

NetScout User's Manual

Minuteman Systems
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NetScout is an off-line tool that browses several standard Internet resource lists, covering tens of thousands of subjects. The ability to search these wide-ranging lists off-line with a single tool allows you to conduct a comprehensive search quickly, and eliminate many on-line usage charges.

This program is provided for your free evaluation for up to ten days. If you decide to keep it beyond that period, you must purchase a permanent copy. Ordering information is provided at the end of this document.

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Chapter 1 - Introduction

The Internet can be a boundless source of information on topics ranging over the entire spectrum from recreational to technical subjects. Since there is so much information out there, finding the particular items you are interested in can be time-consuming and expensive.

This document will provide information on how to use the NetScout, a list browser, to rapidly locate information on the Internet. Since NetScout operates off-line using standard and easily available index lists, you avoid the expense of operating on-line. Your local search proceeds faster than would occur over telephone or other dial-in lines.

NetScout can search standard lists of the following types of Internet resources;

- Newsgroups
- MailLists
- FTP sites (file archives)
- frequently-asked-questions lists (FAQs)

After determining off-line the specific resources you need from the above lists, you can then go back on-line to your Internet Service Provider and directly access the desired resource.

If you're an experienced Internet user and are familiar with these terms, you may wish to proceed directly to chapters 6, 7, and 8 which give detailed instructions on conducting searches with NetScout.

If you are relatively new to the Internet, or perhaps a new member of CompuServe or America OnLine, chapters 2 through 5 provide tutorial information on the nature and capabilities of the Internet, and how to access it.

This program is provided for your free evaluation for up to ten days. If you decide to keep it beyond that period, you must purchase a permanent copy. Ordering information is provided at the end of this document. When you purchase a copy of the program, you will have the option to receive a set of the full and up-to-date resource lists that NetScout works with.

1.1 A Quick Demonstration

Here is a quick, walk-through of how NetScout can help you locate resources. To conduct a search for “humorous” topics, use NetScout to search for the keywords “comedy” or “humor” or “joke” (you can do “and” or “or” searches). Shortly, you are returned a list of a half-dozen “Frequently Asked Questions”. “FAQs” are mini-encyclopedias and can be extremely helpful.

In this case we note the list includes a FAQs on “Books for the Avid BritComedy Fan”. The listing indicates an archive at an FTP site. At this point you go back on-line to your Internet service access provider (Compuserve, America On-Line, or one of the many smaller providers) and use the FTP function to connect to the anonymous site “rtfm.mit.edu”. (Newcomers - don’t be intimidated! Detailed yet easy instructions for doing this are provided later on). The FAQ can be found at path tv/british-comedy/books/part1. You can then transfer the file to your provider, and download it to your own machine for printing or reading.

The listing also gives us a good lead to another “humorous” source. Note that the FAQ is posted periodically in several newsgroups including alt.comedy.british. Again, back online, you can use your newsreader function to scan that newsgroup and obtain a lot more material for download.

Please note that NetScout does not replace all on-line activity - it simply allows you to locate a lot of sources of information off-line, saving a lot of connection-time and it’s associated expense.

The sample lists provided with NetScout are a small clipping from the full lists. Instructions are provided for accessing the complete lists yourself. Once you do, conducting searches will yield far more “finds”. repeating the above search with the full list set returns over 60 sources, including a number of email lists you can subscribe to, and a number of sites archiving humorous material and jokebooks.

Don’t let the proceeding example leave an impression that there are only “frivolous” topics on the Internet. Far from it!. A scan of the keywords “market” and ‘business” return over a hundred and fifty topics including sales, marketing, and business resources - examples include the misc.entrepreneurs newsgroup, the Applied Global Marketing maillist, and the Multi-Level-Marketing FAQ.

Chapter 2 - What Is The Internet?

The majority of this tutorial will be written from the perspective of someone using one of the major on-line data services such as America OnLine or CompuServe.

2.1 Commercial Services are Single-Computer Systems

If you have an account on one of these, you are used to using a computer and modem, with a graphical interface package, to dial into the service's system. These major systems are each basically a single large computer system (possibly using redundant machines) which you are accessing via a nation-wide or world-wide telephone system.

For example, America Online's computer system is located in Vienna, VA. and is illustrated below. AOL's system consists of 9 Stratus Inc. fault-tolerant computers. A fault-tolerant computer is one which can keep running, without loss of computation or loss of data, even when certain elements fail.

America OnLine uses Sprintnet to provide telephone service. When you dial AOL in, say, Pittsburgh, you're really dialing a number AOL is buying from Sprintnet in Pittsburgh. Sprintnet routes the call through their system from Pittsburgh to their Vienna, VA office and then into AOL headquarters.

Services like CompuServe, Prodigy, and others have a similar structure. The important thing is that each service consists of one centralized computer system that you are using.

2.2 The Internet Is a Network of Networks

The Internet, on the other hand, is actually a network of multiple computers.

