Packet Tracer - Troubleshoot Static and Default Routes

# Addressing Table

| Device | Interface | IP Addresses |
| --- | --- | --- |
| R1 | G0/0 | 172.31.1.1/25 |
| R1 | G0/0 | 2001:DB8:1::1/64 |
| R1 | S0/0/0 | 172.31.1.194/30 |
| R1 | S0/0/0 | 2001:DB8:2::194/64 |
| R2 | G0/0 | 172.31.0.1/24 |
| R2 | G0/0 | 2001:DB8:3::1/64 |
| R2 | S0/0/0 | 172.31.1.193/30 |
| R2 | S0/0/0 | 2001:DB8:2::193/64 |
| R2 | S0/0/1 | 172.31.1.197/30 |
| R2 | S0/0/1 | 2001:DB8:4::197/64 |
| R3 | G0/0 | 172.31.1.129/26 |
| R3 | G0/0 | 2001:DB8:5::1/64 |
| R3 | S0/0/1 | 172.31.1.198/30 |
| R3 | S0/0/1 | 2001:DB8:4::198/64 |
| PC1 | NIC | 172.31.1.126/25 |
| PC1 | NIC | 2001:DB8:1::126/64 |
| PC2 | NIC | 172.31.0.254/24 |
| PC2 | NIC | 2001:DB8:3::254/64 |
| Server | NIC | 172.31.1.190/26 |
| Server | NIC | 2001:DB8:5::190/64 |

# Objectives

In this activity you will troubleshoot static and default routes and repair any errors that you find.

* Troubleshoot IPv4 static routes.
* Troubleshoot IPv4 default routes.
* Troubleshoot IPv6 static routes.
* Configure IPv4 static routes.
* Configure IPv4 default routes.
* Configure IPv6 static routes.

# Background / Scenario

A newly hired network technician is attempting to preconfigure a simple topology that will be delivered to a customer. The technician has not been able to establish connectivity between the three LANs. You have been asked to troubleshoot the topology and verify connectivity between the hosts on the three LANs over IPv4 and IPv6.

# Instructions

## Locate and document the problems.

Record your findings in a table like the one below.

| Location | Problem | Solution |
| --- | --- | --- |
| R1 | IPv4 default static route was incorrect | Changed the defaults static route to 172.31.1.193 |
| R2 | IPv4 next-hop routes were flopped | Changed the next hop route for the 172.31.1.0 network to 172.31.1.194 and changed the next hop route for the 172.31.1.128 network to 172.31.1.198 |
| R2 | Static next hop ipv6 route address is incorrect | Change static ipv6 route to correct address: 2001:db8:1::/64 |
| R3 | Static ipv4 route for 172.31.1.0 network has the wrong subnet mask | Change the static route with the correct subnet mask : 255.255.255.128 |
| R3 | No IPv4 static route for LAN 1 | Add the correct static route for 2001:db8:1::/64 |

## Repair the problems.

Configure the devices so that full connectivity exists between the hosts on the LANs over IPv4 and IPv6.

**Note:** Your task is to establish connectivity using the existing static route design. Changing the types of static routes used will result in a loss of points.

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