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C I A C

Computer Incident Advisory Capability

Electronic Resources for Security Related Information

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- Incident Handling consulting
- Computer Security Information
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Electronic Resources for Security Related Information

Abstract

The quantity, quality, and availability of electronic resources is multiplying rapidly. Information Technology (IT) security professionals must make timely and effective use of these resources if they are to contain the growing threats of globally networked attackers. This paper outlines the threats, including recent examples, and then provides multi-level descriptions of the abundant resources available to the information technology security community. These descriptions are valuable to everyone from networking novices to sophisticated experts. While the information is useful for the entire security community, this paper pays particular attention to Department of Energy requirements.

Introduction

Information Technology (IT) security professionals are battling network attackers. Each of the professionals—from the operations level down to the assistant computer security officer, whether classified or unclassified, manager or user—must maintain their ability to recognize the threat and acquire the appropriate countermeasures. They must gain and maintain knowledge and ability to use the ever increasing resources—on parity with the attackers. This paper opens the door for the novice and enlarges the opening for the expert. It increases the reader's threat awareness and enables effective and efficient use of the resources that attackers will certainly use against us. In short, cognizance of electronic resources is critical—they are the common ground of both information technology threats and countermeasures. The attackers use the resources with abundant facility; we must become at least as proficient. The remainder of this section sets the perspective of the exposition that follows.

Over two decades ago, the futurist Marshall McCluan made the (since oft-quoted) observation that "the electronic interconnections will make the Earth a global village." It was a brilliant metaphor and qualitatively predicted the electronic way of life for many of us. What is far more problematic is the quantitative impact of the electronic interconnections on what we do—specifically, ensuring secure networking and computation for our constituents.

The network[1] is the product of a rapidly developing technology and the need to interconnect information resources. As a recent phenomenon without historical precedence and paradigm, it raises new challenges to our abilities to manage vast resources. Often, the incremental cost of obtaining valuable information is insignificant. A document available on the network is an inexhaustible supply of its own copies. Most users are not only in instantaneous contact with each other, but with each other's private and public databases and other online information.

It is estimated[2] that there are over three million nodes on the Internet—the network of networks that links a significant portion of the Earth's intellectual community. Each machine on the Internet has between one and many thousands of users and these machines are found just about anywhere on the planet. In principle, any user on any node can access or transfer information to or from any other node, use its resources, and even log in to it.[3]

To the novice, this myriad of actual and potential connections, this diversity of protocols, this spectrum of philosophies is an incomprehensible maze. Remarkably, with a little training and a modest amount of determination bolstered by need, the electronic world opens a new facility in communications as well as a vast store of information. To obtain a true perspective of its expanse and appreciation of its capabilities, one must *experience* the network.

The Threats

The average computer attacker[4] is no more a technological genius than the average driver is a brilliant automotive engineer. The danger is not so much his[5] native intelligence as his acquired knowledge, training, and facility with the network structures. Notwithstanding the legal, moral, ethical, and pragmatic issues, trying to reduce the free flow of questionable information on the network would be unmanageable at best, trying to eliminate it would be unimaginable. Our goal as security professionals is recognition and understanding of the threats.

Attackers gain both qualitative and quantitative advantages from their facility with the network. Qualitatively, they have access to extremely effective communications channels. The Internet Relay Chat (IRC) allows them to anonymously and openly discuss whatever they want at minimal (if any) cost, while simultaneously being able to (surreptitiously) exchange private correspondences of any kind. For example, someone creates an accurate and instantly updatable index of online cracking tools and then posts it on the network, making it (and unlimited copies) immediately available to the global cracking community.

[1] The network for the purpose of this discussion is a generic term signifying the many methods of electronic interconnections. The conceptual domain is sometimes referred to as "*cyberspace*."

[2] Recent estimates by reliable sources; there is no way to know for certain.

[3] In practice, of course, many of the nodes have some degree of security which prohibits some or all levels of arbitrary access.

[4] This document's term for an electronic criminal; other, possibly more ambiguous terms are *hacker, intruder, cyberpunk, phreak*, and so on.

[5] The masculine pronoun with neutral intent is used for rhetorical smoothness. I find *s/he, his/her*, *his or her* awkward and distracting.

This also highlights the quantitative aspect of the attacker advantage. The amount of time individuals save by immediately taking advantage of each other's efforts is immeasurable. They often use free[6] resources and appear to have abundant personal time. Attackers frequently use personal computers as well as computer accounts on obliging or compromised systems to search the network for vulnerabilities.

Examples

Early in 1994, the Internet experienced a continuing series of "sniffer" attacks. That is, attackers compromised host systems, installed software that monitored and recorded specific Local Area Network transactions that included host name/user name/password combinations. Some intruders evaded detection through the use of sophisticated Trojan software. It only took a one or a few talented individuals to create the software and techniques that were then used by many to compromise at the least hundreds of thousands[7] of accounts.

A full time physicist and part time computer security expert discovered a significant security vulnerability. It was in a popular operating system on a popular workstation. He wrote a program to exploit the vulnerability, complete with detailed comments, and submitted it to the vendor of the workstation as well as reliable computer security groups. The vendor responded and eventually created a patch to fix the vulnerability. Ironically, the program fell into attacker hands—we still do not know how, and is widely being used to exploit unpatched workstations. Evidently, the attackers can circulate the program quicker than the security community can disseminate the countermeasures.

[6] Clearly any resource has a cost; chances are the crackers are not paying. When the marginal costs are so low, there is no economical way of recovering them at the user level—they are absorbed as institutional overhead.

[7] CERT estimate.

The Electronic Frontier Foundation[8], a non profit organization created to promote the free exchange of information on the network (among other things), provides a repository for “Computer Underground Digest” (CUD) publications. Literary merit notwithstanding, these (quasi) periodicals frequently contain significant attacker information, including detailed methodologies on defeating toll call controls (Phone Phreaking), a complete list of credit card prefixes, intimate information on computer and network vulnerabilities, and so on. To get a feel for the authors’ level of defiance and perversity, one publication has detailed and accurate instructions on the construction of a light bulb bomb; another on how to manufacture nitroglycerine. Recently, someone posted a comprehensive index to the CUD—a substantial time and labor saving compendium for attackers.

The IRC links attackers from everywhere; they can exchange information (figuratively) across the table or under the table—in real time. Recently, user name password pairs from newly compromised university computer systems were openly posted on the IRC channel #hack.

Resources and Countermeasures

We will discuss several major network resources; there are others that may be found in the references at the end of this document; and there are still others that may be discovered simply by browsing the network. At the introduction of each resource, we will offer suggestions of how the resource may be used to counter attackers and other possible adverse activities. Of course, any technology that makes you more efficient and effective will help achieve that goal.

There is no single expert on all network resources. There is no single up-to-date compendium. There is no single structure that governs or manages all resources. The network is both planned and unplanned—with formal, defacto, and sometimes incompatible standards. Its growth is both revolutionary and evolutionary. This document provides a high level view of a selected subset of resources and services, providing sufficient detail for the novice to get started and most sophisticated users to learn something new.

[8] The EFF provides an open, uncensored service with significant value to the general community as well as information security professionals.

Electronic mail (E-mail) delivers messages between physically distant points, often within minutes. File transfer copies information at hundreds or thousands (or greater) characters per second.[9] The USEnet news group service provides an open electronic exchange of information in thousands of special interest groups. The IRC provides conferencing where special interest groups meet electronically to “chat” and exchange information.[10] Electronic Bulletin Board Services (BBS) are a relatively mature and stable method of information exchange. Electronic list servers provide moderated and unmoderated collection and dissemination of contributor supplied information on specific topics. There are electronic reference services that allow a user to hierarchically search the entire spectrum of network resources for specific subjects or services. Finally, there is a network information provider.

For information technology security specialists, discovering that attackers routinely exploit these network resources is the first step. Appreciating their strategic and tactical value is the next. The third step is learning how to use them. Experienced IT specialists, even those unfamiliar with Unix, TCP/IP, and/or the Internet, will find that the network is a timely and powerful strategic asset; a remarkably effective system of communication requiring their serious attention.

The following sections introduce each of the resources mentioned above[11] (E-mail first, the remainder in alphabetical order). The best and most effective way to learn is by doing. Examples and help texts for ftp and rn appear in the appendices. This is a rapidly emerging suite of resources, where good, up to date documentation is scarce. Even the online documentation tends to age quickly—and is usually only updated as an afterthought.

[9] The proposed National Information Infrastructure (NII) calls for transfer rates of gigabits/second.

[10] The conceptual location of the "chat," since it is physically distributed among terminals and computers, is an excellent example of “*cyberspace*.”

[11] It is assumed for pedagogic purposes that the reader is familiar with the commands or languages cited. The appendix has specific examples as well as help listings.

