

## Packet Tracer - Propagate a Default Route in OSPFv2

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### Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0	172.16.1.1	255.255.255.0	N/A
	S0/0/0	172.16.3.1	255.255.255.252	
	S0/0/1	192.168.10.5	255.255.255.252	
R2	G0/0	172.16.2.1	255.255.255.0	N/A
	S0/0/0	172.16.3.2	255.255.255.252	
	S0/0/1	192.168.10.9	255.255.255.252	
	S0/1/0	209.165.200.225	255.255.255.224	
R3	G0/0	192.168.1.1	255.255.255.0	N/A
	S0/0/0	192.168.10.6	255.255.255.252	
	S0/0/1	192.168.10.10	255.255.255.252	
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

#### Part 1: Propagate a Default Route

##### Step 1: Test connectivity to the Web Server

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

Were any of the pings successful?

**R:** The ping failed on each pcs.

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

**R:** On some pcs we have the Request time out in some petition of the 4 of each ping but letter of two "request time out error" we had the Reply from 172.16.2.1: Destination host unreachable.

- b. Examine the routing tables on routers R1, R2, and R3.

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

**R:** The configuration of the routing tables allow to communicate with the others networks but the message on each route "Gateway of last resort is not set" is the problem that causes the failure.

### Step 2: 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.

### Step 3: 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
```

### Step 4: 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
```

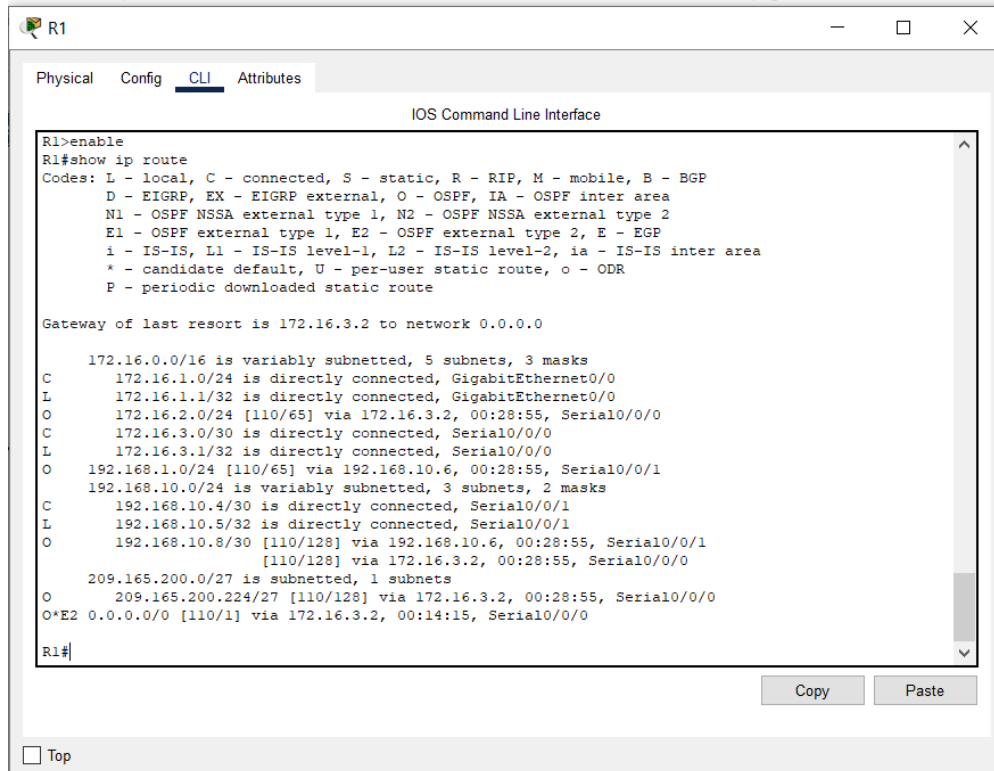
```
!-----
```

```
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
```



```
R1>enable
R1#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       I - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

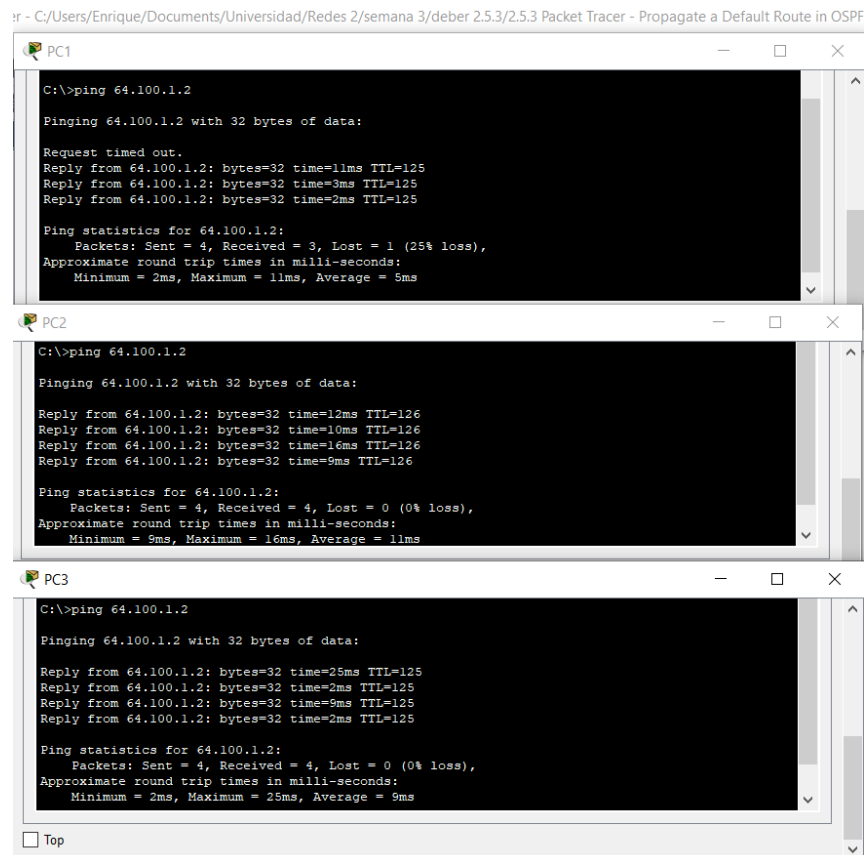
Gateway of last resort is 172.16.3.2 to network 0.0.0.0

    172.16.0.0/16 is variably subnetted, 5 subnets, 3 masks
       C       172.16.1.0/24 is directly connected, GigabitEthernet0/0
       L       172.16.1.1/32 is directly connected, GigabitEthernet0/0
       O       172.16.2.0/24 [110/65] via 172.16.3.2, 00:28:55, Serial0/0/0
       C       172.16.3.0/30 is directly connected, Serial0/0/0
       L       172.16.3.1/32 is directly connected, Serial0/0/0
       O       192.168.1.0/24 [110/65] via 192.168.10.6, 00:28:55, Serial0/0/1
       L       192.168.10.0/24 is variably subnetted, 3 subnets, 2 masks
          C     192.168.10.4/30 is directly connected, Serial0/0/1
          L     192.168.10.5/32 is directly connected, Serial0/0/1
          O     192.168.10.8/30 [110/128] via 192.168.10.6, 00:28:55, Serial0/0/1
                   [110/128] via 172.16.3.2, 00:28:55, Serial0/0/0
       O       209.165.200.0/27 is subnetted, 1 subnets
          O     209.165.200.224/27 [110/128] via 172.16.3.2, 00:28:55, Serial0/0/0
O*E2 0.0.0.0/0 [110/1] via 172.16.3.2, 00:14:15, Serial0/0/0

R1#
```

