

The Internet

1. The Internet
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The Internet

- A global network connecting millions of computers
- More than 100 countries are linked into exchanges of data, news and opinions.
- The Internet links are computer networks all over the world so that users can share resources and communicate with each other.



Types of Computer Network

Local Area Network (LAN)

- A LAN connects network devices over a relatively short distance.
- A networked office building, school, or home usually contains a single LAN, though sometimes one building will contain a few small LANs (perhaps one per room), and occasionally a LAN will span a group of nearby buildings.

Types of Computer Network

Metropolitan Area Network (MAN)

- A metropolitan area network(MAN) is a large computer network that usually spans a city or a large campus.
- A MAN often acts as a high speed network to allow sharing of regional resources.
- A MAN typically covers an area of between 5km and 50km diameter.
- A MAN might be owned and operated by a single organization, but it usually will be used by many individuals and organizations.

Types of Computer Network

Wide Area Network(WAN)

- WAN covers a large geographic area such as country, continent or even whole of the world.
- A WAN is a geographically-dispersed collection of LANs.
- Most WANs (like the Internet) are not owned by any one organization but rather exist under collective or distributed ownership and management.

Internet Access

- To gain access to the internet, the user has to register to any Internet Service Provider (ISP).
- Types of Internet connection:
 - Dial-up
 - Integrated services digital network
 - Asymmetric Digital Subscriber Line
 - Wireless Internet Connections
 - Internet over Satellite

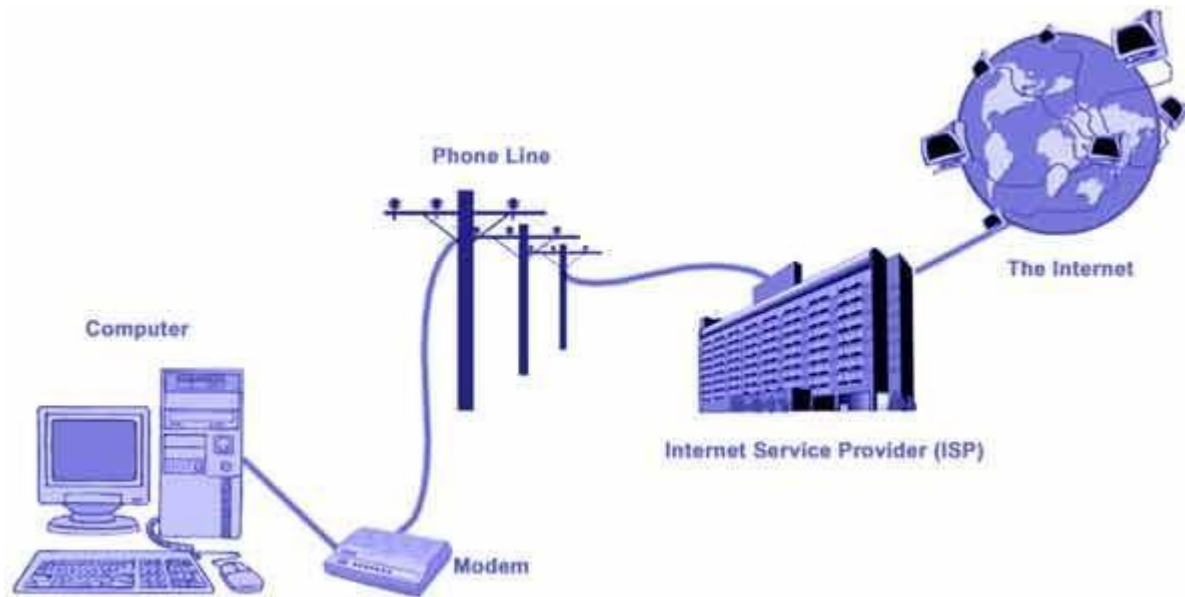
Internet Access

Dial-up

- Slower than other type of connection
- Connects through existing phone lines using dial-up modem
- Cheapest
- Must “dial-up” to connect to Internet and disconnect when done.
- Cannot use Internet and phone line at the same time.

