

Surfing the Internet 1.0

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Surfing the INTERNET: an Introduction

Jean Armour Polly _Assistant Director, Public Services _Liverpool Public Library _310 Tulip St. _Liverpool, NY 13088 _(315) 457-0310
_INTERNET: polly@LPL.ORG

Today I'll travel to Minnesota, Texas, California, Cleveland, New Zealand, Sweden, and England. I'm not frantically packing, and I won't pick up any frequent flyer mileage. In fact, I'm sipping cocoa at my Macintosh. My trips will be electronic, using the computer on my desk, communications software, a modem, and a standard phone line.

I'll be using the Internet, the global network of computers and their interconnections, which lets me skip like a stone across oceans and continents and control computers at remote sites. I haven't "visited" Antarctica yet, but it is only a matter of time before a host computer becomes available there!

This short, non-technical article is an introduction to Internet communications and how librarians and libraries can benefit from net connectivity. Following will be descriptions of electronic mail, discussion lists, electronic journals and texts, and resources available to those willing to explore. Historical details about the building of the Internet and technical details regarding network speed and bandwidth are outside the scope of this piece.

What's Out There Anyway?

Until you use a radio receiver, you are unaware of the wealth of programming, music, and information otherwise invisible to you.

Computer networks are much the same. About one million people worldwide use the Internet daily. Information packet traffic rises by 15% each month.

About 727,000 host computers are connected, according to a January, 1992 report (Network Working Group Request for Comments: 1296) by Mark K. Lottor.

So, what's all the excitement about? What's zipping around in that fiber and cable and ether, anyway?

On my electronic adventure I browsed the online catalog at the University Library in Liverpool England, leaving some "hi there from Liverpool New York" mail for the librarian. I downloaded some new Macintosh anti-virus software from Stanford's SUMEX archive. Then I checked a few databases for information needed for this article, and scanned today's news stories. I looked at the weather forecast for here in the East and for the San Francisco Bay area, forwarding that information to a friend in San Jose who would read it when he woke up. The Internet never closes!

After that I read some electronic mail from other librarians in Israel, Korea, England, Australia and all over the U.S. We're exchanging information about how to keep viruses off public computers, how to network CD ROMS, and how to re-ink inkjet printer cartridges, among other things.

I monitor about twelve discussion groups. Mail sent to the group address is distributed to all other "subscribers." It's similar to a round-robin discussion. These are known variously as mailing lists, discussion groups, reflectors, aliases, or listservs, depending on what type they are and how they are driven. Subscriptions are free.

One of these groups allows children and young adults all over the world to communicate with each other. Kids from Cupertino to Moscow are talking about their lives, pets, families, hopes, and dreams. It's interesting to see that Nintendo is a universal language!

Teachers exchange lesson plans and bibliographies in another group, and schools participate in projects like the global market basket survey. For this project, students researched what foods a typical family of four would buy and prepare over one week's time. Their results were posted to the global project area, where they could be compared with reports from kids all over North and South America, India, Scandinavia, and Asia. It opened up discussions of dietary laws, staple foods, and cultural differences.

Other lists explore the worlds of library administration, reference, mystery readers, romance readers, bird-watcher hotlines, cat enthusiasts, X-Soviet Union watchers, packet radio techies, and thousands more. There is even a list to announce the creation of new lists!

The Power of the Net

A net connection in a school is like having multiple foreign exchange students in the classroom all the time. It promotes active, participatory learning.

Participating in a discussion group is like being at an ongoing library conference. All the experts are Out There, waiting to be asked. Want to buy a CD ROM drive? Send one query and "ask" the 3,000 folks on PACS-L (Public Access Computer Systems list) for advice. In a few hours you'll have personal testimonies on the pros and cons of various hardware configurations.

Want to see if any libraries are doing anything with Total Quality Management? Ask the members of LIBADMIN and you'll have offers of reports, studies, personal experiences and more.

How do you cope with budget cuts: personnel layoffs or materials? Again, LIBADMIN use allows shared advice.

Here is one story about the power of the net. At Christmas, an electronic plea came from Ireland. "My daughter believes in Santa Claus," it began. "And although the My Little Pony 'Megan & Sundance' set has not been made in three years, she believes Santa will prevail and she will find one under her tree."

Mom, a university professor, had called the manufacturer in the US, but none were available. "Check around," they said, "maybe some yet stand on store shelves." So, Mom sent the call out to the net.

