ECCS-3631
Networks and Data Communications

Module 7-2
Configuring IPv6 Network using Static IPs

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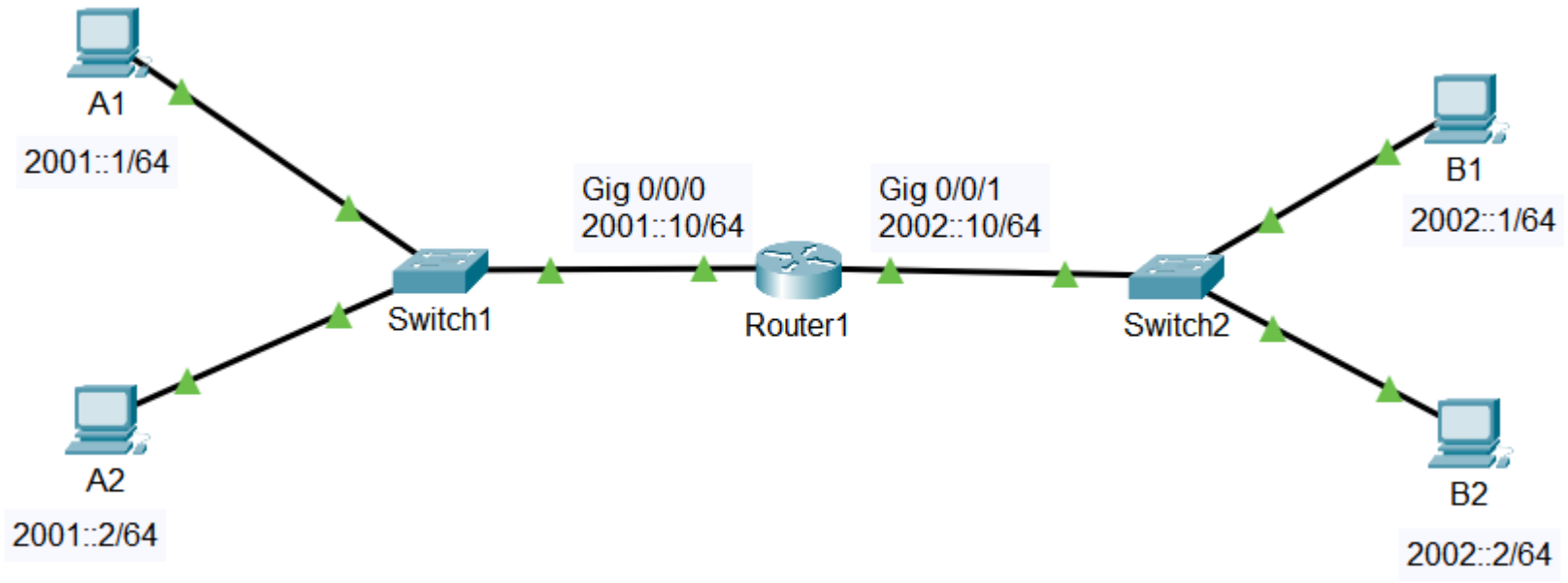
IPv6 Network – Example 1

- Let's consider the following network to configure with IPv6
- Two Networks A (2001::/64) and B (2002::/64)



IPv6 Network – Step 1

- **Step 1: Enable IPv6 Globally on the Router**

  Router(config)#ipv6 unicast-routing

IPv6 Network – Step 2

- **Step 2: Enable IPv6 on each Interface of the Router**

```
Router(config)#interface gig 0/0/0
Router(config-if)#ipv6 enable
Router(config-if)#no shutdown
```

IPv6 Network – Step 3

- **Step 3: Configure IPv6 Address on the Interface**
- **Apply a manual interface (host address)**

```
Router(config)#interface gig 0/0/0
Router(config-if)#ipv6 address 2001::10/64
Router(config-if)#end
```