Internet Access

Dial-up



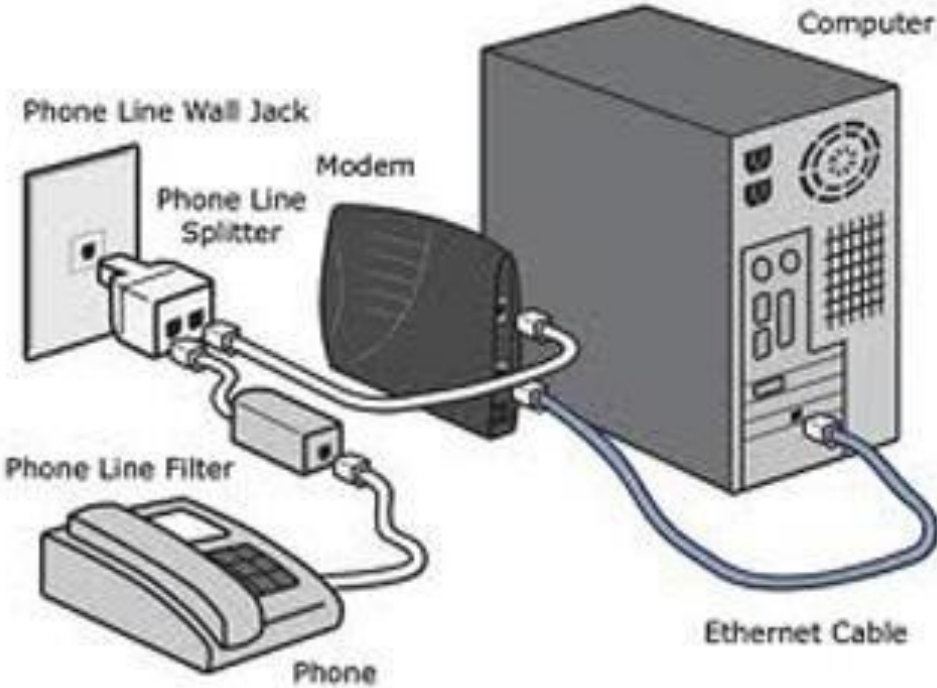
Internet Access

Digital Subscriber Line (DSL)

- Broadband – faster than dial-up connection
- Connects through phone lines, but does not require phone service
- Always on
- Internet and phone can be used in the same time
- Unavailable in many location

Internet Access

Digital Subscriber Line (DSL)



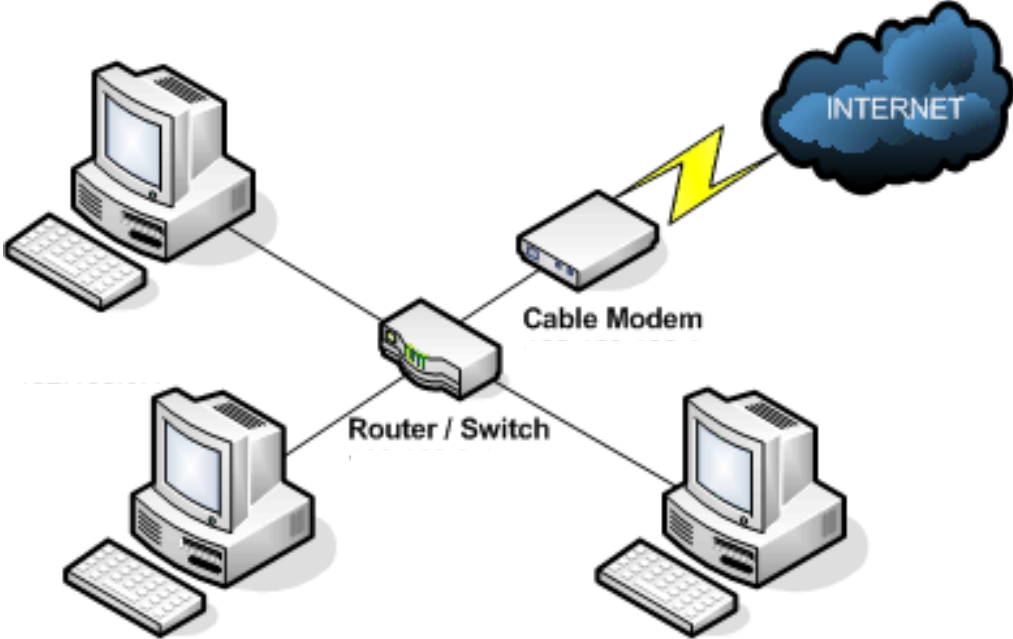
Internet Access

Cable

- Broadband – faster than dial-up and DSL
- Use cable connection
- Always on
- Only available where cable is available