Many readers began a global search for the wily Pony as part of their own holiday shopping forays. Soon, another message came from Dublin. It seemed that a reader of the original message had a father who was a high-ranking executive in the toy company, and he had managed to acquire said pony where others had failed! It was duly shipped in time to save Santa's reputation.

Part of the library's mission is to help remove barriers to accessing information, and part of this is removing barriers between people. One of the most interesting things about telecommunications is that it is _the Great Equalizer. It lets all kinds of computers and humans talk to each other.

The old barriers of sexism, ageism, and racism are not present, since you

can't see the person to whom you're "speaking". You get to know the person without preconceived notions about what you THINK he is going to say, based on visual prejudices you may have, no matter how innocent.

Not that electronic mail is always an harmonic convergence of like souls adrift in the cyberspace cosmos: of course there are arguments and tirades (called "flames"). Sometimes you get so used to seeing a frequent poster's electronic signature that you know what he's going to say before he says it!

Smileys

One problem with written communication is that remarks meant to be humorous are often lost. Without the visual body-language clues, some messages may be misinterpreted. So a visual shorthand known as "smileys" has been developed. There are a hundred or more variations on this theme-- :-) That's a little smiley face. Look at it sideways.

What a range of emotions you can show using only keyboard characters. Besides the smiley face above, you can have :-(if you're sad, or :-< if you're REALLY upset! ;-) is one way of showing a wink. Folks wearing glasses might look like this online: %^).

But for the most part, the electronic community is willing to help others. Telecommunications helps us overcome what has been called the tyranny of distance. We DO have a global village.

Electronic Newsletters and Serials

Subscribing to lists with reckless abandon can clog your mailbox and provide a convenient black hole to vacuum up all your spare time. You may be more interested in free subscriptions to compiled documents known as electronic journals. These journals are automatically delivered to your electronic door.

There are a growing number of these. Some of the best for librarians are listed below. To subscribe to these journals you must know how to send an interactive message to another computer. This information is well-documented in the resources listed at the end of this article.

ALCTS NETWORK NEWS

(Association for Library Collections and Technical Services) _Various ALA news, net news, other items of interest to librarians. _Send the following message to LISTSERV@UICVM: _SUBSCRIBE ALCTS First Name Last Name.

Current Cites

Bibliography of current journal articles relating to computers, networks, information issues, and technology. Distributed on PACS-L, or connect remotely via TELNET to MELVYL.UCOP.EDU; Enter command: SHOW CURRENT CITES. Further information: David F. W. Robison, DROBISON@UCBLIBRA

EFFector Online

The online newsletter of the Electronic Frontier Foundation. All the hot net issues are covered here: privacy, freedom, first amendment rights. _Join EFF to be added to the mailing list or FTP the files yourself from eff.org.

Hot Off the Tree (HOTT) (Excerpts and Abstracts of Articles about Information Technology)

TELNET MELVYL.UCOP.EDU; Enter command: SHOW HOTT. _Further information: Susan Jurist, SJURIST@UCSD.EDU.

NetNews

An irreverent compendium of tidbits, resources, and net factoids that is a must for true internet surfers. _To subscribe, contact Dana Noonan at Metronet in the Twin Cities area, (612) 722-9257 or electronically at noonan@msus1.msus.edu.

Public-Access Computer Systems News and The Public-Access Computer Systems Review

Sent automatically to PACS-L subscribers. See above. _For a list of back issue files, send the following message to LISTSERV@UHUPVM1: INDEX PACS-L. To obtain a comprehensive list of electronic serials on all topics, send the following commands to LISTSERV@UOTTAWA.BITNET _GET

EJOURNAL1 DIRECTORY _GET EJOURNAL2 DIRECTORY _For further information, contact Michael Strangelove: _441495@ACADVM1.UOTTAWA.CA.

Remote Login to Internet Resources: TELNET

One step beyond electronic mail is the ability to control a remote computer using TELNET. This feature lets you virtually teleport anywhere on the network and use resources located physically at that host. Further, some hosts have gateways to other hosts, which have further gateways to still more hosts. How can you be in two places at once? It sounds more confusing than it is.

