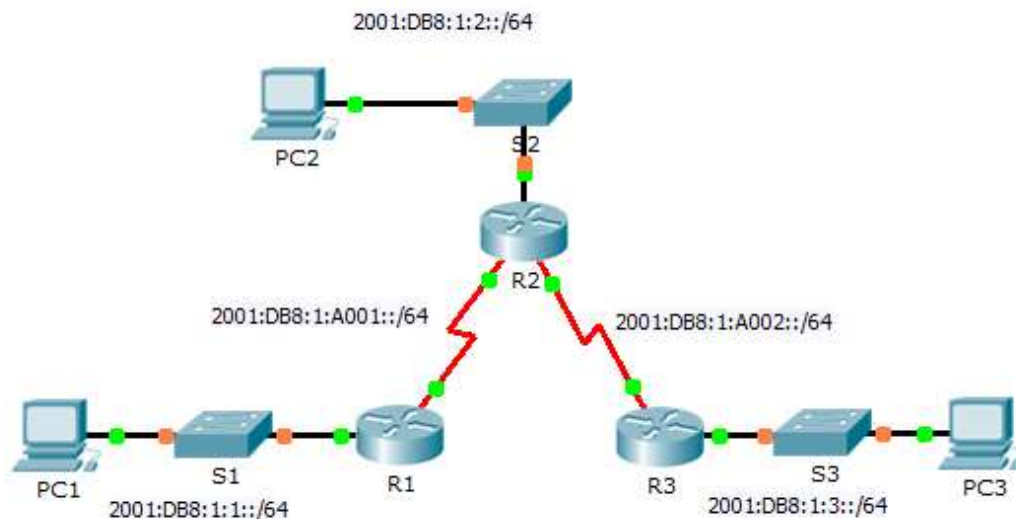


## Packet Tracer - Configuring IPv6 Static and Default Routes



### IPv6 Addressing Table

| Device | Interface | IPv6 Address/Prefix   | Default Gateway |
|--------|-----------|-----------------------|-----------------|
| R1     | G0/0      | 2001:DB8:1:1::1/64    | N/A             |
|        | S0/0/0    | 2001:DB8:1:A001::1/64 | N/A             |
| R2     | G0/0      | 2001:DB8:1:2::1/64    | N/A             |
|        | S0/0/0    | 2001:DB8:1:A001::2/64 | N/A             |
|        | S0/0/1    | 2001:DB8:1:A002::1/64 | N/A             |
| R3     | G0/0      | 2001:DB8:1:3::1/64    | N/A             |
|        | S0/0/1    | 2001:DB8:1:A002::2/64 | N/A             |
| PC1    | NIC       | 2001:DB8:1:1::F/64    | FE80::1         |
| PC2    | NIC       | 2001:DB8:1:2::F/64    | FE80::2         |
| PC3    | NIC       | 2001:DB8:1:3::F/64    | FE80::3         |

### Objectives

**Part 1: Examine the Network and Evaluate the Need for Static Routing**

**Part 2: Configure IPv6 Static and Default Routes**

**Part 3: Verify Connectivity**

### Background

In this activity, you will configure IPv6 static and default routes. A static route is a route that is entered manually by the network administrator in order to create a route that is reliable and safe. There are four

different static routes used in this activity: a recursive static route; a directly attached static route; a fully specified static route; and a default route.

### Part 1: Examine the Network and Evaluate the Need for Static Routing

- a. Looking at the topology diagram, how many networks are there in total?
- b. How many networks are directly connected to R1, R2, and R3?
- c. How many static routes are required by each router to reach networks that are not directly connected?
- d. Which command is used to configure IPv6 static routes?

### Part 2: Configure IPv6 Static and Default Routes

#### Step 1: Enable IPv6 routing on all routers.

Before configuring static routes, we must configure the router to forward IPv6 packets

Which command accomplishes this?

Enter this command on each router.

#### Step 2: Configure recursive static routes on R1.

Configure an IPv6 recursive static route to every network not directly connected to R1.

#### Step 3: Configure a directly attached and a fully specified static route on R2.

- a. Configure a directly attached static route from R2 to the R1 LAN.
- b. Configure a fully specific route from R2 to the R3 LAN.  
**Note:** Packet Tracer v6.0.1 only checks for directly attached and recursive static routes. Your instructor may ask to review your configuration of a fully specified IPv6 static route.

#### Step 4: Configure a default route on R3.

Configure a recursive default route on R3 to reach all networks not directly connected.

#### Step 5: Verify static route configurations.

- a. Which command is used in Packet Tracer to verify the IPv6 configuration of a PC from the command prompt?
- b. Which command displays the IPv6 addresses configured on a router's interface?
- c. Which command displays the contents of the IPv6 routing table?

### Part 3: Verify Network Connectivity

Every device should now be able to ping every other device. If not, review your static and default route configurations.

### Suggested Scoring Rubric

| Activity Section  | Question Location | Possible Points | Earned Points |
|---|-------------------|-----------------|---------------|
| Part 1: Exam the Network and Evaluate the Need for Static Routing | a - d             | 20              |               |
| <b>Part 1 Total</b>   |                   | <b>20</b>       |               |
| Part 2: Configure IPv6 Static and Default Routes                  | Step 1            | 5               |               |
|   | Step 5            | 15              |               |
| <b>Part 2 Total</b>   |                   | <b>20</b>       |               |
| <b>Packet Tracer Score</b>  |                   | <b>60</b>       |               |
| <b>Total Score</b>  |                   | <b>100</b>      |               |