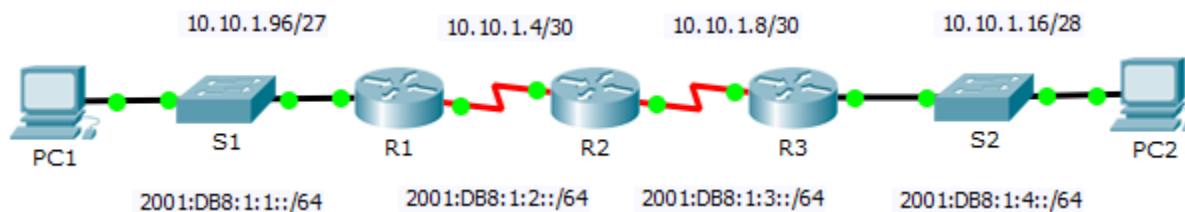


Packet Tracer - Verifying IPv4 and IPv6 Addressing

Topology



Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
		IPv6 Address/Prefix		
R1	G0/0	10.10.1.97	255.255.255.224	N/A
		2001:DB8:1:1::1/64		N/A
	S0/0/1	10.10.1.6	255.255.255.252	N/A
		2001:DB8:1:2::2/64		N/A
	Link-local	FE80::1		N/A
R2	S0/0/0	10.10.1.5	255.255.255.252	N/A
		2001:DB8:1:2::1/64		N/A
	S0/0/1	10.10.1.9	255.255.255.252	N/A
		2001:DB8:1:3::1/64		N/A
	Link-local	FE80::2		N/A
R3	G0/0	10.10.1.17	255.255.255.240	N/A
		2001:DB8:1:4::1/64		N/A
	S0/0/1	10.10.1.10	255.255.255.252	N/A
		2001:DB8:1:3::2/64		N/A
	Link-local	FE80::3		N/A
PC1	NIC			
PC2	NIC			

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.

Part 1: Complete the Addressing Table Documentation

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

- Click **PC1** and click the **Desktop** tab > **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 click the **Desktop** tab > **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?
- From **PC2**, ping the IPv4 address for **PC1**. Was the result successful?

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

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

With which interfaces are the four addresses associated?

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

What addresses were encountered along the path?

With which interfaces are the four addresses associated?

Step 2: Use tracert to discover the IPv6 path.

- a. 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?

With which interfaces are the four addresses associated?

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

What addresses were encountered along the path?

With which interfaces are the four addresses associated?

Suggested Scoring Rubric

Activity Section	Question Location	Possible Points	Earned Points
Part 1: Complete the Addressing Table Documentation	Step 1b	10	
	Step 1d	10	
	Step 2a	10	
	Step 2b	10	
Part 1 Total		40	
Part 2: Test Connectivity Using Ping	Step 1a	7	
	Step 1b	7	
	Step 2a	7	
	Step 2b	7	
Part 2 Total		28	
Part 3: Discover the Path by Tracing the Route	Step 1a	8	
	Step 1b	8	
	Step 2a	8	
	Step 2b	8	
Part 3 Total		32	
Total Score		100	