Starting IPv6 addressing

Network Topology:


```
                                    192.168.1.0/24
        .2/:2                       2001:DB8:0:1::/64
  [PC1]─────────────────[SW1]
  PC1
                192.168.2.0/24                              G0/0
        .2/:2   2001:DB8:0:2::/64                                  .1/:1
  [PC2]─────────────────────────────────────────────G0/1─.1/:1
  PC2              SW2                                              .1/:1    R1
                                                            G0/2
        .2/:2
  [PC3]─────────────────[SW3]
  PC3              SW3
                192.168.3.0/24
                2001:DB8:0:3::/64
```
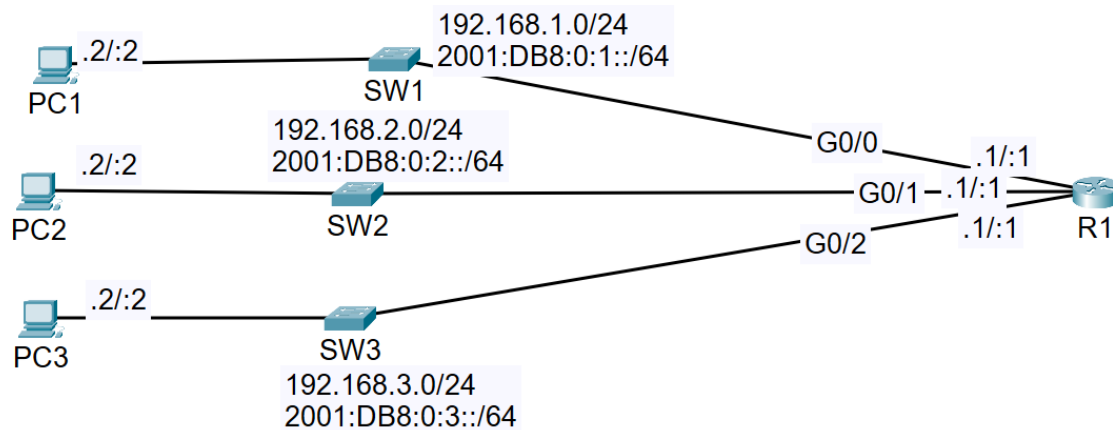
R1 CLI:
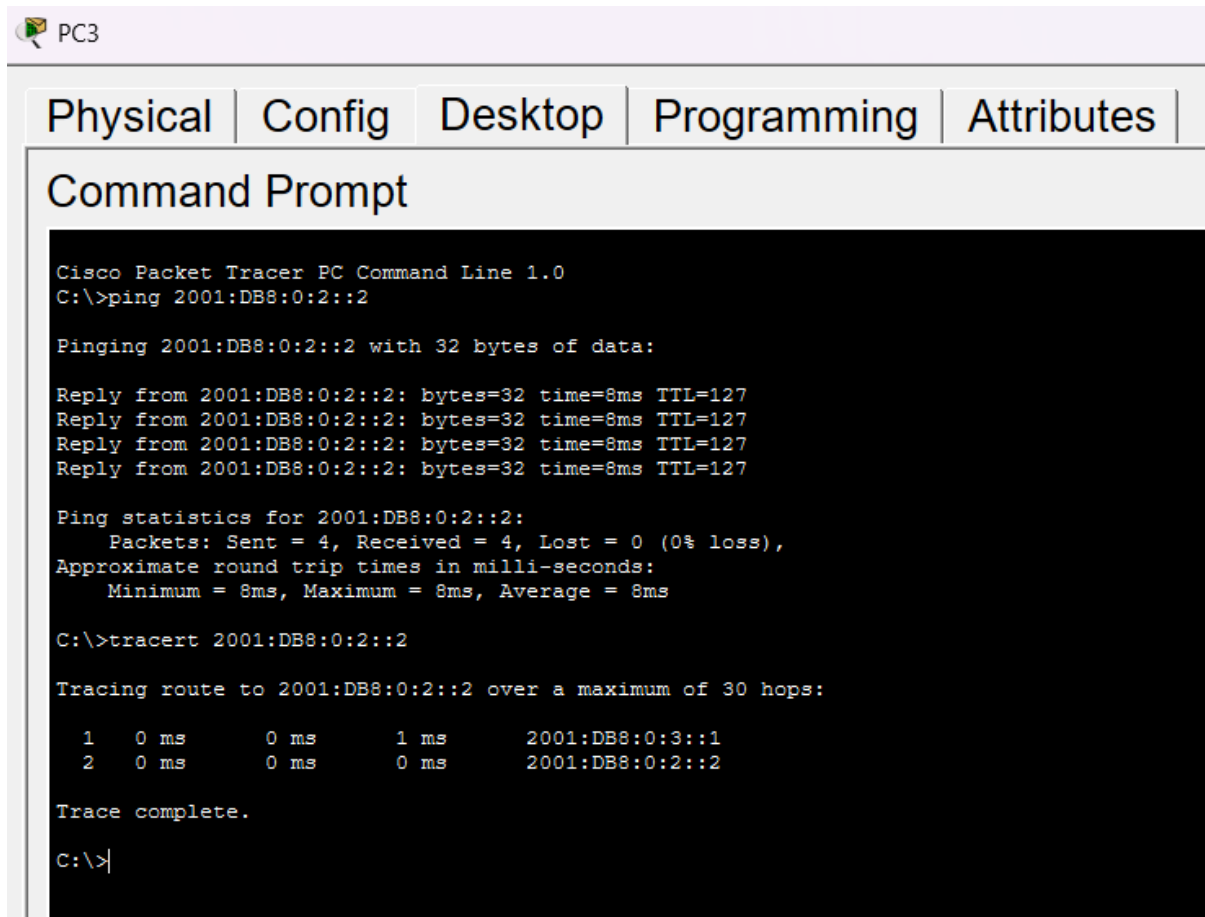
```
R1>en
R1#sh ip int br
Interface              IP-Address      OK? Method Status                 Protocol
GigabitEthernet0/0     192.168.1.1     YES manual up                     up
GigabitEthernet0/1     192.168.2.1     YES manual up                     up
GigabitEthernet0/2     192.168.3.1     YES manual up                     up
Vlan1                  unassigned      YES unset  administratively down  down
R1#ipv6 unicast-routing
     ^
% Invalid input detected at '^' marker.

R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ipv6 unicast-routing
R1(config)#int g0/0
R1(config-if)#ipv6 address 2001:DB8:0:1::1/64
R1(config-if)#no shutdown
