

Internet Primer

Background

The Internet, or "The Net" as it's commonly called, has become a household word virtually overnight. Originally designed by the U.S. Department of Defense in 1969 as an experimental project called ARPANET, the Internet has grown exponentially. It now includes tens of millions of people and tens of thousands of networks.

The Internet is not just one network connecting you with another computer, it's a network of networks including Local Area Networks (LANs), Metropolitan Area Networks (MANs) and Wide Area Networks (WANs). All these networks connect computers worldwide, like a spider web. Hence, the name "web" is most aptly used to describe the Internet's reach.

Although the Internet was developed initially as a research tool to link researchers with distant resources, its uses have become manifold today. The most common use of the Internet is for communication and access to information. Although more and more people are using interactive video and audio applications on the system. The system and its uses evolve every day. New applications that make the Internet easier to use are constantly being introduced. And the system itself is experiencing an unprecedented growth in users. Growth is estimated to be close to 10% a month.

The Internet is not managed by just one entity. A cooperative effort of many single networks manage and maintain the Internet. The networks have all agreed upon certain standards of operation regarding how information is sent and received.

The Basics

There are millions of destinations you can access through the Internet: libraries, databases, on-line bookstores, record stores, magazines, florists, job information, real estate listings; you can retrieve catalogs, software, consulting services, training, etc. This list goes on and on. Whether you're a researcher looking for technical information or a recreational hacker looking for someone to chat with on a Saturday night, the Internet can answer your needs.

There are two ways to connect to the Internet: **Dedicated** - through an organization's network (usually a dedicated connection via high-speed digital access), or **Dial-Up** - through a computer, modem and telephone line. You gain access to the Internet through a service provider that offers entry to the worldwide network through local computers. For individuals using telephone lines, most service providers charge a set monthly fee for unlimited use. There are no long-distance telephone calls; your computer's modem dials into a local number which connects you to a modem-pool/terminal server or to another computer which in turn connects you to resources around the world.

As with all computer networks, the Internet operates under a system of "protocols" - a set of standards by which computers communicate. The official "language" of the Internet is **TCP/IP** which stands for Transmission Control Protocol/Internet Protocol. The Internet uses TCP/IP to break the data you are transmitting into packets. Each packet contains fundamental information and IDs for addressing its destination. Computers on the network examine the information and pass the packet along to its next site until it reaches its destination. Each packet is labeled such that it can travel independently. This whole process is called **packet switching**.

There are three basic applications on the Internet: **Electronic Mail (e-mail)**, **File Transfer** and **Remote Login**.

ELECTRONIC MAIL

For many users e-mail is the most useful function of the Internet and its most popular application. At its most basic, the application allows you to send text messages to one or more people. However, e-mail also allows you to retrieve information from automated computer programs and send and receive graphic images.

E-mail is sent and received within seconds and it does not require that the recipient of your message be online to receive. Messages can be sent day or night, across time zones and date lines. The message will be waiting when the recipient is ready to go on-line. The elements you need to send e-mail are these: access to the Internet, an e-mail program and the recipient's e-mail address.

REMOTE LOGIN

Remote login, also known as Telnet, is a tool that allows interactive access to applications and programs on another computer. By using this tool, you can login to a worldwide network of databases and services ranging from library catalogs to bulletin boards.

FILE TRANSFER

This application allows files to be transferred from one computer to another. The process by which you transfer files to your computer is called **File Transfer Protocol** or simply **FTP**. Obviously, all transfers must be done with public documents.

Sifting Through the Information

With the thousands of computer sites available for access and the overabundance of information available for retrieval, how do you make your way through effectively? Several search techniques are available to navigate the average user through the sea of information available on the Internet. These tools present the information in a user-friendly, menu-based environment, without the coding and command structure required to make this information available. These applications establish links between themselves and other services in order to cross-reference and find information more easily. The major players in information retrieval are: Gopher,archie, WANS, WWW and Veronica. The World Wide Web (WWW) is growing faster than any other protocol on the Internet. Growth in new web sites has reached an incredible 20% per month.