The Internet grew out of an project called The ARPANET in the late 1960's. The project was to develop a Wide-Area-Network, or WAN, to link together numerous remote sites involved in government-sponsored research. It was very successful and started growing. It's use spread to non-restricted utilizations.

A technical strength of the Internet is that it uses one communication-protocol TCP/IP as a standard for communication between all sites. This means that a wide variety of computer architectures and media can work together, because they all share the same "language".

Numerous networks like the ARPANET were formed and interconnected. Collectively, this "Network of Networks" is called the Internet. As of the Fall of 1995, the Internet consisted of over 5,000 networks. One "Network" on the Internet could consist of a single computer, or thousands of computers on one company's network. (Digital Equipment Corporation has something like 40,000 nodes on its one network). Given that many computers are mini- or main-frame computers that may have hundreds or even thousands of user accounts, the total number of Internet user accounts can be seen to be in the millions.

Incidentally, the ARPANET itself was dismantled in the early 90's.

2.3 Who and What Are On The Internet

The Internet is often drawn schematically as a “cloud” with individual networks connecting into the cloud. Anyone on a network connected into the cloud can utilize various services to communicate with other networks. It’s not important (for us right now) what goes on inside the cloud - its just important that any points connected into it can communicate.

Some comments about specific types of networks connected into the Internet.

1. OnLine Services - The major services like CompuServe and Prodigy all have a point of interconnection to the Internet. They typically have made use of only a subset of the wide range of Internet services available. That’s changing - they are all rapidly moving to support all Internet capabilities.
2. Individual Companies - If you work for a company of (ball-park) 500 or more employees, your company may be have a connection from their internal network to the Internet. (They cost from \$5000/yr up to perhaps \$100,000 per year, depending on the rate of traffic supported and the range of services subscribed to.) This means you may be able to access some Internet services from a PC or Mac on your desk.
3. Educational or Research Institutes - A large number of these are on the Internet, in fact as stated above they were the “core” of the start of the Internet. These organizations are still a large part of the Internet member community, and besides their private materials have a large amount of tools of interest to the network community. NASA has a large amount of public information and pictures about space activities. CERN, the European center for Nuclear Research in the Swiss/French border, is the founding organization of “the World Wide Web” - the current standard tool for wide-area document searching.

4. Local Access Providers - Increasingly, companies are being set up whose main service is to provide individuals inexpensive access to the Internet. These companies have a mini-computer, and a number of dial-in lines. Individuals can call up and register for accounts at a relatively low price (such as \$5 per month plus \$2 per hour of connect time.) When you dial in with a PC using a terminal-emulator communication program, such as PROCOMM, you have access to a full range of services on the Internet, and you're also allocated some reasonable amount of storage (1-2 Megabytes) on their system for moving files.
5. Local BBSs - Many small-time Bulletin Board Systems, are increasingly buying an Internet connection. Magazines like *Boardwatch* and *BBS Magazine* usually have lists of BBSs that have Internet connections. If you join such a BBS in your area, you can use it to access the Internet. It also means you can log onto other Internet-accessible BBSs without having to dial over long-distance land-lines. There's virtually no "telephone charge" involved. (However, some may charge a membership fee)

Chapter 3 - What Functions are Available On The Internet?

The main point of the preceding chapter was that the Internet consists of a large number of Computers, owned by a variety of companies and organizations, all connected together and able to exchange information. But what type of information is out there? And how does one get at it? That will be addressed in this chapter.

3.1 Some Internet Naming Conventions

Its necessary to understand the nomenclature used on the Internet to name individuals and sites. You will use this to send mail to individuals, or to access sites for file transfer.

Addresses of individuals take the general shape “username@organization” as below;

This “organization” is the “Internet name” for the site itself. The “organization” consists of several names separated by periods such as “oak.oakland.edu” or “world.std.com”. The rightmost name is one of several broadbrush categories

com = commercial

edu = educational

mil = military

gov = government

net = network support company

org = other organizations

The rest of the organization usually consists of a top-most name (oakland) assigned by a central naming committee. The organization then assigns its own sub-org names (oak) and user-account names. This mechanism greatly simplifies the naming process.

The full “username@organization” for people on the major data services having an Internet connection is a combination of their account name and their services’ name. A user with account number 12345,6789 on CompuServe would have address “12345.6789@compuserve.com.” User “JDoe” on America OnLine would be “jdoe@aol.com”. Please note that each service may also have “local” requirements to allow you to indicate if a mail message you are composing is addressed to someone on the home system or on the Internet. Example - CompuServe members sending mail to each other just use the local account name, but any mail destined for the Internet must be preceded by “INTERNET:”.

The preceding description applies mostly to sending email, or to connecting to sites using non-graphical or “command-line” interfaces found on some of the less expensive services (more about that later). When accessing sites using the graphical WEB Browsers commonly found on CompuServe and AOL, you usually have to employ a slightly longer address nomenclature called a “URL” (“Uniform Resource Locator”). The format of the URL depends upon the type of function you are accessing. WEB and FTP functionality will be described a few pages on. For now, the following example shows the URLs for the Web and FTP functions at Microsoft;

WWW URL = <http://www.microsoft.com/>

FTP URL = <ftp://ftp.microsoft.com/>

There are other URL types for other functions such as “gopher” (gopher://x.y.z) but WEB and FTP functions are the ones most commonly used.

