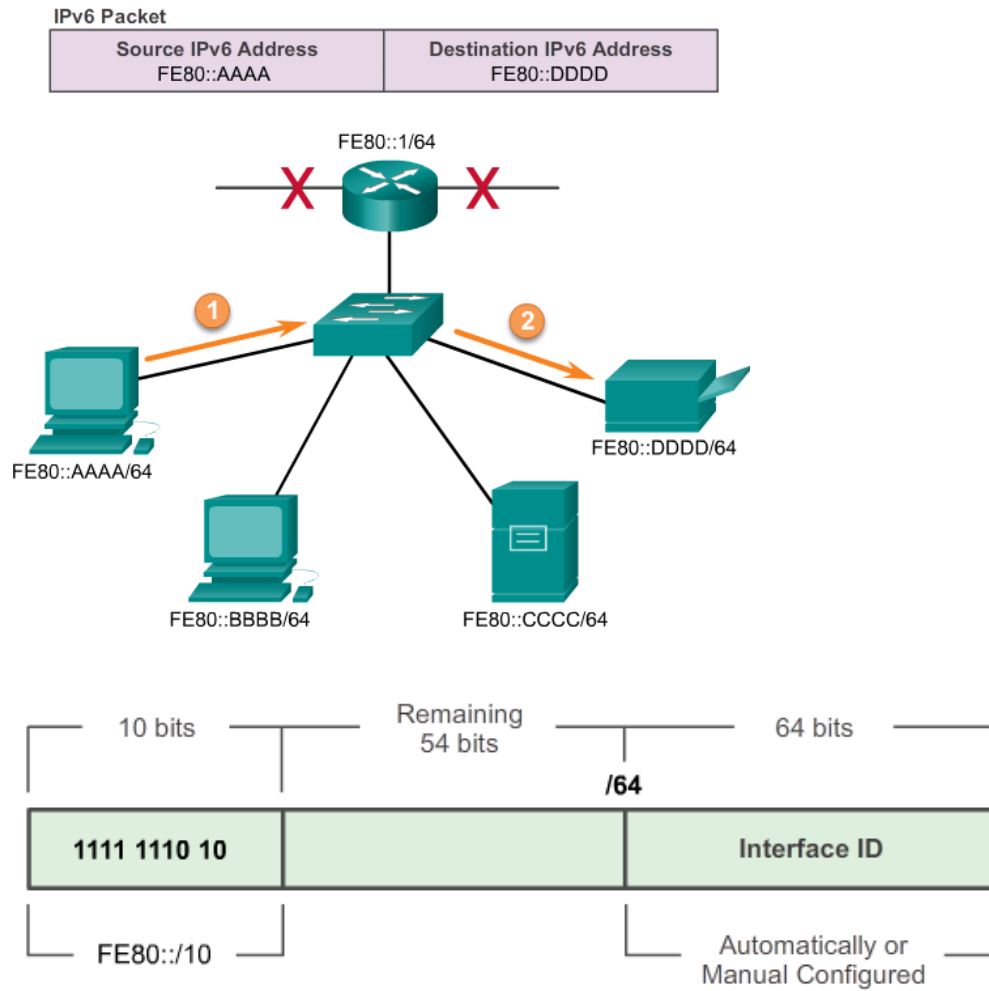


CHAPTER 8 IPv6 ADDRESSING

An IPv6 link-local address enables a device to communicate with other IPv6-enabled devices on the same link and only on that link (subnet). Packets with a source or destination link-local address cannot be routed beyond the link from where the packet originated.

IPv6 Link-Local Communications



Preferred	2001:0DB8:0000:1111:0000:0000:0000:0200
No leading 0s	2001: DB8: 0:1111: 0: 0: 0: 200