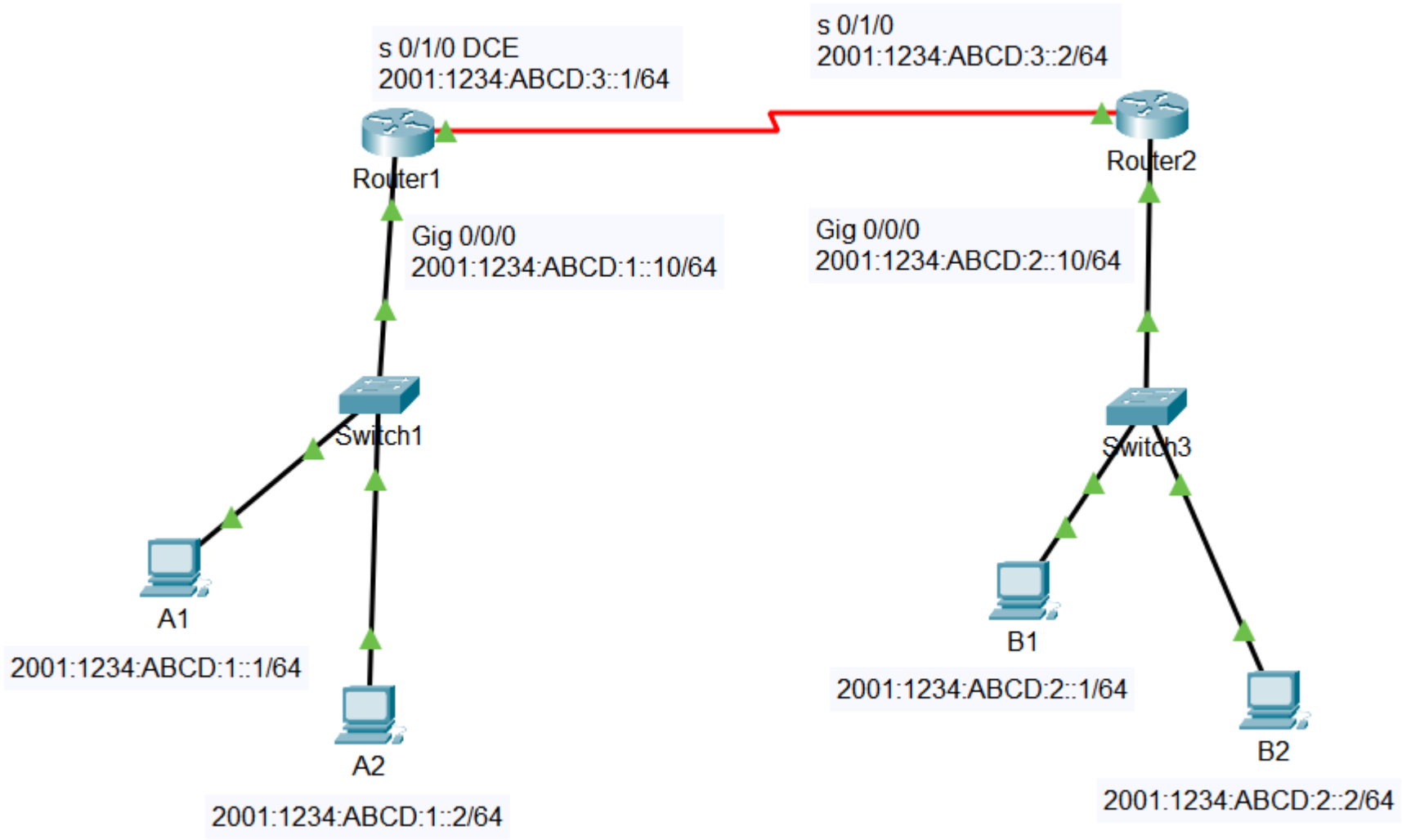
IPv6 Network – ping

- Router#ping ipv6 2002::10

- Using Command Prompt from a PC:

  A1>ping 2001::1

IPv6 Network – Example 2



IPv6 Network – Example 2

- In this network with IPv6, the global IP address is 2001:1234:ABCD: while the other 16 bits, such as :1: or :2: or :100: represent the subnetting of this network.
- Step 1: Enable IPv6 Globally on the Router using the following statement:

For Router1

```
Router1(config)#ipv6 unicast-routing
```

For Router2

```
Router2(config)#ipv6 unicast-routing
```

IPv6 Network – Example 2

- Step 2 and 3: Enable IPv6 on each interface of the Router and configure IP address:

For Router1

```
Router1(config)#interface gig0/0/0
Router1(config-if)#ipv6 enable
Router1(config-if)#ipv6 address 2001:1234:ABCD:1::10/64
Router1(config-if)#no shutdown
Router1(config-if)#exit
Router1(config)#interface s0/1/0
Router1(config-if)#ipv6 enable
Router1(config-if)#ipv6 address 2001:1234:ABCD:3::1/64
Router1(config-if)#clock rate 250000
Router1(config-if)#no shutdown
```

IPv6 Network – Example 2

For Router2

```
Router2(config)#interface gig0/0/0
Router2(config-if)#ipv6 enable
Router2(config-if)#ipv6 address 2001:1234:ABCD:2::10/64
Router2(config-if)#no shutdown
Router2(config-if)#exit
Router2(config)#interface s0/1/0
Router2(config-if)#ipv6 enable
Router2(config-if)#ipv6 address 2001:1234:ABCD:3::2/64
Router2(config-if)#no shutdown
```

IPv6 Network – Example 2

- Step 4: Apply IPv6 static routing on each Router to forward the data packets to other networks:

For Router1

```
Router1(config)#ipv6 route 2001:1234:ABCD:3::/64 s0/1/0
Router1(config)#ipv6 route 2001:1234:ABCD:2::/64 s0/1/0
```

For Router2

```
Router2(config)#ipv6 route 2001:1234:ABCD:3::/64 s0/1/0
Router2(config)#ipv6 route 2001:1234:ABCD:1::/64 s0/1/0
```

IPv6 Network – Example 2

- Instead of static routing, Default routing can also be applied as follows:

For Router1

```
Router1(config)#ipv6 route ::/0 s0/1/0
```

For Router2

```
Router2(config)#ipv6 route ::/0 s0/1/0
```