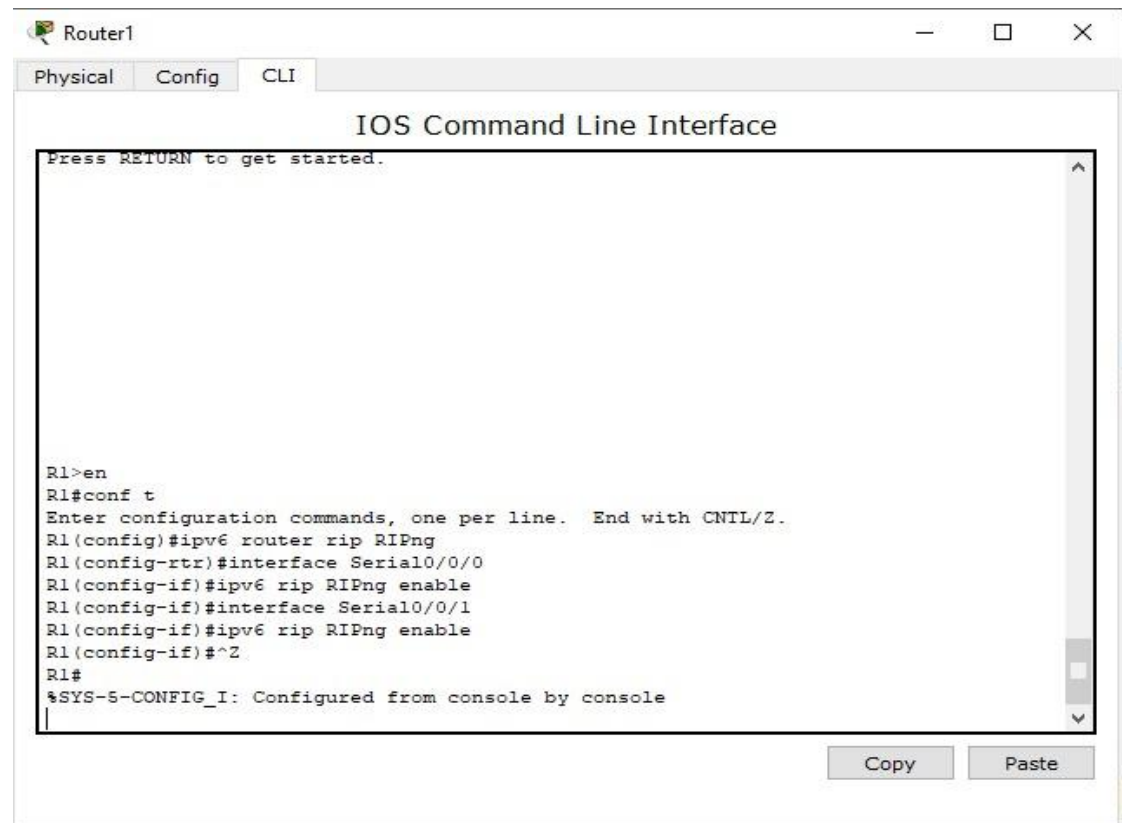
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
R1(config-if)#^Z
R1#
%SYS-5-CONFIG_I: Configured from console by console
```

Copy Paste

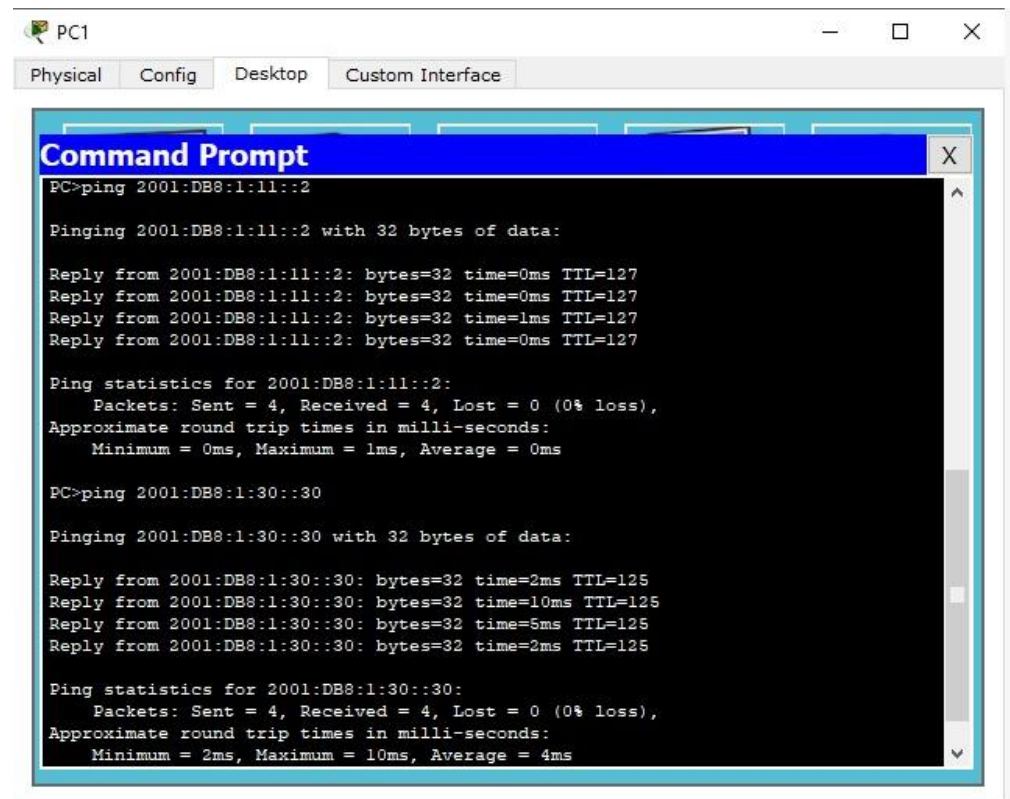


CONFIGURING RIPng ON ROUTERS





CHECKING THE NETWORK CONNECTIVITY



The screenshot shows a Windows Command Prompt window titled "PC1" with tabs for "Physical", "Config", "Desktop", and "Custom Interface". The command prompt displays the results of two ping commands. The first command is "PC>ping 2001:DB8:1:11::2", which shows four successful replies with 0ms response times and a TTL of 127. The second command is "PC>ping 2001:DB8:1:30::30", which shows four successful replies with response times of 2ms, 10ms, 5ms, and 2ms, and a TTL of 125. Both tests show 0% packet loss.