Internet Access

Cable



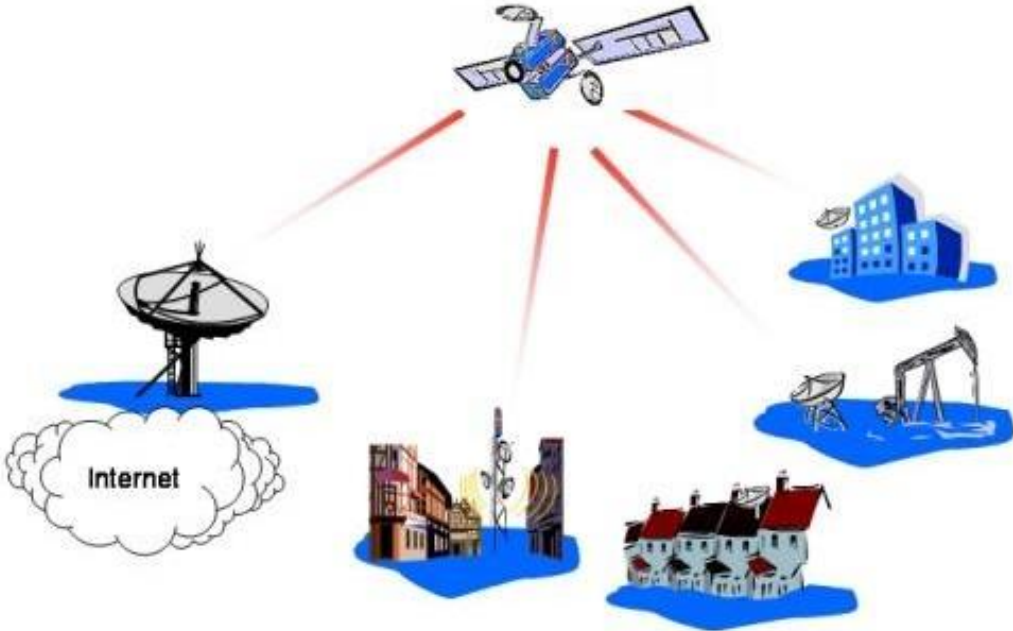
Internet Access

Satellite

- Broadband – faster than dial-up, but data is delayed
- Connects via satellites
- Can be affected by rain and snow
- Does not require phone lines and cables
- Can be use anywhere around the world

Internet Access

Satellite



Internet Access

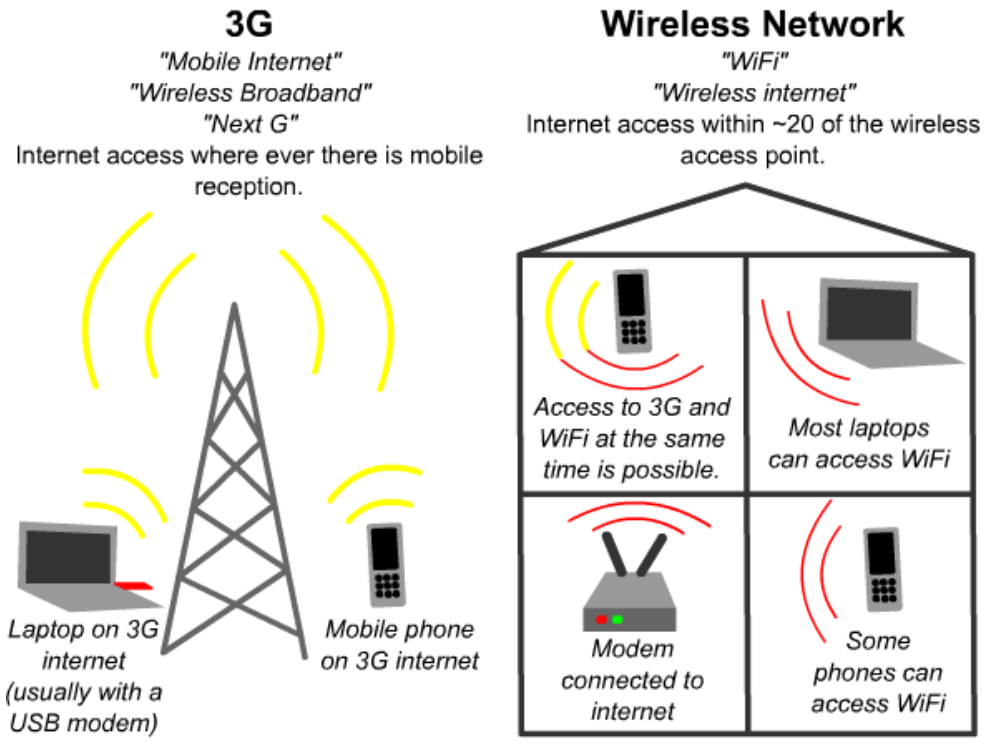
3G and 4G

- Available for mobile phones, computers and tablets
- Connects wirelessly through 3G/4G provider
- Can access Internet anywhere
- Slower than DSL and Cable connection

