06/08/2024

Experiment 4: Set and configure a LAN (Local Area Network) using a switch and Ethernet cables in your lab.

Aim:
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To set up and configure a LAN using a switch and Ethernet cable.

Steps:
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Step1: Plan and design an appropriate network topology taking into account network requirements and equipment location.

Step2: You can take 4 computers, a switch with 8, 16 or 24 ports which is sufficient for network of these sizes and 4 Ethernet cables.

Step3: Connect your computers to network 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.

Step4: Assign IP address to your PCs

1. Long 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/IP4) -> click on Properties -> Select use the following ip address option and assign ip address.

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 an IP address of the switch in the address box. 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 a 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 → share it with everyone on the same LAN.

Step 8: Try to access the shared folder from other computer of the network.

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 and every device. Write the outcome and challenges faced while configuring the LAN.

Diagram

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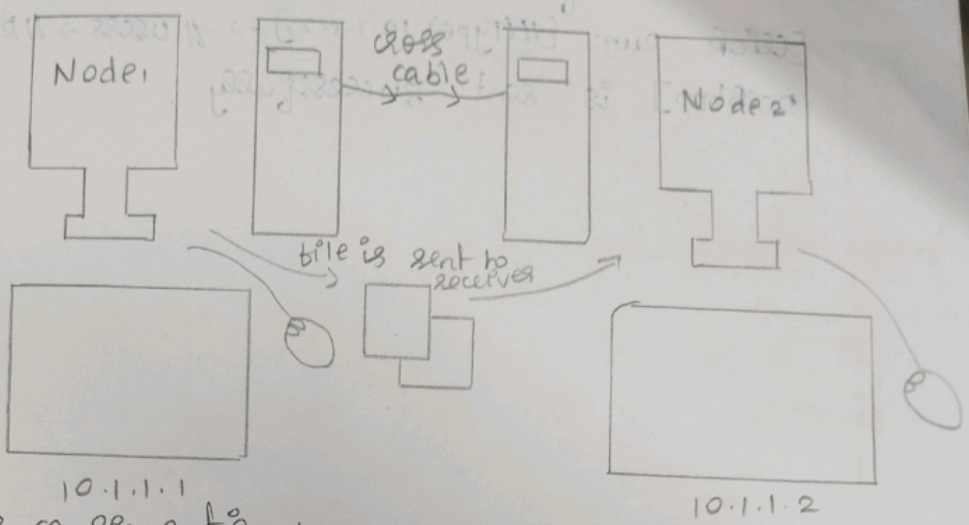
Diagram of the LAN:



IP configuration:

Node -1 : IPV4 Address: 10.1.1.1

Node-2 : IPV4 Address: 10.1.1.2

Actual steps:

1. open cmd, inconfig: see the IPV4 Address in the Ethernet Adapter Ethernet.
2. Open Run, open: \\ [IPV4 address of a receiver PC]. Eg: open: \\ 10.1.1.1
3. After opening go to the users. select REC Go to Desktop / Documents / Downloads (Whereever you want).
4. Paste the file there to share in the receiver PC.
5. Then check the Receiver PC on the respective directory that can previously selected and verify that the fill have sent.

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Outcome:

The file that sent through [Click Run: [\\(Type) 10.1.1.2] -> \\ users -> \\REC\\ Desktop] is sent successfully.

Result:

Thus, the setup for LAN is successfully configured and the data is sent and verified. Therefore, the file transfer are observed & studied.