

## Lab 2: Setting Up a Local Area Network (LAN) with a Switch

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**Aim:** Configure a LAN using a switch and multiple PCs to understand basic networking and connectivity within a LAN.

### Objectives:

1. Connect multiple PCs to a switch.
2. Assign IP addresses to each PC.
3. Test network connectivity between PCs using the ping command.

### Steps:

#### 1. Open Cisco Packet Tracer:

- Launch Cisco Packet Tracer and create a new project.

#### 2. Add Devices:

- **Add a Switch:** Drag a switch (e.g., 2960) from the “Switches” category to the workspace.
- **Add PCs:** Drag multiple PCs (e.g., PC0, PC1, PC2) from the “End Devices” category to the workspace.

#### 3. Connect PCs to Switch:

- **Copper Straight-Through Cable:** Use a copper straight-through cable to connect each PC's FastEthernet0 port to one of the switch ports.
  - **Color Codes for Copper Straight-Through Cable (TIA/EIA-568B Standard):**
    - Pin 1: White/Orange
    - Pin 2: Orange
    - Pin 3: White/Green
    - Pin 4: Blue

- Pin 5: White/Blue
- Pin 6: Green
- Pin 7: White/Brown
- Pin 8: Brown

#### **4. Assign IP Addresses:**

- **Configure Each PC:**
  - Click on a PC, go to the Desktop tab, and open IP Configuration.
  - Assign IP addresses in the same subnet (e.g., PC0: 192.168.1.2, PC1: 192.168.1.3, PC2: 192.168.1.4) with a Subnet Mask of 255.255.255.0.

#### **5. Test Connectivity:**

- On each PC, use the Command Prompt to ping the other PCs to verify connectivity.