ORIENTAL JOURNAL OF COMPUTER SCIENCE & TECHNOLOGY
An International Open Free Access, Peer Reviewed Research Journal
www.computerscijournal.org

ISSN: 0974-6471
December 2011,
Vol. 4, No. (2):
Pgs. 463-466

Paper Presentation on Computer Networks

D.G. KRISHNAMOHAN

Academic Consultant, Krishna University, Machilipatnam (India).
*Corresponding author: E-mail: krishnamohanmca2006@gmail.com

(Received: October 10, 2011; Accepted: October 17, 2011)

ABSTRACT

The primary purpose of a computer network is to share resources. A computer network is referred to as client/server if (at least) one of the computers is used to "serve" other computers referred to as "clients". Besides the computers, other types of devices can be part of the network. In the early days of networking, there will be once central server that contains the data and all the clients can access this data through a Network Interface Card. Later on Client server architecture came into existence, where still burden is there on the server machine. To avoid the disadvantages in distributed computing was introduced which reduces the burden on the server by providing work sharing capabilities[1]. This paper describes how the concept of distributed computing came into existence based on the advantages and disadvantages that raised in earlier networking concepts. The concept of distributed computing speaks that once data is available within the server(s), it should be able to be accessed and processed from any kind of client device like computer, mobile phone, PDA, etc

Key words: Computer Networks, Hardware, LAN.

INTRODUCTION

A computer network consists of a collection of computers, printers and other equipment that is connected together so that they can communicate with each other.

A computer network comprises the following components

- A minimum of at least 2 computers
- Cables that connect the computers to each other, although wireless communication is becoming more common (see Advice Sheet 20 for more information)
- A network interface device on each computer (this is called a network interface card or NIC)
- A 'Switch' used to switch the data from one point to another. Hubs are outdated and are little used for new installations.
- Network operating system software

Types of Networks

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

Local Area Network

The network limited to single organization located at single place. *For Example Network present in a bank, Network in an office, etc.…*

Metropolitan Area Network

Network limited to single city and its sub urban places. *For Example Siticable Network*

Wide Area Network

Network which has no limits in the universe. *For Example Internet.*

There are two more types of networks which are based on the above three networks:

- Intranet
- Extranet

Intranet

Network limited to single organization located at various places.

For Example Banking Network

Extranet

Network limited to group of organizations located at various places.

For Example ATM Network

The above two networks are collectively called as "Enterprise Area Network".

Types of Network Computing

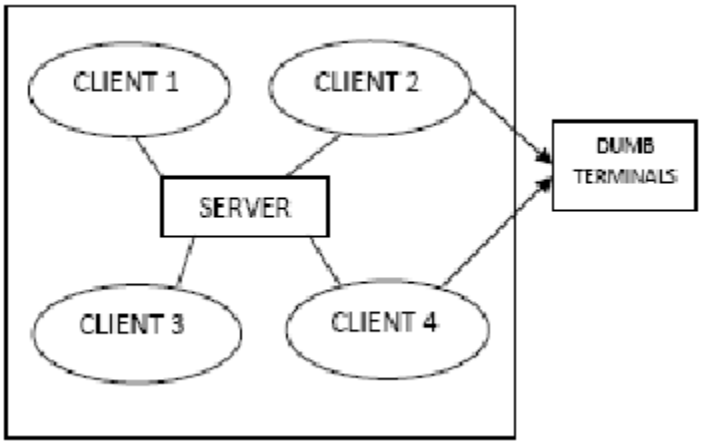
Based on the different types of networks available, the network computing is categorized as follows:

- Centralized Computing
- Client – Server Computing
- Distributed Computing

Centralized Computing

In this type of network computing, all computers are connected to a centrally located server are known as Clients.

The clients in Centralized computing are known as "Dumb Terminals" because they do not contain any resources like Processor, RAM, Hard disk, Mother board, Operating System, etc…..



As clients do not contain any processor, processing is done at server only. To execute any command or request, every client should depend on the server only.

Disadvantages

When clients increases to large number,

(i) Burden on the server will increase and the performance will decrease.