3.2 File Transfer Protocol - FTP

Moving or transferring files from one site to your system is one of the most commonly used Internet functions. FTP, for File Transfer protocol, is the mechanism for doing this. The different graphical interfaces on the major services provide slightly different ways to do it, but the following description will closely approximate all systems.

The way to access files on a remote system is to “log on” using something called “anonymous FTP”. This means that you use the FTP function on your system to specify the name of a site which is known to accept public access. Ordinarily that system will prompt you for a USERNAME: and you would enter “anonymous” (sometimes this is case-sensitive!). You are then asked to enter a PASSWORD:, and the correct response is to enter your email address. You are then connected to the top directory structure of that remote system.

If you are using a graphical interface as is now common on CompuServe and America OnLine, much of the above is automated for you. The CompuServe Spry Mosaic browser requires that you input a full URL, but then it invisibly enters the username password. The remote systems directory structure is presented to you looking much like a drive would under Windows’ File manager. You can click/browse through the remote systems file. There is even a “file search” feature. When you find the file or files you want, you click a button to download them

If you are using a non-graphical interface, the remote system looks to you much as if you were operating “at the DOS prompt” instead of inside Windows. The major, major, MAJOR exception is that Internet systems do not use DOS! They use UNIX. Write this down! To move up and down through the directory structure, you use a different command set. And to receive files off the remote system, you use “Get” instead of “copy” or “Move” A brief list of UNIX and FTP-specific commands, follows.

FTP Command Summary

ascii	set ascii transfer type
binary	set binary transfer type
bye	terminate FTP session and exit
cd	change remote working directory
cdup	change remote working directory to parent directory
close	terminate FTP session
cr	toggle carriage return stripping on ascii gets
delete	delete remote file
dir	list contents of remote directory
get	receive file
ls	list contents of remote directory
mkdir	make directory on the remote machine
open	connect to remote tftp
put	send one file
mdelete	delete multiple files
mdir	list contents of multiple remote directories
mget	get multiple files
rmdir	remove directory on the remote machine
send	send one file
system	show remote system type

FTP Via EMAIL

Even if you don't have full Internet access, you may still be able to access much FTP functionality by sending EMAIL to sites. There are 2 types of approaches

1.) Info Servers - Some FTP sites respond to EMAIL requests as well as direct FTP connections. In general you mail a message to the FTP handler-address, and it executes the contents of the message as if it were coming from an FTP connection. In the event of a "get" instruction, it then emails back to you the requested file.

I said "in general" for several reasons. First, not all FTP sites (anonymous or otherwise) support this feature. Secondly, those that do support FTP via mail do not all use the same command set. To find out how to use a particular sites' FTP mail functions, you (usually) can send it a message with the single word "help" (lowercase) in the body, and it will mail back to you a file with the instructions. While just the word "help" often works, sometimes other commands are supported .

Example - mail a message to the info-server at **info-server@nnsf.net**. The "subject" field can be anything, but have the body be

request: info
topic: help

and you will receive a set of instructions

A list of info-servers is available via anonymous FTP at host **pit-manager.mit.edu** at directory pub/usenet/news.answers. Not surprisingly, its also available by email-server. Send a message to **mail-server@pit-manager.mit.edu** with the command "help" in the subject field. (Note that this is different from other systems where you put "help" in the body).

2.) ftpmail-servers - An info-server can only send files from its own system. There are a limited number of FTP-via-email systems which allow you to access files on any anonymous-FTP host. An FTP-mail-server accepts a command string in a message from you. It then does its own anonymous FTP logon to the requested host, executes the command string, and mails you the results.

Send a message with the one-line body "help" to **ftpmail@pa.dec.com** or **ftpmail@decwrl.dec.com** to receive instructions for using those FTP-mail-servers. (Note that both are sponsored by Digital Equipment Corp - "dec")

Important Information About Transferring Files !!!

I cannot over-emphasize that FTP is the primary mechanism for moving files around the Internet. You can move some files using email, but there are limitations on filetypes and or file-lengths. I.E. Binary files are hard to move reliably using mail - FTP provides guaranteed movement.

There are a couple very basic things you need to know about, or be warned about, regarding the transfer of files. These come out of 2 basic facts;

- Binary Files May Need Different Handling Than Text Files

FTP actually handles Binary and Text files in different manners. ("Binary" can mean graphics files, executable files, or any file that's been compressed such as with PKZIP.) On many systems when you do a "get" or "put" the resident FTP program automatically detects the type of the file and handles it appropriately. However, on some systems you have to manually set a toggle to indicate if you're moving a binary or text file. If you're getting corrupted files - try setting the file type manually. (i.e. enter the FTP command "binary" or "ASCII".)

