INTERNET : A GLOBAL NETWORK OF COMPUTER NETWORKS

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INTRODUCTION

Millions of people around the Globe are now a "click" of the "mouse" away from instantly joining a world wide computer communication network. The advent of digital technology which covers all communication signals to 0s and is called Bits, greatly expands capacity for transmission of texts, audio, graphics and video. The result has been to II unfold changes in business and personal life. Rapid strides in science, technological infusions into creative process and other intellectual activities has led to exponential in information generation. Information "Propulsions" necessities the use of Hi-Tech computers and other electronic devices to ensure instaneous flow of crisp information to the right individual at the right time. Collection, accessing, maintaining and distribution of data through networks to the information seekers around the globe is the main concern of present day Database management. Over the years this task has become established as one of the most vital computer applications with advancement of "Fierce Technology" and complete dependence on computers, data base Management System in the context of a "Network Environment" has expanded both in number and complexity. Today a complete hardware and software solution is available to the problems of sharing programme files, data files and peripherals and providing security for master files and personal information is available through a LAN. Until recently installing a LAN meant huge investments. But in the modern era new types of Networks are available, much less complex and well within the grasp, both financially and technically. Present day automated information systems often relay heavily on some type of DBMS for support. DataBase Management system attempts to represent a real world management information situation within the frame work of one of the complex data Models. These data bases now encompass such diverse applications as distributed multimedia data bases as well as knowledge bases for artificial Intelligence System. Mechanism are being devised which permit direct machine support reference from textual chunk to another. New interfaces provide and enable the user to transport the chunk by establishing relationship across the globe through Data Networks.

FACTORS NECESSIATING DATA NETWORK

Resource sharing

Computing resources are made available to all users on the network. Networks such as the Internet provide worldwide access to data.

Eliminating duplication

Unnecessary duplication of resources may be avoided.

Reliability

The availability of alternative computers and data sources makes it possible to continue operation in spite of hardware failure. It also minimizes the risk of loss of critical data.

Communication

Users can communicate easily, instantaneously and economically over large distances (even across continents) and can work together. Electronic bulletin boards facilitate the prompt dissemination and discussion of scientific work.

WHAT IS INTERNET ? WHY ?

The Internet - also known as the net - is the world's largest computer network. A computer network is basically a bunch of computers hooked together. In concept, it's a sort of like a radio or a TV network that connects a bunch of radio or TV stations so that they can share the latest programme. But computer networks unlike TV networks, are invariably two-way, so that when computer A sends a message to computer B, B can send a reply back to A. Internet, are more egalitarian and permit any computer on the network to communicate with any other. Factually, the Internet isn't really a network - it's a network of networks, all freely exchanging information. To illustrate, as of August 1994, more than 20,000 networks on every continent connecting more than 3 million computers were part of Internet, with 1000 new networks and 100,000 computers per month being added !

Components of the Internet

1. The people who use it, and
2. The information that resides in it.

Access to the Internet

Most networks are very restrictive in what they allow users to do and hence have specific arrangements and passwords for each service. The Internet is

probably the most open network in the world. Thousands of computers provide facilities that are available to any one who has net access. The vast majority of Internet services are free for taking, once connected.

Ancestry of the Internet

The ancestor of the Internet was the ARPANET, a project started by the Department of Defence (DOD) in 1969 on an experimental scale to link DOD and military research contractors, including the large number of Universities engaged in military funded research. Initially the ARPANET started small and connected three computers in California, but it grew to span the continent.

Checklist for a conventional dialup connection

To establish a conventional dialup connection to the Internet, the following are needed :

* a Telephone

* a Computer with a serial port (for external modems) or an expansion slot (for internal modems)

* a Modem (and if it's an external modem, a cable to connect it to the computer)

* Communication (or "terminal emulation") software

* an Account with the Internet access provider

Tips for hookup to the Internet

Basically there are two approaches to access the Internet services, namely,

1.   The "deek" or "deranged approach"
2.   The "normal approach"

Under "deranged approach" huge network cables are made to run along all over with humming boxes full of routers and subnets and packet drivers. The other approach, is to use a computer, a modem, and a phone line to dial into an Internet service. A normal terminal programme like CROSSTALK or PROCOMM is run on the computer for linkage.

Utility cute little box - Modem

A modem is a little device that enables data from one computer to travel to another computer by using ordinary telephone lines. The little cute box goes between the host computer and the phone line and between the phone line and the computer on the other end.

Internet service provider

Internet service providers or Internet access providers provide access to its subscribers (generally for a fee) along with other on-line or conference services.

Protection of information along the net

The fundamental global criticism on the Internet is that while exploring the Internet one can himself in many far-off and not-so-far-off lands on many strange computers. To protect information in the network, an elaborate scheme of permission is used. Permission also known as access control, are what determine who can do what to what. Permissions are assigned to files and directories and determine who can access each file and directory and in what way. Levels of permission include no access, read, write, no doubt information is protected by some of these permissions.

Eye view of Internet at work

Internet has more than a million computers attached to it. Each machine on the net is identified by a number and a name assigned to identify it to other hosts, sort of like a phone number. The numbers are in four parts. Most hosts also have names. The names have multiple parts separated by dots (chico.iecc.com).

A simple Internet command

Of all the commands that access the Internet, the easiest to use is the network application names finger. The finger command is part of the suit of utilities that have grown up around the Internet network software. To execute, just type the word finger followed by the login name of the user. The interesting thing about finger is that, if connected to the Internet, it can tell about users on other computers.

Internet Protocols

The set of conventions used to pass packets from one host to another is known as Internet protocols, or IP. The two best known protocols are Transmission control protocol (TCP) and User Datagram Protocol (UDP).

Getting off the Internet

The most common exit sequence include the following :

* Exit

* Ctrl-D (popular on UNIX systems)

* Logout

* Bye

If on an UNIX environment, pressing Ctrl-D enough

times usually helps to LOGOFF from the system.

The Indian Scenario

In India, the Networking services are provided by Videsh Sanchar Nigam's (VSN) Gateway Packet Switching Service (GPSS). Based on this I-NET has been established. An Electronic Mail Service, also based on GPSS is available.

Epilogue

No doubt, the age of the Internet has brought society more than the fruits of farway knowledge, new business opportunities and round-the-clock entertainment. Cerf, the "father of the Internet", has predicted that by 2000 there will be 300 million users on-line. Educom's Roberts says, "The Internet will evolve the way we make it evolve".

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