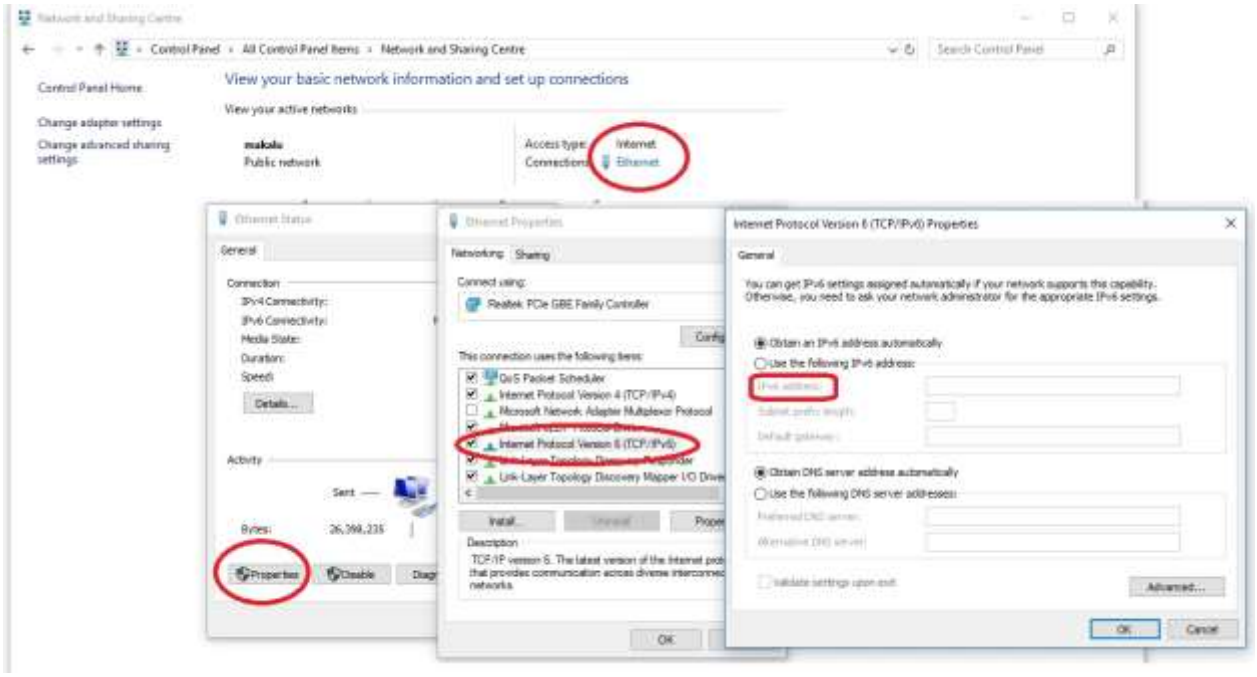
Download and Install latest version of Packet Tracer more than 6.0

Note: Registration should be done online

Lab 1: IPv6 configuration in Microsoft OS.



