Packet Tracer - Propagate a Default Route in OSPFv2

# Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IPv4 Address | Subnet Mask | Default Gateway |
| R1 | G0/0 | 172.16.1.1 | 255.255.255.0 | N/A |
| R1 | S0/0/0 | 172.16.3.1 | 255.255.255.252 | N/A |
| R1 | S0/0/1 | 192.168.10.5 | 255.255.255.252 | N/A |
| R2 | G0/0 | 172.16.2.1 | 255.255.255.0 | N/A |
| R2 | S0/0/0 | 172.16.3.2 | 255.255.255.252 | N/A |
| R2 | S0/0/1 | 192.168.10.9 | 255.255.255.252 | N/A |
| R2 | S0/1/0 | 209.165.200.225 | 255.255.255.224 | N/A |
| R3 | G0/0 | 192.168.1.1 | 255.255.255.0 | N/A |
| R3 | S0/0/0 | 192.168.10.6 | 255.255.255.252 | N/A |
| R3 | S0/0/1 | 192.168.10.10 | 255.255.255.252 | N/A |
| PC1 | NIC | 172.16.1.2 | 255.255.255.0 | 172.16.1.1 |
| PC2 | NIC | 172.16.2.2 | 255.255.255.0 | 172.16.2.1 |
| PC3 | NIC | 192.168.1.2 | 255.255.255.0 | 192.168.1.1 |
| Web Server | NIC | 64.100.1.2 | 255.255.255.0 | 64.100.1.1 |

# Objectives

Part 1: Propagate a Default Route

Part 2: Verify Connectivity

# Background

In this activity, you will configure an IPv4 default route to the Internet and propagate that default route to other OSPF routers. You will then verify the default route is in downstream routing tables and that hosts can now access a web server on the Internet.

# Instructions

## Propagate a Default Route

### Test connectivity to the Web Server

* + - 1. From PC1, PC2, and PC3, attempt to ping the Web Server IP address, 64.100.1.2.

#### Questions:

Were any of the pings successful?

No.

What message did you receive, and which device issued the message?

A message stating “Destination host unreadable” sent by each PCs LANs router

* + - 1. Examine the routing tables on routers R1, R2, and R3.

Open configuration window

#### Question:

What statement is present in the routing tables that indicates that the pings to the Web Server will fail?

Gateway of last resort not set

### Configure a default route on R2.

Configure **R2** with a directly attached default route to the Internet.

R2(config)# **ip route 0.0.0.0 0.0.0.0 Serial0/1/0**

**Note**: Router will give a warning that if this interface is not a point-to-point connection, it may impact performance. You can ignore this warning because it is a point-to-point connection.

### Propagate the route in OSPF.

Configure OSPF to propagate the default route in OSPF routing updates.

R2(config)# **router ospf 1**

R2(config-router)# **default-information originate**

### Examine the routing tables on R1 and R3.

Examine the routing tables of **R1** and **R3** to verify that the route has been propagated.

R1> **show ip route**

<output omitted>

Gateway of last resort is 172.16.3.2 to network 0.0.0.0

<output omitted>

O\*E2 0.0.0.0/0 [110/1] via 172.16.3.2, 00:00:08, Serial0/0/0

!-------------------

R3> **show ip route**

<output omitted>

Gateway of last resort is 192.168.10.9 to network 0.0.0.0

<output omitted>

O\*E2 0.0.0.0/0 [110/1] via 192.168.10.9, 00:08:15, Serial0/0/1

Close configuration window

## Verify Connectivity

Verify that **PC1**, **PC2**,and **PC3** can ping the web server.

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