

Classification of Computer Networks

Published on Monday, December 07, 2015

As many of you might be aware that I started [Professional series for IBPS IT officers exam](#). nN this series, today I am sharing Classification of Computer Networks.

Computer networks can be logically classified into the following:

1. Peer to Peer Networks
2. Client- Server Networks
3. Centralized Networks
4. Distributed Networks



PK Series Computer Networks Classification

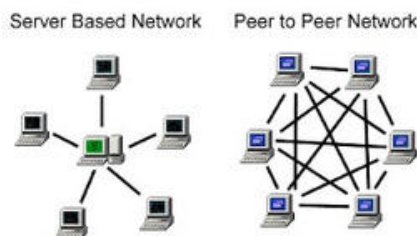


Peer to Peer Networks

Peer to peer network is created when 2 or more PCs are connected and share resources without going through a separate server computer. In this each party has same capabilities and any of them can start a communication session unlike client/server model where client makes a request and server responds. Most P2P applications are used for media sharing. E.g. - BitTorrent.

Client Server Network

Designed for end users, clients make requests to server for browsing, emailing and accessing resources such as files, songs and other data. Often clients and servers have separate hardware but they can reside in one system also. Advantage of this mechanism is the central management of the server which hosts resources to serve various clients.



Centralized Network

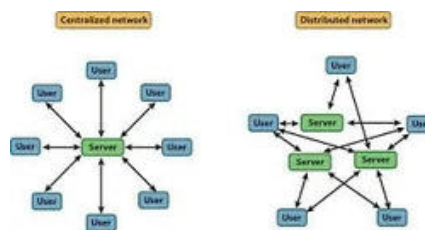
A network where all users connect to the central server. This server would usually store both communications and user account information. This central server would usually be set up in Head Office or Data Centres in a dedicated server room with multiple terminals attached to central server. It provides better security over decentralized network due to all processing being managed at a single location.

Major disadvantage would be saving that central server from catastrophes which might crash the entire system.

Difference between a client server and centralized network would be that in centralized network, database having all the data is located at one place, not distributed among various databases across different locations. A mainframe network architecture can be considered to be centralized network

Distributed Network

The network resources are placed and managed from different geographical locations or spread over more than one computer. Client Server architecture is an example of distributed network only. These days most of the enterprise network are distributed networks.



Type of servers used in a network

File Server

File servers are used to store the documents and files centrally. An ideal file server should have large amount of memory and storage space, fast hard disks, multiple processors, redundant power supplies. A file server runs File Transfer Protocol (FTP) on port 20 usually for FTP data transfer.

Print Server

It redirects print jobs from client computers to specific printers.

Mail Server

Main Servers are used to transmit emails using email protocols like SMTP on port 25 (simple mail transfer protocol) which is an outgoing mail server. Incoming mail server is POP3 on port 110 (post office protocol, version 3)

Application Server

It provides the business logic for an application program. It is usually viewed as a part of 3 tier application consisting of GUI at first layer, application server at second layer and database server at third layer. Application servers work with HTTP (Hyper text transfer protocol, port 80)

Database Server

It allows authorized clients to create, view, modify, update or delete an organization's data, stored in common database. E.g. - IBM DB2, MySQL, Sybase, Oracle.

Directory Server They allow the central administration and management of network users and network resources. Directory servers provide the basic functions of network security, authentication, authorization and accounting. E.g. - MS active directory, Open LDAP.