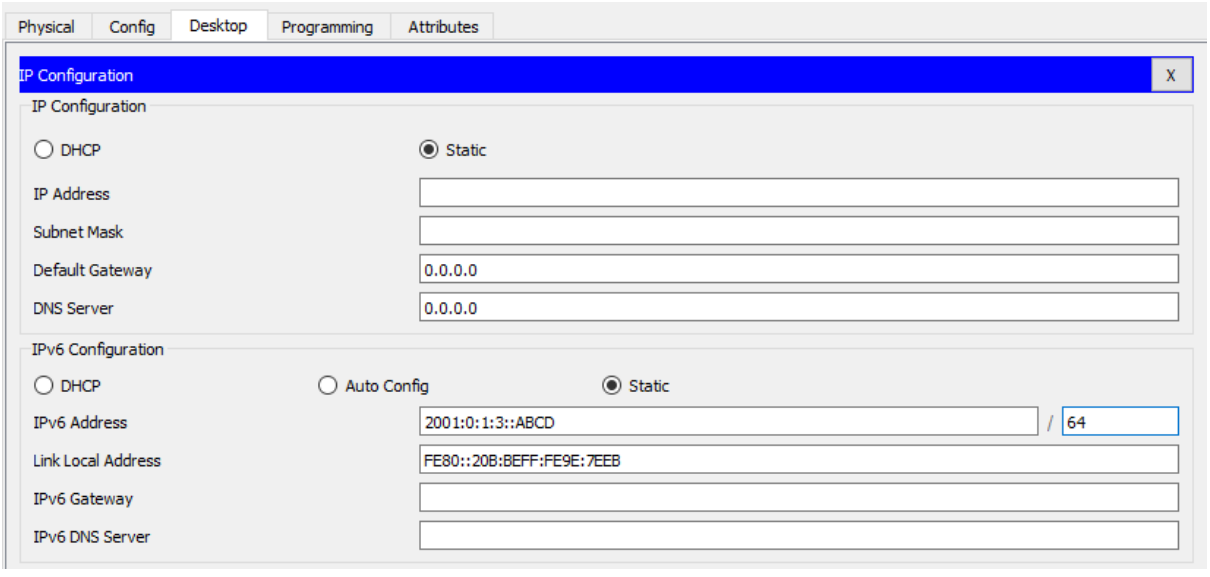
Lab 2: Static IPv6 configuration in between two hosts and Auto configuration in IPv6 and recheck using EUI-64 (EUI-64 *(Extended Unique Identifier) is a method we can use to automatically configure* IPv6 *host addresses.*)

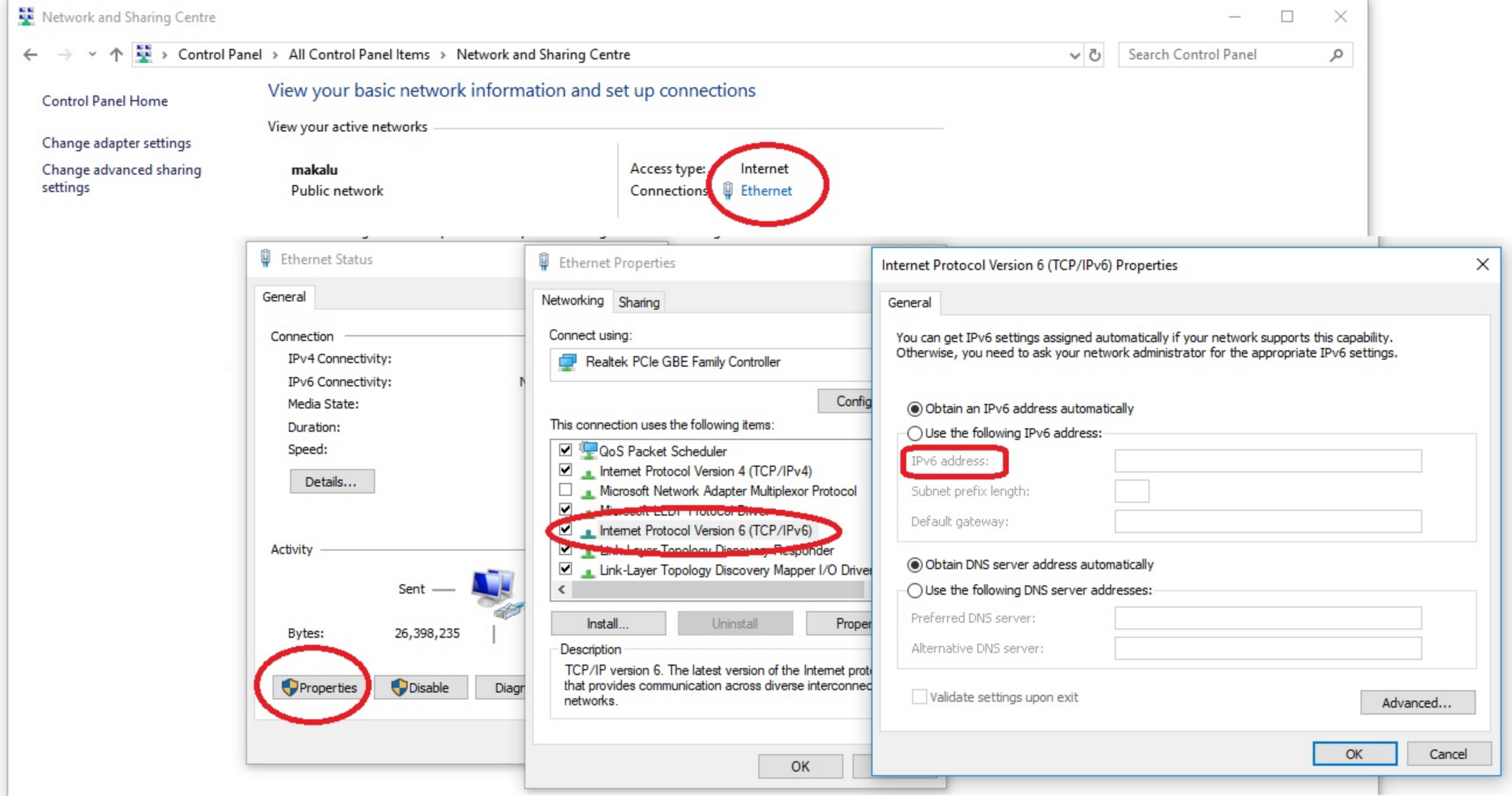
- **Host A:** 2001:0:1:3::ABCD
- **Host B:** 2001:0:1:3::BCDE
- Link-local address is just for your local area network, they are not routable, and can be used for internal communications e.g.192.168.0.1 or 10.1.1.1. or FE80::/10

