Introduction to Networking

Overview

The dictionary defines the word networking as "a group or system of interconnected people or things." Similarly, within the computer world, the term network means two or more connected computers which will share resources like data and applications, office machines, an online connection, or some combination.
The main task is to supply participants with one platform for exchanging data and sharing resources. This task is so essential that many aspects of lifestyle and therefore the times would be unimaginable without networks. Here's a real-life example: during a typical office, every workstation has its computer. Without a network of computers, it might be difficult for a team to figure on a project since there would be no commonplace to share or store digital documents and knowledge, and team members wouldn't be ready to share specific applications.

Overview of Network Components

The following list describes the network components depicted and, therefore, the functions they serve:

- **Client:** The term client defines the device an end-user uses to access a network. This device could be a workstation, laptop, smartphone with wireless capabilities, or a spread of other end-user terminal devices.
- **Server:** A server, because the name suggests, serves up resources to a network. These resources might include e-mail access provided by an e-mail server, sites provided by an internet server, or files available on a digital computer.

Network Architecture

A way to categorize networks is predicated on where network resources reside. An example of a client/server network may be a collection of PCs, all sharing files on a centralized server. However, if those PCs had their OS (OS) (for example, Microsoft Windows 8 or Mac OS X) configured for file sharing, they might share files from one another's hard drives. Such an appointment would be a peer-to-peer network because the peers (the PCs during this example) make resources available to other peers.

❖ Peer-to-Peer Networks

Peer-to-peer networks allow interconnected devices (for example, PCs) to share their resources. Those resources might be, for instance, files or printers. As an example of a peer-to-peer network, consider Figure 1, where each peer can share files on their hard drives shared with the opposite peers within the network.

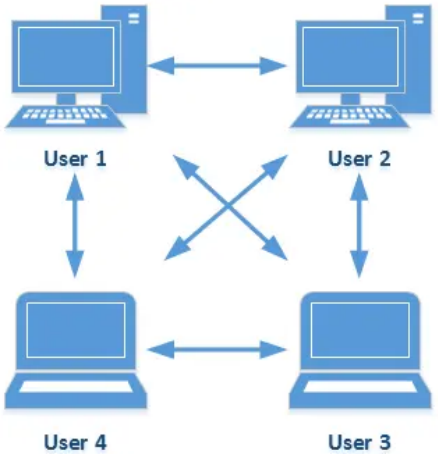

Figure 1: Peer to Peer

❖ Client-Server Networks

Client/server may be a model of interaction during which a program sends an invitation to a different program and awaits a response. The requesting program is named a client; the answering program is called a server. Although the client/server model is often used between programs during a single computer, the term typically refers to a network. A client-server network may have quite one server, each dedicated to handling a selected function.

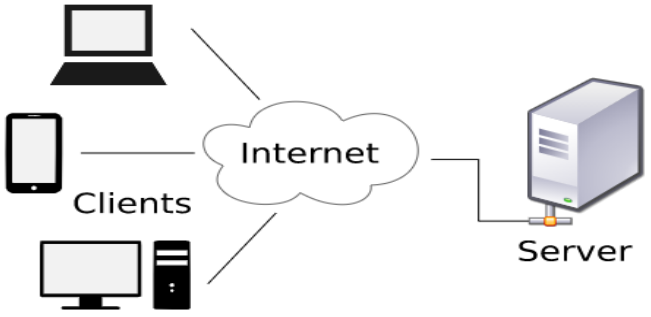

Figure 2: Client/Server Architecture