Packet Tracer - Configure IPv6 Addressing
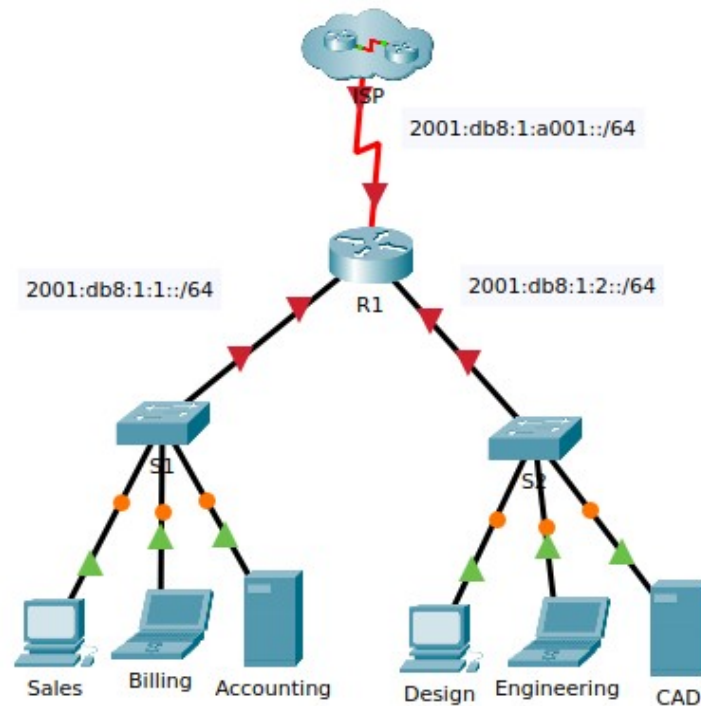
Addressing Table

Device	Interface	IPv6 Address/Prefix	Default Gateway
R1	G0/0	2001:db8:1:1::1/64	N/A
		fe80::1	
	G0/1	2001:db8:1:2::1/64	N/A
		fe80::1	
	S0/0/0	2001:db8:1:a001::2/64	N/A
		fe80::1	
Sales	NIC	2001:db8:1:1::2/64	fe80::1
Billing	NIC	2001:db8:1:1::3/64	fe80::1
Accounting	NIC	2001:db8:1:1::4/64	fe80::1
Design	NIC	2001:db8:1:2::2/64	fe80::1
Engineering	NIC	2001:db8:1:2::3/64	fe80::1
CAD	NIC	2001:db8:1:2::4/64	fe80::1
ISP	S0/0/0	2001:db8:1:a001::1	fe80::1

R1 configuration
- enable the router to forward IPv6 packets:
R1(config)#ipv6 unicast-routing
- For G0/0:
R1(config)#interface g0/0
R1(config-if)#ipv6 address 2001:db8:1:1::1/64
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#no shutdown
R1(config-if)#exit

- For G0/1

R1(config)#interface g0/1
R1(config-if)#ipv6 address 2001:db8:1:2::1/64
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#no shutdown
R1(config-if)#exit

- For S0/0/0:

R1(config)#interface s0/0/0
R1(config-if)#ipv6 address 2001:db8:1:a001::2/64
R1(config-if)#ipv6 address fe80::1 link-local
R1(config-if)#no shutdown
R1(config-if)#exit

- For verification

```
R1#show ipv6 interface brief
GigabitEthernet0/0         [up/up]
    FE80::1
    2001:DB8:1:1::1
GigabitEthernet0/1         [up/up]
    FE80::1
    2001:DB8:1:2::1
GigabitEthernet0/2         [administratively down/down]
    unassigned
Serial0/0/0                [up/up]
    FE80::1
    2001:DB8:1:A001::2
Serial0/0/1                [administratively down/down]
    unassigned
Vlan1                      [administratively down/down]
    unassigned
```

Sales configuration

IPv6 Configuration

○ Automatic	● Static
IPv6 Address	2001:db8:1:1::2 / 64
Link Local Address	
Default Gateway	fe80::1
DNS Server	

Billing configuration

IPv6 Configuration

○ Automatic	● Static
IPv6 Address	2001:db8:1:1::3 / 64
Link Local Address	
Default Gateway	fe80::1
DNS Server	

Accounting Server configuration

IPv6 Configuration

○ Automatic	● Static
IPv6 Address	2001:db8:1:1::4 / 64
Link Local Address	FE80::201:C7FF:FE83:3CED
Default Gateway	fe80::1
DNS Server	

Design configuration

IPv6 Configuration

○ Automatic	● Static
IPv6 Address	2001:db8:1:2::2 / 64
Link Local Address	
Default Gateway	fe80::1
DNS Server	

Engeneering configuration

IPv6 Configuration

○ Automatic	● Static
IPv6 Address	2001:db8:1:2::3 / 64
Link Local Address	
Default Gateway	fe80::1
DNS Server	

CAD configuration

IPv6 Configuration

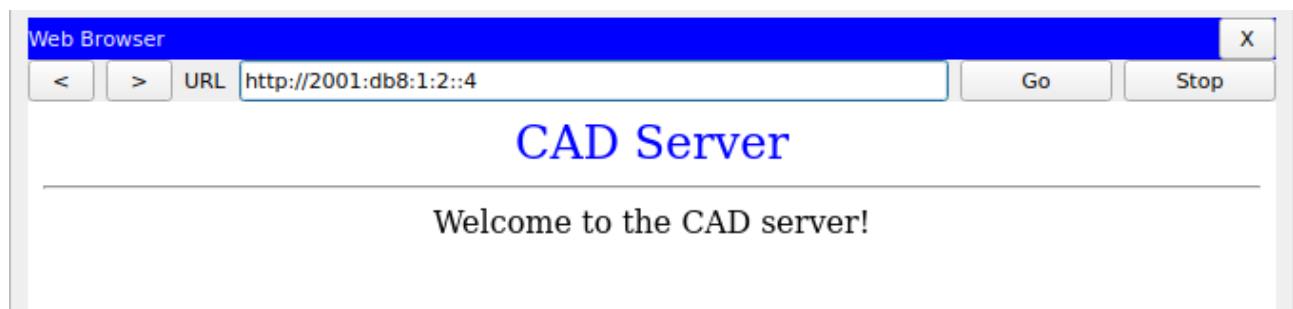|	
○ Automatic	● Static
IPv6 Address	2001:db8:1:2::4 / 64
Link Local Address	FE80::20B:BEFF:FEBE:73E2
Default Gateway	2001:db8:1:2::4
DNS Server	

From Design client, ping the ISP

```
C:\>ping 2001:db8:1:a001::1

Pinging 2001:db8:1:a001::1 with 32 bytes of data:

Reply from 2001:DB8:1:A001::1: bytes=32 time=1ms TTL=254
Reply from 2001:DB8:1:A001::1: bytes=32 time=15ms TTL=254
Reply from 2001:DB8:1:A001::1: bytes=32 time=14ms TTL=254
Reply from 2001:DB8:1:A001::1: bytes=32 time=13ms TTL=254

Ping statistics for 2001:DB8:1:A001::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 15ms, Average = 10ms
```

Browse the CAD server from Design client

Web Browser					X
<	>	URL	http://2001:db8:1:2::4	Go	Stop

CAD Server
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Welcome to the CAD server!

Browse the Accounting server from Design client

Web Browser					X
<	>	URL	http://2001:db8:1:1::4	Go	Stop

Accounting Server
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Welcome to the Accounting server!