➢ **Add devices and connect with them as shown in figure.**

➢ **Double click Host A**

➢ **Double click IP Configuration and fill the IPv6 Address as shown in figure**




Network and Sharing Centre
Control Panel › All Control Panel Items › Network and Sharing Centre
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
View your basic network information and set up connections
View your active networks
makalu
Public network
Access type: Internet
Connections: Ethernet
Ethernet Status
General
Connection
IPv4 Connectivity:
IPv6 Connectivity:
Media State:
Duration:
Speed:
Details...
Activity
Sent
Bytes: 26,398,235
Properties
Disable
Ethernet Properties
Networking
Sharing
Connect using:
Realtek PCIe GBE Family Controller
Config
This connection uses the following items:
QoS Packet Scheduler
Internet Protocol Version 4 (TCP/IPv4)
Microsoft Network Adapter Multiplexor Protocol
Internet Protocol Version 6 (TCP/IPv6)
Link-Layer Topology Discovery Mapper I/O Driver
Install...
Uninstall
Description
TCP/IP version 6. The latest version of the Internet protocol that provides communication across diverse interconnected networks.
OK
Internet Protocol Version 6 (TCP/IPv6) Properties
General
You can get IPv6 settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IPv6 settings.
Obtain an IPv6 address automatically
Use the following IPv6 address:
IPv6 address:
Subnet prefix length:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternative DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

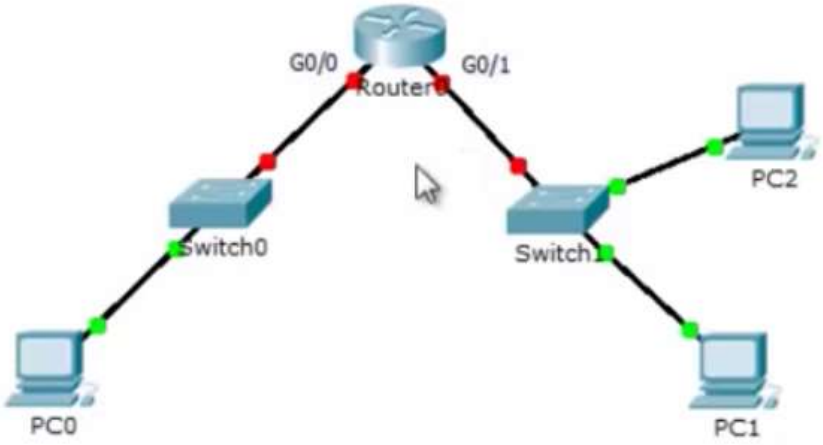
- **Same as Host B - 2001:0:1:3::BCDE**
- ***2001::/16*** *- IPv6 global addresses are similar to IPv4 public addresses*
- *Subnet ID – 64 bits long. Contains the site prefix (obtained from a Regional Internet Registry) and the subnet ID (subnets within the site). Interface ID – 64 bits long, typically composed of a part of the MAC address of the interface.*
- *Here is a graphical representation of the two parts of an global IPv6 address:*

