

**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 |
|  |  | 2001:db8:1:1::1/64 | |  |
|  | S0/0/1 | 10.10.1.6 | 255.255.255.252 | N/A |
|  |  | 2001:db8:1:2::2/64 | |  |
|  |  | fe80::1 | |  |
| R2 | S0/0/0 | 10.10.1.5 | 255.255.255.252 | N/A |
|  |  | 2001:db8:1:2::1/64 | |  |
|  | S0/0/1 | 10.10.1.9 | 255.255.255.252 | N/A |
|  |  | 2001:db8:1:3::1/64 | |  |
|  |  | fe80::2 | |  |
| R3 | G0/0 | 10.10.1.17 | 255.255.255.240 | N/A |
|  |  | 2001:db8:1:4::1/64 | |  |
|  | S0/0/1 | 10.10.1.10 | 255.255.255.252 | N/A |
|  |  | 2001:db8:1:3::2/64 | |  |
|  |  | fe80::3 | |  |
| PC1 | NIC | 10.10.1.100 |  | 10.10.1.97 |
| PC1 | NIC | 2001:db8:1:1::a/64 | | fe80::1 |
| PC2 | NIC | 10.10.1.20 | 255.255.255.240255.255.255.224 | 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

**Step 1: Use ipconfig to verify IPv4 addressing.**

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

* 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.

* 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.**

* From **PC1**, ping the IPv4 address for **PC2**.

Was the result successful?

**ANS**, Yes the Ping was successful.

* From **PC2**, ping the IPv4 address for **PC1**.

Was the result successful?

**ANS**, Yest it was successful.

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

a. From **PC1**, ping the IPv6 address for **PC2**.

Was the result successful?

**ANS**, Yest it was successful.

From **PC2**, ping the IPv6 address of **PC1**. Was the result successful?

**ANS**, Yest it was successful..

**Part 3: Discover the Path by Tracing the Route**

**Step 1: Use tracert to discover the IPv4 path.**

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

PC> **tracert 10.10.1.20**

What addresses were encountered along the path?

**ANS**, The following addresses were encountered 10.10.1.97, 10.10.1.5, 10.10.1.10, 10.10.1.20.

With which interfaces are the four addresses associated

**ANS**, The four addresses are associated with the following interfaces G0/0 of R1, S0/0/0 on R2, S0/0/1 on R3, NIC of PC2.

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

What addresses were encountered along the path?

**ANS**, The following addresses were encountered 10.10.1.17, 10.10.1.9, 10.10.1.6, 10.10.1.100.

With which interfaces are the four addresses associated?

**ANS**, The four addresses are associated with the following interfaces G0/0 of R3, S0/0/1 of R2, S0/0/1 of R1, NIC of PC1

**Step 2: Use tracert to discover the IPv6 path.**

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

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

What addresses were encountered along the path?

**ANS**, The following addresses were encountered 2001:db8:1:1::1, 2001:db8:1:2::1, 2001:db8:1:3::2, 2001:db8:1:4::a.

With which interfaces are the four addresses associated?

**ANS**, The four addresses are associated with the following interfaces G0/0 of R1, S0/0/0 of r2, S0/0/1 of R3, NIC of PC2

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

What addresses were encountered along the path?

**ANS**, The following addresses were encountered 2001:db8:1:4::1, 2001:db8:1:3::1, 2001:db8:1:2::2, 2001:db8:1:1::a.

With which interfaces are the four addresses associated?

**ANS**, The four addresses are associated with the following interfaces G0/0 of R3, S0/0/1 of R2, S0/0/1 of R1, NIC of PC1