Electronic Mail

Electronic mail (E-mail) is the network's answer to "telephone tag," the seemingly interminable exchange of "please return my call" messages without direct communications. E-mail allows an individual to consider and reply to each message in his or her own time. It also allows tracking, filing, and other computer aided manipulations. All computer incident handling teams use E-mail to distribute their bulletins and advisories and communicate with each other, and most of the technical community[12].

E-mail is the most popular form of electronic exchange. If a location has any network access at all, it will have E-mail. There are several addressing schemes; we will consider only the popular and common hierarchical Internet form:

user@localhost.subdomain$_1$…subdomain$_n$.topdomain

which reads *user* at *localhost* in *subdomain$_1$* in … in *subdomain$_n$* in *topdomain.* For example:

joe@bigboy.xyzlab.gov

which is user *joe* on host *bigboy* in subdomain *xyzlab* in the *gov*ernment domain. Mail applications vary, but they usually have addressing to individuals or lists, carbon copies, subject field specification, replying, forwarding, and from and date information in the header. They may also have blind carbon copies, binary file attachment, and message ID, received, resent from, and reply to in the header.

The command[13] to read mail is:

mail [-options]

The command to send mail is:

mail [-options] recipient_list

Help is available by typing ***man mail*** at the command prompt or ***?*** prompt from within mail.

[12] Various groups are addressing issues of confidentiality and integrity; there are interim solutions.

[13] Commands are assumed to be UNIX unless otherwise specified.

You may E-mail anonymously through services offered by willing volunteer sites, called “remailers.” One such remailer is located at nowhere@bsu-cs.bsu.edu, and is operated by Chael Hall. (A list of some other sites appears in the appendix.) It guarantees anonymity and is simple to use. To use this service, make sure that the first two lines of your message contain the following:

first line	***::***
second line	***Request-Remailing-To: fergp@sytex.com***

Modify any .sig or .mailsig files to suppress signature additions before sending the message. This would reveal your identity.

Anonymous ftp

Anonymous ftp is the network’s main library facilitator—either directly, or more recently serving as a partial basis for the reference services. It opens a remarkably cooperative, extremely low cost, timely, ever increasing, and loosely coupled store of valuable (and not so valuable) information. Not only is there abundant information directly relevant for information technology security specialists, but there is the potential to effectively share greater quantities. For example, all bulletins of the incident response teams, shareware, and freeware[14] are readily available from multiple anonymous ftp sites. It is equally as important for the security specialist to keep abreast of the attacker information also available from anonymous ftp sites. Ironically, some of the sites provide both kinds of information in the spirit of a completely open network.

Anonymous ftp is a special instance of the TCP/IP file transfer protocol, requiring only a user name of “anonymous”—if allowed by the remote site. The password is by convention expected to be your Internet address and user name. Anonymous ftp sites are often library repositories. If the directory is not known beforehand, /pub is usually a good place to start and then you can search down hierarchically.

[14] Shareware is software for which the author requests a nominal fee if the user is satisfied with the product. Freeware is software distributed without cost as a public service.

Electronic Resources for Security Related Information, Continued

To connect to the remote system targ.sub.dom, enter:

ftp targ.sub.dom

At the user name prompt, enter your Internet address. For example:

hero@good.guy.gov

You can now list the top level directory:

ls [-l]

With the -l option, lines that begin with the character “d” will be subdirectories. You can change directories by entering:

cd <directory name>

Print the current working directory:

pwd

Copy a file:

get <file name>

Send a file:

put <file name>

And terminate the session:

quit

Some systems provide introductory or “tidbit” information through the finger command; its format is:

finger @<remote host name>

or

finger <username>@<remote host name>

Electronic Bulletin Board Services

Security specialists use electronic bulletin board services (BBSs) as an alternative or in conjunction with E-mail and anonymous ftp. They can "meet" and correspond with other specials, obtain security bulletins and software, and learn of the latest threats and countermeasures. The CIAC bulletin board service is a good example.

Electronic bulletin board services are usually accessed through dial up telephone, data network (such as X.25), or occasionally by Internet. These services tend to be PC oriented and require a suitable terminal package. Workstations and timesharing systems with out-dialing capabilities may also be used. CIAC, NIST, and the NCSC (through DOCKMASTER) provide electronic bulletin board (among other) services.

Electronic Conferencing

Electronic conferencing is effectively exploited by the attacker community and other special interest groups. IT security use has been for the most part using it to passively learn about new threats. It is an effective means of immediate, value added communications between physically (and perhaps socially) separate individuals.

Electronic conferencing has been enhanced with the recent development of the Internet Relay Chat (IRC) software. Your local computer (PC, Macintosh, workstation, timesharing system) must obtain the (public domain) software from one of the anonymous ftp sites listed in the appendix, or from some other source. Assuming you have Internet access, you then connect to one of the listed regional servers—preferably the geographically closest. If your local machine does not have the client software, you can telnet to the site listed in the appendix to achieve IRC access. Once connected, you may then view and select channels on which to "chat." To maintain anonymity, use a "handle" rather than your real name if you decide to listen into channel #hack. Also, the server will reveal your Internet location to anyone inquiring—unless you go through the telnet server.

Information flow on IRC tends to be sporadic and frequently flies off on tangents. You can however, initiate a session, invoke recording to disk, and leave it unattended. Other channel participants may notice this, object, and terminate your connections. As a countermeasure, participants have created *'bots* (for robots): script programs designed to appear like a real person listening and making comments. Finally, information may be surreptitiously exchanged between other members of the channel.

List Servers/ Information Sources

List servers provide the security specialist with timely, topic specific information on narrowly defined subjects. Examples include viruses (Virus-L), means of safely connecting to the network (Firewalls), and the risks of computer and network systems (RISKS digest).

List servers are electronic mailing lists provided to (qualified) individuals. Moderated lists require that each message be reviewed by a moderator before being resent to the mailing list; on unmoderated lists, all submissions are automatically resent to everyone. Digests are moderated lists that combine all significant messages into periodic mailings. Unless otherwise indicated, you may subscribe to a list by sending an E-mail message to the subscription with the single line:

subscribe listname

in the text (not subject) portion of the message. The list will then be sent to the address from which you requested the subscription.

Network Information

The Network Information Center provides registration information for nodes on the Internet. It is frequently used to find a responsible system administrator for a host that may be attacking a location. Such information includes one or more names, addresses, telephone numbers, and electronic mail addresses.

Network information is provided by the Network Information Center at:

rs.internic.net

You may *telnet* to that address and you will be automatically logged in. The system will show you a help screen and you may then enter commands to get information on users and addresses. The principle command is:
whois domain

or

whois subdomain

You may obtain similar information concerning European hosts by telneting to:

whois.ripe.net

Reference Services

Reference services are emerging as value added facilities to search through the ever increasing quantities of information available through the Internet. They have the potential to do everything from locating a source of Macintosh anti-viral software to providing the weather report for a city that you’re visiting tomorrow.

There are several information servers that allow you to browse the network.

- “**Archie**” is an information locator with which you locate anonymous ftp files. At last count, it could locate 150 gigabytes of information at over 1000 sites. There are a variety of ways to connect, the simplest being where you telnet to one of the server sites listed in the appendix and log in as “archie” (no password is required).

- “**Gopher**” is an Internet resource locator. Its preferred access is through client software on a PC or workstation, but it can be accessed through telnet from a terminal.

- The “**Wide Area Information Server**” (WAIS) is a text retrieval system freely available from Thinking Machines Corporation.

- The “**World Wide Web**” (WWW or W3) provides for the global sharing of academic information. Its source is available through anonymous ftp from CERN. Its growth has exploded in the last year (1994).

- “**Mosaic**” is a rapidly growing, popular “hypermedia” implementation of WWW. According to its creators, it is “an Internet-based global hypermedia browser that allows you to discover, retrieve, and display documents and data from all over the Internet.” It appears to be emerging as a potential de facto standard. Mosaic has the added virtue that it can reference most other services, such as Gopher and ftp (see the appendix in this document).

- “**Hytelnet**” is a library catalog reference service.

USEnet News

USEnet news is the interactive news service of the network. The security specialist can selectively read postings on computer security, viruses, privacy issues, attacker methodologies (by the attackers), specific hardware and software, and so on. The specialist can correspond with the authors either privately or through the news service. USEnet is an excellent way of not only learning what's happening, but meeting contemporaries. As with any news source, one should independently verify the information.[15]

USEnet news (sometimes referred to as netnews) is selectively accessed through various news reader applications. The news groups are hierarchically defined; some major roots are listed in the appendix. The news reader application for the purposes this discussion is *rn*.

Netnews is a methodology for exchanging information on a common topic. Original articles are "postings" from individuals. Readers may then post replies to postings, replies to replies, and so on. This sequence started by the original posting is called a "thread." News reader applications allow you to "kill" (eliminate) a posting, thread, or news group. Conventionally, if replies contain the text of the referenced posting, it should be indented and/or preceded by a distinguishing character, usually >. Since replies can be nested, one frequently sees postings including various levels of indentation. As a matter of practicality and courtesy, subject lines should be clear and concise.

