**Packet Tracer - Use Ping and Traceroute to Test Network Connectivity**

**Addressing Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Device** | **Interface** | **IP Address / Prefix** | | **Default Gateway** |
| R1 | G0/0 | 2001:db8:1:1::1/64 | | N/A |
| *R1* | G0/1 | 10.10.1.97 | 255.255.255.224 | 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 | 2001:db8:1:4::1/64 | | N/A |
| *R3* | G0/1 | 10.10.1.17 | 255.255.255.240 | 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 | *blank* | *blank* | *blank* |
| PC2 | NIC | *blank* | | *blank* |
| PC3 | NIC | *blank* | *blank* | *blank* |
| PC4 | NIC | *blank* | | *blank* |

**Objectives**

**Part 1: Test and Restore IPv4 Connectivity**

**Part 2: Test and Restore IPv6 Connectivity**

**Scenario**

There are connectivity issues in this activity. In addition to gathering and documenting information about the network, you will locate the problems and implement acceptable solutions to restore connectivity.

**Note:**The user EXEC password is **cisco**. The privileged EXEC password is **class**.

**Instructions**

**Part 1: Test and Restore IPv4 Connectivity**

**Step 1: Use ipconfig and ping to verify connectivity.**

a.     Click **PC1**and open the **Command Prompt**.

b.     Enter the **ipconfig /all** command to collect the IPv4 information. Complete the **Addressing Table**with the IPv4 address, subnet mask, and default gateway.

c.     Click **PC3**and open the **Command Prompt**.

d.     Enter the **ipconfig /all** command to collect the IPv4 information. Complete the **Addressing Table**with the IPv4 address, subnet mask, and default gateway.

e.     Use the **ping** command to test connectivity between **PC1**and **PC3**. The ping should fail.

**Step 2: Locate the source of connectivity failure.**

a.     From **PC1**, enter the necessary command to trace the route to **PC3**.

Question:

What is the last successful IPv4 address that was reached?

10.10.1.97

b.     The trace will eventually end after 30 attempts. Enter **Ctrl**+**C** to stop the trace before 30 attempts.

c.     From **PC3**, enter the necessary command to trace the route to **PC1**.

Question:

What is the last successful IPv4 address that was reached?

10.10.1.17

d.     Enter **Ctrl**+**C** to stop the trace.

*Open configuration window*

e.     Click **R1**. Press **ENTER**and log in to the router.

f.      Enter the **show ip interface brief** command to list the interfaces and their status. There are two IPv4 addresses on the router. One should have been recorded in Step 2a.

Question:

What is the other?

10.10.1.6

g.     Enter the **show ip route** command to list the networks to which the router is connected. Note that there are two networks connected to the **Serial0/0/1** interface.

Question:

What are they?

10.10.1.6/32, 10.10.1.4/30

Type your answers here.

h.     Repeat steps 2e through 2g with **R3** and record your answers.

i.      Click **R2**. Press **ENTER** and log into the router.

j.      Enter the **show ip interface brief** command and record your addresses.

k.     Run more tests if it helps visualize the problem. Simulation mode is available.

*Close configuration window*

**Step 3: Propose a solution to solve the problem.**

Compare your answers in Step 2 to the documentation you have available for the network.

Question:

What is the error?

Serial 0/0/0 interface milik R2 dikonfigurasi dengan ip address yang salah

What solution would you propose to correct the problem?

Dikonfigurasikan dengan ip address yang benar

Type your answers here.

**Step 4: Implement the plan.**

Implement the solution you proposed in Step 3b.

**Step 5: Verify that connectivity is restored.**

a.     From **PC1** test connectivity to **PC3**.

b.     From **PC3** test connectivity to **PC1**.

Question:

Is the problem resolved?

**Step 6: Document the solution.**

**Part 2: Test and Restore IPv6 Connectivity**

**Step 1: Use ipv6config and ping to verify connectivity.**

a.     Click **PC2**and open the **Command Prompt**.

b.     Enter the **ipv6config /all** command to collect the IPv6 information. Complete the **Addressing Table**with the IPv6 address, subnet prefix, and default gateway.

c.     Click **PC4**and open the **Command Prompt**.

d.     Enter the **ipv6config /all** command to collect the IPv6 information. Complete the **Addressing Table**with the IPv6 address, subnet prefix, and default gateway.

e.     Test connectivity between **PC2**and **PC4**. The ping should fail.

**Step 2: Locate the source of connectivity failure.**

a.     From **PC2**, enter the necessary command to trace the route to **PC4**.

Question:

What is the last successful IPv6 address that was reached?

2001:db8:1:3::2

b.     The trace will eventually end after 30 attempts. Enter **Ctrl**+**C** to stop the trace before 30 attempts.

c.     From **PC4**, enter the necessary command to trace the route to **PC2**.

Question:

What is the last successful IPv6 address that was reached?

tidak

d.     Enter **Ctrl**+**C** to stop the trace.

e.     Click **R3**. Press **ENTER**and log in to the router.

f.      Enter the **show ipv6 interface brief** command to list the interfaces and their status. There are two IPv6 addresses on the router. One should match the gateway address recorded in Step 1d.

Question:

Is there a discrepancy?

ya

g.     Run more tests if it helps visualize the problem. Simulation mode is available.

**Step 3: Propose a solution to solve the problem.**

Compare your answers in Step 2 to the documentation you have available for the network.

Question:

What is the error?

Pc4 menggunakan konfigurasi default gateway yang salah

What solution would you propose to correct the problem?

Konfigurasi pc4 dengan default gateway yang benar

**Step 4: Implement the plan.**

Implement the solution you proposed in Step 3b.

**Step 5: Verify that connectivity is restored.**

a.     From **PC2** test connectivity to **PC4**.

b.     From **PC4** test connectivity to **PC2**.

Question:

Is the problem resolved?

**Step 6: Document the solution.**