Network Models: Peer to Peer and Client Server

Peer-to-peer has decentralized the simplest form of network architecture where every computer system (node) can communicate with every other computer system (node). In the peer-to-peer network architecture, there is no use of a centralized server as every computer system can communicate with every other computer system directly.

In the peer-to-peer network, each node of the network has equal permission and responsibility for processing the data or information. Each computer network in the peer-to-peer computer network architecture acts as an independent workstation and maintains its security. Every computer system stores data on its disk and can share the data with the rest of the computer systems present in the network. So, we can say that in a peer-to-peer network, each computer system can act as both a server and a client. Hence, each computer network can request service(s) and can also provide the services. The main focus of the peer-to-peer network model is on the connectivity among the computer systems.

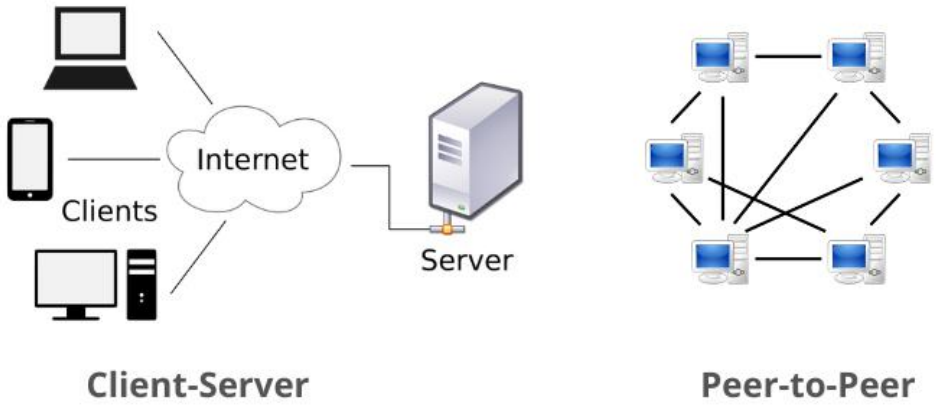
A **client** is a computer system that accesses the services provided by a server. On the other hand, a **server** is a powerful centralized hub that stores various information and handles the requests of the client(s).

The **client-server** network model is one of the most widely used networking models. In the client-server network, the files are not stored on the hard drive of each computer system. Instead, the files are centrally stored and backed up on a specialized computer known as a **server**. Here, a server is designed to efficiently provide data to a remote client. On a large-scale network, there can be more than one server.

Examples:

- **File Server :**
  A file server is used to transfer files to the client(s).
- **Email Server :**
  An email server is used to deal with the internal email system.
- **Web Server :**
  A web server is used to control access to the internet and block any unsuitable websites.
- **Print Server :**
  A print server is used to deal with all of the printing requests from the client(s).

In a client-server network, there is a specific server and specific clients connected to the server.



Differences between Peer to Peer and Client Server Model:

S.NO	Client-Server Network	Peer-to-Peer Network
1.	In Client-Server Network, Clients and server are differentiated, Specific server and clients are present.	In Peer-to-Peer Network, Clients and server are not differentiated.
2.	Client-Server Network focuses on information sharing.	While Peer-to-Peer Network focuses on connectivity.
3.	In Client-Server Network, Centralized server is used to store the data.	While in Peer-to-Peer Network, Each peer has its own data.
4.	In Client-Server Network, Server respond the services which is request by Client.	While in Peer-to-Peer Network, Each and every node can do both request and respond for the services.
5.	Client-Server Network are costlier than Peer-to-Peer Network.	While Peer-to-Peer Network are less costlier than Client-Server Network.
6.	Client-Server Network are more stable than Peer-to-Peer Network.	While Peer-to-Peer Network are less stable if number of peer is increase.
7.	Client-Server Network is used for both small and large networks.	While Peer-to-Peer Network is generally suited for small networks with fewer than 10 computers.