The "rn" news reader is run by entering:

rn

You will be asked if you want to subscribe to recently added news groups. When that query is finished, you will then be asked to read specific groups. You can answer ***y***es, ***n***o, or ***q***uit, or you can enter a news group level command. For example, to read the news group "alt.security", type:

g alt.security

at any point. You will then be shown the chronologically oldest article.[16] Note that all articles have sequential numbers. You can mark the article as read and go on by entering ***k***. You can read the next article by entering ***n***. You can save an article by typing ***s***. You can get a list of all articles by entering **=**. There are other commands that allow you to navigate through a selected news group. You can get help by typing ***h***. Note that you must first *q*uit reading one news group before you can *g*o to another. Once you are back at the selection level, there are many commands that allow you to navigate through that process. Finally, you can exit completely by typing ***q*** at the selection level.

[15] Forgeries (known as "spoofing") are possible and do occur occasionally.

[16] If you see a *--more--(x%)* prompt at the bottom of the screen and are unfamiliar with *more* protocol, note the following. Pressing the space bar advances one page and typing ***q*** quits reading that article. You may also type most other rn commands, for example ***n*** or =.

The DOE Automated Departmental Directives System (ADDS)

The DOE Automated Departmental Directives System (ADDS) is a database of current DOE and Headquarters Orders, Notices, and Secretary of Energy Notices. It features menu-driven text search and retrieval and reports providing summaries of current and newly issued Directives. The recommended ADDS workstation is an IBM PC (or compatible) with communication software (the FTTERM File Transfer and Terminal Emulator Program is “strongly recommended”), dial out capabilities, a Hayes compatible or BISCOMP modem supporting V.22 or V.32 protocol or DPU in headquarters, and an attached printer. To register, submit DOE forms 1450.5 and 1450.5A to Chief, Human Resource Information Systems, U.S. Department of Energy, AD-123/F-109, Washington, DC 20585. For further information or questions, contact George Hofman at (301) 903-2870.

The National Institute of Standards and Technology (NIST) Electronic Bulletin Board Services

The National Institute of Standards and Technology (NIST) maintains four electronic bulletin board systems for information exchange:

- Computer security
- Data management activities and applications
- Open Systems Interconnections standards activities
- North American Integrated Services Digital Network (ISDN) Users’ Forum (NIUF)

The telephone numbers appear in the appendix of this document.

The DOE Computer Incident Advisory Capability (CIAC) File Server and Electronic Bulletin Board System

The DOE Computer Incident Advisory Capability (CIAC) provides an electronic bulletin board service as well as anonymous ftp. These are in addition to their bulletins and advisories, which are distributed electronically, in hard copy, and (if of immediate importance) by FAX to DOE sites. The BBS and ftp services contain similar information, where the BBS is for those without Internet access. They both feature CIAC and other response team bulletins, virus information, computer security related shareware, utilities, and so on. Access information to these services appears in the appendix of this document. Use of the BBS is menu driven and self explanatory. An example of access to ftp services appears in the appendix (note that the current name “CIAC.llnl.gov” will be changing to “ciac.llnl.gov” in the near future). A draft summary document for using both resources appears in the appendix. CIAC will be publishing user documentation for both services in the future. If you need further information or help, call the CIAC hotline at (510) 422-8193.

The National Computer Security Center (NCSC) DOCKMASTER

DOCKMASTER is a (Multics-based) subscription service of the National Computer Security Center (NCSC), that they consider an "Information Security Showcase." Its large repertoire of available services (its users manual is over one hundred pages) includes E-mail, electronic bulletin boards, and allows hands-on software evaluation. Its Evaluated Products List rates computers and computer security products. Users can access online documents (such as the *Orange Book*), participate in online discussions, and learn about computer security conferences. Users can connect to DOCKMASTER through MILNET (part of the Internet), TYMNET (a packet switching service), and local dial-in. A registration packet may be requested by writing to NCSC, Fort George G. Meade, MD 20755-6000—Attn: DOCKMASTER Accounts Administrator. Note that Federal employees are "User Type 3", contractors are "User Type 6" and the project should be" Catwalk" unless you were specifically assigned another one. The resource guide for DOCKMASTER appears in the appendix of this document. Further information is available by calling (410) 850-4446—and they are very helpful.

Appendix A

Glossary and Notation

[Note: Unix commands are case sensitive.]

Term	Description
{}	alternate choice for the preceding item
[]	containing optional command switches; also, part of file name syntax for some anonymous ftp servers
<>	containing descriptions of fields for commands, such as file names
*	wildcard character in file name specification
^	hold down control key while depressing character following the ^
…	recursive wildcard directory
anonymous ftp	ftp service not requiring a secret password
archie	Internet ftp file locator reference service
bbs	electronic bulletin board system
bold type	things that are particularly helpful to attackers/hackers
bold italics	user input in examples
’bots	(from robots) routines to simulate intelligent activity on an IRC channel
CIAC	(the DOE) Computer Incident Advisory Capability
.com	commercial organization Internet address domain
<CR>	carriage return—Return key pressed by user
cracker	term for computer criminal (*see also*, hacker)
CPSR	Computer Professionals for Social Responsibility
CUD	Computer Underground Digest
cyberspace	the conceptual location of electronic interconnections and communications
CERT	Computer Emergency Response Team
des	Data Encryption Standard
DNS	Domain Name Service—methodology/implementation for routing TCP/IP messages
.edu	educational institution Internet address domain
EFF	Electronic Frontier Foundation; organization advocating open information on the Internet (among other things)
faq	frequently asked questions
FCC	Federal Communications Commission
(F/C)	FTS and commercial telephone number
finger	Unix command to obtain user information at a local or remote host
FIRST	Forum of Incident Response and Security Teams
flame	posting critical and sometimes derogatory comments in reply to a posting
freeware	software freely distributed at no cost with owner maintaining all rights
ftp	file transfer protocol; used to send or receive files over the Internet
FTS	Federal Telephone System
fyi	for your information
gif	graphic file format used to exchange pictures

gopher	Internet resource locator

Glossary and Notation, Continued

Term	Description
.gov	government agency Internet address domain
hacker	ambiguous term for computer criminal (original hackers were tinkerers in the positive sense; *see also*, cracker)
handle	electronic pseudonym used for effect and/or to mask identity
HP	Hewlett-Packard
HTML	HyperText Markup Language – “mark up” language for Mosaic hypertext
HTTP	HyperText Transfer Protocol
HYTELNET	Internet library reference service
IITF	Information Infrastructure Task Force
italics	defined terms (in text)
IRC	Internet relay chat; enhanced multi-member electronic conversation
ISDN	integrated services digital network; voice, data, etc., on the same transmission media
ISS	Internet Security Scanner—a tool for checking vulnerabilities
IT	Information Technology—a blanket term for computer, network, information related activities
kerberos	DES-based encryption scheme—intuitively, a distributed security server
kill	(reading news) eliminate a posting, thread, or newsgroup
MD5	message digest algorithm for cryptographic checksums
.mil	military organization Internet address domain
MIME	Multipurpose Internet Mail Extensions
mirror	duplication of an ftp distribution site to share distribution overhead
NASIRC	NASA Automated Systems Incident Response Capability
NCSC	National Computer Security Center
.net	backbone networking organization Internet address domain
NFS	Network File System
NIC	Network Information Center; assigns/maintains Internet addresses
NII	National Information Infrastructure
NIST	National Institute of Standards and Technology
.org	non-profit organization Internet address domain
OSI	Open Systems Interconnection (networking standards)
PCMCIA	Personal Computer Memory Card International Association
pem	privacy enhanced mail
pgp	pretty good privacy (enhanced mail)
phreaks	attackers who specialize in telephone systems (freaks with a “ph”)
posting	USEnet news article
/pub	top level directory usually reserved for public anonymous ftp documents
public domain	software released into the public domain, having no owner or use restrictions
remailer	a site that forwards mail anonymously, removing any identity
rfc	request for comment; technical information notes
ripem	riordan's Internet privacy enhanced mail
rn	Unix read news utility
SERT	Security Emergency Response Team (Australia)
sha	secure hash algorithm
shareware	low cost software, freely distributed with “voluntary” payment requested from satisfied users
sysop	system operator (especially BBS)
.tar	Unix file name suffix; Unix archive program format; use ***tar -fx filename*** to retrieve

Glossary and Notation, Continued

Term	Description
TCP/IP	transport Control Protocol/Internet Protocol; networking protocol originally for Unix and now most other operating systems as well; used for the Internet
telnet	remote terminal protocol; used to login to remote hosts on the Internet (primarily Unix)
thread	original posting and all subsequent replies to that posting
TIS	Trusted Information Systems—developers of pem
Unix	generic term for a number of similar operating systems originally developed by Bell Labs
URL	Uniform (sometimes Universal) Resource Locator: addresses for WWW/Mosaic
.Z	Unix file name suffix; compressed format for transmission; use ***uncompress*** to expand

