

## **PRACTICAL 4**

### **SETTING UP AND CONFIGURING A LAN USING A SWITCH**

**AIM:** To set up and configure a Local Area Network (LAN) using a switch and Ethernet cables.

#### **What is a LAN?**

A Local Area Network (LAN) connects devices in a limited area (like a lab, office, or home) to share resources such as data, printers, and internet access. It enables fast, secure data transfer between connected devices, like computers, printers, and servers, through a central device called a switch.

#### **Steps to Set Up a LAN**

##### **1. Plan the Network**

- Design the layout based on equipment location and network requirements.

##### **2. Gather Equipment**

- 4 computers, an 8-, 16-, or 24-port switch, and 4 Ethernet cables.

##### **3. Connect Devices**

- Connect each computer to the switch using Ethernet cables.

##### **4. Assign IP Addresses to Computers**

- Log in as an Administrator, go to Network Settings:
- Right-click Local Area Connection → Properties → Internet Protocol (TCP/IPv4) .
- Choose Use the following IP address and assign IPs:
- PC1: IP 10.1.1.1, Subnet Mask 255.0.0.0
- PC2: IP 10.1.1.2, Subnet Mask 255.0.0.0
- PC3: IP 10.1.1.3, Subnet Mask 255.0.0.0
- PC4: IP 10.1.1.4, Subnet Mask 255.0.0.0

##### **5. Configure the Switch**

- Connect your computer to the switch and log into the switch's web interface using its IP address.
- Set the switch's IP address to **10.1.1.5** with Subnet Mask **255.0.0.0**.

##### **6. Test Connectivity**

- Use the ping command in Command Prompt to check if each device can communicate with the switch and other computers.

##### **7. Share Files**

- Right-click on a folder, select Properties → Sharing tab → Share it with everyone on the LAN.

## **8. Access Shared Files**

- On other computers, navigate to the shared folder to ensure file sharing is successful.