Also, many mail programs can't handle binary files at all. (see the fix below)

- Some parts of the Internet have limits on file size.

Even though the receiving and transmitting hosts may deal perfectly well with large files, the path across the Internet can be quirky and you may run across a link that rejects or corrupts anything exceeding some size limitation. Some equipment rejects files greater than 56kbytes in size.

An Important Tool - The tool pair UUENCODE/UUDECODE is used to translate binary files into text files for transmission, and back into binary at reception. Also, they have the ability to take a large file and break it up into numerous small ones, below a size you specify, and then re-assemble them at reception. There are versions of these tools available to run on all platforms.

3.3 Gopher

GOPHER is a menu-driven search tool for finding information on the Internet. A typical menu is shown below;

```
=====
Internet Gopher Information Client v1.13

      Root gopher server: gopher.std.com

--> 1. Information About The World Public Access UNIX/
    2. The World's ClariNews AP OnLine Newswire Index/
    3. The World's FDCH US Congressional Committee Transcripts/
    4. OBI The OnLine Book Initiative/
    5. Shops on The World/
    6. Internet and USENET Phone Books/
    7. Commercial Services via the Internet/
    8. Book-Sellers/
    9. Bulletin Boards via the Internet/
   10. Consultants/
   11. FTP/
   12. Government Information/
   13. Internet Information and Resources/
   14. Libraries/
   15. Membership and Professional Associations/
   16. Metropolitan and Community News/
   17. News and Weather/
   18. Non-Profit Organizations/

Press ? for Help, q to Quit, u to go up a menu          Page: 1/2
=====
```

Moving through the menu is quite straightforward. Just type the number of the menu-item you're interested in, or use up/down arrow to make a selection. There are a virtually unlimited combination of sub-menus. Many end in actual files, often text files, and you will be presented with options to copy the file to your home system.

Note that there is almost always a top-level-menu entry that says something like "access other GOPHER servers". While no one GOPHER services knows about every file on the Internet, by hopping from server to server you can cover almost the entire Internet, but admittedly it can take a long time.

Also note that GOPHER is somewhat "backwards compatible" with FTP. It has the ability to scan FTP-sites and present files for downloading.

Besides perusing the menu, there is a search function. The "search" scans the titles in the menu tree and perhaps keywords, but it doesn't scan the contents of any documents (which wouldn't work with executable or other binary files anyhow.)

3.4 Newsgroups

These are postings of series of messages. They are “broadcast” across the whole Internet, on specific subjects. You call up a “news reader” program on your Internet host to browse the different Newsgroups and read the entries in each.

There are an incredible number of Newsgroups - thousands, with more being created every day. They range from new-service postings and financial news, to computer-professional information, to “recreational” and “alternative lifestyles”.

Some sample names

alt.beer -discussions about beer

rec.humor - jokes!

comp.msdos.announce - announcements about msdos services and programs available.

news.newsgroups.announce - news about new Newsgroups

alt.answers - miscellaneous info about how to use the Internet

The first word of the newsgroup name (alt, comp, etc) is a broad-brush category. The presently defined list is;

alt - alternative systems

biz - business related

comp - computer-related

k12 - education (kindergarten through grade 12)

misc - miscellaneous

rec - recreation

sci - science

soc - social topics

talk - controversial subjects

3.5 MailLists

MailLists are a variant on Newsgroups. These are Mailings to your specific mailbox on selected topics. There are thousands of MailLists, and you have to subscribe to the ones you want. You generally send a generic message with “subscribe listname” or just “subscribe” in either the body or the “Subject:” field to the maintainer of the MailList, and a program automatically enrolls you. (You may have to experiment.) Similarly, the MailList has an address to which you mail messages you want to post, and they will be automatically re-mailed to all members of the MailList. Some MailLists are “moderated” - the maintainer will censor messages felt to be “inappropriate” - which can mean illegal, immoral, or just a waste of bandwidth. Bookstores generally carry several books which have listings of MailLists, with enrollment instructions.

Listservers are very closely related to MailLists. You subscribe by sending an “enrollment” message to an administrative address. You then receive via mail copies of anything posted to the listserver. Messages are posted by sending to a publication address, which is different from the enrollment address. You can execute various other administrative commands by sending pre-defined messages to the administrative address. There are many listserver lists.

As an example, to obtain a list of listserv discussion groups, send a message to **listserv@bitnic.bitnet**. In the body of the message, have the single entry “list global” (without the quotation marks). Leave the subject field blank. You’ll be mailed back a long file. To obtain instructions on other commands available, send to the same address a message with the body just including “INFO REFCARD”.

3.6 The World Wide Web

The World-Wide-Web is perhaps the first mechanism to break the threshold of ease-of-use beyond which large numbers of people from varying backgrounds can find the Internet to be useful.