Anonymous ftp Sites

Format:

ftp internet address:optional directory

Log in as ***anonymous***, and enter ***your username and E-mail address*** when prompted for a password. Directories usually begin /pub unless otherwise specified. This is not a complete list. You can often find additional information by viewing the parent directories of listed specific subdirectories. Numeric addresses, when available, appear in parentheses.

internet address: optional directory	**Description/Comment**
ames.arc.nasa.gov:pub/SPACE	NASA information, images, etc.
apple.apple.com	Apple/Macintosh
aql.gatech.edu:/pub/eff/CUD (128.61.10.53)	**CUD**
aql.gatech.edu:/pub/security/iss	security utilities
archive.cis.ohio-state.edu	security software
arisia.xerox.com	message-digest software
arizona.edu	astronomy programs
arthur.cs.purdue.edu:/pub/pcert/tools/unix/netlog-1.02.tar.g	Unix security tools
arthur.cs.purdue.edu:/pub/reports/TR823.PS.Z	password information
ashley.cs.widener.edu:/pub/src/adm/shadow-3.1.4.tar.Z	password management
aql.gatech.edu	ISS
athena-dist.mit.edu	kerberos software
ba.com	Bell Atlantic
bcm.tmc.edu:/pcnfs/pcnfsd.92.11.05.tar.Z	Sun patches
beach.utmb.edu	anti-virus software backup site
bell.com	telecommunications information
black.ox.ac.uk (129.67.1.165) :/src/security	security information
boombox.micro.umn.edu:/pub/gopher	gopher reference service software
bruno.cs.colorado.edu	?
byrd.mu.wvnet.edu /pub/ejvc/EJVC.INDEX.FTP	Electronic Journal on Virtual Culture
cert.org:/pub/virus-l/docs	Virus-L documentation
cert.org:/pub/…	security information (e.g., COPS, npasswd)
coast.cs.purdue.edu	security tools archive
coast.cs.purdue.edu:/pub/aux	security archive
consultant.micro.umn.edu	electronic bookstore
coombs.anu.edu.au:/pub/irc	IRC information
crl.dec.com:/pub/DEC/ultrix-faq.txt	Ultrix faq
cs.bu.edu:/IRC/support	IRC
cs.bu.edu:/pub/listserv	list server software
cs.utah.edu:/pub	?
cs.uwp.edu:/pub/msdos/wp/passwp.zip	breaking WordPerfect encryption
csn.org	security, etc.

Anonymous ftp Sites, Continued

internet address: optional directory	Description/Comment
cpsr.org:/cpsr/clinton	white house documents
crvax.sri.com	RISKS digest
csrc.nist.gov:pub/… (129.6.54.11)	NIST BBS, security bulletins, first contacts
cv.vortex.com:/privacy	privacy forum archives
dartvax.dartmouth.edu:/pub/security /passwd+.tar.Z	password security (Unix)
dartmouth.edu	security software
decuac.dec.com:/pub/DEC/ultrix-faq.txt	Ultrix faq
dftnic.gsfc.nasa.gov:[.FILES.MAC] MACSECURE31.HQX{SIT}	anti-virus software
dg-rtp.rtp.dg.com(128.222.1.2)	Data General security patches
dhvx20.csudh.edu:/global_net	global network
drgate.dra.com:/pub/gpo	GPO BBS
ds.internic.net:pub/the-scientist	*The Scientist* (periodical)
educom.edu	information technology news
eecs.nwu.edu	security software
emx.utexas.edu	security software
etext.archive.umich.edu/pub/CuD/cud (141.211.164.18):	**CUD**
eugene.utmb.edu:/pub/pgp	pgp
eugene.utmb.edu:/pub/virus-software/pc{macintosh}	anti-virus software
export.lcs.mit.edu	astronomy programs
faui43.informatik.uni-erlangen.de	IRC
first.org:/pub	security information
freebie.engin.umich.edu	IRC client/server software ftp site
ftp.acsu.buffalo.edu:/pub/IRC	IRC client/server software ftp site
ftp.apple.com:dts/mac/sys.soft/imaging	Apple utilities
ftp.bio.indiana.edu:/util/gopher	gopher software
ftp.bsdi.com	BSDI
ftp.census.gov:/pub	Census bureau
ftp.cert.org:/pub/tools	security tools
ftp.cic.net	Internet use instruction
ftp.cisco.com/pub	Cisco (Router/Firewall Vendor)
ftp.cni.org:/CNI/documents/farnet /stories-index	Coalition for Networked Information Internet Information
ftp.ccmail.com	security upgrades
ftp.cco.caltech.edu:/pub/bjmccall	white house documents
ftp.comlab.ox.ac.uk:/pub/Zforum	Z specification language
ftp.cs.berkeley.edu:ucb/sendmail	security software
ftp.cs.bul.nl	foreign nodes
ftp.cs.purdue.edu:/pub/spaf/…	security tools
ftp.cs.purdue.edu:/pub/spaf/COAST /Tripwire	Tripwire security software
ftp.cs.ttu.edu:/pub/asciiart	ascii art
ftp.cs.uwm.edu:pub/comp-privacy	computer privacy information
ftp.cs.widener.edu:/pub/zen/…	Zen and the Art of the Internet: A Beginner's Guide to the Internet

Anonymous ftp Sites, Continued

internet address:	
optional directory	**Description/Comment**
ftp.cs.wisc.edu:/connectivity_table	international connectivity table
ftp.cwru.edu:/security/unix-security.ps	Unix security
ftp.delmarva.com:pub/security	firewalls information
ftp.denet.dk:/pub/misc/cm200-UFC.tar.Z	password cracker
ftp.digital.com:/pub/Digital/info	Digital Equipment Corporation
ftp.ee.mu.oz.au:/pub/text/Cud/…	**computer underground digest**
ftp.eff.org:/pub/CUD/… (192.88.144.4)	**computer underground digest, indices, etc.**
ftp.eff.org:/pub/IRC/lumberjak.shar	IRC
ftp.einet.net	gopher sources
ftp.eit.com:/pub/web.guide/	directory of Cyberspace resources
ftp.es.net:/pub/networking-info/earn /nettools.ps{txt}	Internet resource guides
ftp.es.net:/pub/security	security information
ftp.etext.org:/Zines/InterText	Intertext electronic periodical
ftp.eunet.no:/pub/text/online.txt	network information—shareware book
ftp.fcc.gov	FCC
ftp.funet.fi:/pub/unix/mail/zmailer/	more secure mailer (than sendmail)
ftp@ghost.dsi.unimi.it:/pub/crypt/sci.crypt	cryptography
ftp.greatcircle.com:pub/firewalls	firewalls information
FTP.GreatCircle.COM:pub/archive /firewalls.Z	firewalls digest
ftp.gwu.edu:/pub/hoffman	cryptography
ftp.hep.net	High Energy Physics
ftp.inoc.dl.nec.com:pub/security/… (143.101.112.3)	computer security tools
ftp.informatik.uni-hamburg.de:/pub/virus /texts/security	security documents
ftp.informatik.uni-hamburg.de:/pub/virus /texts/tests	virus archives
ftp.informatik.uni-hamburg.de:/pub/virus /texts/catalog/msdosvir.zip	MS-DOS virus information
ftp.isoc.org/isoc/charts	Internet statistics
ftp.lm.com:pub/interpedia	electronic encyclopedia
ftp maristb.marist.edu	white house documents
ftp.ncsa.uiuc.edu	NCSA telnet
ftp.ncsa.uiuc.edu:/Mosaic (141.142.20.50)	Mosaic/WWW software
ftp.nec.com:/pub/security/socks/cstc	SOCKS
ftp.next.com /pub/NeXTanswers/Files	NeXT patches and security alerts
ftp.netsys.com	**computer underground publications**
ftp.nisc.sri.com:netinfo/interest-groups	mailing lists, security, etc.
ftp.nisc.sri.com:pub/zone	definitions of Internet zones
ftp.ntia.doc.gov	National Information Infrastructure
ftp.oar.net:/pub/OARnet/doc/oarsec.PS.Z	Internet security
ftp.ox.ac.uk	cryptography
ftp.pica.army.mil	privacy issues
ftp.pnl.gov in the directory:/pub/pnlinfo	gopher software
ftp.psy.uq.oz.au:/pub/DES	des
ftp.qucis.queensu.ca:pub/dalamb/ college-email	how to find E-mail addresses