## Part 2: Verify Connectivity

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



```
PC1
C:\>ping 64.100.1.2

Pinging 64.100.1.2 with 32 bytes of data:

Request timed out.
Reply from 64.100.1.2: bytes=32 time=11ms TTL=125
Reply from 64.100.1.2: bytes=32 time=3ms TTL=125
Reply from 64.100.1.2: bytes=32 time=2ms TTL=125

Ping statistics for 64.100.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 11ms, Average = 5ms

PC2
C:\>ping 64.100.1.2

Pinging 64.100.1.2 with 32 bytes of data:

Reply from 64.100.1.2: bytes=32 time=12ms TTL=126
Reply from 64.100.1.2: bytes=32 time=10ms TTL=126
Reply from 64.100.1.2: bytes=32 time=16ms TTL=126
Reply from 64.100.1.2: bytes=32 time=9ms TTL=126

Ping statistics for 64.100.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 16ms, Average = 11ms

PC3
C:\>ping 64.100.1.2

Pinging 64.100.1.2 with 32 bytes of data:

Reply from 64.100.1.2: bytes=32 time=25ms TTL=125
Reply from 64.100.1.2: bytes=32 time=2ms TTL=125
Reply from 64.100.1.2: bytes=32 time=9ms TTL=125
Reply from 64.100.1.2: bytes=32 time=2ms TTL=125

Ping statistics for 64.100.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 25ms, Average = 9ms
```

# ScreenShoot of activity:

Cisco Packet Tracer - C:\Users\Enrique\Documents\Universidad\Redes 2\semana 3\deber 2.5.3\2.5.3 Packet Tracer - Propagate a Default Route in OSPFv2.pka - Luis Enrique Pérez Señalín - 2024-05-09 22:17:58

File Edit Options View Tools Extensions Window Help

Activity Results

Time Elapsed: 00:33:33

Congratulations Luis Enrique Pérez Señalín! You completed the activity.

Overall Feedback Assessment Items Connectivity Tests

Expand/Collapse All Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
R2				
OSPF		0	Other	
Process ID 1		0	Routing	
Default Information	Correct	50	OSPFv2 Default R...	
Routes		0	Other	
Static Routes		0	Routing	
(deprecated) Route0	Correct	50	IPv4 Static Defaul...	

Score : 100/100

Item Count : 2/2

Component	Items/Total	Score
IPv4 Static Default Route Configuration	1/1	50/50
OSPFv2 Default Route Propagation	1/1	50/50

Windows Taskbar Icons

10:51 PM 5/9/2024