

Ex: 04

DATE: 06-08-2024

SETUP AND CONFIGURE LAN

Aim:

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

What is 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 LAN switch serves as the primary connecting device, managing and directing communication 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?

Step: 1

Plan and Design an appropriate network topology taking into

account network requirements and equipment location.

Step-2:

You can take 4 computers, a switch with 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, which is as simple as plugging one end of the Ethernet cable into your computer and the other end into your network switch.

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 Connections
3. 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 ipaddress

~~Similarly assign IP address to all the 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 in the address bar. This should bring up the login page for the switch's web interface. Enter the username and password to log in.

3. Configure basic settings: once you're logged in, you will be able to configure basic settings for the switch.

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

Step-6:

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

Step-7:

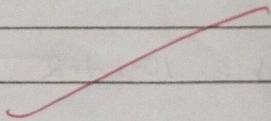
Select a folder → go to properties → click sharing tab → sharing it with everyone on the same LAN.

Step 8:

try to access the shared folder
from others computer of the network.

Actual steps:

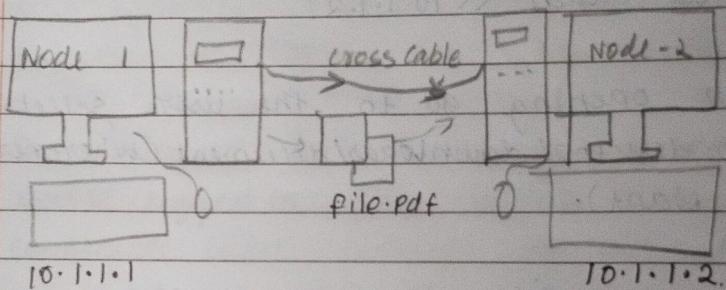
- 1) Open cmd, ipconfig : See the IPv4 Address in the Ethernet Adapter Ethernet.
- 2) Open run, open: \\ [IPv4 address of a receiver PC]
Eg: open: \\ 10.1.1.2
- 3) After opening go to the user select REC,
go to desktop/ downloads/ document (wherever you want).
- 4) Paste the file you want to share.
- 5) Then check the Receiver PC on the respective directory that your previously selected and 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 challenges faced while configuring 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 was sent through [click run : [11 10.1.1.2] ^(Type) → 11/users/REC//
Desktop] is sent successfully.

Result : Set up for LAN is successfully done and the results are verified, observed & studied.