What resources are available? Here is a sampling of some of the fare awaiting you at several sites:

Cleveland Freenet

Freenets are the progeny of Tom Grundner, Director, Community Telecomputing Laboratory, Case Western Reserve University, 303 Wickenden Building, Cleveland, OH 44106 _(216) 368-2733 FAX: (216) 368-5436 _Internet: aa001@cleveland.freenet.edu _BITNET: aa001%cleveland.freenet.edu@cunyvm and the folks at _National Public Telecomputing Network (NPTN), Box 1987, Cleveland, OH 44106 _(216) 368-2733 FAX: (216) 368-5436 _aa622@cleveland.freenet.edu. _Freenets are built around a city metaphor, complete with schools, hospitals, libraries, courthouses, and other public services.

Academy One recently held an online global simulation of a series of major space achievements. _16 schools (from five states and four nations) participated. Here are some of the descriptions of their projects: _"VALKEALA HIGH SCHOOL _VALKEALA ELEMENTARY SCHOOL _Valkeala, Finland (sa124@cleveland.freenet.edu) _Acting as Space Shuttle Discovery taking the Hubble Telescope into space. These Finnish students will be in communication with students in Estonia, relaying their reports." _"SAN MARINO ELEMENTARY SCHOOL _Buena Park, CA (aa630@cleveland.freenet.edu) _Simulating the Apollo 11 mission which placed the first human on the moon. Reports will be posted hourly pertaining to the real Apollo 11 mission, as well as the simulation in progress." _"DR. HOWARD ELEMENTARY SCHOOL _Champaign, IL (cwilliam@mars.ncsa.uiuc.edu, cdouglas@ncsa.uiuc.edu) _Dr. Howard School (25 students in 3rd/4th grade) will be simulating the Challenger 2 launch. They are being assisted by the National Center for Supercomputing Applications." _"ST. JULIE BILLIART SCHOOL

_Hamilton, OH (ba542@cleveland.freenet.edu) _Simulating a NASA Tracking Station in Florida. They will be posting hourly weather reports about the conditions in Florida around Cape Kennedy. This information is vital to the recovery of the Friendship 7 capsule and crew. Students have taken an interest in Space Junk and will be posting additional reports on the various probes which were used to test the surface of the moon and how all of that junk is now becoming a hazard to current and future space exploration." __Another Freenet resource is Project Hermes. This service provides copies of Supreme Court opinions in electronic form to as wide an audience as possible, almost as soon as they are announced. The Court's opinions can be sent directly to you or you may download the files directly from any NPTN community computer system. The Freenets also provide weather, news, and gateways to other resources.

To access the Cleveland Freenet (where all this is being held) _simply telnet to: freenet-in-a.cwru.edu 129.22.8.82 or 129.22.8.75 or 129.22.8.76 or 129.22.8.44 and select "visitor" at the login menu.

MELVYL

The University of California MELVYL Catalog _Division of Library Automation _University of California Office of the President _300 Lakeside Drive, 8th floor, Oakland, California 94612-3550 _(415) 987-0555 (MELVYL Catalog Helpline) _E-mail: lynch@postgres.berkeley.edu _The MELVYL catalog is the online union catalog of monographs and serials (periodicals) held by the nine University of California campuses and affiliated libraries. It represents nearly 11 million holdings at UC, the California State Library, and the Center for Research Libraries. The MELVYL catalog also provides access to two databases of article citations: MEDLINE and Current Contents as well as a gateway to many other systems. Access to MEDLINE and Current Contents files are restricted under a license agreement to the University of California faculty, staff, and students. _Telnet melvyl.ucop.edu or any of four Internet addresses _(31.1.0.1, 31.0.0.11, 31.0.0.13, 31.1.0.11).

CARL

Colorado Alliance of Research Libraries _777 Grant, Suite 306 Denver CO 80203-3580 _(303)861-5319 _E-mail: help@carl.org _CARL offers access to the following groups of databases: _Academic and public library online catalogs, current article indexes such as UnCover and Magazine Index, databases such as the Academic American Encyclopedia and Internet Resource Guide, and a gateway to other library systems. Access

to some items is limited. `_telnet pac.carl.org` or `telnet 192.54.81.128`

MICROMUSE

This is how Barry Kort (aka 'Moulton'), Visiting Scientist at Educational Technology Research, BBN Labs, Cambridge, MA describes MicroMuse at M.I.T. `_`"MUDs (Multi-User Dimensions) or MUSEs (Multi-User Simulation Environments) are virtual realities which offer a rich environment for synergy, community, collaboration, and exploratory discovery. Players connect to the host computer, adopt a character and personality of their choosing, and enter into the synthetic world, consisting of a web of connected rooms and movable props. Everything (rooms, movable objects, connecting passageways, and players) has a description (typically a few lines of text) which are displayed when a player looks at it. Actions such as picking up or dropping an object, and exiting to an adjacent room also generate a short message appropriate to the action."

