

Networking Devices

- Modem
- RJ-45 connector
- Ethernet Card (NIC)
- Router
- Switch
- Gateway
- Wi-Fi Card

Modem

- Modem is short for "Modulator-Demodulator."
- It is a hardware component that allows a computer or another device, such as a router or switch, to connect to the Internet.
- As we know phone lines work on analog signal while computer works on digital signal, So the role of Modem is to convert Digital signal to Analog so that it can be carried by telephone lines and other side it again convert analog signal to digital form

RJ-45 connector

- The "RJ" in RJ45 stands for "registered jack,"
- Registered Jack 45 (RJ45) is a standard type of physical **connector** for network cables.
- RJ45 connectors are most commonly seen with Ethernet cables and networks. Modern Ethernet cables feature small plastic plugs on each end that are inserted into the RJ45 jacks of Ethernet devices



Ethernet Card

- It is also known as NIC (Network Interface Card)
- Is a device that is attached to each of the workstations and the server and helps the workstations establish all – important connection with the network.
- It contain RJ-45 slot to connect Ethernet cable with RJ-45 connector.
- Each NIC attached to workstation has a unique number identifying it, known as MAC Address.
- Also known as Network Interface Unit.



Router

- ⦿ A device that works like a bridge but can handle different protocols is known as router. For example router can link Ethernet and mainframe. It is responsible for forwarding data from one network to different network.
- ⦿ The main purpose of router is to sorting and distribution of the data packets to their destination based on their IP Address.
- ⦿ Router uses Logical Address whereas Bridge uses Physical Address

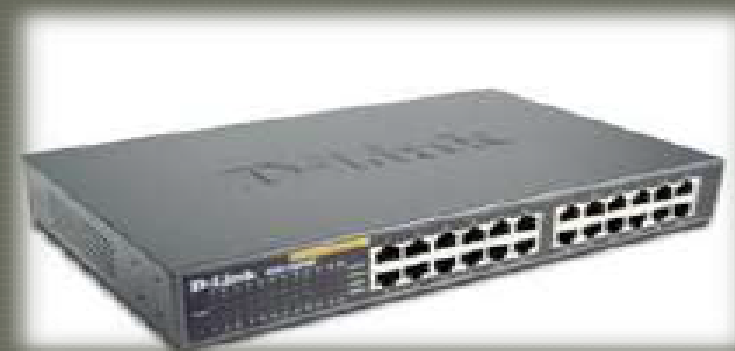
Hub

- is an electronic device that connect several nodes to form a network and redirect the received information to all the connected nodes in a **broadcast mode**.
- Hub is basically used in network to increase the number computer allows them to communicate with each other.
- It is a dumb device i.e. it forward the message to every node connected and create huge network traffic.
- Hubs can be either Passive or Active
 - **Active Hub** : they amplify the signals as it moves from one connected device to another like Repeaters.
 - **Passive Hub**: allows signals to pass from one device to another without any change.



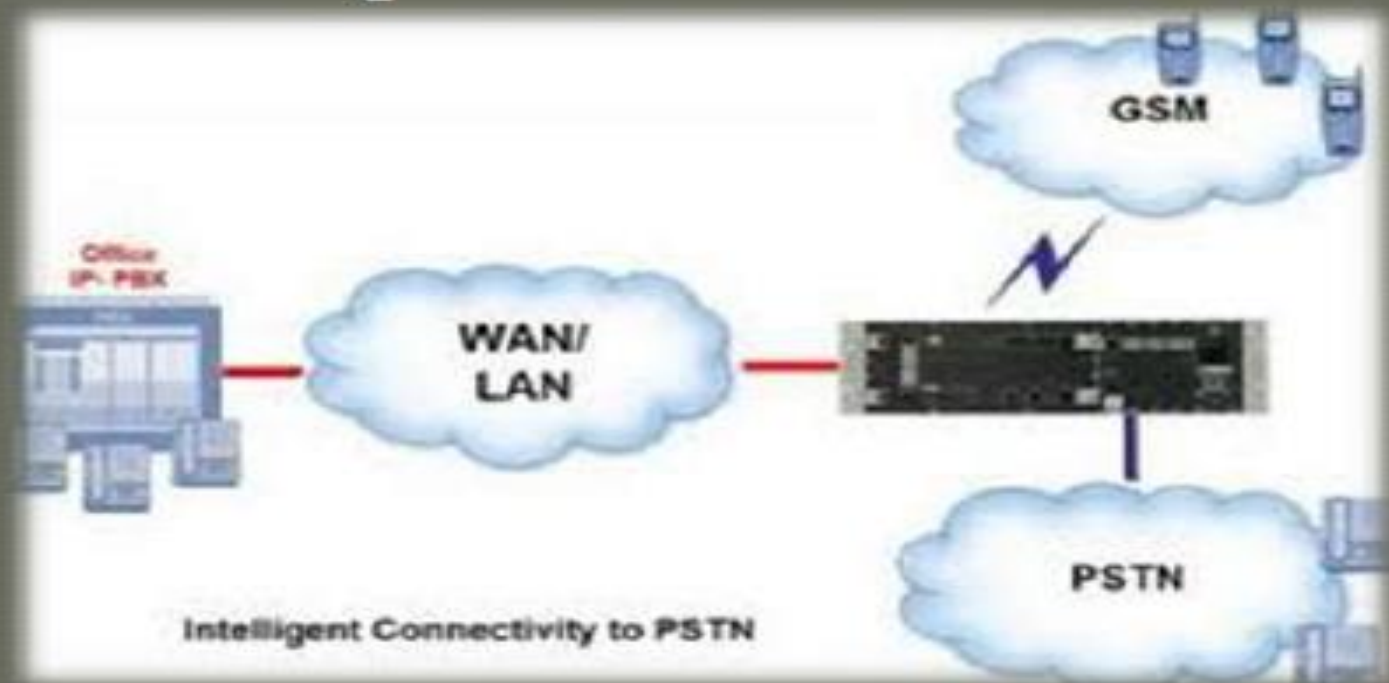
Switch

- It is known as Intelligent HUB
- Is an intelligent device that connect several nodes to form a network and redirect the received information only to the intended node(s)
- Switch stores MAC table, and when any node transmit the data to any node, Switch filters the desired MAC Address of that node and send the data to that node only.



Gateway

- is a device used to connect different type of networks and perform the necessary translation so that the connected networks can communicate properly. Gateway helps to connect different type of network i.e. following different protocols.



Wi-Fi(802.11) Card

- Similar to Ethernet card, but it allows our computer to connect with other device without wire i.e. for wireless connectivity.
- It may be internal or external with built-in wireless radio and antenna. The most common Wi-Fi card used in desktop computer are PCI-Express Wi-Fi card made it fit the PCI-Express card slots on the motherboard.
- It allow to connect our device to hotspot available.
- Advantage is that it allows computer to become part of network without being physically connected through wire and can be placed anywhere.



THANKS