

**Packet Tracer - Verify IPv4 and IPv6 Addressing**

# Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Device** | **Interface** | **IP Address / Prefix** | | **Default Gateway** |
| R1  *R1* | G0/0 | 10.10.1.97 | 255.255.255.224 | N/A |
| *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  *PC1* | NIC  *NIC* | *blank* **110.10.1.100** | *blank blank***1255.255.255.224** | *blank* **110.10.1.97** |
| *blank***12001:db8:1:1::a/64** | | *blank* **1fe80::1** |
| PC2 | NIC  *NIC* | *blank* **110.10.1.20** | *blank***1255.255.255.240** | *blank* **110.10.1.17** |
| *PC2* | *blank* |  | *blank* |
| *blank***12001:db8:1:4::a/64** | | **1fe80::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 dualstack 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

**Packet Tracer - Verify IPv4 and IPv6 Addressing**

**Step 1: 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.

**Step 2: 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.

# Part 2: Test Connectivity Using Ping

**Step 1: 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.***

**Step 2: Use ping to verify IPv6 connectivity.**

a. 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.***

# Part 3: Discover the Path by Tracing the Route

**Step 1: 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?

Answer: 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

Answer: G0/0 R1, S0/0/0 R2, S0/0/1R3, NIC PC2 ***Type your answers here.***

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

**Packet Tracer - Verify IPv4 and IPv6 Addressing**

Questions:

What addresses were encountered along the path?

Answer: 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?

Answer: G0/0 R3 , S0/0/1 R2 , S0/0/1 R1 , NIC PC1

***Type your answers here.***

**Step 2: 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?

Answer: 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?

Answer: G0/0 R1, S0/0/0 R2 , S0/0/1 R3 , NIC PC2

***Type your answers here.***

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

Questions:

What addresses were encountered along the path?

Answer: 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?

Answer: G0/0 R3 , S0/0/1 R2 , S0/0/1 R1 , NIC PC1

***Type your answers here.***

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