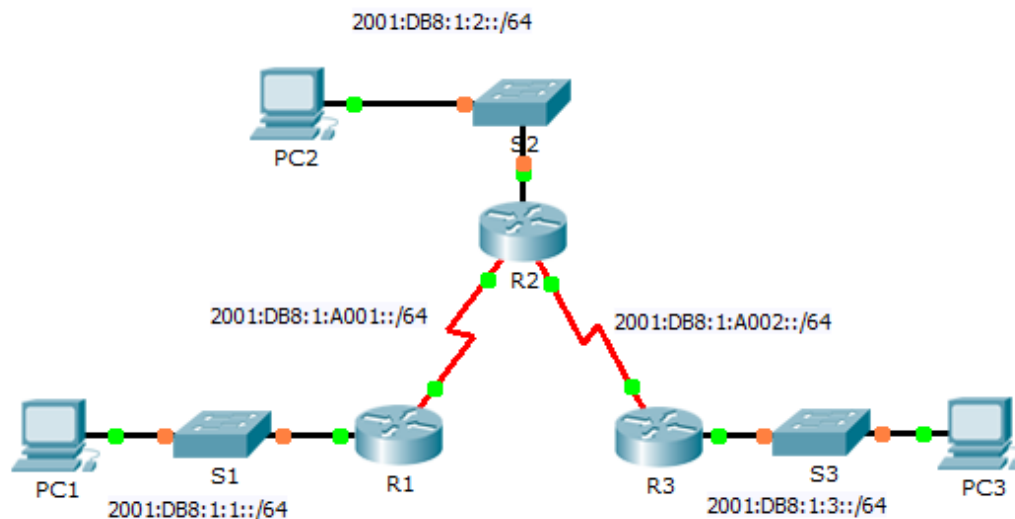


Packet Tracer - Configuring IPv6 Static and Default Routes



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?
5
- b. How many networks are directly connected to R1, R2, and R3?
R1 has 2, R2 has 3, and R3 has 2
- c. How many static routes are required by each router to reach networks that are not directly connected?
R1 needs to configure 3 static routes, R2 needs to configure 2 static routes, and R3 needs to configure 3 static routes.
- d. Which command is used to configure IPv6 static routes?
ipv6 route [network/prefix] [exit interface/next hop address]

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?

#ipv6 unicast-routing

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?
ipv6config
- b. Which command displays the IPv6 addresses configured on a router's interface?
show ipv6 interface brief
- c. Which command displays the contents of the IPv6 routing table?
show ipv6 route

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 | |
| Part 1 Total | | 20 | |
| Part 2: Configure IPv6 Static and Default Routes | Step 1 | 5 | |
| | Step 5 | 15 | |
| Part 2 Total | | 20 | |
| Packet Tracer Score | | 60 | |
| Total Score | | 100 | |