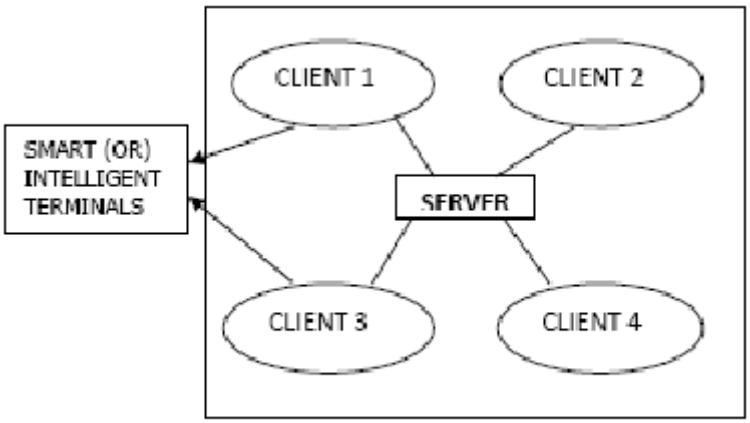
(ii) Burden on the network will increase and the network will become slow.

To overcome the disadvantages in centralized computing, the concept of Client-Server computing was introduced.

Client – Server computing

In this type of network computing, all clients are connected to a server known as Intelligent or Smart terminals because every client contains all the computer resources like processor, RAM, Operating system, Mother board, etc...

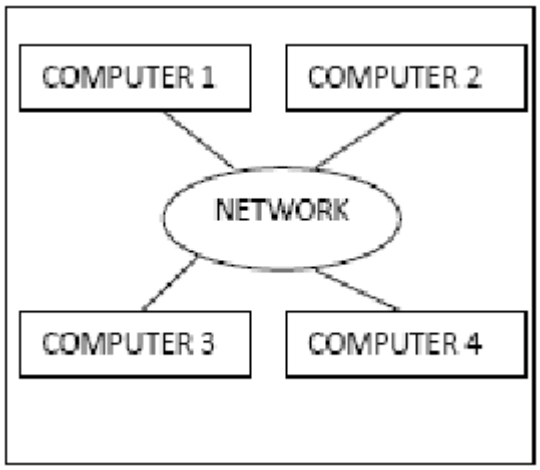
As every client contains its own processor, processing will be done at client side only and not at server. Clients are not required to depend on the server to execute any command.



Client/server networks are more suitable for larger networks. A central computer, or 'server', acts as the storage location for files and applications shared on the network. Usually the server is a higher than average performance computer. The server also controls the network access of the other computers

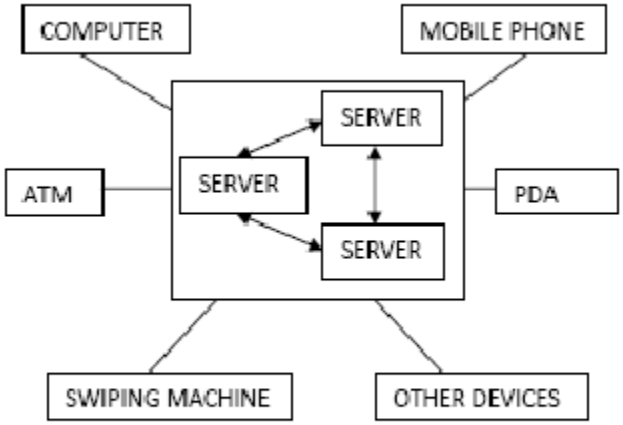
Distributed Computing

In this method, the logic code of the application that is to be executed is divided among many computers in the network, so that execution can be done at faster rate.



Current scenario of distributed Computing

Current Scenario of distributed computing speaks that once data is available within the server or servers, it should be able to be accessed and processed from any kind of client device like computer, mobile phone, PDA, etc…[1]



CONCLUSION

Distributed computing is the next steps in computer progress, where computers are not only networked, but also smartly distribute their workload across each computer so that they stay busy and don't squander the electrical energy they feed on. This setup rivals even the fastest commercial supercomputers built by companies like IBM or Cray. When we combine the concept of distributed computing with the tens of millions of computers connected to the Internet, we've got the fastest computer on Earth. The distributed computing is the current scenario for all types of applications such as online banking, online shopping, ATMs and other applications.

REFERENCES

1. Communication Networks by Sheram Hekmat, Pragsoft Corperation.
2. Data Communications and Networking by Behrouz. A. Forouzan.