

### 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.