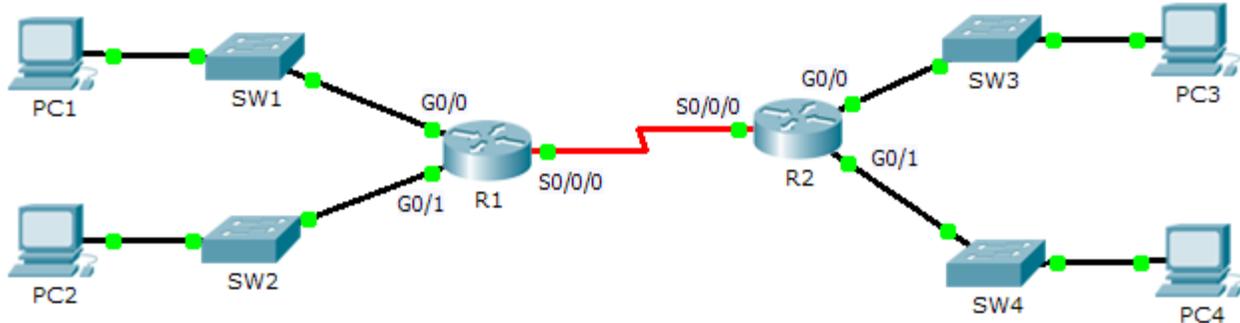# Packet Tracer - Investigating Directly Connected Routes

Topology

Objectives

Part 1: Investigate IPv4 Directly Connected Routes

Part 2: Investigate IPv6 Directly Connected Routes

Background

The network in the activity is already configured. You will log in to the routers and use **show** commands to discover and answer the questions below about the directly connected routes.

Note: The user EXEC password is **cisco** and the privileged exec password is **class.**

Part 1: Investigate IPv4 Directly Connected Routes

Step 1: Use show commands to gather information about the IPv4 directly connected networks.

Enter the following command on **R1**:

```
R1> show ip route ?
```

a. What option would be most beneficial in determining the networks assigned to the interfaces of the router? Conectado.

b. Which networks are directly connected on **R1**? Hint: Use the option determined above.

```
G0/0 – 172.31.20.0/23, G0/1 – 172.31.22.0/23, S0/0/0 – 209.165.200.224/30
```

c. Which IP addresses are assigned to the LAN interfaces on **R1**?

```
G0/0 is up. Conectado. 172.31.23.254/23 Serial0/0/0 conectado a, 209.165.200.225/30.
```

    d.   Which networks are directly connected on **R2**?

        G0/0 – 172.31.24.0/24, G0/1 – 172.31.25.0/24, S0/0/0 – 209.165.200.224/30.

    e.   Which IP addresses are assigned to the LAN interfaces on **R2**?

        G0/0 172.31.24.254, G0/1 172.31.25.254, S0/0/0 209.165.200.224.

Step 2: Verify PC addressing and test connectivity.

    a.   Open a command prompt on **PC1**. Issue the command to display the IP settings. Based on the output, would you expect **PC1** to be able to communicate with all interfaces on the router? Provide a short answer describing your expectations.

        Si, La PC1 esta conectada a R2 y cuenta con la direccion gateway por default.

    b.   Open a command prompt on **PC2**. Issue the command to display the IP settings. Based on the output, would you expect **PC2** to be able to communicate with **PC1**? Verify your expectations. Si.

    c.   Determine the IP addresses of **PC3** and **PC4**. Record the results and determine if **PC3** and **PC4** are able to communicate.

        Si, todas las PCc estan conectadas de tal forma que se puede conectar una con otra.

    d.   Test connectivity from **PC1** to **PC3**. Was the test successful? Si

    e.   **Bonus**: Looking at the outputs of the routing tables on **R1** and **R2**, what might indicate a reason for the success or failure of communication between **PC1** and **PC3**? Podria fallar si se desconecta PC1 del R1.

Part 2: Investigate IPv6 Directly Connected Routes

Step 1: Use show commands to gather information about the IPv6 directly connected networks.

    a.   Which IPv6 networks are available on **R1**?

        2001:DB8:C001:1::/64 -> G0/0,conectado 2001:DB8:C001:2::/64 desde G0/1, conectado 2001:DB8:C001:ACE::/64 desde Serial0/0/0.

        _____

    b.   Which IPv6 unicast addresses are assigned to the LAN interfaces on **R1**?

        G0/0 Global unicast address: 2001:DB8:C001:1::1 G0/1 Global unicast address: 2001:DB8:C001:2::1 S0/0/0 Global unicast address: 2001:DB8:C001:ACE::_____ _____

    c.   Which IPv6 networks are available on R2?

        2001:DB8:C001:3::/64 [0/0] via G0/0, conectado 2001:DB8:C001:4::/64 [0/0] via G0/1, conectado 2001:DB8:C001:ACE::/64 [0/0] via Serial0/0/0._____ _____

    d.   Which IPv6 addresses are assigned to the LAN interfaces on **R2**?

        G0/0 (FE80::2 2001:DB8:C001:3::1) y G0/1_____ __

Step 2: Verify PC settings and connectivity.

a. Open a command prompt on **PC1**. Issue the command to display the IPv6 settings. Based on the output, would you expect **PC1** to be able to communicate with all interfaces on the router? Provide a short answer describing your expectations

Si, se conecta desde la misma manera que los demas._____

b. Open a command prompt on **PC2**. Issue the command to display the IPv6 settings. Based on the output, would you expect **PC2** to be able to communicate with **PC1**? Verify your expectations. _Si___

c. Determine the IPv6 addresses of **PC3** and **PC4**. Record the results and determine if **PC3** and **PC4** are able to communicate.

Si, PC3 y PC4 se comunican entre si_____

d. Test connectivity from **PC1** to **PC3**. Was the test successful? Si__

e. **Bonus**: What might indicate a reason for the success or failure of communication between **PC1** and **PC3** after looking at the outputs of the IPv6 routing tables on **R1** and **R2**?

Si PC1 se desconecta de R1 y PC3 se desconecta de R2

_____

Suggested Scoring Rubric

Activity Section	Question Location	Possible Points	Earned Points
Part 1: Investigate IPv4 Directly Connected Routes	Step 1	25	
	Step 2	25	
Part 2: Investigate IPv6 Directly Connected Routes	Step 1	25	
	Step 2	25	
	Total Score	**100**	