Internet Access

3G and 4G

The Difference Between 3G and WiFi



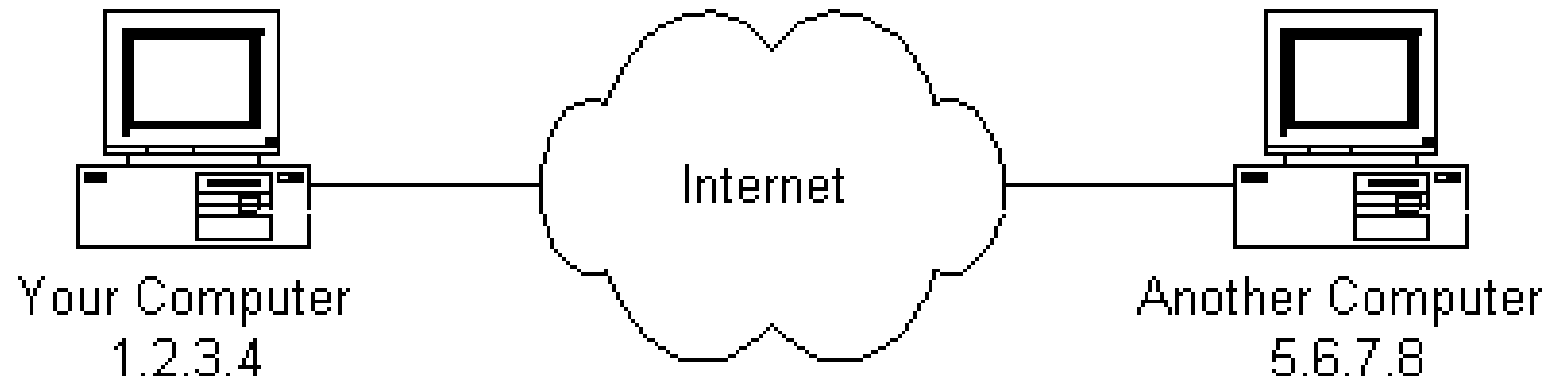
Choosing Internet Service Provider

Below are some things to consider as you research ISPs:

- Speed
- Price
- Ease of Installation
- Service Record
- Technical Support
- Contract Terms

How Internet Works?

- Because the Internet is a global network of computers each computer connected to the Internet **must** have a unique address.
- This address is known as an IP address.



Internet Requirement

- Computer with modem/router/network card.
- Internet account with ISP.
- Application software:
 - Web browser (Firefox, Chrome)
 - Email client (MS Outlook)
 - Plugins software (Adobe Reader, Flash Player)
- Optional: Speaker, Printer, Webcam

Internet Usages

- Communication
- Send and receive emails
- Download files
- Post your opinion to a newsgroup
- Chatting
- Surf the world wide web
- Business
- Shopping
- Entertainment

Internet Applications

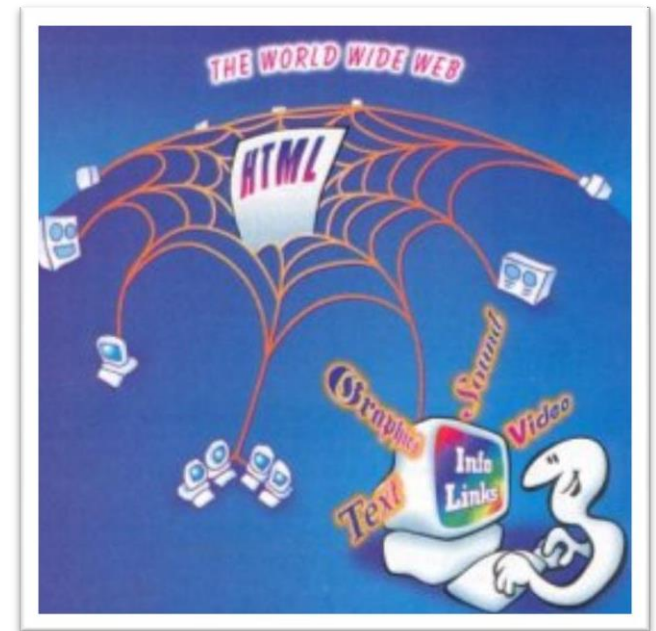
- An Internet application is an interactive, compiled application that can be accessed through a corporate or through the Internet.
- Internet applications can perform complex business processes on either the client or the server.
- The application uses the Internet protocol to receive requests from a client, typically a Web browser, process associated code, and return data to the browser.