```
PC1
Physical Config Desktop Custom Interface

Command Prompt
PC>ping 2001:DB8:1:11::2

Pinging 2001:DB8:1:11::2 with 32 bytes of data:

Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=1ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127

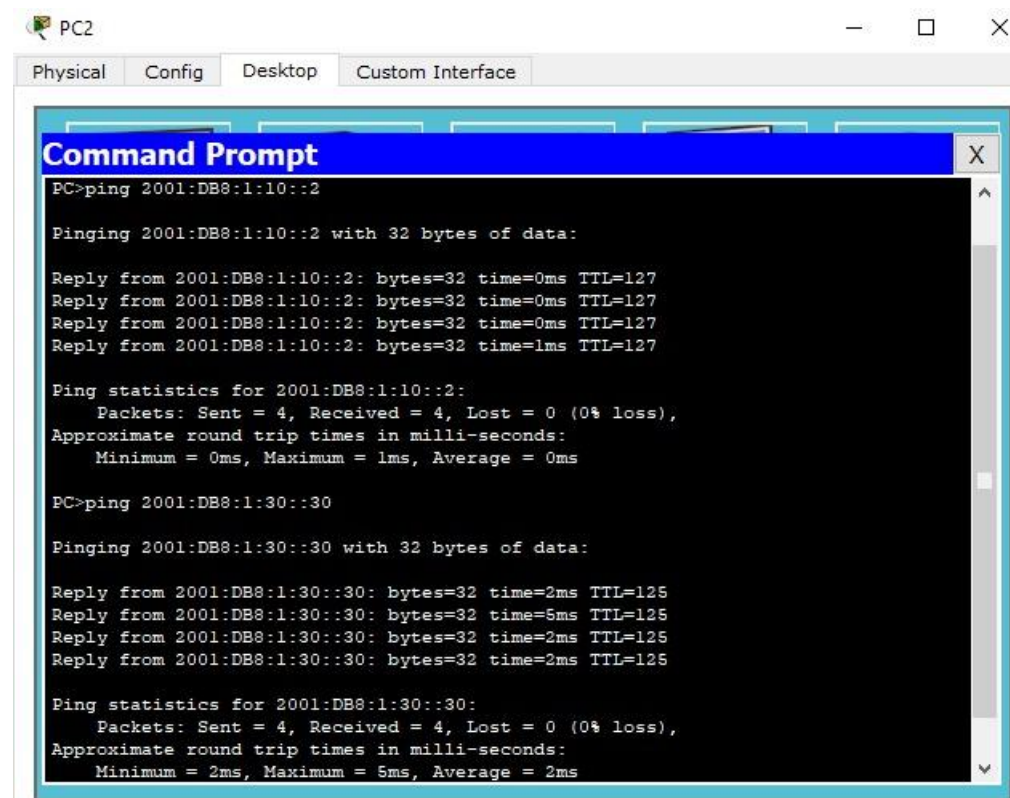
Ping statistics for 2001:DB8:1:11::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 2001:DB8:1:30::30

Pinging 2001:DB8:1:30::30 with 32 bytes of data:

Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=10ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=5ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125

Ping statistics for 2001:DB8:1:30::30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 10ms, Average = 4ms
```



The screenshot shows a Windows Command Prompt window titled "PC2" with tabs for "Physical", "Config", "Desktop", and "Custom Interface". The command prompt displays the results of two ping commands. The first command is "PC>ping 2001:DB8:1:10::2", which shows four successful replies with 0ms response times and a TTL of 127. The second command is "PC>ping 2001:DB8:1:30::30", which shows four successful replies with response times of 2ms, 5ms, 2ms, and 2ms, and a TTL of 125. Both tests show 0% packet loss.

```
PC2
Physical Config Desktop Custom Interface

Command Prompt
PC>ping 2001:DB8:1:10::2

Pinging 2001:DB8:1:10::2 with 32 bytes of data:

Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=1ms TTL=127

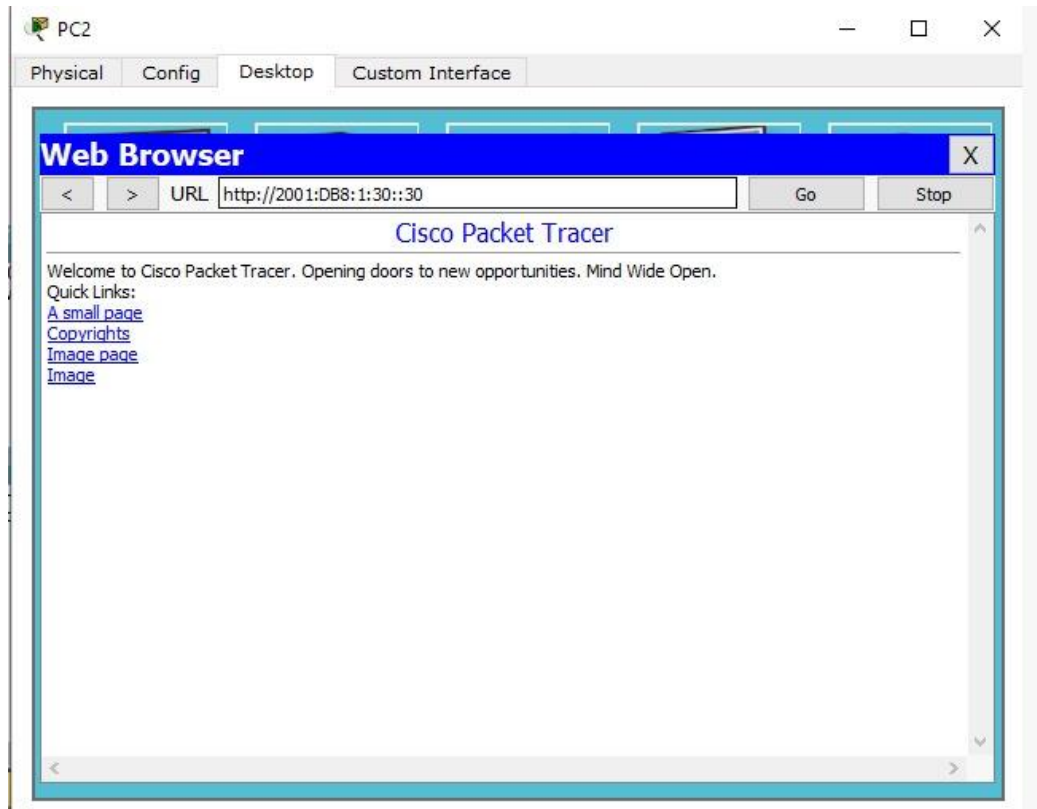
Ping statistics for 2001:DB8:1:10::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 2001:DB8:1:30::30

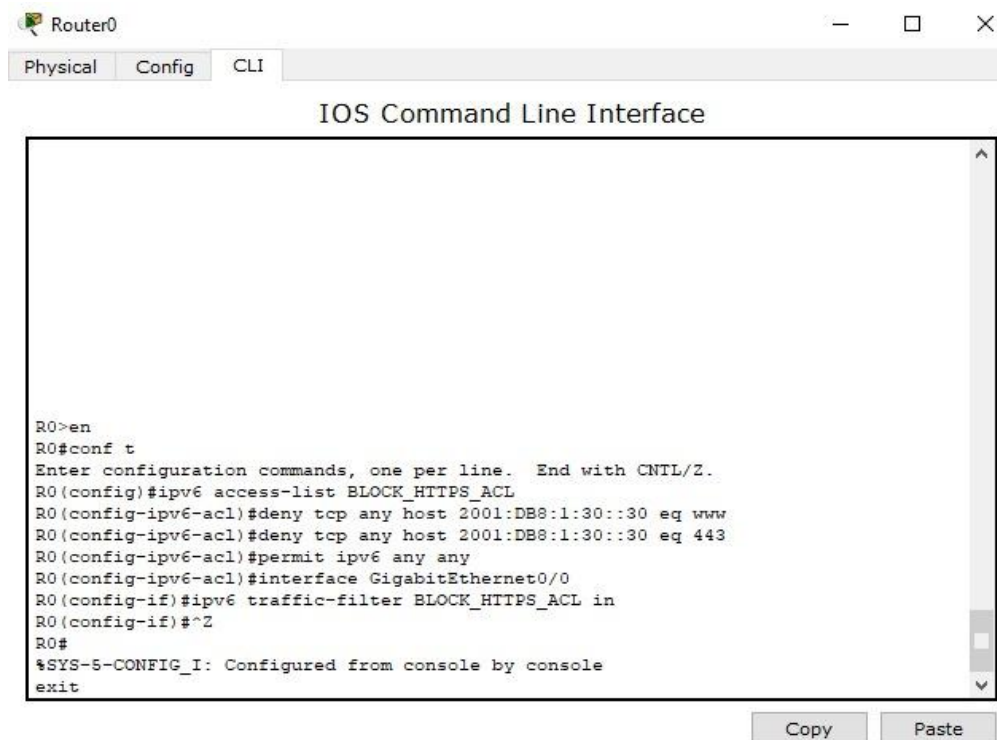
Pinging 2001:DB8:1:30::30 with 32 bytes of data:

Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=5ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125

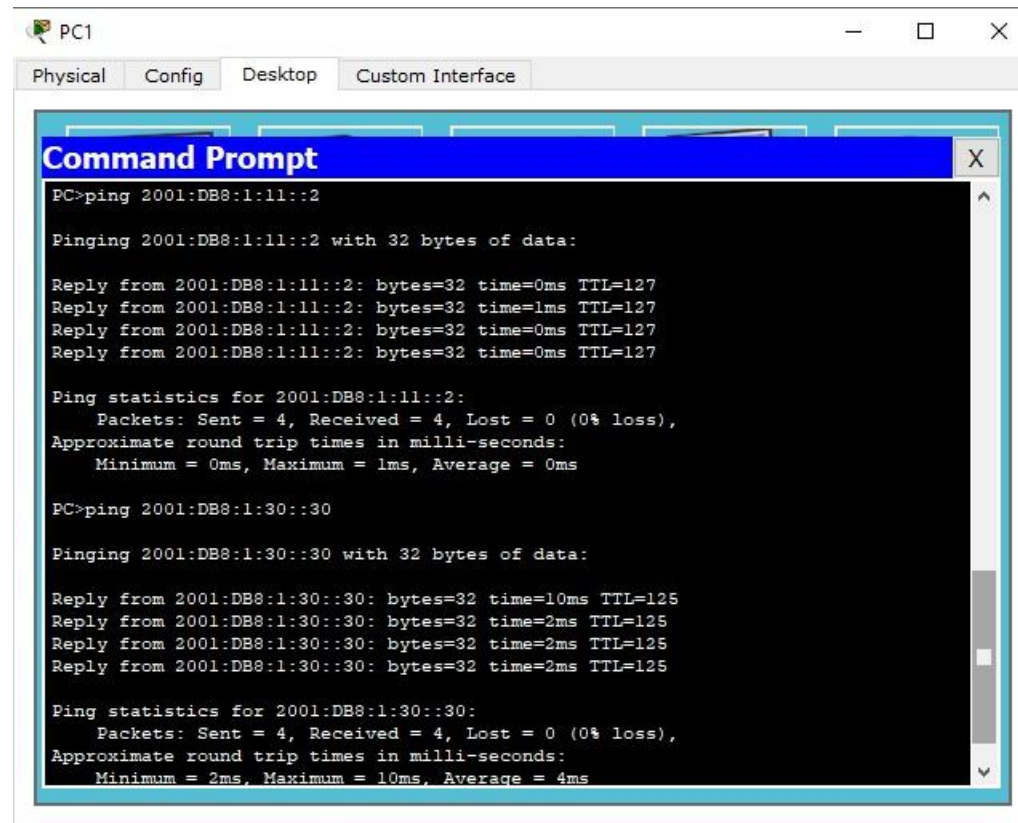
Ping statistics for 2001:DB8:1:30::30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 5ms, Average = 2ms
```



CONFIGURING ACL



VERIFYING THE WORKING OF ACL



PC1

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 2001:DB8:1:11::2

Pinging 2001:DB8:1:11::2 with 32 bytes of data:

Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=1ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:11::2: bytes=32 time=0ms TTL=127

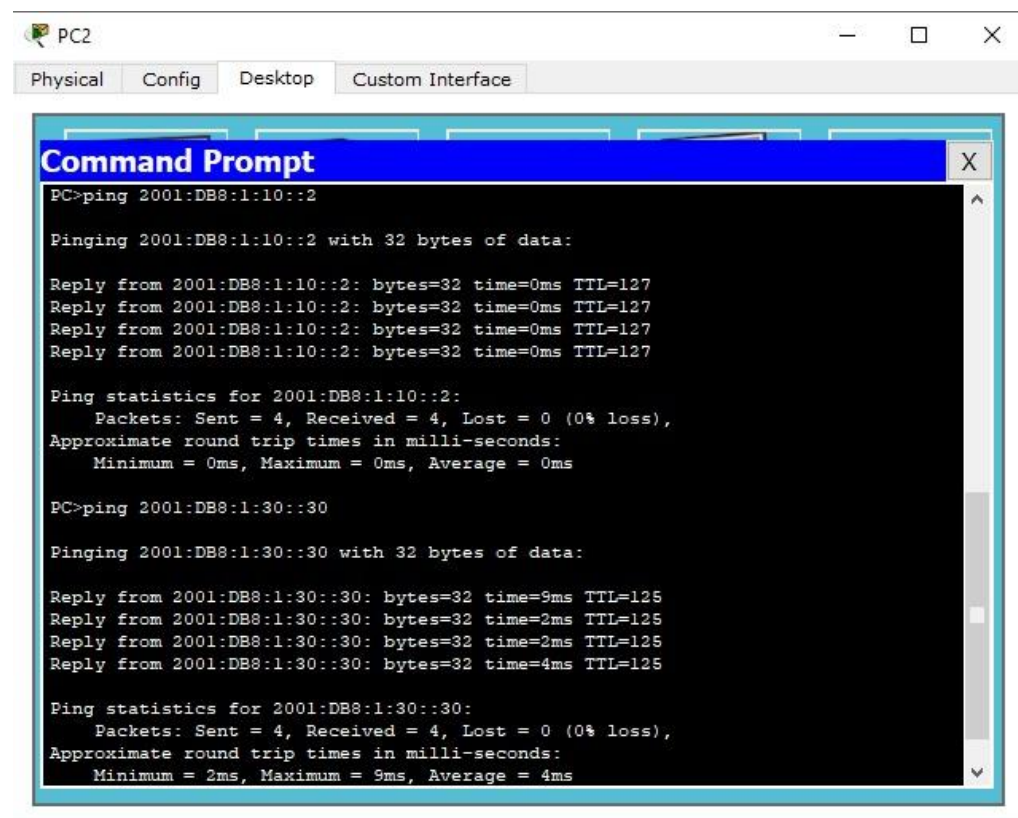
Ping statistics for 2001:DB8:1:11::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 2001:DB8:1:30::30

Pinging 2001:DB8:1:30::30 with 32 bytes of data:

Reply from 2001:DB8:1:30::30: bytes=32 time=10ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125

Ping statistics for 2001:DB8:1:30::30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 10ms, Average = 4ms
```