"At MIT's AI Lab, MicroMuse features explorations, adventures, and puzzles with redeeming social, cultural, and educational content. The MicroMuse Science Center offers an Exploratorium and Mathematica Exhibit complete with interactive exhibits drawn from experience with Science Museums around the country. The Mission to Mars includes an elaborate tour of the red planet with accurate descriptions rivaling those found in National Geographic. Elsewhere on MicroMuse, one can find an outstanding adventure based on the children's classic Narnia; a recreation of the Wizard of Oz adventure built by a gifted 8-year old; a challenging Logic Quest; and a living model of the science fiction genre "The DragonRiders of Pern" by author Anne McCaffrey."

If you would like to explore MicroMuse, you may connect as follows from your local host computer: `_telnet michael.ai.mit.edu [18.43.0.177] _login: guest [no password required] _tt [TinyTalk client program] _connect guest [Connect to MicroMuse]`

BBS.OIT.UNC.EDU

It's a must. Not only can you read Usenet Newsfeeds, but you can use LibTel, a scripted telnet gateway to access both US and international libraries plus such things as Data Research Associates Library of Congress catalog, the Ham Radio Call Book, the National Science Foundation, the Weather Server, Webster's dictionary and thesaurus, and more.

Remote Access to Files (FTP)

FTP or File Transfer Protocol is what to use to retrieve a text file, software, or other item from a remote host. Normal practice is to FTP to the host you want and login as "anonymous". Some sites use the password "guest" while others require that you put in your network address as the password. Some popular FTP sites follow:

SUMEX-AIM

This archive at Stanford (sumex-aim.stanford.edu) houses a plethora of Macintosh applications, utilities, graphics and sound files.

SIMTEL20

Visit (simtel20.army.mil) at the White Sands Missile Range in New Mexico, which contains a similar archive of software for MS-DOS computers. _The Network Service Center at npsc@npsc.nsf.net is a gold mine of documents and training materials on net use. See further information on this in the Resources for Learning More section of this article.

Project Gutenberg

The primary goal of Project Gutenberg is to encourage the creation and distribution of electronic text. They hope to have 10,000 etexts in distribution by the end of 2001. Some of the many texts available now include Alice in Wonderland, Peter Pan, Shakespeare, Paradise Lost, and other texts in the public domain. _Michael S. Hart, Director, Project Gutenberg _National Clearinghouse for Machine Readable Texts _Illinois Benedictine College _5700 College Road _Lisle, Illinois 60532-0900
_BITNET> HART@UIUCVMD INTERNET> HART@VMD.CSO.UIUC.EDU
_CompuServe: >INTERNET:hart@vmd.cso.uiuc.edu

Travel Agents: Archie, Gopher, WAIS, Worldwide Web

There is so much information on the net, it's impossible to know where everything is, or even how to begin looking. Fortunately, some computerized "agents" are in development to help sort through the massive data libraries on the net.

Archie

Peter Deutsch, of McGill's Computing Centre, describes the archie server concept, which allows users to ask a question once yet search many different hosts for files of interest. _"The archie service is a collection of resource discovery tools that together provide an electronic directory service for locating information in an Internet environment. Originally created to track the contents of anonymous FTP archive sites, the archie service is now being expanded to include a variety of other on-line directories and resource listings."

"Currently, archie tracks the contents of over 800 anonymous FTP archive sites containing some 1,000,000 files throughout the Internet. Collectively, these files represent well over 50 Gigabytes (50,000,000,000 bytes) of information, with additional information being added daily. Anonymous FTP archive sites offer software, data and other information that can be copied and used without charge by anyone with connection to the Internet."

"The archie server automatically updates the listing information from each site about once a month, ensuring users that the information they receive is reasonably timely, without imposing an undue load on the archive sites or network bandwidth."

