Introduction to types of network

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***Abstract*- A computer network, or simply a network, is a collection of computers and other hardware components interconnected by communication channels that allow sharing of resources and information. Computer networking may be considered a branch of electrical engineering, telecommunications, computer science, information technology or computer engineering, since it relies upon the theoretical and practical application of the related disciplines Network is use to transfer data from one client to another client. Network is a telecommunications network which allows computers to exchange data. It is use to transfer files, media: audio, video.**

I. INTRODUCTION

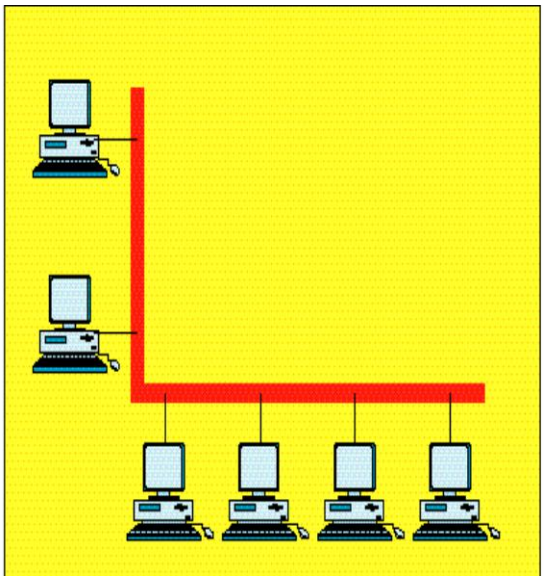
One way to categorize the different types of computer network designs is by their scope or scale. For historical reasons, the networking industry refers to nearly every type of design as some kind of *area network*. The category into which a network falls is determined by its size. A LAN normally covers an area less than 2 miles; a WAN can be worldwide. Networks of a size in between are normally referred to as metropolitan- area networks and span tens of miles.

II. TYPES OF NETWORK

Network divide into three main categories:-

- LAN (Local Area Network)
- MAN (Metropolitan Area Network)
- WAN (Wide Area Network)

LAN (Local Area Network):- A local area network (LAN) is usually privately owned and links the devices in a single office, building, or campus. Depending on the needs of an organization and the type of technology used, a LAN can be as simple as two PCs and a printer in someone's home office; or it can extend throughout a company and include audio and video peripherals. Currently, LAN size is limited to a few kilometers. LANs are designed to allow resources to be shared between personal computers or workstations. The resources to be shared can include hardware (e.g., a printer), software (e.g., an application program), or data. A common example of a LAN, found in many business environments, links a workgroup of task-related computers, for example, engineering workstations or accounting PCs. One of the computers may be given a large- capacity disk drive and may become a server to clients. Software can be stored on this

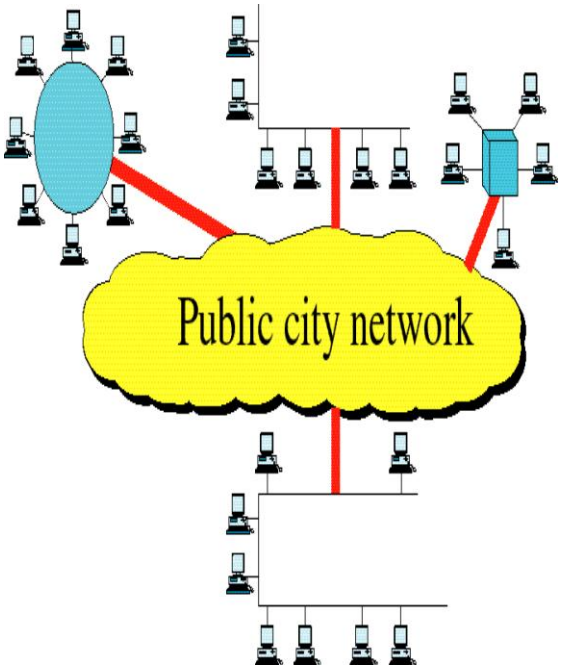


Local Area Network

central server and used as needed by the whole group. In this example, the size of the LAN may be determined by licensing restrictions on the number of users per copy of soft- ware, or by restrictions on the number of users licensed to access the operating system. In addition to size, LANs are distinguished from other types of networks by their transmission media and topology. In general, a given LAN will use only one type of transmission medium. The most common LAN topologies are bus, ring, and star. Early LANs had data rates in the 4 to 16 megabits per second (Mbps) range. Today, however, speeds are normally 100 or 1000 Mbps.

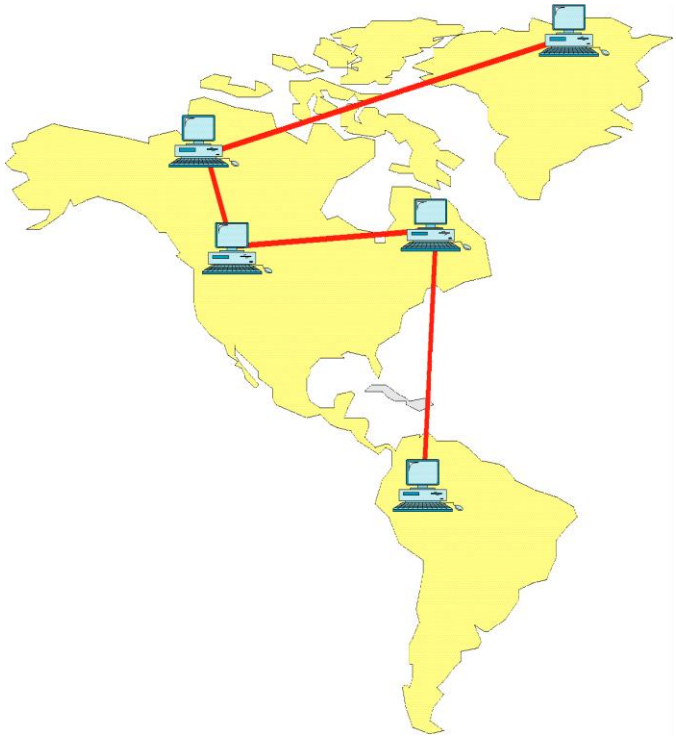
MAN (Metropolitan Area Network):- A metropolitan area network (MAN) is a network with a size between a LAN and a WAN. It normally

