Packet Tracer - Verify IPv4 and IPv6 Addressing

# Addressing Table

|  |  |  |  |
| --- | --- | --- | --- |
| Device | Interface | IP Address / Prefix | Default Gateway |
| R1 | G0/0 | 10.10.1.97  | 255.255.255.224 | N/A |
| R1 | G0/0 | 2001:db8:1:1::1/64 | N/A |
| R1 | S0/0/1 | 10.10.1.6 | 255.255.255.252 | N/A |
| R1 | S0/0/1 | 2001:db8:1:2::2/64 | N/A |
| R1 | S0/0/1 | fe80::1 | N/A |
| R2 | S0/0/0 | 10.10.1.5 | 255.255.255.252 | N/A |
| R2 | S0/0/0 | 2001:db8:1:2::1/64 | N/A |
| R2 | S0/0/1 | 10.10.1.9 | 255.255.255.252 | N/A |
| R2 | S0/0/1 | 2001:db8:1:3::1/64 | N/A |
| R2 | S0/0/1 | fe80::2 | N/A |
| R3 | G0/0 | 10.10.1.17 | 255.255.255.240 | N/A |
| R3 | G0/0 | 2001:db8:1:4::1/64 | N/A |
| R3 | S0/0/1 | 10.10.1.10 | 255.255.255.252 | N/A |
| R3 | S0/0/1 | 2001:db8:1:3::2/64 | N/A |
| R3 | S0/0/1 | fe80::3 | N/A |
| PC1 | NIC | blank | blank | blank |
| PC1 | NIC | blank | blank |
| PC2 | NIC | blank | blank | blank |
| PC2 | NIC | blank | blank |

# Objectives

Part 1: Complete the Addressing Table Documentation

Part 2: Test Connectivity Using Ping

Part 3: Discover the Path by Tracing the Route

# Background

Dual-stack allows IPv4 and IPv6 to coexist on the same network. In this activity, you will investigate a dual-stack implementation including documenting the IPv4 and IPv6 configuration for end devices, testing connectivity for both IPv4 and IPv6 using **ping**, and tracing the path from end to end for IPv4 and IPv6.Complete the Addressing Table Documentation

### Use ipconfig to verify IPv4 addressing.

* + - 1. Click **PC1** and open the **Command Prompt.**
			2. Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway.
			3. Click **PC2** and open the **Command Prompt.**
			4. Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway.

### Use ipv6config to verify IPv6 addressing.

* + - 1. On **PC1**, enter the **ipv6config /all** command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway.
			2. On **PC2**, enter the **ipv6config /all** command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway.

## Test Connectivity Using Ping

### Use ping to verify IPv4 connectivity.

* + - 1. From **PC1**, ping the IPv4 address for **PC2**.

#### Question:

Was the result successful?

Type your answers here.

* + - 1. From **PC2**, ping the IPv4 address for **PC1**.

#### Question:

Was the result successful?

Type your answers here.

### Use ping to verify IPv6 connectivity.

* + - 1. From **PC1**, ping the IPv6 address for **PC2**.

#### Question:

Was the result successful?

Type your answers here.

From **PC2**, ping the IPv6 address of **PC1**.

#### Question:

Was the result successful?

Type your answers here.

## Discover the Path by Tracing the Route

### Use tracert to discover the IPv4 path.

* + - 1. From **PC1**, trace the route to **PC2**.

PC> **tracert 10.10.1.20**

#### Questions:

What addresses were encountered along the path?

Type your answers here.

With which interfaces are the four addresses associated

Type your answers here.

* + - 1. From **PC2**, trace the route to **PC1**.

#### Questions:

What addresses were encountered along the path?

Type your answers here.

With which interfaces are the four addresses associated?

Type your answers here.

### Use tracert to discover the IPv6 path.

* + - 1. From **PC1**, trace the route to the IPv6 address for **PC2**.

PC> **tracert 2001:db8:1:4::a**

#### Questions:

What addresses were encountered along the path?

Type your answers here.

With which interfaces are the four addresses associated?

Type your answers here.

* + - 1. From **PC2**, trace the route to the IPv6 address for **PC1**.

#### Questions:

What addresses were encountered along the path?

Type your answers here.

With which interfaces are the four addresses associated?

Type your answers here.

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