UNIX Support Group, Computing Centre, McGill University, Room 200, Burnside Hall, 805 Sherbrooke Street West, Montreal, Quebec _CANADA H3A 2K6 (514) 398-3709 _peterd@cc.mcgill.ca _Some archie server sites to telnet to: _archie.ans.net (USA [NY]) _archie.rutgers.edu (USA [NJ]) _archie.sura.net (USA [MD]) _archie.mcgill.ca (Canada) _archie.funet.fi (Finland/Mainland Europe) _archie.au (Australia/New Zealand) _archie.doc.ic.ac.uk (Great Britain/Ireland)

Gopher

A gopher (or go-fer) is someone who fetches necessary items from many locations. Login as gopher after you telnet to consultant.micro.umn.edu and enjoy having a computer do all the work for you. Almost. Gopher is still in beta test mode and it still has a few glitches but it is well worth using. Besides archie, gopher includes fun and games, humor, libraries (including reference books such as the Hacker's Dictionary, Roget's 1911 Thesaurus, and the CIA World Fact Book), gateways to other US and foreign gophers, news, and gateways to other systems. _Is this the new world order of automated librarianship?

WAIS

Wide Area Information Servers (pronounced ways) allows users to get information from a variety of hosts by means of a "client". The user tells the client, in plain English, what to look for out in dataspace. The client then searches various WAIS servers around the globe. The user tells the client how relevant each hit is, and the client can be sent out on the same quest again and again to find new documents.

WAISStation is an easy to use Macintosh implementation of a WAIS client. It can be downloaded from think.com as well as a self-running MediaTracks demo of WAISStation in action.

Kahle also moderates a thoughtful WAIS newsletter and discussion group, often speculating about the future of libraries and librarians.
_Brewster Kahle _Project Leader Wide Area Information Servers
_Thinking Machines Corporation _1010 El Camino Real, Menlo Park, CA 94025 _(415) 329-9300 x228 brewster@Think.COM

WorldWideWeb

Tim Berners-Lee describes the Web this way: "The WWW project merges the techniques of information retrieval and hypertext to make an easy but powerful global information system. The WWW world consists of documents, and links. Indexes are special documents which, rather than being read, may be searched. The result of such a search is another ('virtual') document containing links to the documents found. The Web contains documents in many formats."

"Those documents which are hypertext, (real or virtual) contain links to other documents, or places within documents. All documents, whether real, virtual, or indexes, look similar to the reader and are contained within the same addressing scheme. To follow a link, a reader clicks with a mouse (or types in a number if he or she has no mouse)."

"To search and index, a reader gives keywords (or other search criteria). These are the only operations necessary to access the entire world of data." _Tim Berners-Lee _WorldWideWeb project, 1211 Geneva 23 Switzerland _Tel: +41(22)767 3755 Fax:+41(22)767 7155 _email:tbl@cernvax.cern.ch

Hytelnet

HYTELNET version 5.0, the utility which gives an IBM-PC user instant-access to all Internet-accessible library catalogs, Freenets, CWISs (Campus Wide Information Systems), Library BBSs, etc. is now available. You can get it via anonymous FTP from: `_access.usask.ca _` in the `hytelnet/pc` subdirectory. It is listed as `HYTELN50.ZIP`.

How to Get Connected

Now that you're interested in what resources are available, how does one go about getting connected? Time was that you needed a standard, dedicated connection to the Internet. Then you needed a robust computer system and a couple of zany gurus to keep it all running. And once a year you could expect an invoice in the \$30,000 range to keep the data flowing.

These days, anyone can connect, from small libraries and non-profits to individuals. And the prices are affordable. There is a NSFNet acceptable-use policy you must agree to adhere to if your traffic passes through NSFNet. It is available from the NSF Network Service Center (address below).

Contact your regional network first to see what services might be available to you. A list of regional nets can be obtained from the NSF Network Service Center or check with a local college or university's academic computing center. A university may be able to give you a guest account on its system for educational purposes.

Access to electronic mail alone is roughly \$20 a month at this writing. Additional capabilities, including telnet and FTP, cost more, and it will cost \$2,000 or more per year if you want to operate your own host system. The good news is that the costs are spiraling downwards.

Here are a few other methods of connecting to the net:

The California Education and Research Federation

CERFnet has announced DIAL N' CERF USA. It allows educators, scientists, corporations, and individuals access to the Internet from anywhere in the continental US. A toll-free number provides subscribers with the capability to log in to remote machines, transfer files, and send and receive electronic mail, as if they had a standard, dedicated

connection. _The cost of this toll-free connection is \$20 a month with a \$10 per hour usage fee and free installation. There is an installation charge of \$50. _CERFnet. California Education and Research Federation, c/o San Diego Supercomputer Center, P. O. Box 85608, San Diego, CA 92186-9784 help@cerf.net, 800-876-CERF or (619) 534-5087.