Anonymous ftp Sites, Continued

internet address: **optional directory**	**Description/Comment**
ftp.rpi.edu	computer mediated communications
ftp.sco.com	SCO Unix patches
ftp.sei.cmu.edu: /pub/dvk/passwd.ps	password security
ftp.senate.gov	U.S. Senate
ftp.sert.edu.au:/security/sert/tools	tools from Australian SERT
ftp.sgi.com:/pub/sgi/IRIX	SGI patches
ftp.sti.nasa.gov	NASA information
ftp.sura.net:pub/nic	network guides and resources
ftp.tansu.com.au:/pub/docs/security	security documentation
ftp.telebit.com:/pub/nomad/…	network observations
ftp.temple.edu:pub/info/help-net	glossary of computer oriented abbreviations and acronyms
ftp.tis.com	pem
ftp.tis.com:pub/firewalls	Internet firewall toolkit and papers
ftp.ucsd.edu:hamradio/packet/tcpip/crypto (128.54.16.7)	des source
ftp.unl.edu:/pub/archie/clients	archie client software
ftp.unt.edu:/pub	computer and network security information
ftp.usask.ca:/pub/hytelnet/pc (128.233.3.11)	HYTELNET software
ftp.utdallas.edu:/pub/staff/billy/libguide (129.110.10.1)	Internet library guide
ftp.uu.net	dictionaries, astronomy programs
ftp.uu.net:/tmp/CUPindex	CUD index
ftp.uu.net:~ftp/systems/sun/sun-dist	sun patches
ftp.win.tue.nl	TCP security tools
ftp.win.tue.nl:/pub/security /tcp_wrappers_6.3.shar.Z	TCP wrappers
ftpserver.massey.ac.nz:/pcnfs.sun	sun patches
furmint.nectar.cs.cmu.edu/security	security
garbo.uwasa.fi:/pc/util/wppass2.zip	**breaking WordPerfect encryption**
gatekeeper.dec.com (16.1.0.2)	Third party software for DEC systems
gatekeeper.dec.com:pub/DEC/DECinfo /DECnews-EDU	*DECNEWS* electronic periodical
gatekeeper.dec.com:/pub/DEC/ultrix-faq.txt	Ultrix faq
gatekeeper.decwrl.com	
gate.demon.co.uk	pgp
ghost.dsi.unimi.it:/pub/crypt	cryptography
ghost.dsi.unimi.it:/pub/security/atp.tar.Z	anti-tampering program, etc.
gopher.uiuc.edu	electronic bookstore
gs80.sp.cs.cmu.edu:/usr/anon/public /space-tech	technical space information
hafnhaf.micro.umn.edu	“Electronic Government Information Service”
halcyon.com:/pub/mirror/CUD/… (202.135.191.2)	**mirror of ftp.eff.org**
hopf.math.nwu.edu:pub/gn/gn-0.6.tar.Z	gopher software (GN)
ibm1.cc.lehigh.edu	Virus-L archives
idlastro.gsfc.nasa.gov	astronomy library
ietf.cnri.reston.va.us:/oc/inet93	INET conference proceedings

Anonymous ftp Sites, Continued

internet address: optional directory	Description/Comment
iitf.doc.gov	NII
info.umd.edu	Univ. of Maryland information/programs
info.umd.edu:/info/Computers/PC/Unix/uuexe520.zip	virus survey
iraun1.ira.uka.de	security, IRC
CIAC.llnl.gov (128.115.19.60)	CIAC
iris1.ucis.dal.ca:pub/gif	Voyager, Hubble, etc. GIFs
iskut.ucs.ubc.ca:/pub/Internet-drafts/draft-rsadsi-rivest-md5-02.txt	MD5 description
jbcondat@attmail.com	**Chaos digest - mail server**
jerico.usc.edu:pub/gene/kk	cryptographic papers
julius.cs.qub.ac.uk:pub/SpaceDigestArchive	Space Digest
kampi.hut.fi	DES software
kidd.vet.purdue.edu:/pub/users/wam/docs/legal	computer security documents
mac.archive.umich.edu	Macintosh archives
mac.archive.umich.edu:/mac/util/encryption	Macintosh encryption
mcafee.com	anti-virus products
mrcnext.cso.uiuc.edu	project Gutenberg online text
mcsun.eu.net	windows security
more@hpcwire.ans.net	technical news stories
naic.nasa.gov:files/general_info/earn-resource-tool-guide.ps, earn-resource-tool-guide.txt	network resources
nasirc.nasa.gov	NASIRC archives
net.tamu.edu:pub/security/TAMU	Texas AMU security tools
net-dist.mit.edu:/pub/PGP	PGP
net-dist.mit.edu: /pub/TechMail-PEM	PEM
netlib@research.att.com	compilers
network.ucsd.edu:/intertext (128.54.16.3)	electronic periodical
nevada.edu:/pub/liaison/govrnmnt.zip	Government information on the Internet
nic.funet.fi	network information center, Finland
nic.merit.edu:documents/fyi	network guides and resources
nis.nsf.net:/documents/rfc/…	“requests for comments”standards
nnsc.nsf.net	Internet documents
nri.reston.va.us:/ietf	Internet Engineering Task Force
ns.ripe.net:earn/earn-resource-tool-guide.ps, earn-resource-tool-guide.txt	network resource guide
nysernet.org:pub/resources/guides	network guides and resources
oak.oakland.edu	large software repository
oak.oakland.edu:pub/msdos/virus	virus information
ocf.berkeley.edu:/pub/Library/poetry	poetry
otabbs.ota.gov	Office of Technology Assessment (U.S. Federal)
pc10868.pc.cc.cmu.edu	lists
pencil.cs.missouri.edu:/pub/crypt	pretty good privacy (enhanced mail)
photo1.si.edu	Smithsonian photos
pioneer.unm.edu:pub/info/beginner-info	space imagery data
pit-manager.mit.edu:/pub/usenet/…	faqs for the newsgroups
prep.ai.mit.edu	general including fax security

Anonymous ftp Sites, Continued

internet address:	
optional directory	**Description/Comment**
prep.ai.mit.edu:/pub/gnu/fax-3.2.1.tar.Z	net fax software
princeton.edu:/pub/pgp20	pretty good privacy (enhanced mail)
pubinfo.jpl.nasa.gov	JPL
pyrite.rutgers.edu	security mailing list
rascal.ics.utexas.edu:mac/virus-*	anti-virus software
Research.att.com:dist/Internet_security	papers on firewalls and break ins
red.css.itd.umich.edu:/CUD/…	**mirror of ftp.eff.org**
rtfm.mit.edu	computer security information
rogue.llnl.gov	DECnet security tools
ripem.msu.edu	ripem programs
ripem.msu.edu:pub/crypt	encryption software
risc.ua.edu:/pub/ibm-anti-virus	anti-virus software
rpub.cl.msu.edu	RSAREF
rsa.com:/pub/…	cryptography
rsa.com:/rsaref/dist/930105	RIPEM, RSAREF
rtfm.mit.edu:/pub/usenet	USEnet faq archive
rutgers.edu	Columbia University Appletalk
s1.gov:/pub/socks.tar.Z	Unix security
s6k.boulder.ibm.com	IBM security fixes
sc.tamu.edu:pub/security/TAMU	network security tools
sipb.mit.edu:/pub/diswww/diswww.tar.gz	electronic conferencing source (Discuss)
slopoke.mlb.semi.harris.com:/pub/IRC	IRC client/server software ftp site
soda.berkeley.edu:/pub/cyberpunks	remailer usage
soda.berkeley.edu:/pub/cyberpunks/pgp	pgp
software.watson.ibm.com	IBM fixes
solbourne.solbourne.com	Solbourne information (including security fixes)
src.doc.ic.ac.uk:/computing/comms/irc	IRC information
src.doc.ic.ac.uk:/public/sun/pc-nfs/pcnfsd.92.11.05.tar.Z	Sun patches
src-aux.src.umd.edu	Macintosh information/software
sumex-aim.stanford.edu	Apple software
sumex-aim.stanford.edu:/info-mac/virus	anti-virus software
sunsite.unc.edu	linux fixes
sunsite.unc.edu:/home3/wais/white-house-papers	white house documents
sunsolve1.sun.com:/pub/patches	SUN patches
s1.gov	security software
techreports.larc.nasa.gov:pub/techreports/larc/92	NASA technical reports
thumper.bellcore.com:/pub/skey	s/key one time password software
thumper.bellcore.com:/pub/crypt	cryptography
Town.Hall.Org	Edgar—Securities and Exchange information
uiunix.ui.org	Unix standards
una.hh.lib.umich.edu:/inetdirsstacks	Internet resource guides
unma.unm.edu	ethics, policy, legislation
urvax.urich.edu:[MSDOS.ANTI-VIRUS]/info-mac/virusux1.cso.uiuc.edu:/pc/virus	anti-virus software

