

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.

How to Set up a LAN

Step 1: Plan and design an appropriate network 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 networks of the 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 other end into your network switch.

Step 4: Assign IP address to your PC's

1. Log on to the client computer as administrator as admin.

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 on the following ip address option and assign Ip Address.

Similarly assign Ip address to all the PCs Connected to Switch.

PC 1 - Ip address: 10.1.1.1, Subnet mask 255.0.0.0.

PC 2 - Ip address: 10.1.1.2, Subnet mask 255.0.0.0.

PC 3 - Ip address: 10.1.1.3, Subnet mask 255.0.0.0.

PC 4 - 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's interface, You will need to connect Your computer to the Switch using an Ethernet cable.

2. Login 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 & 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 & 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.

When I try to access the shared folder from other
computer of the network, I get the following error
message: "The network path is not accessible."
This error message is displayed because the
computer is not able to find the shared folder.
To resolve this issue, I have to check the
network connection and the sharing settings.
First, I will check the network connection.
I will go to the Control Panel > Network and
Sharing > Network Connections. I will see
the status of the network connection. If it is
not connected, I will click on the "Connect" button.
If it is connected, I will click on the "Troubleshoot" button.
This will help me to identify the problem and
resolve it. After checking the network connection,
I will check the sharing settings. I will go to
the Control Panel > Network and Sharing > Sharing
and Storage Spaces. I will see the sharing settings
for the network. If the sharing is not enabled,
I will click on the "Turn on sharing on this network" button.
This will enable the sharing on the network.

Result:- Hence LAN has been Successfully
Setup and Configured.

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