The WEB was initially developed by CERN as a mechanism to view hypertext documents and provide links between multiple documents on multiple hosts. Technologically it has grown to encompass true multi-media formats. The widespread availability of browsers, multi-media-authoring tools, and the ability to create your own WEB site has resulted in a complementary boom in both WEB sites and WEB users. The WEB is expanding to include information of all types - business, educational, scientific, entertainment, and more.

WEB Terminology and Operation

The World Wide Web is known by several names ; WWW, w³, and “the WEB” are often used interchangeably and all mean the same thing.

Originally it went one (major) step beyond GOPHER and allowed a hypertext link between documents. This means that by selecting a “hotword” in one document, or on one screen, you jump to an entry point in another document. This link may be on the current host, or it may be to a point of entry, or “Home Page” on another host.

This frees you from the rigid structure of a menu tree, and even more importantly allows you access into the contents of documents. Also, WEB sites and browsers typically have extensive search capabilities built into them.

This additional freedom has some cost. Navigation can become harder. Even within any one site it may be difficult to keep track of where you are and loops are frequently encountered. At any point you may suddenly find that you are now on a different site. Also, the widespread proliferation of WEB home pages has made it nearly impossible to effectively develop white- or yellow-pages.

Still, the advantages greatly outweigh any newly acquired difficulties, and work continues to develop better searching and tracking features.

The basic hypertext format is defined in a semi-standard known as “HTML” - HyperText Markup Language. This format goes just beyond plain-text and includes such text-formatting features as fonts, sizes, bold, etc. The formatting has also expanded to incorporate both images and sound. With a full-capability (i.e. multi-media) browser, as you navigate the WEB you are presented with not just text information, but accompanying images and often audio.

The name “Mosaic” is used a lot in reference to the WEB. Mosaic is one of many types of WEB browsers available. It is one of the most comprehensive. Versions are available for many platforms, it supports full multi-media capability, and it may be downloaded for free.

WEB documents and browsers have exhibited fairly comprehensive backwards and forwards compatibility. Low-end text-only browsers appropriately filter out images and sound and make a best-effort at reformatting text. Legacy features such as FTP and GOPHER are generally represented quite well, within their given limitations.

About addressing

You will see the phrase “URL” employed a lot. It stands for “Uniform Resource Locator”. In simplistic terms, this means “addressing”. WEB sites are typically identified by some name such as **http://www.ibm.com/**. Subdirectories within the sites are identified by further extensions of the name, although you typically don’t have to keep track of this, the WEB browser does it for you.

The address example given is actually a subset of a more comprehensive naming structure. the “http” prefix identifies one type of resource - “ftp://” and “gopher://” prefixes are used to identify those types of sites.

About Bandwidth

Its all well and good to talk about a complete multi-media interface. However, the bandwidth requirements can be significant. Recall that bandwidth you have available to you depends upon your type of Internet connection. Your “bandwidth” may range from a low-end of 9600 bits/sec for a dial-up-line at to 56kbits-to-Megabits/sec if you’re at a company with its own IP Gateway. The low-end may be all right for a text-only operation from at home (don’t even think about trying to operate with a lower-speed modem). Graphics, audio, and motion require successively higher bandwidth. You can spend a lot of time sitting there watching the screen get updated. Most good browsers allow you to selectively shut off features such as graphics if you’re finding that operation is too slow.

Graphical Browsing Tools

The “avalanche” of interest in the WEB has come about largely due to the widespread availability of good, multi-platform, graphical browsers that support text, graphics, and audio. Perhaps the most widely known is Mosaic, although a number of other good ones exist, and there are lots more on the way.

Mosaic was initially developed by NCSA, the National Center for Supercomputing Applications. NCSA was established under a grant from the National Science Foundation, and Mosaic is available for free download. The Software Development Group or SDG provides ongoing support of Mosaic.

There are also a number of commercial versions of Mosaic available.

Mosaic is a cross-platform tool - versions are available for Windows, Macintosh, Amiga, and the UNIX operating system. If you are operating it over a dial-up line though, please note that the line has to support SLIP or PPP.

A number of commercial companies are rushing to develop graphical WEB browsers. Also, the Commercial OnLine Data Services are all working on making versions available over their systems. CompuServe offers the Spry Mosaic Browse. This system is quite usable and makes easy WEB access available to a very large audience.

Text-Based Browsers

The earliest stages of WEB development used text-based browsers only. In fact the very first ones were line-at-a time only. LYNX was one of the first screen-mode text-based browsers and remains widely available on UNIX and VMS systems.

If you have an account on one of the less expensive Internet Access providers, that only provide a command-line or text-based interface, LYNX may be your only available WEB Browser. Still, it is a pretty capable tool.

Since LYNX is text based, many of its screen may initially look like GOPHER screens. As you use arrow keys to move through it, you’ll quickly notice that it jumps to highlighted words in the middle of sentences. These are the “hotkeys” or links to other documents and sites. Pressing CR or a different arrow key makes the jump. When you make a jump to a GOPHER site, you get a conventional GOPHER representation. When you make a jump to an FTP site, the presented screen looks a lot like a directory listing.

