

Ex: NO: 4

LAN

Date: 01.08.24

Aim:

Setup and configure a LAN (Local Area Network) using a switch and ethernet cables in your lab.

What is a LAN?

A Local Area Network (LAN) refers to a network that connects devices within a limited area, such as an office building, school or home. It enables users to share resources, including data, printers and Internet access. LAN connects devices to promote collaboration and transfer information between users, such as computers, printers, servers and switches.

How to set up a LAN

Step 1: Plan and Design an appropriate network topology taking into account network requirements and equipment locations.

Step 2: You can take 4 computers, a switch 8, 16 or 24 ports which is sufficient for networks of these sizes and 4 ethernet cables.

Step 3: Connect your computers to network switch via an ethernet cable.

Step 4: Assign IP address to your PCs

1. Log on to the client computer as Administrator or as owner.
2. click network and Internet Connection.
3. Right click Local Area Connection / Ethernet → Go to properties → Select IP → click on properties → select use the following ip address option and assign ip address.

Ethernet properties

Networking sharing

Internet Protocol v4

☒ You can get IP settings assigned automatically if your network supports this

☐ Obtain an IP address

☒ Use the following IP Address

IP address: 10.1.1.1

Subnet mask: 255.0.0.0

Default gateway: . . .

☐ Obtain DNS server address

Preferred DNS Server: . . .

Alternate DNS server: . . .

☐ Validate settings

Similarly assign IP address to all PCs connected to switch.

PC1 - IP address: 10.1.1.1, subnet mask 255.0.0.0

PC2 - IP address: 10.1.1.2, subnet mask 255.0.0.0

PC3 - IP address: 10.1.1.3, subnet mask 255.0.0.0

PC4 - IP address: 10.1.1.4, subnet mask 255.0.0.0

Step 5: configure a network switch;

1. Connect your computer to the switch;
To access the switch's web interface, you will need to connect your computer to the switch using an ethernet cable.

2. Log in to the web interface: Open a web browser and enter the IP address of the switch

3. configure basic settings

4. Assign IP address as: 10.1.1.5 subnet mask 255.0.0.0.

Step 6:

check the connectivity between switch and other machines by using ping command in the command prompt of the device

Step 7: Select a folder → go to properties
click sharing tab → share it with everyone on the same LAN

Steps: Try to access the shared folder from other computers of the network.

Result:

The experiment was successfully executed and the output is verified.

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