3 bits	45 bits	16 bits	64 bits
001	Global Routing Prefix	Subnet ID	Interface ID

- **Then, Double command prompt**
- **Ping – ping 2001:0:1:3::ABCD**

Lab 3: IPv6 Unicast Routing

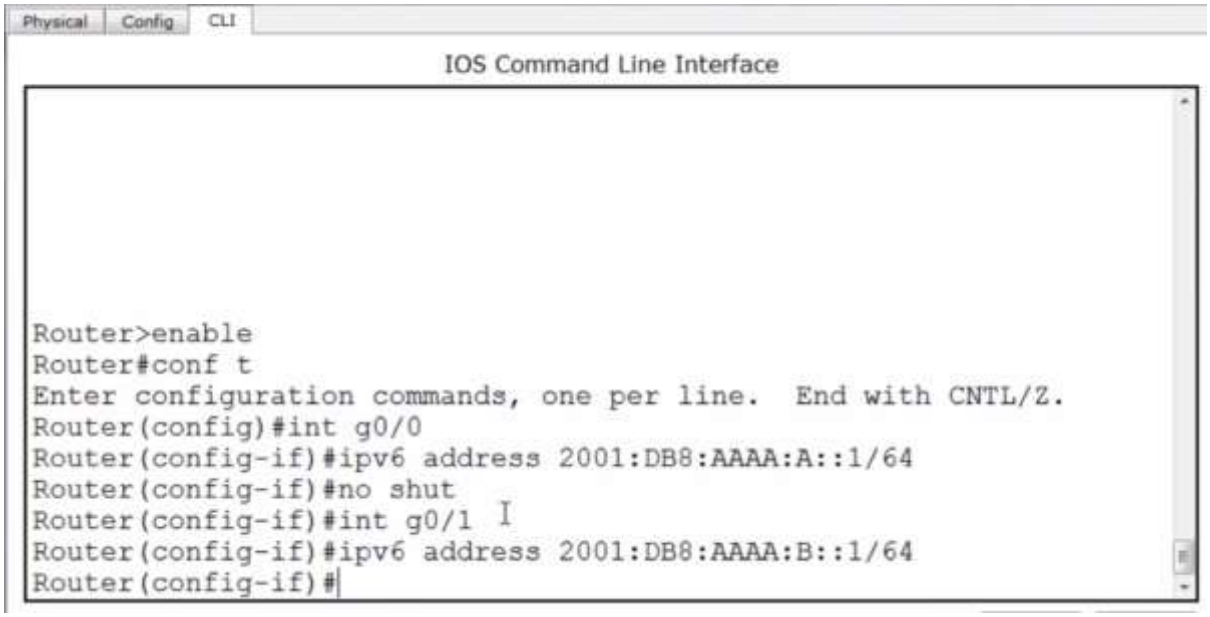
- **Design a network as shown in figure**