R1(config-if)#int g0/1
R1(config-if)#ipv6 address 2001:DB8:0:2::1/64
R1(config-if)#no shutdown
R1(config-if)#int g0/2
R1(config-if)#ipv6 address 2001:DB8:0:3::1/64
R1(config-if)#no shutdown
R1(config-if)#do sh ipv6 int br
GigabitEthernet0/0          [up/up]
    FE80::201:97FF:FE9A:AC01
    2001:DB8:0:1::1
GigabitEthernet0/1          [up/up]
    FE80::201:97FF:FE9A:AC02
    2001:DB8:0:2::1
GigabitEthernet0/2          [up/up]
    FE80::201:97FF:FE9A:AC03
    2001:DB8:0:3::1
Vlan1                       [administratively down/down]
    unassigned
R1(config-if)#
```

Default gateways and IPv6 addresses on PC1, PC2 and PC3 are configured.

PC's are able to ping each other using IPv6 addresses.

PC3 CLI:

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
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=8ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time=8ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time=8ms TTL=127
Reply from 2001:DB8:0:2::2: bytes=32 time=8ms 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 = 8ms, Maximum = 8ms, Average = 8ms

C:\>tracert 2001:DB8:0:2::2

Tracing route to 2001:DB8:0:2::2 over a maximum of 30 hops:

  1    0 ms      0 ms      1 ms      2001:DB8:0:3::1
  2    0 ms      0 ms      0 ms      2001:DB8:0:2::2

Trace complete.

C:\>
```

The first IPv6 address is the router default gateway for PC3, and the second is the destination address, i.e., PC2.