PC2

Physical Config Desktop Custom Interface

Command Prompt

```
PC>ping 2001:DB8:1:10::2

Pinging 2001:DB8:1:10::2 with 32 bytes of data:

Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127
Reply from 2001:DB8:1:10::2: bytes=32 time=0ms TTL=127

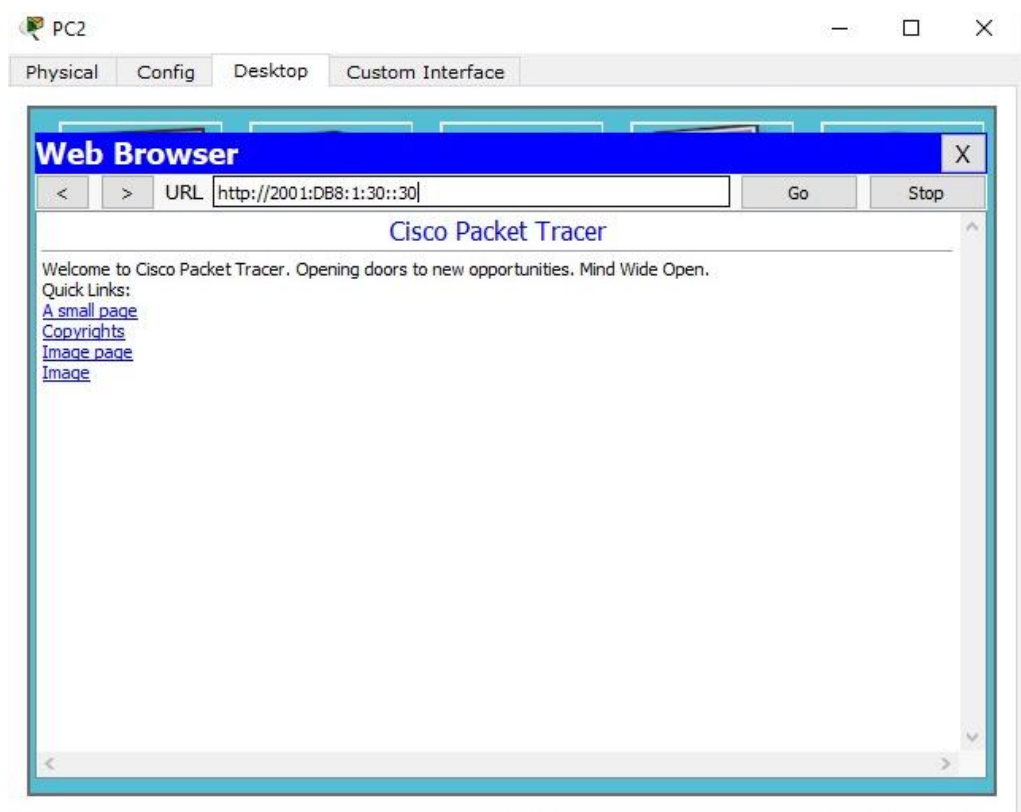
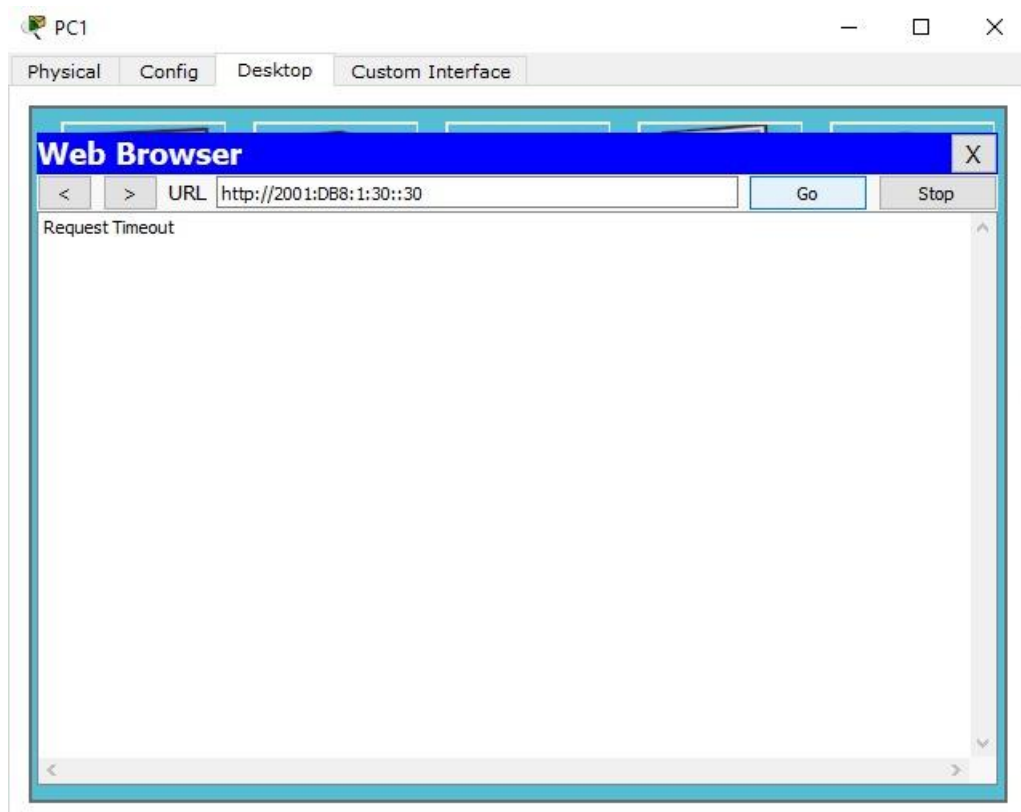
Ping statistics for 2001:DB8:1:10::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 2001:DB8:1:30::30