covers the area inside a town or a city. It is designed for customers who need a high-speed connectivity, normally to the Internet, and have endpoints spread over a city or part of city. A good example of a MAN is the part of the telephone company network that can provide a high-speed DSL line to the customer. Another example is the cable TV network that originally was designed for cable TV, but today can also be used for high-speed data connection to the Internet.



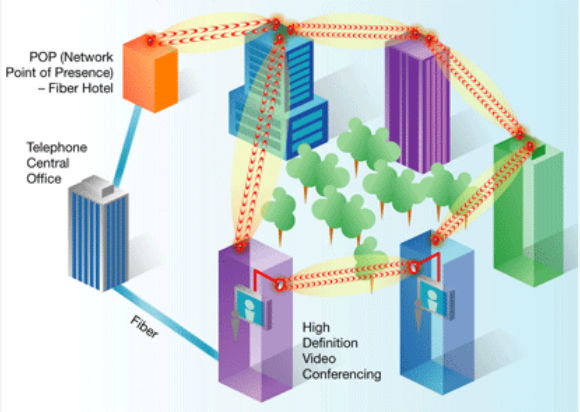
Metropolitan Area Network

WAN (Wide Area Network):- A wide area network (WAN) provides long-distance transmission of data, image, audio, and video information over large geographic areas that may comprise a country, a continent, or even the whole world. A WAN can be as complex as the backbones that connect the Internet or as simple as a dial-up line that connects a home computer to the Internet. We normally refer to the first as a switched WAN and to the second as a point-to-point WAN. The switched WAN connects the end systems, which usually comprise a router (internet-working connecting device) that connects to another LAN or WAN. The point-to-point WAN is normally a line leased from a telephone or cable TV provider that connects a home computer or a small LAN to an Internet service provider (lSP). This type of WAN is often used to provide Internet access. An early example of a switched WAN is X.25, a network designed to provide connectivity between end users. X.25 is being gradually replaced by a high-speed, more efficient network called Frame Relay. A good example of a switched WAN is the asynchronous transfer mode (ATM) network, which is a net- work with fixed-size data unit packets called cells.



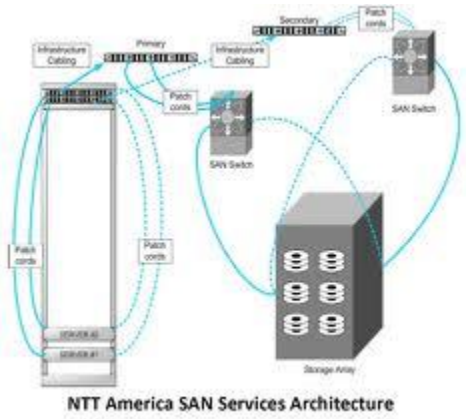
Wide Area Network

CAN (Campus Area Networks):- Campus Area Networks are usually a connection of many small LAN networks which are often used on university campuses and office buildings. Campus Area Networks allow for easy file sharing between different departments as all the files are usually shared on the server machines of each LAN network. This type of network offers a lot of simplicity in the transfer and downloading of files.



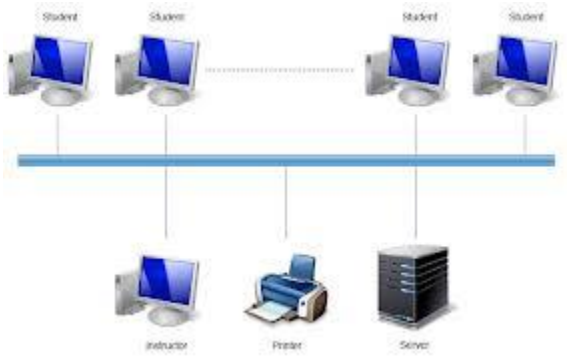
Campus Area Networks

SAN (Storage Area Network):- Storage Area Networks are primarily used as information databases. They are not usually used by large organizations or similar entities. They are specifically used for the storage of information, and easy retrieval of specific pieces of data whenever required. Storage Area Networks are usually used by websites which offer downloading services.



NTT America SAN Services Architecture

SAN (System Area Network):- System Area Networks are speed oriented networks which provide high speed internet connections to a cluster of computers. These are primarily used for server purposes, and allow other computers to connect to these System Area Networks. Permission to different access points are given according to what status a system is on the System Area Network, such as administrators or simple users.



III. CONCLUSION

There are so many networks to transfer the data, media etc. Now-a-days these networks are most important for communication. Networking is required to make accessible communication between computers possible by a network connection. Networking allows for many possibilities, such as accessing the internet, file sharing, file transferring, networks attacks and system communication.

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