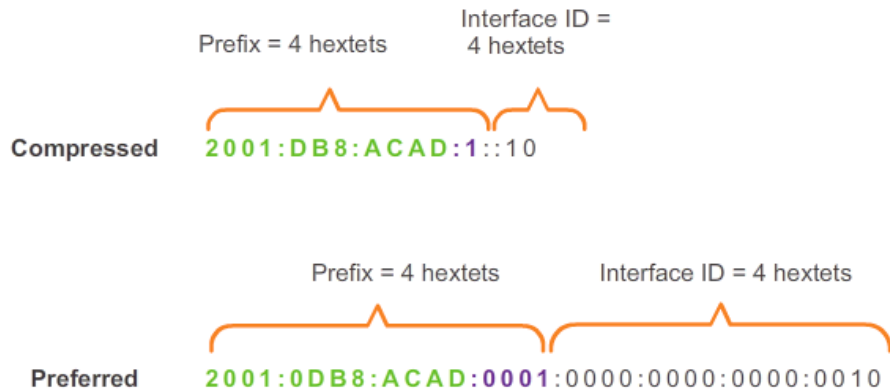
Preferred	2001:0DB8:0000:1111:0000:0000:0000:0200
No leading 0s	2001: DB8: 0:1111: 0: 0: 0: 200
Compressed	2001:DB8:0:1111::200

Preferred	2001:0DB8:0000:0000:ABCD:0000:0000:0100
No leading 0s	2001: DB8: 0: 0:ABCD: 0: 0: 100
Compressed	2001:DB8::ABCD:0:0:100
or	
Compressed	2001:DB8:0:0:ABCD::100

Only one :: may be used.

Preferred	0000:0000:0000:0000:0000:0000:0000:0001
No leading 0s	0: 0: 0: 0: 0: 0: 0: 1
Compressed	::1

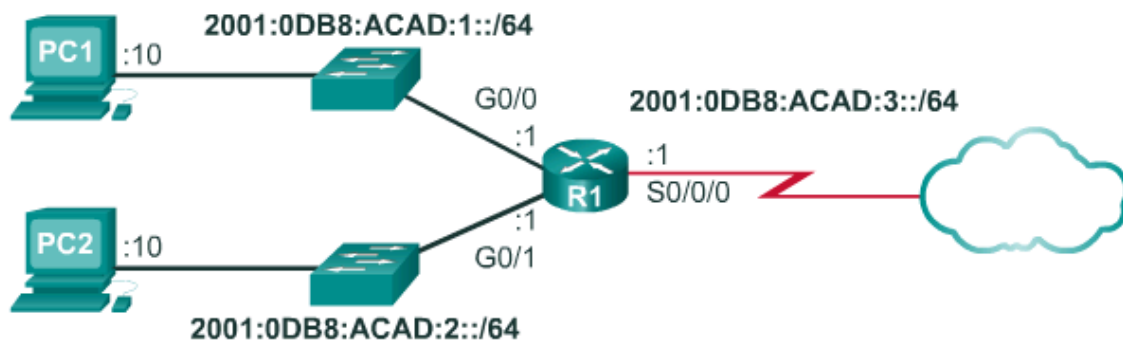
IPv6 Unicast Addresses



Global Routing Prefix = 2001:0DB8:ACAD

Subnet ID = 0001

Interface ID = 0000:0000:0000:0200



```
R1(config)#interface gigabitethernet 0/0
R1(config-if)#ipv6 address 2001:db8:acad:1::1/64
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface gigabitethernet 0/1
R1(config-if)#ipv6 address 2001:db8:acad:2::1/64
R1(config-if)#no shutdown
R1(config-if)#exit
R1(config)#interface serial 0/0/0
R1(config-if)#ipv6 address 2001:db8:acad:3::1/64
R1(config-if)#clock rate 56000
R1(config-if)#no shutdown
```

Configuring the link-local address

```
R1(config)#interface gigabitethernet 0/0
R1(config-if)#ipv6 address fe80::1 ?
link-local Use link-local address

R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#exit
R1(config)#interface gigabitethernet 0/1
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#exit
R1(config)#interface serial 0/0/0
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#
```

```
R1#show ipv6 interface brief
GigabitEthernet0/0 [up/up]
  FE80::1
  2001:DB8:ACAD:1::1
GigabitEthernet0/1 [up/up]
  FE80::1
  2001:DB8:ACAD:2::1
Serial0/0/0 [up/up]
  FE80::1
  2001:DB8:ACAD:3::1
Serial0/0/1 [administratively down/down]
  unassigned
R1#
```

