Internet connection facts

Connecting to the InternetThere are many ways to connect to the Internet. The following are the various services you can use to connect to the Internet

DialupA dialup connection uses a modem connected to the phone line to communicate with another host through a wide area connection

-Dialup connections use the public switched telephone network (PSTN). Phone lines are sometimes referred to as POTS (plain old telephone service).
-Multiple standards define how to send digital data over the analog phone lines at various speeds and compression ratios. Standards include: V. 24, V. 32bis, V. 34, V. 42, V. 44, V. 90, and V. 92
-Dialup connections are available anywhere a dialup telephone line exists
-Data transfer rates include 28. 8 Kbps, 33. 3 Kbps, and 56 Kbps. The V. 44 standard adds compression, allowing effective data transfer rates above 56 Kbps
-Dialup connections cannot be used for both voice (phone calls) and data at the same time.

Digital Subscriber Line (DSL)DSL provides broadband digital data transmission over existing telephone lines.

-DSL divides the telephone line into multiple channels. One channel is used for analog voice, while the remaining channels are used for digital data.
-Filters are used to separate the analog voice data from digital data
-There are many DSL standards (such as ADSL, SDSL, and HDSL), collectively referred to as xDSL
-Depending on the type of DSL used, you can used the same line for simultaneous voice and data

-DSL is not available to every location; the end location must be within a fixed distance of telephone switching equipment

Integrated Services Digital Network (ISDN)ISDN is a digital service, running over a switched network.

There are two versions of ISDN:
-ISDN BRI divides the regular telephone line into three channels as follows:
*2 64-Kbps bearer (B) channels can transfer data up to 128 Kbps (data compression increases the data transfer rate). Only one B channel is used during phone use reducing maximum speed to 64 Kbps
*1 16-Kbps delta (D) channel for connection control.
ISDN BRI is often called 2B+1D

-ISDN PRI requires different cables be installed rather than the regular phone lines. The cable is divided into 24 channels:
*23 B channels (each at 64 Kbps) for data transmission
*1 D channel (at 64 Kbps) for connection control
ISDN PRI is often called 23B+1D

-ISDN is not available in all service areas; subscribers are required to be within a certain proximity of telephone company equipment

-ISDN is implemented widely in Europe (limited implementation in the US).

CableCable networking uses a cable TV connection to create a wide area connection to the Internet
-A cable modem (router) connects the computer to the cable network for sending networking signals.

-the same cable line is used to carry networking and cable TV signals, although in some cases a separate line is installed for Internet access
-Cable networking requires the installation of a cable TV line to your location (if one does not exist).

CellularCellular networking uses a digital mobile phone for Internet access.

-Mobile phones with digital data plans use cellular calls to connect to the Internet
-You can install a cellular adapter in a notebook computer to provide cellular access
-Cellular networking is a truly mobile solution; you can often be moving and still have Internet access without manually having to reconnect
-Internet access is limited to areas with cell phone coverage. Coverage will be dictated by the service provider's network. Roaming charges might apply, while some areas will not have coverage

Cellular networks used for voice and data include the following types:
-2G (second generation) networks were the first to offer digital data services. 2G data speeds are slow (14. 4 Kbps) and were used mainly for text messaging and not Internet connectivity. 2. 5G was an evolution that supported speeds up to 144 Kbps.
-EDGE (also called 2. 75G) networks are an intermediary between 2G and 3G networks. EDGE is the first cellular technology to be truly Internet compatible, with speeds between 400-1000Kbps
-3G (third generation) is the latest cellular technology offering simultaneous voice and data. The minimum speed for stationary users is quoted at 2 Mbps

or higher.

-4G cellular (also called WiMAX) is now available with minimum speeds around 3-8 Mbps with over 100 Mbps possible.

SatelliteSatellite networking uses radio signals sent and received from a satellite. Satellite networking:

-Uses a transmitter with an antenna (dish) directed skywards to a satellite
-Requires direct line of sight (dish placement is crucial).
-Is subject to mild atmospheric and weather conditions (for, rain, or snow can disrupt service).
-May have a long delay time (latency) between request and downloads
-Can be a portable solution for cars or trucks with an attached satellite dish
-Provides nearly 100% global coverage.

Some satellite Internet access solutions are limited to download only. Another solution, such as dialup, is required to provide upload capabilities

Internet access facts-Regardless of the method you choose, you make a connection from your location to an Internet Service Provider (ISP). The ISP might be the cable TV company, the phone company, or another company offering Internet access

-When you connect to the Internet, you connect to the Internet, you connect to an AP at the ISP which is connected to the Internet

-Voice over IP (VoIP) sends voice phone calls using the TCP/IP protocol over digital data lines.
*With VoIP, phone calls are made through your Internet connection, not

through a phone line

*When you make a phone call, the call is converted to digital data and sent through the Internet

*VoIP is provided by many ISPs to replace your current analog telephone line (even using the same phone number).

*You can install software on a computer connected to the Internet and use a microphone and speakers connected to the computer to make phone calls. Skype is probably the most well-known VoIP application for computers.