Besides the navigational features, its important to note that at any point you can download the currently selected document. (This can be done by a file extract or by having it emailed to you at any address you select.)

3.7 The Great Search Sites

A lot of people have put great efforts into tools that conduct on-line searches. The majority of these are geared towards locating specific WWW sites that match a given interest, but they also may incidentally point to FTP sites, newsgroups, or other resources.

Several search engines which you may reach via the WWW include;

<http://www.yahoo.com>
<http://www.lycos.com>
<http://www.excite.com>
<http://www.jumpcity.com>
<http://www.opentext.com>
<http://www.mckinley.com>
<http://www.gnn.com/wr>

Chapter 4 - Accessing The Internet From The Major OnLine Data Services

A great many people access the Internet from one of the major on-line data services such as America OnLine or CompuServe. These services now offer comprehensive graphical interfaces to the majority of Internet services. The following is a brief description of how to access these the WWW, FTP, Gopher, and Internet email on AOL and CompuServe.

4.1 America OnLine

Current versions of the AOL interface package include an integrated series of graphical interfaces to Internet services. At the Main Menu, clicking "Internet Connection" brings up an Internet-specific menu page. This page is also accessible via the Keyword "Internet". The page has separate icons for FTP, Gopher, Newsgroups, and the WWW. Much of the process of accessing sites is automated for you - you enter a site name, or click one from a menu, and the interface program handles any sign-on protocol. There are also buttons for functions such as downloading files.

There is also a separate icon for composing Internet email. There are plenty of informational screens to explain the process of composing mail, and in particular the addressing conventions. For example, if you know the account number of someone on CompuServe, you are told exactly how to construct their valid Internet email address.

To make use of MailLists, you use email to compose "enroll" messages as previously described. Mailist postings will then appear in your mailbox as regular mail.

4.2 CompuServe

CompuServe purchased the Spry company and now offers a customized version of the Mosaic WEB browser. This program operates as a stand-alone package separate from the WICIM or other CompuServe interfaces. The Spry Mosaic browser is the mechanism for accessing WWW pages, FTP sites, Gopher, and Newsgroups. (use the HELP function for details on accessing Newsgroups. But basically you enter Newsgroups as URLs of the form news:newsgroup.name)

Sending email, and accessing mailists, is not done in the Spry Mosaic browser. It is performed in the main CompuServe environment, using for example such as WinCIM. Email is sent to the Internet using the prefix "INTERNET:" followed by a valid Internet email address.

Chapter 5 - Accessing The Internet From Internet Access Providers

Even if you have an account on a major online data service provider such as CompuServe, if you're going to be using the Internet a lot you may find it more cost effective to have a separate account at an Internet Access provider.

There has been a mini-boom in the last several years of Internet Access providers. These are companies that go through all the work described in the preceding section, of setting up an Internet Gateway. Then, they rent out monthly accounts to anyone. Accounts are accessed via dial-in lines. The sophistication of these systems runs from providing local telephone access of a command-line interface on a terminal-emulation session, to a nationwide-access dial-in system with a graphical interface.

There are many ways to find these providers. First, they advertise, both locally in newspapers and in relevant magazines such as Internet World. Also, there are lists maintained on the Internet of Dial-In Access providers. (We'll skip over the chicken-and-egg situation of needing to get on the Internet first to get at the list.) One list is called PDIAL and is available at the FTP server rtfm.mit.edu.

A couple systems have achieved some degree of national fame for the depth of their services, or the character of their membership. Two that come to mind are The WELL, in the San Francisco area, and PANIX in New York City.

A couple new features have been appearing on many of these providers;

- The ability to create your own World-Wide-Web home page
- They can create a network address for you that looks like your own commercial business address. Instead of being "username@provider_name.com" you can now be "username@your_businessname.com" For example, I can go from being "bck@world.std.com" to "bobk@minuteman.com" This is a real plus if you're establishing a company-presence.

5.1 Basic-Service Providers

This is a no-frills system wherein you get an account on the Providers system. You use a terminal emulator to dial in and are presented with a command-line interface. You are allocated a certain amount of storage space on the system for composing and or moving files. Fees are rather reasonable - there may be no sign-up fee, and monthly costs may be as low as \$5 basic fee plus \$2 per hour. I've heard there are systems as inexpensive as \$20 per year.

Very often these systems are UNIX systems. A UNIX command-line may appear a bit cryptic to someone familiar with DOS, and downright puzzling to a business person trying to get their first exposure to the Internet. However, you really should have little difficulty learning to use at least the basics of a UNIX command-line system. Most systems have a "help" command and a UNIX command summary. There are also many good books around on UNIX. A very rudimentary UNIX command summary is provided in on the following pages.

If I had to give one piece of advice to UNIX-neophytes it is ; watch out for case-sensitivity! UNIX paths and filenames are case sensitive, and this can cause a lot of grief until you get used to it.