Internet Applications

- The World-Wide Web (WWW)
- Electronic Mail (E-Mail)
- File Transfer Protocol (FTP)
- Search Engine
- Chatting
- Video Conferencing
- E-Commerce

World Wide Web (WWW)

- The **World Wide Web** is a system of interlinked hypertext documents accessed via the Internet
- With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them via hyperlinks



World Wide Web (WWW)

- It use a protocol called HTTP – Hypertext Transfer Protocol
- HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

World Wide Web (WWW)

- A **Uniform Resource Locator**, or URL is the address of a document you'll find on the WWW.
- The elements in a URL:
 Protocol://server's address/filename
- Example:
 <http://www.google.com/index.html>

World Wide Web (WWW)

Types of website:

- Static
 - A static website is one that has web pages stored on the server in the format that is sent to a client web browser. It is primarily coded in Hypertext Markup Language (HTML)
- Dynamic
 - A dynamic website is one that changes or customizes itself frequently and automatically, based on certain criteria.

Electronic Mail (Email)

- The transmission of messages over communications networks.
- It is a fast and efficient way to communicate with friends or colleagues.
- You can communicate with one person at a time or thousands; you can receive and send files and other information.

Electronic Mail (Email)

- Basic email functions:
 - send and receive mail messages
 - save your messages in a file
 - print mail messages
 - reply to mail messages
 - attach a file to a mail message

Electronic Mail (Email)

- Email address
 - someone@mail server
- The email address has three parts:
 - a user name
 - an "at" sign (@)
 - the address of the user's mail server
- Example
 - Harris@ftms.edu.my

Email Client

- An email client is a computer program used to manage a user's email.
- Popular email clients include Microsoft Outlook, Pegasus Mail, Mozilla's Thunderbird, and Apple Inc.'s Mail.



Web-based mail

- Is an e-mail service intended to be primarily accessed via a web browser.
- Very popular webmail providers:
 - Gmail
 - Yahoo! Mail
 - Hotmail
- Web mail is popular as it allows you to send or receive e-mail from anywhere.

File Transfer Protocol (FTP)

- The protocol for exchanging files over the Internet.
- Used for moving files between two hosts on a TCP/IP network.
- FTP is most commonly used to download a file from a server using the Internet or to upload a file to a server.



File Transfer Protocol (FTP)

- To do FTP, a user invokes one of two commands:
 - **get** - the command for transferring a file from another server to your own computer.
 - **put** - the command for moving a file from your computer to another one.

Search Engine

- A search engine is designed to search for information on the internet.
- Search engine presents the search results in the form of a search results list.
- The search results can be web pages, images, videos, and other type of files.
- Example:
 - Google
 - Bing



Chatting

- Chatting is the other method for Internet conversation.
- It enables people connected anywhere on the Internet to join in live discussions.
- Chat sessions allow many users to join in the same free-form conversation, usually centered around a discussion topic.



Chatting

Examples:

- MSN Messenger
- Yahoo Messenger
- IRC
- Pidgin

Video Conferencing

- A videoconference or video conference is a set of interactive telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously.



Video Conferencing

The other components required for a videoconferencing system include:

- Video input and output
- Audio input and output
- Data transfer
- Computer

E-Commerce

- Electronic commerce or E-Commerce consists of the buying and selling of products or services over electronic systems such as the Internet and other computer networks.
- It includes the entire online process of developing, marketing, selling, delivering, servicing and paying for products and services.



E-Commerce

Some common applications related to electronic commerce are the following:

- Domestic and international payment systems
- Group buying
- Automated online assistants
- Online shopping and order tracking
- Online banking
- Shopping cart software
- Electronic tickets