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 | 10.10.1.100 | 255.255.255.224 | 10.10.1.97 |
| PC1 | NIC | 2001:db8:1:1::A/64 | | Fe80::1 |
| PC2 | NIC | 10.10.1.20 | 255.255.255.240 | 10.10.1.17 |
| PC2 | NIC | 2001:db8:1:4::a/64 | | Fe80::3 |

# 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? Yes

Type your answers here.

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

#### Question:

Was the result successful? Yes

Type your answers here.

### Use ping to verify IPv6 connectivity.

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

#### Question:

Was the result successful? Yes

Type your answers here.

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

#### Question:

Was the result successful? Yes

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? 10.10.1.97, 10.10.1.5, 10.10.1.10, 10.10.1.20

Type your answers here.

With which interfaces are the four addresses associated? Gigabit ethernet and Serial

Type your answers here.

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

#### Questions:

What addresses were encountered along the path? 10.10.1.17, 10.10.1.9, 10.10.1.6, 10.10.1.100

Type your answers here.

With which interfaces are the four addresses associated? Gigabit ethernet and Serial

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? **2001:db8:1:1::1, 2001:db8:1:2::1, 2001:db8:1:3::2, 2001:db8:1:4::a**

Type your answers here.

With which interfaces are the four addresses associated? Gigabit ethernet and Serial

Type your answers here.

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

#### Questions:

What addresses were encountered along the path? **2001:db8:1:4::1, 2001:db8:1:3::1, 2001:db8:1:2::2, 2001:db8:1:1::a**

Type your answers here.

With which interfaces are the four addresses associated? Gigabit ethernet and Serial

Type your answers here.

End of document