5.2 Advanced-Service Providers

Many providers are trying to appeal to a wider customer-base. One way to do this is to offer a graphical interface that eliminates the complexities of both command-line interfaces and the Internet functions themselves. Also, instead of just providing a regional telephone number, some services are working with major telephone carriers to provide access-lines in major urban centers.

The next-level-up of service providers, over the UNIX-command-line method, consists of providers who offer SLIP and PPP protocols over their dial-in lines. This allows you to create what amounts to an Internet connection direct to your own machine. A primary use of this is to allow installation of the Mosaic WEB browser on your system. Mosaic, described later, is an advanced graphical interface for scanning the world-wide-web. It can offer text, graphics, and audio access to WEB sites.

I should point out that there are Mosaic browsers available as freeware - it's not a proprietary program of the service provider. The provider's main job is to provide the SLIP or PPP connectivity. They may or may not also make it easy for you to locate Mosaic and install it.

At the top-level of functionality, some service providers do offer a proprietary graphical interface to overall Internet functions. Some are also expanding their telephone access and advertising on a national basis. These companies are beginning to merge into the same market, and level of service, as the "OnLine Data Service" companies such as CompuServe.

Two such top-level services are The Pipeline and NETCOM On-Line Communications Services.

One other service to mention is DELPHI Internet Services. DELPHI at one point was providing services similar to the OnLine Data Services. However, it's focus became Internet Connectivity. It has been somewhat late, though, in developing a graphical interface. At time of writing the release of DELPHI's graphical interface is imminent. It thus rests in position somewhere between the large OnLine Data Services and the small-but-upcoming graphically-oriented Internet Access providers.

5.3 A Low-cost Alternative - Free-nets

Free-nets are free-access computer systems. They give the general public limited access to the Internet as well as access to local bulletin boards and discussion groups. They are run through a library or educational institution and are often sponsored by a local government. Once you've located a Free-net, if you have a computer and a modem you can logon, often for no charge.

A given Free-net system may have a few drawbacks. They don't generally have full Internet access and are usually limited to text-only environments. Also, their overall size may be limited, and if there is a lot of demand you may find it difficult to avoid a busy signal when dialing in.

Many Free-nets are also accessible via Telnet from other systems, so once you logon to one Free-net node, you can hop around to others.

The National Public Telecomputing Network (NPTN) serves as an umbrella organization for Free-nets. You can contact them by sending mail to info@nptn.org. They publish a weekly-updated list of world-wide Free-nets. It can be found posted in the Newsgroups **alt.freenet** or **alt.online-service.freenet**.

Table 1 - UNIX Command Summary

Above all else - remember that file and directory are case-sensitive !!!

Append to a file Command: cat file1 >> file 2

Change Directory Command: cd directory
 [example cd /pub]
 [cd without argument returns to
 home or top directory]

Copy a file Command: cp file1 file2

Current Directory Command: pwd
 [“present working directory”]

Compress File Command: compress file1
 [compresses to file1.z]

Decompress File Command: uncompress file1.z

Disk Space Left Command: du

List Files Command: ls -argument (include the “-”)
 arguements -s = filesize
 -F = file type
 -cl = by date
 -a = invisible files

Make New Directory Command: mkdir new-directory-name

Move a File Command: mv filename directory

Remove Directory Command: rmdir directory-name

Remove File Command: rm filename

Rename File Use “Move File” to do this

View Contents of a file Command: more filename

Chapter 6 - Using NetScout

Operation is straightforward. You select the resource library lists you wish to scan, by clicking the button (on/off) adjacent to each. The library lists are described in the next chapter.

Then select from 1 to 3 keywords to search for. You may select (via a button click) if you wish to capture entries that contain all the keyword (“and” logic) or any of the keywords (“or” logic).

You may set a maximum number of “finds” that the program will limit itself to. This can be a timesaver to prevent spending a lot of time on a poor choice of keyword that results in many entries being selected. (You can also click the “STOP” button at any time to stop a lengthy search.) For example, if you were to include the keyword “PC” with “or” logic, you would probably find far too many irrelevant entries being found.

All entries which match the keyword criteria are stored in an output text file. You can save the search criteria and the results of the search in output files. On the menu bar, select “FILE” and drop down to “SAVE AS” to save the current search. The search results are stored as a plain text file FILENAME.OUT which can be viewed or otherwise used by any Word Processor program. The search conditions themselves are saved in a special format file FILENAME.DAT - don’t try to examine it.

All the normal word-processor-like functions of OPEN, SAVE, SAVE AS, CLOSE, NEW, and PRINT may be employed.

Clicking the “RUN” button starts a search. A window indicates that the program is “BUSY” until the search is over. The number of matching entries is also displayed.

Once you have conducted a search, you can scan the individual entries by pressing the “VIEW” button. With the “PRINT” button you can send the currently viewed entry to your printer. The “NEXT” button steps you through more entries. Clicking “STOP” ends the Viewing.

When viewing resource descriptions, the bar at the bottom of the screen gives specific instructions for how to use your Internet Service to access the listed resource.

