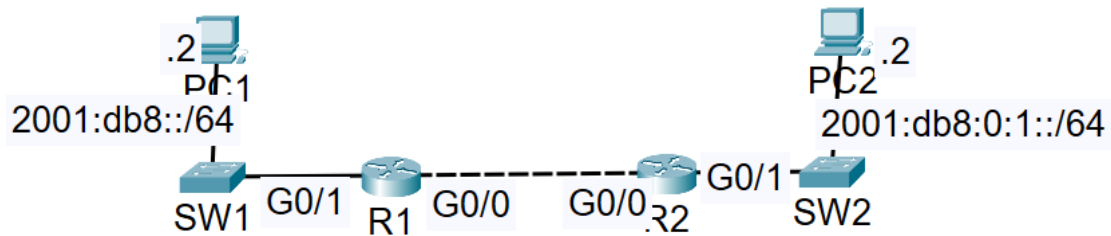


Network Topology:



R1 CLI:

```
R1
Physical | Config | CLI | Attributes |
IOS Command Line Interface

R1>en
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#do sh int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Hardware is CN Gigabit Ethernet, address is 0030.f236.4502 (bia 0030.f236.4502)
  Internet address is 10.0.1.254/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 watchdog, 1017 multicast, 0 pause input
    0 input packets with dribble condition detected
    0 packets output, 0 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out

R1(config)#int g0/1
R1(config-if)#ipv6 address 2001:db8::/64 eui-64
R1(config-if)#do sh ipv6 int br
GigabitEthernet0/0      [up/up]
  unassigned
GigabitEthernet0/1      [up/up]
  FE80::230:F2FF:FE36:4502
  2001:DB8::230:F2FF:FE36:4502
GigabitEthernet0/2      [administratively down/down]
  unassigned
Vlan1                   [administratively down/down]
  unassigned
```

PC1 configuration:

PC1

Physical | Config | Desktop | Programming | Attributes

GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth

FastEthernet0

Port Status ☒ On

Link Speed ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☐ Full Duplex ☒ Auto

MAC Address 0060.7035.C92E

IP Configuration

- ☐ DHCP
- ☒ Static

IPv4 Address 10.0.1.2

Subnet Mask 255.255.255.0

IPv6 Configuration

- ☐ Automatic
- ☒ Static

IPv6 Address 2001:db8::2 /64

Link Local Address: 60:70FF:FE35:C92E

R1's g0/1 IPv6 address is given as the default gateway.

R2 CLI:

R2

Physical | Config | CLI | Attributes

IOS Command Line Interface

```
R2>en
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#do sh int g0/1
GigabitEthernet0/1 is up, line protocol is up (connected)
  Hardware is CN Gigabit Ethernet, address is 0001.63b0.b802 (bia 0001.63b0.b802)
  Internet address is 10.0.2.254/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, media type is RJ45
  output flow-control is unsupported, input flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00,
  Last input 00:00:08, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max/drops); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 watchdog, 1017 multicast, 0 pause input
    0 input packets with dribble condition detected

R2(config)#int g0/1
R2(config-if)#ipv6 address 2001:db8:0:1/64 0201:63FF:FEB0:B802
^
% Invalid input detected at '^' marker.

R2(config-if)#ipv6 address 2001:db8:0:1:0201:63FF:FEB0:B802/64
R2(config-if)#do sh ipv6 int br
GigabitEthernet0/0      [up/up]
  unassigned
GigabitEthernet0/1      [up/up]
  FE80::201:63FF:FEB0:B802
  2001:DB8:0:1:201:63FF:FEB0:B802
GigabitEthernet0/2      [administratively down/down]
  unassigned
Vlan1                   [administratively down/down]
  unassigned
```

Copy Paste

PC2 Configuration:

PC2

Physical | Config | Desktop | Programming | Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Bluetooth

FastEthernet0 Document was last saved

Port Status ☒ On

Link Speed ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☐ Full Duplex ☒ Auto

MAC Address 0001.438B.2D12

IP Configuration

☐ DHCP

☒ Static

IPv4 Address 10.0.2.2

Subnet Mask 255.255.255.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address 2001:db8:0:1::2 /64

Link Local Address: FE80::201:43FF:FE8B:2D12

And R2's g0/1 IPv6 address is given as the default gateway.

R1 CLI:

```
via Null0, receive
R1(config)#ipv6 route 2001:db8:0:1::/64 g0/0 FE80::201:63FF:FE80:B801
R1(config)#do sh ipv6 int br
GigabitEthernet0/0 [up/up]
    FE80::230:F2FF:FE36:4501
GigabitEthernet0/1 [up/up]
    FE80::230:F2FF:FE36:4502
    2001:DB8::230:F2FF:FE36:4502
GigabitEthernet0/2 [administratively down/down]
    unassigned
Vlan1 [administratively down/down]
    unassigned
R1(config)#do sh ipv6 route
IPv6 Routing Table - 4 entries
Codes: 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
C   2001:DB8::/64 [0/0]
    via GigabitEthernet0/1, directly connected
L   2001:DB8::230:F2FF:FE36:4502/128 [0/0]
    via GigabitEthernet0/1, receive
S   2001:DB8:0:1::/64 [1/0]
    via FE80::201:63FF:FE80:B801, GigabitEthernet0/0
L   FF00::/8 [0/0]
    via Null0, receive
R1(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
```

R2 CLI:

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

R2(config-if)#no shutdown

R2(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

R2(config-if)#exit
R2(config)#do sh ipv6 int br
GigabitEthernet0/0      [up/up]
    FE80::201:63FF:FEB0:B801
GigabitEthernet0/1      [up/up]
    FE80::201:63FF:FEB0:B802
    2001:DB8:0:1:201:63FF:FEB0:B802
GigabitEthernet0/2      [administratively down/down]
    unassigned
Vlan1                    [administratively down/down]
    unassigned
R2(config)#do sh ipv6 route
IPv6 Routing Table - 4 entries
Codes: 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
S   2001:DB8::/64 [1/0]
    via FE80::230:F2FF:FE36:4501, GigabitEthernet0/0
C   2001:DB8:0:1::/64 [0/0]
    via GigabitEthernet0/1, directly connected
L   2001:DB8:0:1:201:63FF:FEB0:B802/128 [0/0]
    via GigabitEthernet0/1, receive
L   FF00::/8 [0/0]
    via Null0, receive
R2(config)#
```

PC1 ping:

```
C:\>ping 2001:db8:0:1::2

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

Reply from 2001:DB8:0:1::2: bytes=32 time=1ms TTL=126
Reply from 2001:DB8:0:1::2: bytes=32 time<1ms TTL=126
Reply from 2001:DB8:0:1::2: bytes=32 time<1ms TTL=126
Reply from 2001:DB8:0:1::2: bytes=32 time=1ms TTL=126

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

C:\>
```

PC2 ping:

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

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

Reply from 2001:DB8::2: bytes=32 time<1ms TTL=126
Reply from 2001:DB8::2: bytes=32 time<1ms TTL=126
Reply from 2001:DB8::2: bytes=32 time<1ms TTL=126
Reply from 2001:DB8::2: bytes=32 time<1ms TTL=126

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

C:\>
```