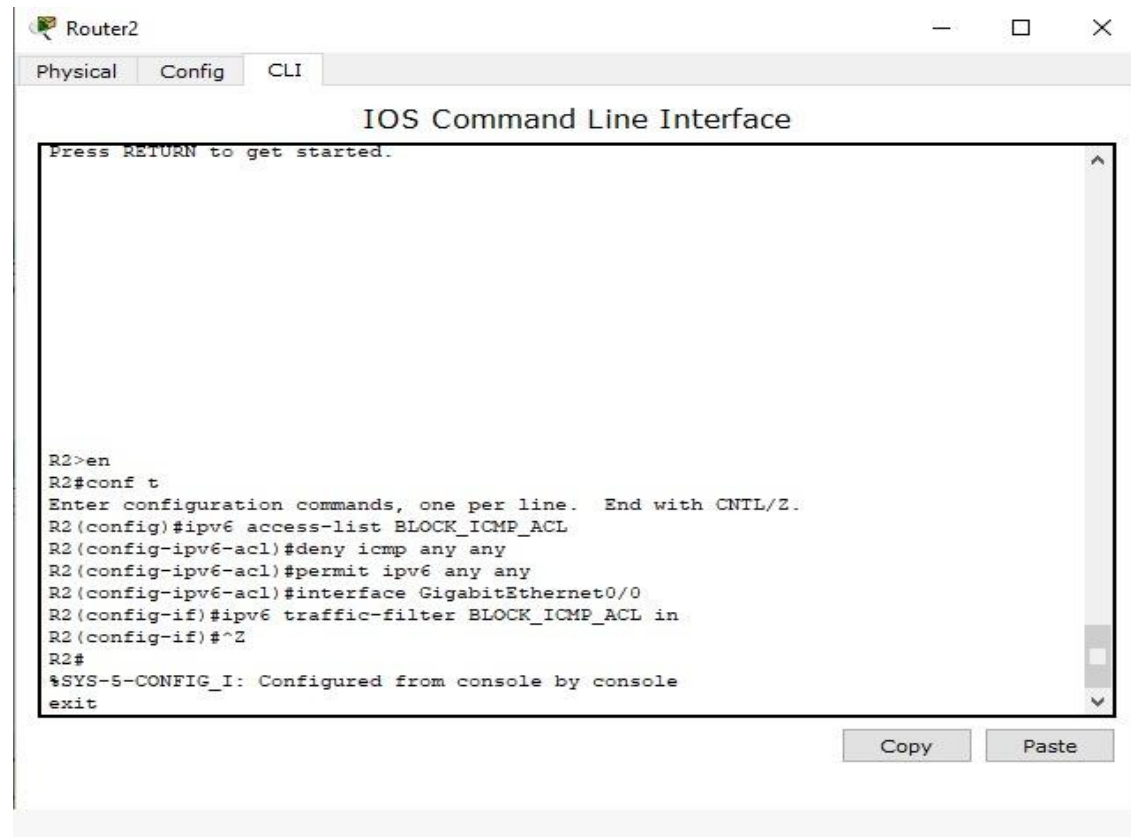
Pinging 2001:DB8:1:30::30 with 32 bytes of data:

Reply from 2001:DB8:1:30::30: bytes=32 time=9ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:30::30: bytes=32 time=4ms TTL=125

Ping statistics for 2001:DB8:1:30::30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 9ms, Average = 4ms
```

CONFIGURING ACL



VERIFYING THE WORKING OF ACL

