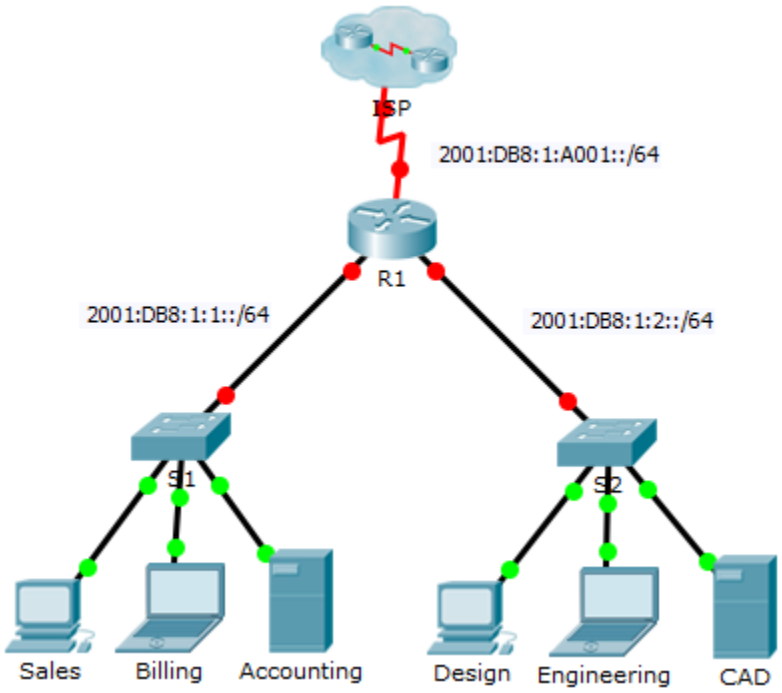
# Packet Tracer - Configuring IPv6 Addressing

## Topology




## Addressing Table

| Device | Interface | IPv6 Address/Prefix | Default Gateway |
|---|---|---|---|
| R1 | G0/0 | 2001:DB8:1:1::1/64 | N/A |
| | G0/1 | 2001:DB8:1:2::1/64 | N/A |
| | S0/0/0 | 2001:DB8:1:A001::2/64 | N/A |
| | Link-local | FE80::1 | N/A |
| 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 |

## Objectives

**Part 1: Configure IPv6 Addressing on the Router**

**Part 2: Configure IPv6 Addressing on Servers**

**Part 3: Configure IPv6 Addressing on Clients**

**Part 4: Test and Verify Network Connectivity**

## Background

In this activity, you will practice configuring IPv6 addresses on a router, servers, and clients. You will also practice verifying your IPv6 addressing implementation.

# 1. Configure IPv6 Addressing on the Router

### 1. Enable the router to forward IPv6 packets.

a. Enter the IPv6 unicast-routing global configuration command. This command must be configured to enable the router to forward IPv6 packets. This command will be discussed in a later semester.

- Press enter…
- **Enter:** enable
- **Enter:** configure terminal
- **Enter:** ipv6 unicast-routing

```
R1(config)# ipv6 unicast-routing
```

### 2. Configure IPv6 addressing on GigabitEthernet0/0.

a. Click **R1** and then the **CLI** tab. Press **Enter**.

b. Enter privileged EXEC mode.

- To enter privileged EXEC mode, enter the enable command:

```
R1> enable
R1#
```

c. Enter the commands necessary to transition to interface configuration mode for GigabitEthernet0/0.

**- Enter :**

```
R1(config-if)# interface GigabitEthernet0/0
```

d. Configure the IPv6 address with the following command:

```
R1(config-if)# ipv6 address 2001:DB8:1:1::1/64
```

e. Configure the link-local IPv6 address with the following command:

```
R1(config-if)# ipv6 address FE80::1 link-local
```

f. Activate the interface.

**- Enter:** no shutdown

**- Enter:** exit

### 3. Configure IPv6 addressing on GigabitEthernet0/1.

a. Enter the commands necessary to transition to interface configuration mode for GigabitEthernet0/1.

**- Enter :**

```
R1(config)# interface GigabitEthernet0/1
```

b. Refer to the **Addressing Table** to obtain the correct IPv6 address.

**- Enter:**

```
R1(config-if)# ipv6 address 2001:DB8:1:2::1/64
```

c. Configure the IPv6 address, the link-local address and activate the interface.

**- Enter**:

```
R1(config-if)# ipv6 address FE80::1 link-local
```

- Enter: no shutdown

### 4. Configure IPv6 addressing on Serial0/0/0.

a. Enter the commands necessary to transition to interface configuration mode for Serial0/0/0.

- Enter:

```
R1(config-if)# ipv6 address 2001:DB8:1:A001::2/64
```

b. Refer to the **Addressing Table** to obtain the correct IPv6 address.

c. Configure the IPv6 address, the link-local and activate the interface.

- Enter:

```
R1(config-if)# ipv6 address FE80::1 link-local
```

- Enter: no shutdown

## 2. Configure IPv6 Addressing on the Servers

### 1. Configure IPv6 addressing on the Accounting Server.

a. Click **Accounting** and click the **Desktop** tab > **IP Configuration**.

b. Set the **IPv6 Address** to **2001:DB8:1:1::4** with a prefix of **/64**.

c. Set the **IPv6 Gateway** to the link-local address, **FE80::1**.

### 2. Configure IPv6 addressing on the CAD Server.

Repeat Steps 1a to 1c for the **CAD** server. Refer to the **Addressing Table** for the IPv6 address.

## 3. Configure IPv6 Addressing on the Clients

### 1. Configure IPv6 addressing on the Sales and Billing Clients.

a. Click **Billing** and then select the **Desktop** tab followed by **IP Configuration**.

b. Set the **IPv6 Address** to **2001:DB8:1:1::3** with a prefix of **/64**.

c. Set the **IPv6 Gateway** to the link-local address, **FE80::1**.

d. Repeat Steps 1a through 1c for **Sales**. Refer to the **Addressing Table** for the IPv6 address.

### 2. Configure IPv6 Addressing on the Engineering and Design Clients.

a. Click **Engineering** and then select the **Desktop** tab followed by **IP Configuration**.

b. Set the **IPv6 Address** to **2001:DB8:1:2::3** with a prefix of **/64**.

c. Set the **IPv6 Gateway** to the link-local address, **FE80::1**.

d. Repeat Steps 1a through 1c for **Design**. Refer to the **Addressing Table** for the IPv6 address.

## 4. Test and Verify Network Connectivity

### 1. Open the server web pages from the clients.

a. Click **Sales** and click the **Desktop** tab. Close the **IP Configuration** window, if necessary.

b. Click **Web Browser**. Enter **2001:DB8:1:1::4** in the URL box and click **Go**. The **Accounting** website should appear.

c. Enter **2001:DB8:1:2::4** in the URL box and click **Go**. The **CAD** website should appear.

d. Repeat steps 1a through 1d for the rest of the clients.

## 2. Ping the ISP.

a. Open any client computer configuration window by clicking the icon.

b. Click the **Desktop** tab > **Command Prompt**.

c. Test connectivity to the ISP by entering the following command:

```
PC> ping 2001:DB8:1:A001::1
```

d. Repeat the **ping** command with other clients until full connectivity is verified.