Internet Connections

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How to acquire Connection?

We are Basically connected with internet by

- Internet Service Provider (ISP) / Internet Access Provider (IAP)
- Wireless Service Provider (WSP)
Internet Service Provider (ISP)

- ISP is a business or organization that provides access to Internet and related services to consumers.

- Mostly, an ISP is a telephone company.

- Common offer is Dialup and DSL Connection
Wireless Service Provider (WSP)

- A company that provides wireless Internet access to the users with wireless modems.

- Notebooks/laptops and Cellular phones are example of wireless devices accessing the internet.
TYPE OF INTERNET CONNECTIONS

- Dialup
- Cable Connection
- DSL Broadband
- Dedicated Leased Line
- ISDN
- Wireless Connection
Dial up connection
Dial up connection

- Dial-up connections are the most common type of Internet Connection for home users.
- Dial-up connections today are considered the slowest but the reputation of being most inexpensive. Connection rates for dial-up modems tend to fall between 24 kbps to 56 kbps.
Features of dial up

- Uses POTS (Plain Old Telephone System)
- Provides a low cost need based access.
- Bandwidth 24 to 56 Kbps.
- On the Customer End Modem is connected to a Telephone Line.
- Achievable bandwidth depends on the line quality.
Cable Connection

Diagram:
- Cable Outlet
- Cable TV Cord
- Cable Splitter
- Cable Modem
- Ethernet / RJ45 Cable
- To TV
Cable Connection

- Cable connection offers very fast and reliable connections with fixed monthly fee. Because cable connections use a different medium to connect you to the Internet, it will not affect how you use your telephone.

- Cable broadband Internet connections offer data transfer rates of approximately 1.5 Mbps up to 7.5 Mbps.
DSL connection

Diagram showing a DSL connection:
- Telephone jack
- Phone cord
- DSL modem
- Ethernet / RJ45 cable
- Computer

Source: BroadbandRates.info
DSL connection

- Digital Subscriber Line or DSL connections are becoming widely available and can provide you with an excellent Internet connection.
- DSL allows you to use the phone normally while connected to the internet. The disadvantage of DSL connections can be costlier than dialup. DSL operates at 512 kbps up to 20 mbps.
Dedicated Leased Line

- A dedicated leased line is a point-to-point, high speed communication line that directly connects your computer to your ISP’s network. The speed of your internet access depends on the type of leased line you have.

- Dedicated Leased Line is much more expensive than the DSL and Cable Connection.
Features of Dedicated Leased Line

- Used to provide point-to-point dedicated network connectivity.

- Analog leased line can provide maximum bandwidth of 9.6 Kbps.

- Digital leased lines can provide bandwidths 64 Kbps.
ISDN Connection are a type of telephone connection that offer data transfer rates of up to 128 kbps. This can be better than dialup, however ISDN connections are considered still more or less outdated.
Feature of ISDN

Another alternative to using analog telephones lines to establish a connection is ISDN.

Speed is one advantage ISDN has over telephone line connections.

ISDN network is a switched digital network consisting of ISDN Switches.

Each node in the network is identified by hierarchical ISDN address which is of 15 digits.

ISDN user accesses network through a set of standard interfaces provided by ISDN User Interfaces.
Comes in two “sizes”

- **Basic Rate (Bell Micro Link)**
  - 2 Bearer channels, each 64Kbps
  - 1 Data channel, 16Kbps

- **Primary Rate (Bell Mega Link)**
  - 23 channels, each 64Kbps
  - 1 Data channel, 64Kbps
Applications of ISDN

- Call Centers
- Internet access
- Videoconferencing
ISDN in Call Centres

- Connect the customer to the phone network
  - Lower customer hardware costs
  - Fewer trunks
  - Almost instantaneous call setup
  - Detailed signalling
ISDN for Video Conferencing

- Video equipment needs \( n \times 64\text{K} \). \( 1 < n < 24 \)
- If \( n > 2 \), Inverse multiplexer sits between video conferencing hardware and phone company.
- Handles all signalling, e.g. “dialling”
- Combines multiple B channels to a single stream
- Can use part of a Primary Rate Interface
- Can combine several Basic Rate Interfaces
- Call-by-call or minute-by-minute
ISDN for Internet Access

- Usually via a router on a LAN
- Router will dial on demand, connect quickly
- May be nailed up for incoming calls
- Low cost, reliable, digital service
  - No connect charges for local calls
- Symmetrical so good for servers