**Experiment 13**

**Aim**: To implement a subnetting scenario

**Software Used**:

Cisco Packet Tracer

**Topology:**

**A diagram of a computer network

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**Procedure: Packet Tracer - Implement a Subnetted IPv6 Addressing Scheme**

**Addressing Table**

| **Device** | **Interface** | **IPv6 Address** | **Link-local Address** |
| --- | --- | --- | --- |
| R1 | G0/0 | 2001:db8:acad:00c8::1/64 | fe80::1 |
| *R1* | G0/1 |  | fe80::1 |
| *R1* | S0/0/0 |  | fe80::1 |
| R2 | G0/0 |  | fe80::2 |
| *R2* | G0/1 |  | fe80::2 |
| *R2* | S0/0/0 |  | fe80::2 |
| PC1 | NIC | Auto Config | |
| PC2 | NIC | Auto Config | |
| PC3 | NIC | Auto Config | |
| PC4 | NIC | Auto Config | |

**Objectives**

**Step 1: Determine IPv6 subnets and addressing scheme.**

**Step 2: Configure IPv6 addressing on routers and PCs.**

**Step 3: Verify IPv6 connectivity.**

**Background / Scenario**

Network administrators must know how to implement IPv6 in their networks. You have been asked to set up a network for use by the sales staff for a customer demonstration. The network will use a series of consecutive IPv6 subnets for four LANs. Your job is to assign the subnets to the LANs and configure the routers and PCs with IPv6 addressing. Make certain to configure all the necessary components for IPv6 routing on the routers.

**Instructions**

**Step 1: Determine IPv6 subnets and addressing scheme.**

You have been given the IPv6 subnet **2001:db8:acad:00c8::/64** as the starting subnet. You will need four more subnets for each network that is required. Increment the subnet addresses consecutively by one to arrive at the four required subnets. Complete the table below.

**Subnet Table**

| **Subnet** | **Address** |
| --- | --- |
| R1 G0/0/ LAN | 2001:db8:acad:00c8::0/64 |
| R1 G0/1 LAN |  |
| R2 G0/0 LAN |  |
| R2 G0/1 LAN |  |
| R1 to R2 link network |  |

**Step 2: Configure IPv6 addressing on routers and PCs.**

Complete the addressing table above to use as a guide for configuring the devices.

·         Assign the first IP address in the subnet to the router LAN interfaces.

·         Assign the link-local addresses as designated in the addressing table.

·         For the connection between the routers, assign the first address in the subnet to R1.

·         For the connection between the routers, assign the second address in the subnet to R2.

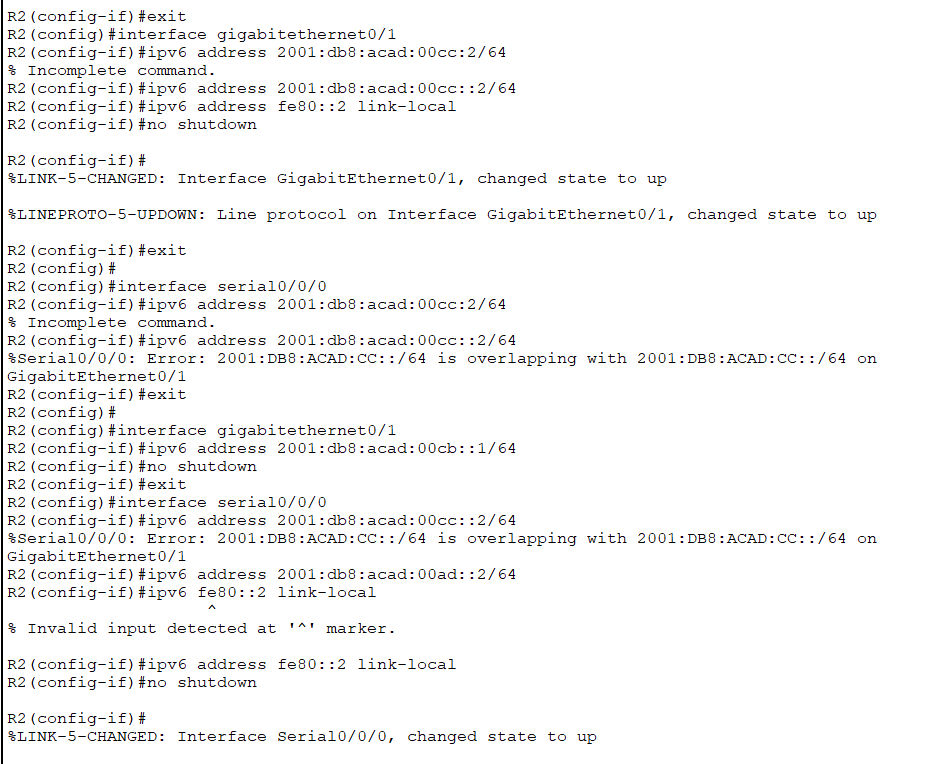
·         Set all four hosts to automatically configure with IPv6 addresses.

A screenshot of a computer program

Description automatically generated

**Step 3: Verify IPv6 connectivity.**

The PCs should be able to ping each other if addressing has been configured properly.



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**Packet Tracer Activity:**

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Description automatically generated with medium confidence**

**Conclusion**:

The router was configured successfully.