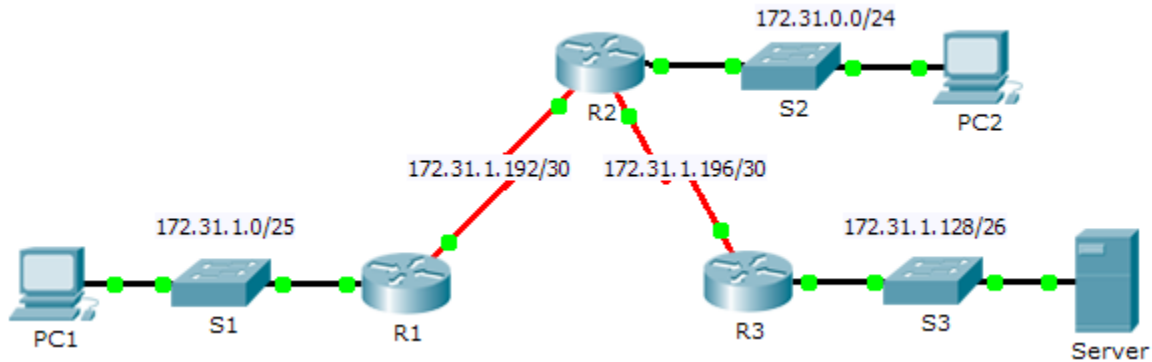# Packet Tracer - Troubleshooting Static Routes (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Topology

Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0	172.31.1.1	255.255.255.128	N/A
	S0/0/0	172.31.1.194	255.255.255.252	N/A
R2	G0/0	172.31.0.1	255.255.255.0	N/A
	S0/0/0	172.31.1.193	255.255.255.252	N/A
	S0/0/1	172.31.1.197	255.255.255.252	N/A
R3	G0/0	172.31.1.129	255.255.255.192	N/A
	S0/0/1	172.31.1.198	255.255.255.252	N/A
PC1	NIC	172.31.1.126	255.255.255.128	172.31.1.1
PC2	NIC	172.31.0.254	255.255.255.0	172.31.0.1
Server	NIC	172.31.1.190	255.255.255.192	172.31.1.129

Objectives

Part 1: Locate the Problem

Part 2: Determine the Solution

Part 3: Implement the Solution

Part 4: Verify That the Issue Is Resolved

Background

In this activity, PC1 reports that they cannot access resources on the server. Locate the problem, decide on an appropriate solution and resolve the issue.

Part 1: Locate the Problem

PC1 cannot access files on the server. Locate the problem using the appropriate **show** commands on all routers and any troubleshooting commands on the PCs that you have learned from previous chapters.

What are some of the troubleshooting commands on routers and PCs that can be used to identify the source of the problem? show ip route, show run, traceroute, tracert, and ping.

Part 2: Determine the Solution

After you have located the problem that is preventing PC1 from accessing files on the server, fill in the table below.

Problem	Solution
The static routes on R2 are both using the incorrect next-hop address.	Remove the static routes and replace them with the correct next-hop router address.
There is no route listed in R3 for the R1 LAN.	Add a static route on R3 to the R1 LAN.

Part 3: Implement the Solution

a. If there are any misconfigured static routes, you must remove them before the correct ones can be added to the configuration.

```
R2(config)# no ip route 172.31.1.0 255.255.255.128 172.31.1.198
R2(config)# no ip route 172.31.1.128 255.255.255.192 172.31.1.194
R2(config)# ip route 172.31.1.0 255.255.255.128 172.31.1.194
R2(config)# ip route 172.31.1.128 255.255.255.192 172.31.1.198
```

b. Add any missing static routes by configuring directly attached routes.

```
R3(config)# ip route 172.31.1.0 255.255.255.128 s0/0/1
```

Part 4: Verify That the Issue Is Resolved

a. Ping from PC1 to the server.

b. Open a web connection to the server. After you correctly identify and implement the correct solution to the problem, you will receive a message in the web browser when you connect to the server.

Suggested Scoring Rubric

Activity Section	Possible Points	Earned Points
Part 1: Locate the Problem	2	
Part 2: Determine the Solution	8	
Packet Tracer Score	90	
Total Score	100	