We encourage members of the user community to explore cyberspace. The information possibilities are virtually endless.

An Introduction to Cyberspace

Terrie Dickson
User Information Services Group, NERSC

NERSC has been using the World Wide Web (WWW) as an information delivery system for over a year. This is one of many articles published in the *Buffer* that provide information on accessing the WWW. We encourage members of the user community to explore the information possibilities.

This article is an excerpt from *Entering the World-Wide Web: A Guide to Cyberspace* by Kevin Hughes, and contains the necessary disclaimer at the conclusion. References to new browsers have been added and a few pointers have been updated. The complete article can be found at URL:

`http://www.eit.com/goodies/www.guide/`

What Is the World Wide Web?

For fifty years, people have dreamt of the concept of a universal database of knowledge—information that would be accessible to people around the world and link easily to other pieces of information so that any user could quickly find the things most important to themselves. It was in the 1960's when this idea was explored further, giving rise to visions of a "docuverse" that people could swim through, revolutionizing all aspects of human-information interaction. Only now has the technology caught up with these dreams, making it possible to implement them on a global scale.

The WWW is officially described as a "wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents." What the WWW, or W3, project has done is provide users on computer networks with a consistent means to access a variety of media in a simplified fashion. Using a popular software interface to the Web called Mosaic, the Web project has changed the way people view and create information—it has created the first true global hypermedia network.

The earliest visions of such systems had as their goal the advancement of science and education. Although the WWW project has the potential to make a significant impact in these areas, it is poised to revolutionize many elements of society, including commerce, politics, and literature.

What Is the Internet?

The Internet is the catch-all word used to describe the massive worldwide network of computers. The word "internet" literally means "network of networks." In itself, the Internet is comprised of thousands of smaller regional networks scattered throughout the globe. On any given day it connects roughly 20 million users in over 50 countries. The WWW is mostly used on the Internet; they do not mean the same thing. The Web refers to a body of information—an abstract space of knowledge, while the Internet refers to the physical side of the global network, a giant mass of cables and computers.

Nobody "owns" the Internet—although there are companies that help manage different parts of the networks that tie everything together, there is no single governing body that controls what happens on the Internet. The networks within different countries are funded and managed locally according to local policies.

Having access to the Internet usually means that one has access to a number of basic services: electronic mail, interactive conferences, access to information resources, network news, and the ability to transfer files.

The WWW uses the Internet to transmit hypermedia documents between computer users internationally. Much in the same way, nobody "owns" the WWW. People are responsible for the documents they author and make available publicly on the Web. Via the Internet, hundreds of thousands of people around the world are making information available from their homes, schools, and workplaces.

It is possible to use WWW software without having to use the Internet. But Internet access is necessary in order to make full use of and participate in the WWW.

What Is Available on the Web?

Currently the Web offers the following through a hypertext, and in some cases, hypermedia interface:

- Anything served through Gopher
- Anything served through WAIS (Wide Area Information Servers)
- Anything served through anonymous FTP sites
- Full Archie services (an FTP search service)
- Full Veronica services (a Gopher search service)
- Full CSO, X.500, and whois services (Internet phone book services)
- Full finger services (an Internet user lookup program)
- Anything on Usenet (decentralized network of discussion forums called "newsgroups")
- Anything accessible through TELNET
- Anything in hytelnet (a hypertext interface to TELNET)
- Anything in techinfo or texinfo (forms of campus-wide information services)
- Anything in hyper-g (a networked hypertext system in use throughout Europe)
- Anything in the form of MAN pages
- HTML-formatted hypertext and hypermedia documents

How Can I Get More Information?

Most of this information is available on the Internet. In order to access resources specified by a URL, you may need to use a Web browser or connect to a TELNET site that provides a public-access browser. Enter the URL as one unbroken line without spaces or carriage returns.

The best way to get general information on the Web without a browser is to type:

```
telnet telnet.w3.org
```

Information on how to obtain software can also be found there (a login is not required).

If you do not know how to use FTP, Gopher, or TELNET, there are dozens of good books available on how to get on and use the Internet. Although there are too many introductory books to list, here are a few mentioned by the *Unofficial Internet Book List* (to receive the list, send e-mail to **savetz@rahul.net**).