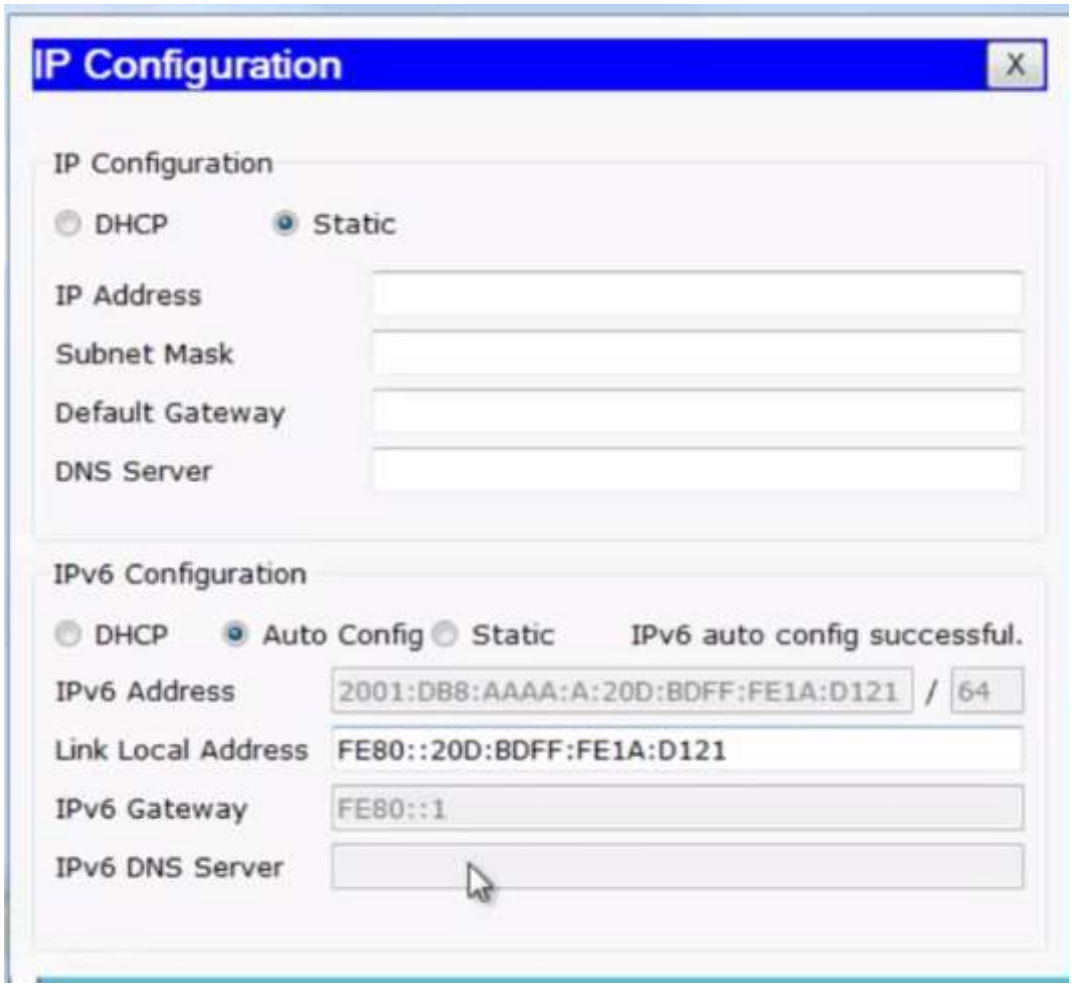
- **Double click Router**

```
        --- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: no

Press RETURN to get started!


Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ipv6 unicast-routing
Router(config)#int g0/0
Router(config-if)#ipv6 address FE80::1 link
Router(config-if)#ipv6 address FE80::1 link-local
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, chang
e to up

Router(config-if)#int g0/1
Router(config-if)#ipv6 address FE80::1 link-local
Router(config-if)#no shut
```