Anonymous ftp Sites, Continued

internet address: optional directory	Description/Comment
ucsd.edu:/hamradio/packet/tcpip/crypto /des.tar.Z	DES code
uunet.uu.net:comp.sources.misc /volume23/smiley/part01.Z	smiley sources
venera.isi.edu	DNS tools
vitruvius.cecer.army.mil	binary gifs
van-bc.wimsey.bc.ca:/pub/crypto/PGP-2.1	pgp
world.std.com:/OBS /The.Internet.Companion/	Internet documentation
wsmr-simtel20.army.mil	large software repository
wsmr-simtel20.army.mil:PD1: <MSDOS.TROJAN-PRO> {PD3:<MACINTOSH.VIRUS>}	anti-virus software
wuarchive.wustl.edu	largest software repository
wuarchive.wustl.edu.: /doc/misc/*	documentation
wuarchive.wustl.edu:ftp/usenet /comp.virus/*	unix security
wuarchive.wustl.edu:usenet /comp.sources.misc/volume23 /smiley/part01.Z	smiley sources

Finger Sources

These are usually electronic “tidbits” you may obtain by typing:

finger <sourcename>

For example, to obtain local Livermore, CA weather, type:

finger weather@icaen.llnl.gov

BBSs

BBS	Access Methods
cc:Mail BBS	(415) 691-0401
CIAC	(510) 423-4573 (1200/2400 baud); (510) 423-3331 (9600 baud)
U.S. Commerce Department	(202) 482-3870 (2400 baud); (202) 482-2167 (9600 baud)
Internet access	Telnet to “ebb.stat-usa”
Fedworld BBS, access to federal information services, versatile, complex	(703) 321-8020 (sys op (703) 487-4608))
IITF bulletin board	(202) 501-1920
Backup	(202) 482-1199
Internet access	Telnet to “iitf.doc.gov” and log in as ***gopher***
Questions	(202) 482-1835; E-mail cfranz@ntia.doc.gov
NIST computer security	(301) 948-5717 (2400 baud or less); (301) 948-5140 (9600 baud)
Internet access	Telnet to “cs-bbs.ncsl.nist.gov” (129.6.54.30)
NIST data management activities and applications	(301) 948-2048 or (301) 948-2059 (2400 baud or less)
NIST open systems interconnection standards	(301) 869-8630 (2400 baud or less)
NIST North American Integrated Services Digital Network User’s Forum	(301) 869-7281 (2400 baud or less)
The Privacy Rights Clearinghouse BBS	Direct access: (619) 260-4670 At the local prompt enter ***c teetot*** At the login prompt enter ***privacy*** Follow instructions for new users
Internet access	Telnet to “teetot.acusd.edu” and follow the above steps

Read the USEnet newsgroup “alt.bbs” for information about bulletin board services.

IRC (Internet Relay Chat) Conferencing

Location	Description
#hack	**attacker channel (there are many other channels, most legitimate)**
bradenville.andrew.cmu.edu	**telnet server**
cc.nsysu.edu.tw	**telnet server - login: IRC**
chatsubo.nerce.gov:login bbs	**telnet server**
ircserver.itc.univie.ac.at 6668	**telnet server**
IRC.ibmpcug.co.uk 9999	**telnet server**
IRC.santafe.edu	**telnet server - login: IRC**
cs.bu.edu:/IRC/clients	IRC client/server software ftp site
ftp.acsu.buffalo.edu:/pub/IRC	IRC client/server software ftp site
freebie.engin.umich.edu	IRC client/server software ftp site
slopoke.mlb.semi.harris.com:/pub/IRC	IRC client/server software ftp site
(US)badger.ugcs.caltech.edu	IRC server site (US)
csd.bu.edu	IRC server site (East Coast US)
disuns2.epfl.ch	IRC server site (Switzerland)
IRC.caltech.edu	IRC server site (West Coast US)
munagin.ee.mu.oz.au	IRC server site (Australia)
nic.funet.fi	IRC server site (Finland)
penfold.ece.uiuc.edu	IRC server site (Midwest US)
sunsystem2.informatik.tu-muenchen.de	IRC server site (Germany)
ucsu.colorado.edu	IRC server site (US)
ug.cs.dal.ca	IRC server site (Canada)

List Servers/Information Sources

List Server/Source	Description
bugtraq-request@fc.net	**bugtraq**
cert@cert.org	CERT - advisories
cert@cert.org	CERT - tools
ciac-listproc@llnl.gov	CIAC - bulletin
ciac-listproc@llnl.gov	CIAC - notes
comp-privacy-request@pica.army.mil	computer privacy digest subscription
gopher-news-request@boombox.micro.umn.edu	gopher news subscription
interpedia-request@telerama.lm.com	Interpedia online encyclopedia
isoc@nri.reston.va.us	Internet Society News
listproc@educom.edu	EDUCOM information technology news
listserv@itocsivm.csi.it	Network Information Retrieval and Online Public Access Catalogs
LISTSERV@KENTVM.BITNET	HYTEL-L list sever (Internet library guide)
LISTSERV@LEHIGH.EDU	MS-DOS viruses; ***SUB VIRUS-L yourfullname***
LISTSERV@LEHIGH.EDU	MS-DOS viruses alert; ***SUB VALERT-L yourfullname***
listserv@vmd.cso.uiuc.edu	CUD, ***SUB CUDIGEST YOUR NAME***
mac-security-request@eclectic.com	Macintosh security subscription
Majordomo@GreatCircle.COM	firewalls and firewalls-digest subscription
majordomo@is.internic.net	scout-report, weekly happenings
Majordomo@Lists.EUnet.fi	cryptography; SUBSCRIBE CYPHERWONKS
Majordomo@net.tamu.edu	academic-firewalls
majordomo@nsmx.rutgers.edu	www-security
pem-dev-request@tis.com	pem subscription
pem-info@tis.com	privacy enhanced mail information
phrack@well.sf.ca.us	**Phrack periodical**
privacy-request@cv.vortex.com	privacy forum digest subscription
risks-request@csl.sri.com	risks digest subscription
security-alert@flatline.corp.sun.com	Sun security information
security-features@sun.com	Sun security alerts
tk0jut2@mvs.cso.niu.edu	**Computer Underground Digest**
dds.hacktic.nl	(telnet) The Digital Cityt

Network Information

Telnet to “rs.internic.net”. The primary command is:

whois domain
or

whois subdomain

Reference Services

Archie

Archie is used for automated anonymous ftp server searches (see anonymous ftp for client software). There are multiple file locator sites (telnet to site and log in as ***archie***):

archie.rutgers.edu (Rutgers University)
archie.unl.edu (University of Nebraska in Lincoln)
archie.sura.net (SURAnet archie server)
archie.ans.net (ANS archie server)

Gopher (Internet Resource Server)

- **Client software:**

  boombox.micro.umn.edu:/pub/gopher
  ftp.bio.indiana.edu:/util/gopher

- **Telnet access:**

  consultant.micro.umn.edu (134.84.132.4)
  gopher.uiuc.edu (128.174.33.160)
  panda.uiowa.edu (128.255.40.201)

- **Servers:**

  ace.esusda.gov – Americans Communicating Electronically (Department of Agriculture)
  aclu.org – ACLU
  ba.com – Bell Atlantic
  bell.com – telecommunications information
  csbh.com – Computer Solutions by Hawkinson
  cix.org – commercial information
  cwis.usc.edu – Gopher Jewels
  dewey.lib.ncsu.edu – North Carolina State University Library
  ds.internic.net – InterNIC network information service
  educom.edu – EDUCOM Documents and News
  fatty.law.cornell.edu – Cornell Law School
  fedix.fie.com – Federal Info. Exchange (FEDIX)
  gopher.acusd.edu – Privacy Rights Clearinghouse
  gopher.bcm.tmc.edu – Baylor College of Medicine
  gopher.census.gov – Census bureau
  gopher.cic.net – Internet use instruction
  gopher.cic.net:Electronic Serials/Alphabetic List/e/Electronic Journal on Virtual Culture/ – Electronic Journal on Virtual Culture
  gopher.cni.org:70/11/cniftp/miscdocs/farnet – Coalition for Networked Information Internet Information
  gopher.cpsr.org – CSPR
  gopher.cs.ttu.edu – Texas Tech University
  gopher.ed.gov – Department of Education
  gopher.eff.org – EFF
  gopher.epa.gov – EPA