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WORLD WIDE WEB

When people talk about the "Web", they are talking about this popular browsing and searching system. It has become the hottest aspect of the Internet due to its use of multimedia elements. With its hypertext and hypermedia, devices that link independent but interrelated documents and pictures, the WWW allows users to click from one Web page to another, electronically hopping around the world.

Thousands of people are increasing the content of the Web daily by adding their own *home pages* which provide links between documents (sounds and images). The home pages are simply doorways into a collection of information at a particular site. Not only educational and research groups, but individuals and businesses have been inundating the Web with new sites over the last two years. The language of the World Wide Web is **HTML**, or HyperText Markup Language, which is used for basic formatting and presentation of hypermedia documents. HTML is used to specify the format of the document, where the links go, how images and sound are presented, etc.

A good way to access the Web is through a *browser* program. These programs display the Web as a graphical environment, using icons and pointers to make your navigation painless. This method of "web surfing" is quickly becoming the new users' entrée into the Internet. Popular browser programs include Mosaic (<http://www.mosaic.com>), Netscape (<http://home.netscape.com>) and Microsoft Internet Explorer (<http://www.microsoft.com>).

Clicking underlined text or a high-lighted graphic on a page takes you to a hyperlinked page on the same site or anywhere on the Internet. A toolbar across the top of the screen allows you to accomplish major movement commands, like **Back** to bring you to the previous page, **Forward** to the next page you viewed if you're backtracked, **Print**, **Reload**, etc.

Further, many developers have designed "search engines" that can pull up lists of sites that interest you. Search engines have been proliferating recently. Some well-known names are: Infoseek, Web Crawler and Yahoo. Yahoo is a topic-oriented catalog of internet sites. Infoseek is a service organization that provides convenient access to information over the Internet. For information on web search engines go to: <http://web.nexor.co.uk/imap/doc/robots/active.html>.

UNIFORM RESOURCE LOCATORS (URLS)

Even given all the "user-friendly" developments of the last couple of years, information retrieval still requires an "address" from which to obtain the information. An address needs a name, and the URL system was developed to give the thousands of resources names. When you want to access a specific resource, you use the URL name to search for it on the Net.

The URL is made up of three parts. The first part refers to the type of application used, for example, "Gopher", "Telnet" or "HTTP" (the protocol that the WWW uses to move information). The identifier is always followed by a colon. The second part always begins with a double slash "/" and then a string of information to find and access the host where the resource can be found. The third part describes the path of information you need once you've accessed the host. For example, <http://www.bigyellow.com> will bring you to the World Wide Web to find Bell Atlantic's yellow pages directory on the Internet. The ".com" indicates that the site is commercial.

Although many of the browser programs don't require you to know URL addresses, it does help to know the address of a particular site you want to visit.

HELPFUL URL ADDRESSES

If you are interested in going "on-line" and need information about the local providers that can help you, the following address will point you in the right direction.

<http://thelist.com>.

Following are several URL addresses that may help you call through the abundance of information that is available on the web.

Lists and Guides for On-line Library Catalogs, BBS's and Databases

Accessing On-line Bibliography Databases
<ftp://ftp.utdallas.edu/pub/staff/billy/libguide>;

<gopher://squirrel.utdallas.edu>
(choose Libraries)

Campus-Wide Information Systems (CWIS)
<http://sunsite.unc.edu/pub/docs/about-the-net/cwis/cwis4>

SURAnet Guide to Selected Internet Resources
<ftp://ftp.sura.net/pub/nic/how.to.get.SURAnet.guide>

Special Internet Connections
<ftp://cds4.csd.uwm.edu/pub/intel.services.txt>

Resource Catalogs and Lists

New Internet Sites
<gopher://liberty.uc.wdu.edu>
(Choose Explore Internet Resources)

Nova-Links Internet Access
<http://alpha.acast.nova.edu/start.html>