Performance Systems International

PSI offers several permutations of network connectivity, including low-end email-only accounts, dial-up host connectivity on demand, and dedicated connections. Costs are competitive and performance is reliable.

PSILink, email and delayed FTP, is \$19 a month for 2400 baud service or below, and \$29 per month for 9600 baud service.

GDS (Global Dialup Service) includes telnet, rlogins at \$39 a month, 2400 baud, 24 hour access.

Host DCS (Dialup Connection Service), at about \$2000 per year, includes a full suite of internet activities (mail, news, FTP, telnet).

PSI has POPs (points of presence) in over forty U.S. cities. _Performance Systems International, Inc. _11800 Sunrise Valley Dr. Suite 1100, Reston, VA 22091 _(800) 82PSI82 or (703) 620-6651 FAX: (703) 620-4586 _info@psi.com _all-info@psi.com generates an automatic rep response containing summaries of various PSI products.

Software Tool & Die

Meet The World, a public access Unix system. The basic rates are \$2 per hour and a \$5 monthly account fee. Services offered by The World include Internet electronic mail, USENET news, ClariNet - UPI, AP, and satellite news services, real-time chat, Unix Software, Archie, the Online Book Initiative (a publicly accessible repository for freely redistributable collections of textual information, a net-worker's library.) AlterNet Access - Users have access to AlterNet via FTP/telnet. Internet - Due to NSFnet policy, not all Internet networks will allow FTP and telnet connections. _The World can also be accessed over the CompuServe Packet Network. You do not have to be a CompuServe subscriber to use this network, but you will be billed for its use.

The WORLD, Software Tool & Die, 1330 Beacon Street, Brookline, MA 02146 (617)739-0202

Resources for Learning More

"Emily Postnews Answers Your Questions on Netiquette"

Brad Templeton's (brad@looking.on.ca) satirical and hilarious piece on how NOT to behave on the net. Emily Postnews, foremost authority on proper net behavior, gives her advice. The best place to FTP the most recent update is from pit-manager.mit.edu

Here is a sample: _"Dear Miss Postnews: How long should my signature be? -- verbose@noisy _A: Dear Verbose: Please try and make your signature as long as you can. It's much more important than your article, of course, so try to have more lines of signature than actual text. Try to include a large graphic made of ASCII characters, plus lots of cute quotes and slogans. People will never tire of reading these pearls of wisdom again and again, and you will soon become personally associated with the joy each reader feels at seeing yet another delightful repeat of your signature. Be sure as well to include a complete map of USENET with each signature, to show how anybody can get mail to you from any site in the world. Be sure to include Internet gateways as well. Also tell people on your own site how to mail to you. Give independent addresses for Internet, UUCP, and BITNET, even if they're all the same."

The CERFnet Network Information Center (NIC)

This is a repository for many eclectic internet guides and RFC (Requests For Comments) from many sources, including the famous, if technical, "Hitchhiker's Guide to the Internet." These may be obtained via anonymous FTP to nic.cerf.net (192.102.249.3). Call the CERFnet Hotline at 800-876-CERF for assistance. California Education and Research Federation, c/o San Diego Supercomputer Center, P. O. Box 85608, San Diego, CA 92186-9784 help@cerf.net, 800-876-CERF or (619) 534-5087.

"Library Resources on the Internet: Strategies for Selection and Use" 1992.

RASD Occasional Paper no. 12, selling for \$18 to members, \$20 for non-members. It can be ordered from ALA Order Services, 50 E. Huron, Chicago, IL 60611, 1-800-545-2433. _Electronic versions available via FTP _ASCII file from: _host DLA.UCOP.EDU, directory pub/internet _filename libcat-guide _host FTP.UNT.EDU, directory library, _filename libcat-guide. _WordPerfect 5.1 file from: _host HYDRA.UWO.CA, directory

"Mining the Internet"

The Net as mine metaphor is a popular theme. Tunneling through the network matrix in search of gems and ore is not far from fact. Sometimes it is hard work, and a lot of it is working in the dark. There is a guidebook called "Mining the Internet," available from University of California at Davis. Here is how the Gold Country Mining Instructions begin:

"Jist durn tuckered o' workin' eight t' five for a salary. ain't you? An' you wanna set out for parts unknown. You're hankerin' for an a'venture. Come'n then go 'Mining the Internet' with me, father of Clementine (that's my darlin'), and I'll tell you some old timey tales and introduce you to a new resource for students, faculty, and staff called wide area networking... 'Taint goin' to hurt you any, and the prospect looks good for a lucky strike."