gopher.es.net – Energy Sciences network
gopher.esa.doc.gov – U.S. Commerce Department
gopher.fcc.gov – FCC
gopher.first.org – FIRST
gopher.fonorola.net – Internet Business Journal archives
gopher.gsfc.nasa.gov – NASA Goddard Space Flight Center
gopher.house.gov – U.S. House of Representatives
gopher.Internet.com – Electronic Newsstand information
gopher.lanl.gov – Los Alamos National Laboratory
gopher.law.csuohio.edu – Cleveland State University Law Library
gopher.lib.umich.edu – University of Michigan Libraries, Internet Resource Guides
gopher.nara.gov – National Archives
gopher.netsys.com (port 2100) – Electronic Newsstand (problems: E-mail to staff@enews.com)
gopher.nist.gov – National Institute of Standards and Technology
gopher.ox.ac.uk:The World/Gopherspace/Alex – electronic texts
gopher.senate.gov – U.S. Senate
gopher-server.nist.gov – National Institute of Standards and Technology (NIST)
gopher.sti.nasa.gov
gopher.tamu.edu – Texas A&M
gopher.tic.com – EFF-Austin/IMatrix Information and Directory Services, Inc. (MIDS), Austin
gopher.town.hall.org – Internet radio
gopher.undp.org – United Nations
gopher.unr.edu – University of Nevada
gopher.vortex.com – Vortex Technology
gopher.well.sf.ca.us – Whole Earth 'Lectronic Magazine - The WELL's Gopherspace
gopher.wired.com – public cryptography issues
hopf.math.nwu.edu – Internet Society, gopher software
ici.proper.com – Internet Computer Index
ietf.CNRI.Reston.Va.US
iitf.doc.gov – information infrastructure
info.asu.edu – electronic periodicals and educational gopher sites
info.learned.co.uk – LI *NewsWire* electronic periodical
internic.net – Network Information Center Gopher
jupiter.esd.ornl.gov – Oak Ridge National Laboratory ESD Gopher
krakatoa.jsc.nasa.gov – Library X at Johnson Space Center
lawnext.uchicago.edu – University of Chicago Law School
liberty.uc.wlu.edu – Washington & Lee University (Legal)
marketplace.com – Internet information mall
marvel.loc.gov – Library of Congress (LC MARVEL)
naic.nasa.gov – NASA Network Applications and Information Center (NAIC)
ns.novell.com – Novell Netwire Archives
nstn.ns.ca – electronic bookstore
ntiaunix1.ntia.doc.gov – National Information Infrastructure
ocs.dir.texas.gov – Department of Information Resources (State of Texas)
pdb.pdb.bnl.gov – Brookhaven National Laboratory Protein Data Bank
rs.internic.net – NIC

sluava.slu.edu – Saint Louis University (Legal)
SunSITE.unc.edu (152.2.22.81) – SUN information
technology.com – NASA Mid-Continent Technology Transfer Center
tic.com – Texas Internet Consulting
trainmat.ncl.ac.uk – network training
twinbrook.cis.uab.edu – Interpedia project
ucsbuxa.ucsb.edu (port 3001) – University of California - Santa Barbara Library
una.hh.lib.umich.edu – University of Michigan Internet resource guides
vienna.hh.lib.umich.edu
vx740.gsfc.nasa.gov – NASA Shuttle Small Payloads Info
wired.com – writing
wiretap.spies.com – Wiretap
world.std.com – The World (Public Access Unix)

Wide Area Information Server

brewster@think.com – E-mail for further information
quake.think.com – telnet and sign on as “wais”
wais.eff.org – EFF

World Wide Web/Mosaic

- **Client software:**

info.cern.ch:/pub/www/WWWLineModeDefaults.tar.Z - browser source
ftp.ncsa.uiuc.edu (141.142.20.50) – Mosaic

- **Servers (Uniform Resource Locators):**

You may access any anonymous ftp server xxx.yyy.zzz as ftp://xxx.yyy.zzz and any gopher server with the prefix gopher:// as illustrated below. The slashes (/) following the reference address delineate directory, subdirectory, ..., file name in the usual Unix notation.

gopher://aclu.org:6601/1 – ACLU
gopher://arl.cni.org:70/11/scomm/edir – directory of electronic journals
gopher://ba.com – Bell Atlantic
gopher://gopher.es.net/11/pub/security – Energy Sciences network
gopher://ntiaunix1.ntia.doc.gov:70/11s/newitems – National Information Infrastructure
gopher://oss968.ssa.gov – Social Security Administration
gopher://peg.cwis.uci.edu:7000/11/gopher.welcome/peg/GOPHERS/gov – U.S. Government
gopher://rsl.ox.ac.uk:70/11/lib-corn/hunter – electronic texts
gopher://una.hh.lib.umich.edu/11/inetdirs – University of Michigan
http://aps.org/ – American Physical Society
http://www.ba.com – Bell Atlantic
http://csrc.ncsl.nist.gov/ – FIRST
http://curia.ucc.ie/info/net/acronyms/acro.html – Acronym translator
http://delcano.mit.edu/ – NASA planetary data
http://delcano.mit.edu/cgi-bin/midr-query – NASA planetary data

http://dfw.net/~aleph1 – cracker home page
http://digicash.support.nl/ – digital cash
http://ds.internic.net/ds/dsdirofdirs.html – InterNIC network information center
http://educom.edu/.index.html – *EDUCOM*
http://first.org – FIRST
http://ftp.etext.org/Zines/InterText/intertext.html – electronic periodical
http://http2.sils.umich.edu/~lou/chhome.html or – University of Michigan
http://ici.proper.com – Internet Computer Index
http://info.acm.org/ – ACM
http://info.cern.ch/hypertext/DataSources/bySubject/Overview.html – WWW virtual library
http://info.cern.ch/wit – WIT WWW conversation software
http://info.cern.ch/hypertext/WWW/Clients.htm – browser programs
http://info.cern.ch/hypertext/WWW/FAQ/Bootstrap.html – telnet accessible browers
http://info.cern.ch/hypertext/WWW/Shen/ref/shen.html – Mosaic security
http://info.isoc.org/interop-tokyo.html – Internet information
http://info.learned.co.uk – LI *NewsWire* electronic periodical
http://jupiter.esd.ornl.gov/ – Oak Ridge National Laboratory ESD
http://lcweb.loc.gov/homepage/lchp.html – Library of Congress
http://login.eunet.no/(presno/ – Online World resources handbook
http://marketplace.com – Internet information mall
http://nearnet.gnn.com/GNNhome.html – Global Network Navigator
http://pass.wayne.edu/business.html – business on the Internet
http://peterhe.ulib.albany.edu/mk-docs/mk-isp.html – list of libraries
http://power.globalnews.com/ – PowerPC News
http://programs.interop.com
http://pubweb.parc.xerox.com/map – Xerox PARC Map Viewer
http://pubweb.ucdavis.edu/Documents/Quotations/homepage.html – quotations
http://stardust.jpl.nasa.gov/pds_home.html – NASA planetary data
http://sunsite.unc.edu/ianc/index.html – “Underground music”
http://web.nexor.co.uk/mak/doc/robots/robots.html – WWW robots
http://wombat.doc.ic.ac.uk/ – Online Dictionary of Computing
http://www-ns.rutgers.edu/www-security/index.html – WWW security
http://www.anl.gov/oithome.html – Department of Energy
http://www.census.gov/ – Census bureau
http://www.cis.ohio-state.edu/hypertext/faq/usenet/FAQ-list.html – USEnet faqs
http://www.charm.net/~web/Vlib.html – WWW page development
http://www.commerce.net/directories/members/ns/new_ipower.html – National Semiconductor security products
http://www.cs.colorado.edu/homes/mcbryan/public_html/bb/summary.html – World-Wide WAIS-Searchable WWW Catalogs
http://www.di.unipi.it/iconbrowser/icons.html – Icon Browser at Pisa University
http://www.digital.com/home.html – Digital Equipment Corporation
http://www.earn.net/lug/notice.html – list servers
http://www.ed.gov/ – Department of Education
http://educom.edu/ – *EDUPAGE*

http://www.ee.surrey.ac.uk/edupage/edupage/ – *EDUPAGE* electronic periodical
http://www.eecs.nwu.edu/hacker_crackdown/index.html – “The Hacker Crackdown”
http://www.eff.org/ftp/EFF – EFF
http://www.eit.com/web/www.guide/ – guide to Cyberspace
http://www.ensta.fr/Internet/ – Internet “goodies”
http://www.fedworld.gov – U.S. Government servers
http://www.geom.umn.edu/docs/snell/chance/welcome.html – probability and statistics
http://www.hp.com – HP Main Welcome Screen
http://www.hpcc.gov/imp95/ – High Performance Computing and Communications
http://www.hull.ac.uk/Hull/ITTI/itti.html – United Kingdom's Information Technology Training Initiative
http://www.ictp.trieste.it/Canessa/whoiswho.html – Who’s Who on the Internet
http://www.ihep.ac.cn:3000/china.html – Peoples Republic of China
http://www.internic.net/ – the interNIC
http://www.internic.net/infoguide.html – guide to Internet WWW resources
http://www.jou.ufl.edu/commres/webjou.html – links to newspapers
http://www.kiae.su/www/wtr/ – Window-to-Russia
http://www.lib.umich.edu/chhome.html or – University of Michigan
http://www.lib.virginia.edu/etext/ETC.html – University of Virginia
http://www.llnl.gov – Lawrence Livermore National Laboratory
http://www.media.org/ – MIT security products
http://www.mit.edu:8008/ – electronic conferencing (Discuss)
http://www.nara.gov – National Archives
http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/whats-new.html – new server announcements
http://www.netmarket.com/ – encrypted Mosaic
http://www.openmarket.com/info/Internet-index/current.html Internet tidbits
http://www.ornl.gov/ – Oak Ridge National Laboratory
http://www.research.att.com/ – ATT Bell Labs
http://www.rpi.edu/~decemj/cmc/mag/current/toc.html – Computer-Mediated Communication Magazine
http://www.rpi.edu/Internet/Guides/decemj/text.html – Internet resources
http://www.scubed.com:8001/ – IRS and state tax forms
http://www.sei.cmu.edu/FrontDoor.html – Software Engineering Institute
http://www.service.com/PAW/home.html – Palo Alto Weekly
http://www.ssa.gov/SSA_Home.html – Social Security Administration
http://www.tansu.com.au/Info/security.html – security information
http://www.tansu.com.au/hypermail/index.html – mailing list archives
http://www.tis.com/ – Trusted Information Systems
http://www.town.hall.org/ – Internet radio
http://www.tu-graz.ac.at/CHCIbib – Human Computer Interaction
http://www.utirc.utoronto.ca:3232/HTMLdocs/NewHTML/intro.html – HTML documentation
http://uu-gna.mit.edu:8001/uu-gna/text/index.html – texts for online classes
http://www.wais.com – Wide Area Information Server
http://www.wais.com/wais-dbs/risks-digest.html – risks digest