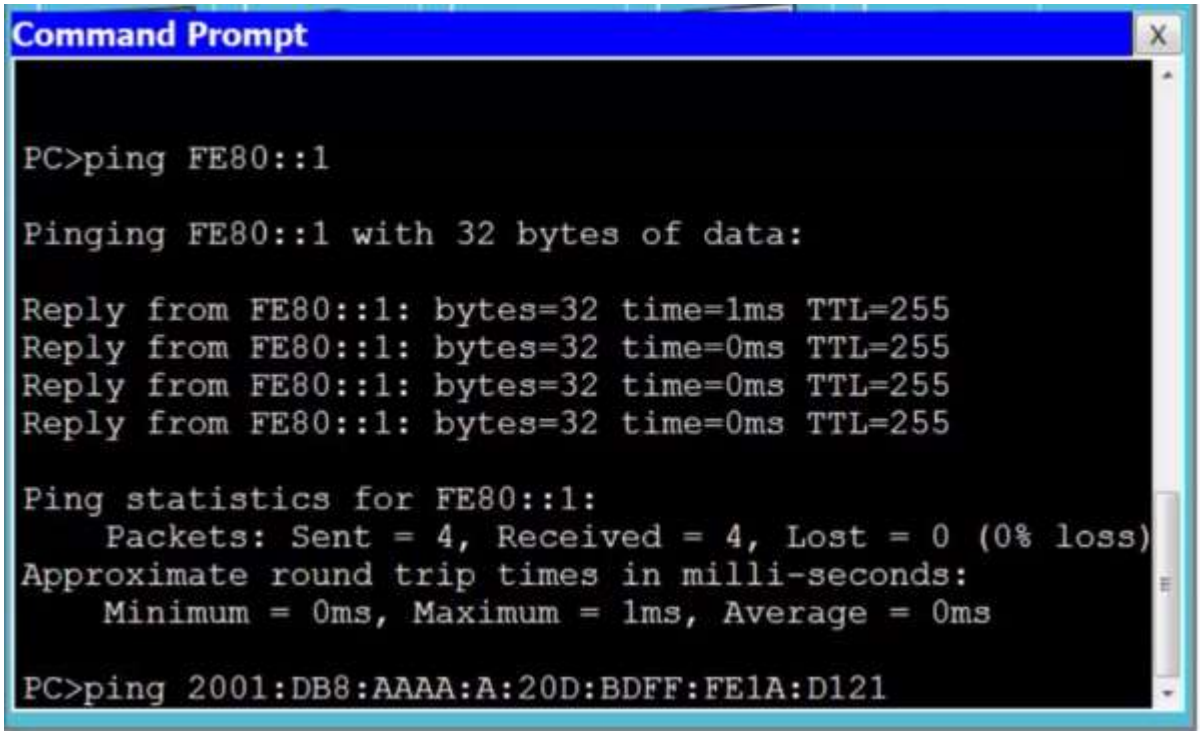
Double click Router

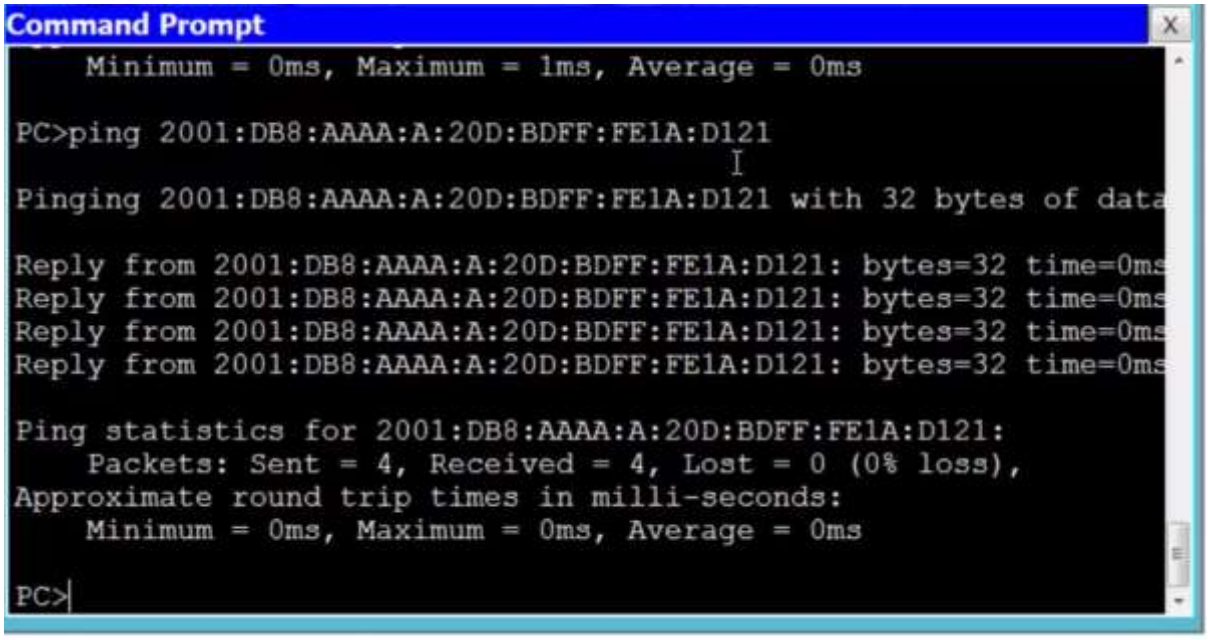


- **Double click PC then**



- **Open command prompt**





- **Double click router and then**
- **Type show run**
- **and enter twice**


Physical
Config
CLI
IOS Command Line Interface
!
interface GigabitEthernet0/0
no ip address
duplex auto
speed auto
ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:AAAA:A::1/64
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:AAAA:B::1/64
!
interface Vlan1