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Internet and Services

3.1 INTRODUCTION

The Internet began way back in 1969 when it was called ARPANet (Advanced Research Project Agency Network) and was used exclusively for military purposes. It soon merged with non-government and academic networks, which grew and eventually came to be called Internet in the year 1979. Today it is simply a “**network of worldwide computer networks**”.

In the present age of Information Technology, the Internet is a medium for *accessing information on any topic* you imagine, for *buying products and services* ON-LINE. It also provides tremendous opportunities to students; researchers and professionals for getting information on matters related to academic and professional topics and lot more.

3.2 OBJECTIVES

After going through this lesson, you would be able to :

- explain Internet addressing conventions and Domain Name System
 - describe terminologies used in Internet
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- explain different Internet Services
- use of various Internet Services: (Email, FTP, Telnet web search engine)

3.3 WHAT IS INTERNET?

The Internet or simply the Net is a **worldwide network of computer networks**. It is an interconnection of large and small networks around the globe.

3.4 APPLICATIONS OF INTERNET

By using Internet facility you can:

- Exchange messages using e-mail (Electronic mail)
- Transfer files as well as software (FTP)
- Browse through information on any topic on web (Internet Surfing)
- Communicate in real time with others connected to the Internet (Chatting over Internet)
- Search databases of government, individuals and organizations (Information Search).
- Set up a site with information about your company's products and services (Internet Hosting).
- Read news available from leading news groups.

3.5 GETTING CONNECTED TO INTERNET

To connect to the Internet you need a PC (personal computer) with requisite software including a browser, a telephone connection or a leased line, a modem, which allows the PC to communicate with other computer.

3.5.1 Types of Internet connections

Dial-up

This is the most common and basic type of Internet connection

available from ISPs (Internet Service Providers). In Dial-up connection, you dial a phone number (provided by the ISP) to get connected to a server at ISP. Once connected to the ISP server, you get to access Internet. It means you are not directly connected to Internet; you access the Internet through an ISP. This process is illustrated in fig. 3.1 below:

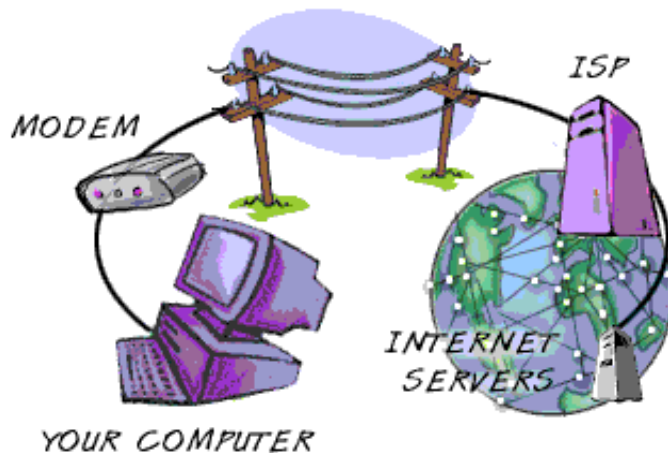


Fig. 3.1 : Dial up connection

Benefits:

- Very economic and is widely available
- Easy to setup and use

Drawbacks:

- Very slow
 - Once connected, the *same telephone line cannot be used for phone calls*
 - It transfers data over an analog line. So before the data is sent it has to be converted from digital to analog signal, likewise, when data is received it has to be converted from analog to digital signal (this is what the MODEM does), this adds performance overhead which affects the speed of the connection.
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3.5.2 ISDN (Integrated Services Digital Network)

In the ISDN process of connecting to server to access Internet is almost same as Dial-up, but it offers connectivity through the use of *digital phone lines* instead of standard line Analog. It offers Internet connectivity at *speeds of up to 128 Kbps*, allows the user to *receive or make calls simultaneously on the same line*. ISDN comes through a regular telephone wire from the telephone pole on your street. The line combines two 64 Kbps channels to offer 128 Kbps bandwidth broken into three bands: One band for the ringing signal of your phone, one band for your telephone conversation, and one band for data.

Benefits:

- Single connection can support both voice and data.
- Eight terminals can be connected on a single line.
- Signal on ISDN line-voice or data is sent in digital mode, so less prone to noise, have very high quality service.
- *Two calls* (which could be voice, data, image or combination of any two) can be *established simultaneously* on a single pair of lines.
- High-speed data transfer from PC to PC.

Drawbacks:

- A special ISDN line must be installed at the customer's location.
- A special ISDN modem or router is also required.

3.5.3 Direct Internet Access (Leased Line Connection)

Leased line is a “**permanent connection**” between a computer system (single CPU or LAN, and the Internet). It is generally used by larger institutions, corporate and government agencies. It involves establishing your own Internet gateway (connection) and paying to have a direct full time line with the network. Your Computers, in effect, become part of the Internet. The main

advantage of this connection is that: it is *on line – 24 hrs a day, seven days a week, (24x7)* and provides faster access.

Dedicated links are established through service provider who places a computer-controlled router (message director) at the site. A router is used to connect local network to the Internet, and it allows all the members of the network complete access to Internet.

3.5.4 DSL (Digital Subscriber Line or Dedicated Service Line) Broadband Connection

DSL, is an “**always-on**” and widely used **data connections** and can provide an excellent Internet connection. It connects your home or office to the Internet through the same telephone wire that comes from telephone pole on the street. Like ISDN, with DSL, user can *make and receive telephone calls* while connected to the Internet. The difference between DSL and dial-up / ISDN is that a DSL Internet connection uses a high-speed dedicated circuit filtering out standard phone calls and Internet signals.

Benefits:

- Connections are ‘**always on**’.
- *Talk and access Internet simultaneously* on single line.
- DSL utilizes the standard copper wiring already installed into businesses and homes, requiring no special line installation for service.
- High Speed data download; data speed starts from *256 kbps to 2 mbps*.
- Can share this connection to create own LAN Network i.e. more than one PC can be connected.

Drawbacks:

- Hardware costs are very high, as you need *a special DSL modem* and a *DSL filter* to use the service.
 - Since a ADSL connections are ‘*always on*’ you need *a firewall* to protect your PC.
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