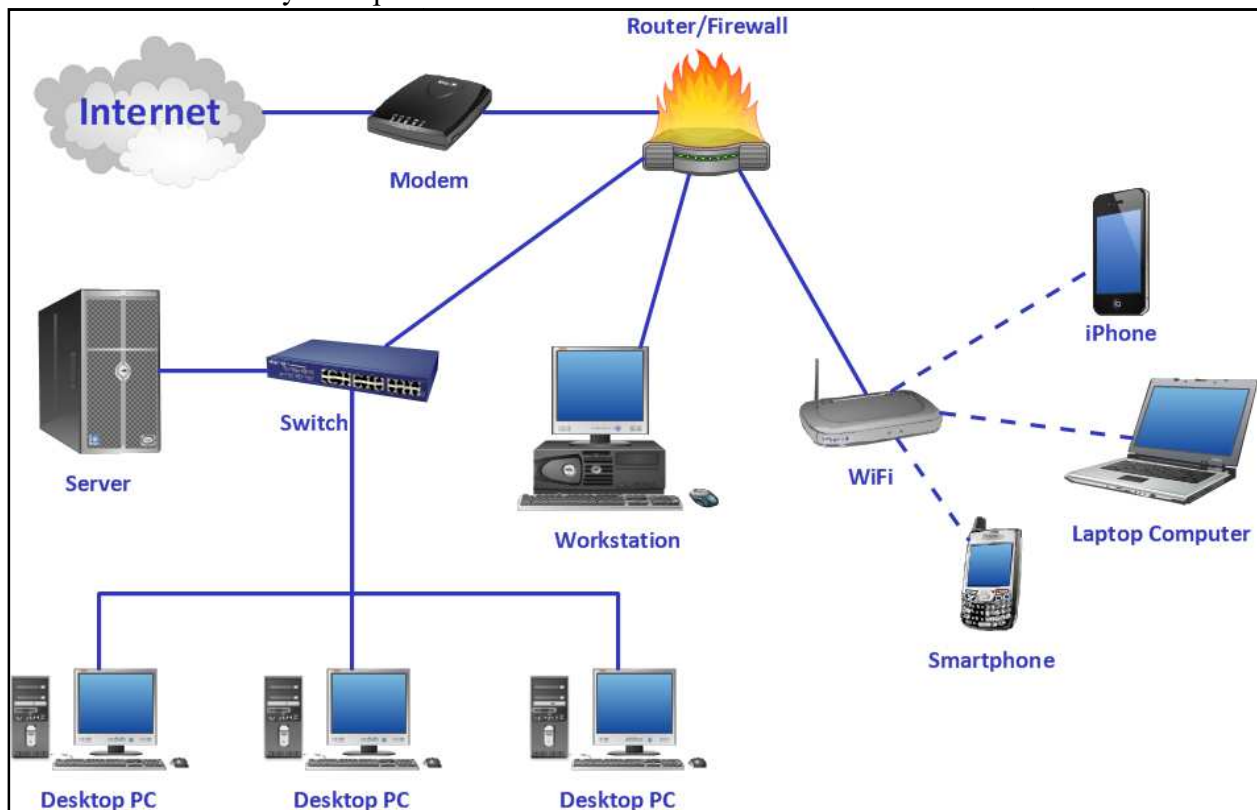


Computer Network

Computer Network Concepts

A computer network is a group of computers that use a set of common communication protocols over digital interconnections for the purpose of sharing resources located on or provided by the network nodes.

A network is a collection of interconnected independent computers. A network includes a group of computers connected in some fashion in order to share resources. This grouping provides greater storage capacity and processing power than that by standalone independent machines. In addition to computers, a network also consists of peripheral devices with carriers and data communication devices used for the purpose of exchanging data and information. By using computer networks, the cost of data transfer can be made economical because computers can send data at a very fast speed.



Computers enable us to reduce both cost and time in transferring data or information. In a network, computers of different make can be connected together and users can work together in a group. Software packages have been developed for group working in Data Base Management System (DBMS) as well as in graphical artworks. Also, data from different departments located at distant places can be transferred to and stored on a central computer. This data can then be accessed by the computers located in different departments. Data in the central computer can be updated and accessed by all users. This method can prevent any bottlenecks in the smooth functioning of the organization because all the users will get the latest information (for example, inventory) stored in the central computer.

Advantages of Network

The following are the advantages of computer networking:

- **Resource sharing:** The aim is to make all programs, data and peripherals available to authorized users on the network irrespective of the physical location of the resources.
- **Reliability:** This is provided by having an alternative source of supply. For example, files can be replicated on two or three machines, so if one of them is unavailable (due to hardware failure), the other copies can be used. In addition, the presence of multiple CPUs means that if one goes down, the others may be able to take over its work. This is of utmost importance for military, banking, air traffic control, etc., which need to continue operating in case of hardware problems.
- **Financial benefits:** Small computers (PCs) have better price-to-performance ratio compared to large ones. A main-frame computer may be ten times faster than a PC, but it may cost about a hundred times more. As a result, most organizations prefer to maintain a computer network consisting of a set of personal computers rather than a centralized large computer.
- **Better communication medium:** In an organization with a number of branches at far-off places, networking of computers facilitates cheap and easy mode of communication. It is possible to transfer any information to any other destination immediately. Whenever a user updates a file, it is visible to the other users logged on to the network.
- **Access to remote database:** By getting access to the remote database, it is possible to get rid of unnecessary trouble and wastage of precious time, especially in works such as airplane and railway reservations, booking hotels, etc. From a remote place in any part of the world, one can book an air ticket from one city to another, accommodation in hotels and get instant confirmation also.

Exercise:

1: What is compute network?

2: What are the advantages of computer network?