"Mining the Internet" and "Using the Internet A&B" available from Computing Services, University of California, Davis, CA 95616-8563; ph: (916) 752-0233. _Or electronically from anonymous FTP ucdavis.edu (128.120.2.1) directory ucd.netdocs/mining.

New User's Guide to Unique and Interesting Resources on the Internet 2.0

Available from NYSERNet (New York State Education and Research Network), this is over 145 pages and lists some 50 sources. OPACS, databases, information resources, and more. _The New User's Guide is available in hard copy only at the present time. Cost: \$25.00. (NYSERNet Members: \$18.00)

"Beyond the Walls: Networked Information Kit"

"....An excellent introduction to the possibilities of 'The World of Networked Information'. This instructional package, of use in presenting the possibilities and benefits of electronic networking to groups, consists of a videotape and an instructional notebook package." _The priced is \$99.00 (price includes postage and handling); for NYSERNet affiliates, \$49.00." _Send a check (made out to NYSERNet) or PO. _Send with your name, US mail address and phone number, to: _NYSERNet New User's Guide, NYSERNet, Inc., 111 College Place, Rm. 3-211 _Syracuse, NY

13244-4100 315.443.4120 (voice) 315.425-7518 (fax) info@nysernet.org

NorthWestNet User Services Internet Resource Guide

NorthWestNet has released a 300-page guide to the Internet, covering electronic mail, file transfer, remote login, discussion groups, online library catalogues, and supercomputer access.. Copies may be purchased for \$20.00 from NorthWestNet. _NorthWestNet, 15400 SE 30th Place, Suite 202, Bellevue, WA 98007 Phone: (206) 562-3000 Fax: (206) 562-4822

NSF Network Service Center (NNSC)

Bolt Beranek and Newman Inc. _10 Moulton Street _Cambridge, MA 02138 _(617) 873-3400 _nnscc@nnscc.nsf.net _NSF Internet Tour HyperCard Stack--borrow a Macintosh long enough to view this, it's worth the effort! Includes net history, net maps, and net poetry and lore. Free. _They also publish a very complete Internet Resource Guide (\$15). _Many items, including the HyperCard Tour to the Internet freely available by anonymous FTP from nnscc.nsf.net.

"Special Internet Connections" compiled by Scott Yanoff

This is an indispensable weekly list of network resources available using telnet and FTP. It includes a few Online Public Access Catalogs, chat lines, weather servers, Campus Wide Information Systems, and reference resources. _Send e-mail to the list manager (Scott Yanoff) at: yanoff@csd4.csd.uwm.edu _or FTP to csd4.csd.uwm.edu and the filename is inet-services.

"There's Gold in Them Thar Networks! or Searching for Gold in all the Wrong Places" written by Jerry Martin

This Ohio State University document is available via Internet message to Infoserver@nnscc.nsf.net. _Once inside the message area, give the following commands to retrieve the document: _REQUEST:NSFNET _TOPIC:NETWORK-TREASURES _REQUEST: END

"Zen and the Art of the Internet" by Brendan Kehoe

The BEST resource and unfortunately hardest to get unless you are connected. Not available in hard copy form unless you can beg one from

your local connected site. The author may be able to tell you when a print edition might be forthcoming. Brendan Kehoe, Sun Network Manager Widener University, Chester, PA brendan@cs.widener.edu
_Electronic editions at: [ftp.uu.net](ftp://ftp.uu.net) [137.39.1.9] in /inet/doc
[ftp.cs.toronto.edu](ftp://ftp.cs.toronto.edu) [128.100.3.6] in pub/zen [ftp.cs.widener.edu](ftp://ftp.cs.widener.edu)
[147.31.254.132] in pub/zen as zen-1.0.tar.Z, zen-1.0.dvi, and zen-1.0.PS
[ftp.sura.net](ftp://ftp.sura.net) [128.167.254.179] in pub/nic as zen-1.0.PS
_If you're limited to UUCP, you can get it anonymously by calling UUNET at 900/GOT-SRCS and get the file /inet/doc/FILES.

