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PRACTICAL-4
SETUP AND CONFIGURE A LAN.

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. A local area network (LAN) switch serves as the primary connecting device, managing and directing communications within the local network. Each connected device on a LAN switch can communicate directly with each other, allowing for fast and secure data transfer.

How to set up a LAN:

1) Plan and design an appropriate network topology taking into account network requirements and equipment location.

2) You can take 4 computers, a switch with 8, 16 or 24 ports which is sufficient for networks for these sizes, and 4 Ethernet cables.

3) Connect your computers to network switch via an Ethernet cable, which is as simple as plugging one end of the Ethernet table into your computer and the other end into your network switch.

4) Assign IP address to your PCs

i) Log on to the client computer as Administrater or as Owner

ii) click network and Internet connections

iii) Right click Local Area Connection/ Ethernet → Go to Properties → Select Internet Protocol (TCP/IPv4) → Click on properties → Select use the following ip address option and assign ip address.

5) Configure a network switch:

i) Connect to your computer to the switch. To acess the switch's web interface, you will need to connect your computer to the switch using an Ethernet cable.

ii) Log in to the web interface: Open a web browser and enter the IP address of the switch in the address bar. This should bring up the login page for the switche's web interface. Enter the username & password to log in.

iii) Configure basic settings: Once you're logged in, you will be able to configure basic settings for the switch.

iv) Assign IP address as: 10.1.1.5, subnet mask 255.0.0.0.

6) Check the connectivity between switch and the other machine by using ping command in the command prompt of the device

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

8) Try to access the shared folder from others computers of the network.

Actual steps:

1) open cmd, Ipconfig: see the IPv4 address in the Ethernet Adapter Ethernet.

2) Open Run; open: \\ [ipv4 address of a receiver PC]
Eg: open: \\10.1.1.2

3) After opening go to the users select REC, GO to desktop (downloads/ document (wherever you want).

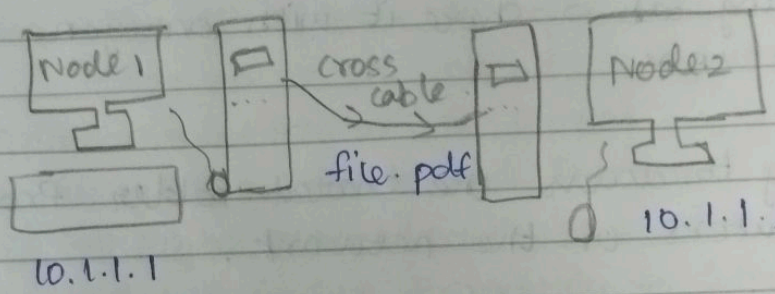
4) Paste the file you want to share

5) Then check the receiver PC on the respective directory that you previously selected & verify the file you sent.

Student Observation:

Draw a neat diagram of the LAN in the configuration observation book that you have implemented in your lab. Write the ip configuration of each & every device. Write the outcome and challenge faced while configurating the LAN.

Diagram of the LAN.



IP configuration.

Node-1 : IPV4 address : 10.1.1.1

Node-2 : IPV4 Address : 10.1.1.2

Outcome:

The file that sent through [click run: [\\10.1.1.2 (type)] -> //users //REC//desktop] is sent successfully

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RESULT

Setting up and configuring a local area network is observed and studied.