In peer to peer nlw, each node in nlw acts as a server as well as client. These nodes are called as Peer.
There are no dedicated server required to provide diff services to clients.
Each node is capable of requesting services and they can also provide services to another node.

Pros
- This nlw is easy to implement
- saves cost as no ~~extra~~ extra h/w &s/w needed.
- Usefull for small nlws.
- If any any peer fails doesn't effect the entire nlw.

Cons.
- No Central authority to control entire nlw.
- Security is big issue.

HARDWARE COMPONENTS

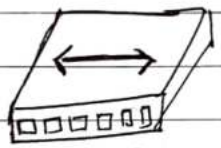
1) **HUB** :- It is connecting device. It is also known as multipoint repeater. It is used in Star topology. Hub works in broadcasting technique. Data received on a port is broadcasted to all ports.
It works in physical layer of OSI mode.

There are 3 types of HUBS 1) Passive
2) Active
3) Intelligent

1) Passive HUB :- It just combines the s/g of a n/w There is no signal (s/g) processing or regeneration. It does not boost the signals.

2) Active HUB :- They work as passive hubs but it has some electronic components for regeneration and amplification of signals.

3) Intelligent HUB :- In addition to signal regeneration, intelligent hubs perform some network mgmt. path selection function.


HUB

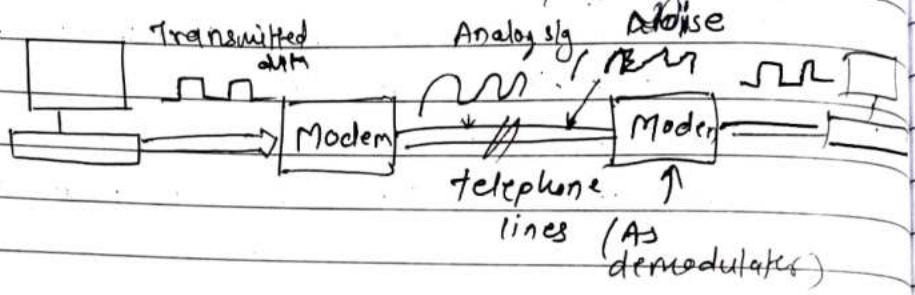
2) Router :-

Router is a device that connects two or more networks. It consists of h/w & s/w. H/w includes physical interfaces to the various n/w & s/w in router is OS & routing protocols.

1) Router is responsible for routing the packets to proper dest^n by selecting appropriate route.
2) Data is grouped into packets. Each packet will have its physical device address and logical network address.

3) MODEM :-

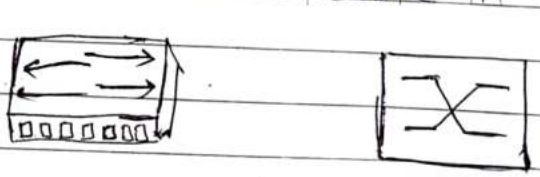
Modem works as modulator as well as demodulator. Modem converts analog s/g to digital s/g & vice-versa. In nws data is transmitted from one location to another location. for that we have PSTN (infrastructure) it is of analog technology. But computer sends digital data. here we need to convert digital data into analog & vice-versa This is done by using MODEMS



4) SWITCH :-

Switches can be used to created Star topology. It looks like HUBS but it is more efficient than HUB.

Switches operates in DLL. They forward the packets only to the desired destination. switches make use of MAC address to find out the correct dest node connected to it. Switches can operate in full duplex mode.



5) BRIDGE :-

Bridge is a network device which operates at DLL. It is used to connect

DATE / /

two different LAN Segments
Bridges stores MAC address of devices connected on nlw by "listening" to n/w traffic. Using this address table bridges either forward the data or block the data based on MAC add^r
~~If bridge finds~~ destination ~~MAC~~ address is ~~on~~ not a nlw
If bridge finds that particular address of des^n is not-in MAddress table it forwards data to another nlw. And if the address is in Address table & not an otherside of Bridge it will block data (~~moving to~~ i.e it does not forward data to nother side)
Types of Bridge

1) Transparent Bridge :-
They are invisible to other devices on nlw. The main function of this bridge is to block or forward data according to MAC address.

2) Source Routing Bridge :-
They are designed by IBM for token Ring NIWs. The route for frame is already embedded with data frames. By source stn. ∴ Once the frame is forwarded it must follow a defined route.

6) REPEATER :-
They operate on physical device layer. It reproduces the signal on similar type of nlw. It is two port device. Repeater doesn't strength the sig it simply reproduce signal when it gets weak.

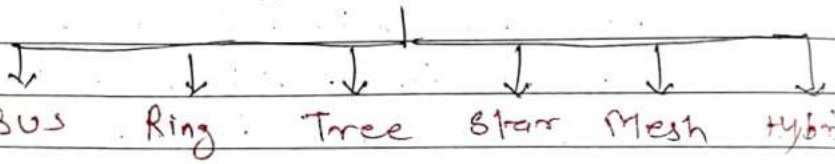
7) GATEWAY:-

It is a device which operates at all 7 layers. It can be used to connect two different dissimilar nlw. eg like ethernet, token ring & FDDI.
They provide conversion bet^n technologies Also they can execute all functionalities of Routers.

* NETWORK TOPOLOGY

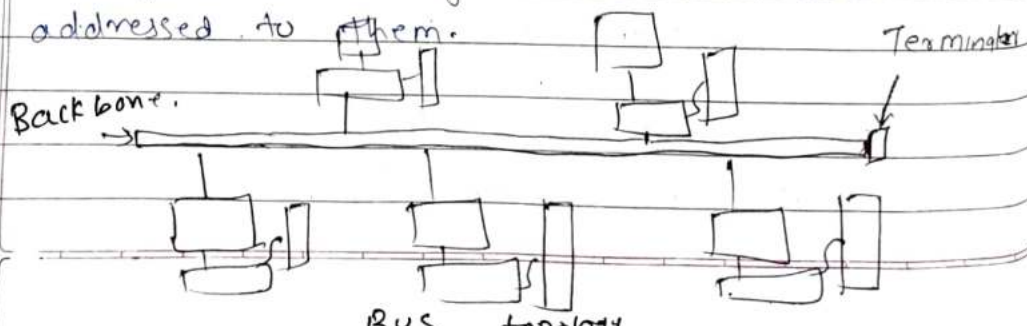
Def^n : Network topology is a map of nlw. It defines how all components are connected with each other.

Types of nlw Topology



1) Bus topology :-

Bus topology is designed in such way that all stations are connected through a single cable. known as Backbone
When node wants to communicate it sends a message over nlw. (broadcast msg) all the stations avaible in network receives message even though it has been not addressed to them.



Bus topology