- *The Internet Guide for New Users*
  Daniel P. Dern, McGraw-Hill, ISBN: 0-07-016511 (paperback)
- *The Internet Starter Kit for the Macintosh*
  Adam Engst, Hayden Books, ISBN: 1-56830-064-6
- *The Internet Unleashed*
  Martin Moore, et al., Sams Publishing, ISBN: 0-672-30466-X
- *PC Internet Tour Guide*
  Michael Fraase, Ventana Press, ISBN: 1-56604-084-1

- *The Whole Internet User's Guide and Catalog*
  Ed Krol, O'Reilly and Associates,
  ISBN: 1-56592-025-2
- *Zen and the Art of Internet*
  Brendan Kehoe, Prentice Hall,
  ISBN: 0-13-010778-6

General Web Information

- World Wide Web Consortium—W3C page

  `http://www.w3.org/pub/WWW`
- Information on WWW

  `http://www.bsdi.com/server/doc/web-info.html`
- The comp.infosystems.www FAQ (Frequently Asked Questions) file

  `http://www.boutell.com/faq`

Miscellaneous Browser pages

- Main NCSA Mosaic page

  `http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/mosaic-docs.html`
- Main Netscape page

  `http://home.netscape.com`
- Main HotJava page

  `http://java.sun.com/hotjava.html`
- Usenet Newsgroups

  A list of web-related newsgroups

  `http://www.w3.org/hypertext/WWW/Mailing/Mail/Overview.html`
- Mailing Lists

  WWW courseware: send e-mail to **`www-courseware-request@eit.com`** with **`subscribe`** as the body. Hypertext archives are available at **`http://www.eit.com/goodies/lists/www-courseware`**.

  WWW literature: send e-mail to **`www-literature-request@eit.com`** with **`subscribe`** as the body. Hypertext archives are available at **`http://www.eit.com/goodies/lists/www-literature`**.

  WWW library resource management: send e-mail to **`listserv@library.berkeley.edu`** with **`SUB Web4Lib`** ***`your name`*** as the body.

Index/Glossary

Archie
A network service that searches FTP sites for files.
browser
Software that provides an interface to the WWW.
CERN
The European collective of high-energy physics researchers (European Organization for Nuclear Research).
client
A computer or program that requests a service of another computer or program obtaining software.
client-server architecture
A structure in which programs use and provide distributed services.
finger
A service that responds to queries and retrieves user information remotely.
Gopher
A versatile menu-driven information service.
Graphics Interchange Format (GIF)
A commonly used graphics format that compresses the image and stores color information within the file.
home page
The default document WWW users see when connecting to a Web server for the first time.
hyper-g
A distributed hypertext system mostly popular in Europe.

hyperlink
A connection between hypermedia or hypertext documents and other media.
hypermedia
Hypertext that includes or links to other forms of media.
hypertext
Text that, when selected, has the ability to present connected documents.
Hypertext Markup Language (HTML)
The standard language used for creating hypermedia documents within the WWW.
Hypertext Transmission Protocol (HTTP)
The standard language that WWW clients and servers use to communicate.
hytelnet
A hypertext interface to TELNET.
Internet
The global collective of computer networks.
Network News Transfer Protocol (NNTP)
A common method by which articles over Usenet are transferred.
page
A hypermedia document as viewed through a WWW browser.
QuickTime
A digital video format developed by Apple Computer that integrates synchronized video and audio with compression techniques.
Rich Text Format (RTF)
A common interchange format for the exchange of electronic documents between computers.
server
A program that provides a service to other client programs.
Tim Berners-Lee
The inventor of the WWW.
Uniform Resource Locator (URL)
A standardized way of representing different documents, media, and network services on the WWW.
Usenet
The global news-reading network.
Veronica
A network service that allows users to search Gopher systems for documents.
webmaster
The administrator responsible for the management (and often design) of a WWW site.
whois
A name lookup service.
Wide-Area Information Servers (WAIS)
A service which allows users to intelligently search for information among databases distributed throughout the Internet.
X.500
A standard which defines electronic mail directory services. Mostly used in Europe.
Xanadu
A client-server system based on networked hypertext that emphasizes electronic publishing and commerce.

Version and Distribution Information

"The problem with the future is that it usually arrives before we're ready for it."

Thanks go to Ken Hensarling and Evan Tector, who helped with the first version in Hawaii, William Wong for EIT nitpicking, Roy Fielding for tightening up my writing, and Tim Berners-Lee for clarifying that the WWW is not the Internet!

* Version 1.0: August 1993
* Version 4.0: September 21, 1993
* Version 5.0: October 9, 1993
* Version 6.0: March 18, 1994
* Version 6.1.1 HTML: May 22, 1994

The opinions stated in this document are solely those of the author and do not necessarily represent the views of Enterprise Integration Technologies.

This document is Copyright ©1994 by Kevin Hughes. It may be freely distributed in any format as long as this disclaimer is included and the textual and graphic contents are not altered. Text-only distribution is permitted. A PostScript copy of this document can be obtained by FTPing to **ftp.eit.com**. Log in as **anonymous** and go to the /pub/web.guide directory.

Comments, questions, corrections, and suggestions relating to this guide are welcomed and can be sent to **kevinh@eit.com**.

Enterprise Integration Technologies
#459 Hamilton Avenue
Palo Alto, CA 94301
Information: (415) 617-8000
Fax: (415) 617-8019
WWW: **http://www.eit.com/**