How to Find out More About Discussion Lists

Unfortunately, you almost need a network connection to discover information about how to use the network! Here are several to get you started:

Dartmouth maintains a merged List of Lists. This list is updated monthly and contains information about approximately 2,200 lists including how to subscribe to each. The data file containing the list-of-lists information can be obtained by electronic mail by sending the command SEND LISTTEXT PACKAGE to LISTSERV@DARTCMS1. This will return five files which can be collated to form the full list. The files are available by anonymous FTP to [DARTCMS1.DARTMOUTH.EDU](ftp://DARTCMS1.DARTMOUTH.EDU) <129.170.16.19> in directory SIGLISTS. To obtain the text file by anonymous FTP, enter the following commands: `FTP DARTCMS1.DARTMOUTH.EDU`
`_ANONYMOUS` `_CD SIGLISTS` `_GET READ.ME` `_GET LISTSERV.LISTS` `_QUIT`
_A comprehensive list-of-lists can be obtained from any host computer running LISTSERV software, by your use of the LIST GLOBAL command in an interactive message. Use of these commands is explained in the Internet resources guides listed above.

Diane Kovacs at KENTVM compiles a useful directory of academically-oriented discussion lists/conferences, which is classified by subject and includes descriptions. Instructions for retrieving it: Send the following commands to LISTSERV@KENTVM.BITNET `_GET ACADLIST FILE1` `_GET ACADLIST FILE2` `_GET ACADLIST FILE3` `_GET ACADLIST FILE4` `_GET ACADLIST FILE5` `_GET ACADLIST FILE6`
_For further information, contact Diane Kovacs: DKOVACS@KENTVM.BITNET

Internet Library Guides

Three different Internet library guides are available to help both beginning and experienced OPAC users.

Art St. George's Internet-Accessible Library Catalogs and Databases includes directions for Internet libraries and Campus Wide Information Systems as well as dialup libraries and bulletin boards in the United States. Available from: [_ariel.umn.edu /LIBRARY INTERNET.LIBRARY](http://_ariel.umn.edu/LIBRARY%20INTERNET.LIBRARY)

Billy Barron's Accessing On-line Bibliographic Databases contains a number of useful features such as guides to local OPAC escape sequences and commands. [_ftp.unt.edu /LIBRARY LIBRARIES.TXT](http://_ftp.unt.edu/LIBRARY%20LIBRARIES.TXT)

This Library Guide is shorter than the others and includes some of the interesting resources available on the net. [_hydra.uwo.ca /LIBSOFT INTERNET_LIB.TXT](http://_hydra.uwo.ca/LIBSOFT%20INTERNET_LIB.TXT)

Books

The Matrix; computer networks and conferencing systems worldwide. _by John S. Quarterman. 1990. ISBN 1-55558-033-5 _Digital Press, 12 Crosby Dr. Bedford, MA 01730 . *!%@: A Directory of Electronic Mail Addressing and Networks.* _by Frey & Adams. 2nd edition, 1991. ISBN 0-937175-15-3 _O'Reilly & Associates, Inc. 632 Petaluma Ave., Sebastopol, CA 95472

Magazine

Matrix News, the monthly newsletter edited by John S. Quarterman. Subscriptions are \$30 per year. _Matrix News, Matrix Information & Directory Services, Inc. (MIDS) _1120 South Capitol of Texas Highway, Building 2, Suite 300 _Austin, TX 78746 (512) 329-1087 FAX: (512) 327-1274 _mids@tic.com

Organizations

CNI _Coalition for Networked Information _1527 New Hampshire Ave., NW, Washington, DC 20036 _(202) 232-2466 FAX: (202) 462-7849 info@cni.org _CPSR _Computer Professionals for Social Responsibility _PO Box 717 _Palo Alto, CA 94302 _(415) 322-3778 FAX: (415) 322-3798 _cpsr@clsi.stanford.edu _EFF _The Electronic Frontier Foundation, Inc. _155 Second St., Cambridge, MA 02141 _(617) 864-1550 FAX: (617) 864-0866 eff@eff.org _NSF _National Science Foundation _1800 G Street NW, Washington, DC 20550 _(202) 472-5108