

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 | 255.255.255.224 | 10.10.1.97 |
| 2001:DB8:1:1::A | | FE80::1 |
| PC2 | NIC | 10.10.1.20 | 255.255.255.240 | 10.10.1.17 |
| 2001:DB8:1:4::A | | 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.

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.

1. 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**.

Was the result successful?

Answer: yes

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

Was the result successful?

Answer: yes

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

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

Was the result successful?

Answer: yes

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

Answer: yes

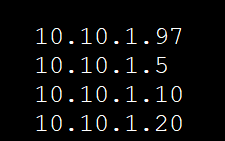
# Part 3: Discover the Path by Tracing the Route

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

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

### PC> tracert 10.10.1.20

What addresses were encountered along the path?

Answer: 

With which interfaces are the four addresses associated:

Answer:1) gigabit 0/0 on r1

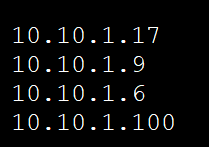
2) serial 0/0/0 on r2

3) serial 0/0/1 on r3

4) pc2

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

What addresses were encountered along the path?

Answer: 

With which interfaces are the four addresses associated?

Answer: 1) gig 0/0 on r3

2) serial 0/0/1 on r2

3) serial 0/0/1 on r1

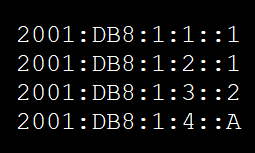
4) pc1

## 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

What addresses were encountered along the path?

Answer: 

With which interfaces are the four addresses associated?

Answer: 1) gig 0/0 on r1

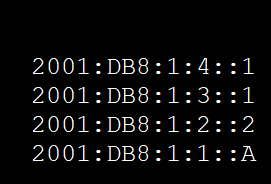
2) serial 0/0/0 on r2

3) serial 0/0/1 on r3

4) pc2

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

What addresses were encountered along the path?

Answer: 

With which interfaces are the four addresses associated?

Answer: 1) gig 0/0 on r3

2) serial 0/0/1 on r2

3) serial 0/0/1 on r1

4) pc1