Date: 5/8/24

Ex-4

Aim: Setup and configure a Lan (Local area Network) using a switch & 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 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 & secure data transfer

How to set up a LAN

Step1: Plan and Design an appropriate networks topology taking into account network requirements & equipment location

Step-2: You can take 4 computers, a switch with 8/16, or 24 ports which is sufficient for network of these sizes & 4 ethernet cables

Step3: 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 & the other end into your network switch.

Step4: Assign IP address to your PC s.

1. log on to the client computer as Administrator as a owner.

2. click Network & Internet connections.

3. Right click local Area Connectn / ethernet -> Go to properties, select Internet protocol (TCP/IPV4) -> click on properties -> select use the following ip address option & assign ip address

Internet Protocol version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address

IP address: `10 . 1 . 1 . 1`

Subnet mask: `255 . 0 . 0 . 0`

Default gateway: `   .   .   .   `

○ Obtain DNS server address automatically

● Use the following DNS server address

Preffered DNS server: `   .   .   .   `

Alternate DNS server: `   .   .   .   `

☐ Validate settings upon exit

[Advanced]

Similarly assign IP address to all the PCs connected to switch.

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.

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

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

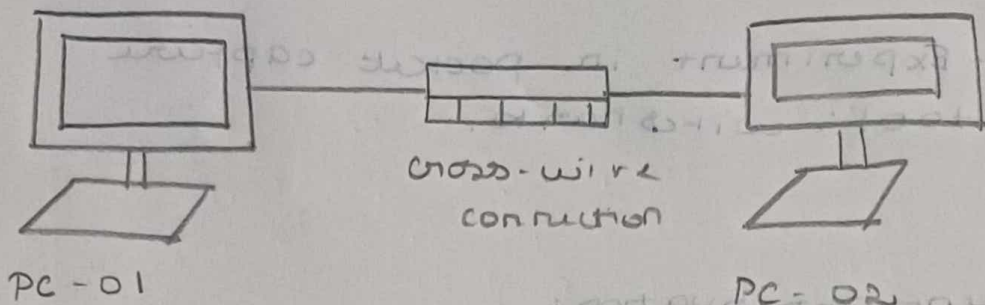4. Assign IP address as: 10.1.1.5, Subnet mask to 255.0.0.0

Step 6: Check the connectivity between switch & other machine by using ping command in the command prompt of the device.

Step 7: Select a folder, →goto properties → click sharing tab → share it with everyone on the same LAN.

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

Result: Thus the study of ethernet cable is successfully studied.

Student observation:-

Cross-wire
connection

PC-01   PC-02

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.

[signature]
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