You can enter choices for an additional search, or click “NEW” to clear all selections

Chapter 7 - Hints for Searching

To be “effective” a search must locate all “right” answers while at the same time include a minimum of “wrong” answers. The judicious selection of keywords is the primary factor in conducting a quick and effective search. With time and practice you will naturally develop this skill. For starting purposes, here are a couple, perhaps obvious, tips for searching.

1. Use shortened forms of words. Using “librar” will help find any subject that includes “library”, “libraries”, or “librarian”. Don’t cut the words too short though - “lib” will locate the above-mentioned words, but it will also find subjects containing “liberty”, “alibi”, and a great number of other subjects you don’t want.
2. Think of words related to your subject - besides “television”, it may help to try words like “tv”, “video”, “program”, “show”, “sit-com”, “serial”, etc.
3. Individual words may take different forms. “Sit-Com”, above, might also be listed under “SitCom”. Don’t expect any word to have one and one-only proper usager that is universally followed. Fortunately all NetScout searches are insensitive to case, which helps somewhat.
4. Avoid words that are too-widely used. When searching for computer-topics, “Unix”, “PC” and “computer” appear in so many subjects that there will be a uselessly-high number of “finds” on any search that employs any of them as a key-word.
5. As a general tip, unless you are specifically looking for archive sites, you may wish to exclude the FTP-sitelist from searches. The descriptions associated with FTP sites employ a lot of “general” or “vague” terms that will result in a lot of false finds.

Chapter 8 - Library Lists Available With NetScout

NetScout works with several library lists that are easily available off the Internet. Due to space considerations, only a sampling of the lists is supplied along with this evaluation copy of the program. However, you can easily obtain the full lists themselves following the directions below. In order for your downloaded versions of the lists to work with NetScout, each only needs to be combined into a single file (if downloaded in multiple parts) and given the filename indicated below.

- Name:** Publicly_Accessible_Mailing_Lists
Description: List of Maillists on the Internet
Lists contact procedure and gives a brief description of subject for each of 1000 maillists available on the ,Internet.
Size: 660 KBytes non-compressed
Location: anonymous FTP server rtfm.mit.edu path /pub/usenet-by-group/news.lists; filename Publicly_Accessible_Mailing_Lists (14 or more parts). Also re-posted periodically in newsgroup news.announce.newusers.
Usage : Combine all parts into one file and rename “maillist.txt”
- Name:** LISTSERV.TXT
Description: List of Bitnet Discussion Groups on the Internet/Bitnet
Gives a brief description of subject for each of 500+ maillists available on Bitnet, a network related to the Internet. This is a different list from MAILLIST.TXT
Size: 600K Bytes non-compressed
Location: Send a mail message to listserv@bitnic.bitnet. In the body of the message, have the single entry “list global” (without the quotation marks). Leave the subject field blank .
Usage: rename as “listserv.txt”
- Name:** List_of_Active_Newsgroups
Description: List of all active news groups. Gives newsgroup name and one-line description.
Size: Approx. 96 Kbytes non-compressed
Location : anonymous FTP server rtfm.mit.edu path /pub/usenet-by-group/news.lists filename List_of_Active_Newsgroups (2 parts)
Usage : Combine all parts into one file and rename “newslst.txt”
- Name:** ftp-sitelist.txt
Description: Comprehensive list of all known FTP servers world-wide.
Size: 1 MB non-compressed
Location : Anonymous FTP server rtfm.mit.edu path /pub/usenet/new.answers/ftp-list/sitelist/part** (17 parts at present and growing)
Usage : Combine all parts into one file and rename “ftplist.txt”

Name: List of Periodic Informational Postings
Description: A list of FAQs archived at a key resource
Size: 630 KBytes non-compressed
Location : Anonymous FTP server rtfm.mit.edu path
/pub/usenet/news.answers/periodic-postings/.
Usage : Combine all parts into one file and rename "faqlist.txt"

Chapter 9 - Ordering Information

This is an evaluation copy of Net Scout. If you use it for more than ten days, you must pay for your copy. Upon payment, you will receive a registration of the program, and a complete set of the most current versions of the library lists.

Please use the order form below or contact us at

Telephone: (617)489-5639

Internet Address : bck@world.std.com

CompuServe : 74252,2350

NetScout Order Form

Fill in the information below, and mail with a check or money order for

___ \$ 9.95 for NetScout Program Registration alone.

or

___ \$19.95 for NetScout Program plus Complete Set Of List Files

or

___ \$39.95 for NetScout Program Plus One Year Subscription of List Files (Updated Quarterly)

Send to ;

Minuteman Systems

P.O. Box 152

Belmont, MA. 02178

Name _____

Company: _____

Land Mail:

Street _____ Apt/MailStop _____

City/Town _____ State__ ZipCode _____

Tele - Business: _____ Home: _____

Electronic Addresses:

AOL : _____ Compuserve: _____

Internet: _____ Other: _____

Media : ___ 5.25" floppy ___ 3.5" micro-floppy