http://www.willamette.edu/~tjones/Spanish – Spanish lessons
http://www.wired.com – public cryptography issues
http://www.wsg.hp.com/ – HP Workstation Systems Group
http://wwwhost.cc.utexas.edu/world/instruction/index.html – instructional uses of the web
http://130.20.92.130:8001/esh/home2.htm – DOE Office of Environment, Safety and Health

Remailers

Edited List

1 hh@pmantis.berkeley.edu
2 hh@cicada.berkeley.edu
3 hh@soda.berkeley.edu
4 nowhere@bsu-cs.bsu.edu
5 remail@tamsun.tamu.edu
6 remail@tamaix.tamu.edu
7 ebrandt@jarthur.claremont.edu
8 hal@alumni.caltech.edu
9 remailer@rebma.mn.org
10 elee7h5@rosebud.ee.uh.edu
11 phantom@mead.u.washington.edu
12 hfinney@shell.portal.com
13 remailer@utter.dis.org
14 00x@uclink.berkeley.edu
15 remail@extropia.wimsey.com

Notes:

1 through 6: do not support encrypted headers.
7 through 12: support encrypted headers.
9, 13, 15: introduce longer than average delay; privately owned machines.
14: public key not yet released.
15: header and message must be encrypted together.

Others

admin@anon.penet.fi

USEnet News

Relevant Major Roots

alt	alternative, testing
comp	computer related
gnu	software from Free Software Foundation
ieee	IEEE related
misc	miscellaneous
sci	science
talk	discussion of specific topic
vmsnet	VMS related

Relevant Groups

austin.eff
alt.bbs.lists
alt.irc
alt.privacy
alt.security
alt.security.index
alt.security.pgp
bit.listserv.infonets
bit.listserv.virus-l
comp.infosystems.gopher
comp.org.eff.talk
comp.risks
comp.security.announce
comp.security.misc
comp.society.cu-digest
comp.society.privacy
comp.sources.binaries
comp.sys.novell
comp.virus
misc.security
sci.crypt
sci.virus

Mail Help

Type ***?*** at the mail prompt to display a help listing.

cd [directory]	chdir to directory or home if none given
d [message list]	delete messages
e [message list]	edit messages
f [message list]	show from lines of messages
h	print out active message headers
m [user list]	mail to specific users
n	go to and type next message
p [message list]	print messages
pre [message list]	make messages go back to system mailbox
q	quit, saving unresolved messages in mbox
r [message list]	reply to sender (only) of messages
R [message list]	reply to sender and all recipients of messages
s [message list] file	append messages to file
t [message list]	type messages (same as print)
top [message list]	show top lines of messages
u [message list]	undelete messages
v [message list]	edit messages with display editor
w [message list] file	append messages to file, without from line
x	quit, do not change system mailbox
z [-]	display next [previous] page of headers
!	shell escape

A [message list] consists of integers, ranges of integers, or user names separated by spaces. If omitted, mail uses the current message.

ftp Help

To display help about ftp, type ***man ftp*** at the Unix prompt.

Use these commands at the ftp> prompt:

append	append to a file
bye	terminate ftp session and exit
cd	change remote working directory
close	terminate ftp session
delete	delete remote file
dir	list contents of remote directory
disconnect	terminate ftp session
help	print local help information
get	receive file
lcd	change local working directory
ls	nlist contents of remote directory
mdelete	delete multiple files
mdir	list contents of multiple remote directories
mget	get multiple files
mkdir	make directory on the remote machine
mls	nlist contents of multiple remote directories
mode	set file transfer mode
mput	send multiple files
open	connect to remote tftp
put	send one file
pwd	print working directory on remote machine
status	show current status
user	send new user information

List Server Commands

Commands are listed in alphabetical order, with the minimum acceptable abbreviation in capital letters. Angle brackets are used to indicate optional parameters. All commands which return a file accept an optional “F=fformat” keyword (without the quotes) that lets you select the format in which you want the file sent; the default format is normally appropriate in all cases. Some esoteric, historical or seldom-used commands and options have been omitted.

List Subscription Commands (from most to least important)

SUBscribe	listname <full_name>	Subscribe to a list, or change your name if already subscribed
SIGNOFF		Remove yourself:
	listname	- From the specified list
	*	- From all lists on that server
	* NETWIDE	- From all lists in the network
SET	listname options	Alter your subscription options:
	ACK/NOACK/MSGack	- Acknowledgments for postings
	CONCEAL/NOCONCEAL	- Hide yourself from REVIEW
	Files/NOFiles	- Toggle receipt of non-mail files from the list
	Mail/NOMail	- Toggle receipt of mail
	DIGests/INDex	- Ask for digests or message indexes rather than getting messages as they are posted
	REPro/NOREPro	- Copy of your own postings?
	TOPICS: ALL <+/->topicname	- Select topics you are subscribed to (add/remove one or replace entire list)

Options For Mail Headers of Incoming Postings (Choose One)

	FULLhdr or FULLBsmtp	- "Full" mail headers
	IETFhdr	- Internet-style headers
	SHORThdr or SHORTBsmtp	- Short (default) headers
	DUALhdr	- Dual headers, useful with PC or Mac mail programs
CONFIRM	listname1 <listname2 <…>>	Confirm your subscription (when LISTSERV requests it)

Other List-Related Commands

INDex	listname	Sends a directory of available archive files for the list, ifcpostings are archived

List Server Commands, Continued

Lists	<option>	Send a list of lists as follows:
	(no option)	- Local lists only, one line per list
	Detailed	- Local lists, full information returned in a file
	Global	- All known lists, one line per list, sent as a (large!) file
	Global /xyz	- Only those whose name or title contains “xyz”
	SUMmary <node>	- Membership summary for all lists on specified node
	SUMmary ALL	- For all nodes (long output, send request via mail!)
	SUMmary TOTAL	- Just the total for all nodes
Query	listname	Query your subscription options for a particular list (use the SET command to change them)
	*	- Query all lists you are subscribed to on that server
REGister	full_name	Tell your name to LISTSERV, so that you don't have to specify it on subsequent SUBSCRIBE's
	OFF	Make LISTSERV forget your name
REView	listname <options>	Get information about a list
	BY sort_field	- Sort list in a certain order:
	Country	by country of origin
	Name	by name (last, then first)
	NODEid	by nodeid
	Userid	by userid
	BY (field1 field2)	- You can specify more than one sort field if enclosed in parentheses: BY (NODE NAME)
	Countries	- Synonym of BY COUNTRY
	LOCal	- Don't forward request to peers
	Msg	- Send reply via interactive messages (BITNET users only)
	NOHeader	- Don't send list header
	Short	- Don't list subscribers
STats	listname <options>	Get statistics about a list
	LOCal	- Don't forward to peers

Informational Commands

Help		Obtain a list of commands
Info	<topic>	Order a LISTSERV manual, or get a list of available ones (if no topic was specified)
Query	File fn ft <filelist> <options>	Get date/time of last update of a file, and GET/PUT file access code
	FLags	- Get additional technical data (useful when reporting problems to experts)
RELEASE		Find out who maintains the server and the version of the software and network data files

List Server Commands, Continued

SHOW	<function>	Display information as follows:
	ALIAS node1 <node2 <…>>	- BITNET nodeid to Internet hostname mapping
	BITEARN	- Statistics about the BITEARN NODES file
	DISTribute	- Statistics about DISTRIBUTE
	DPATHs node1 <node2 <…>>	- DISTRIBUTE path from that server to specified node(s)
	DPATHs *	- Full DISTRIBUTE path tree
	FIXes	- List of fixes installed on that server
	LINKs node1 <node2 <…>>	- Network links at the BITNET node(s) in question
	NADs node1 <node2 <…>>	- Addresses LISTSERV recognizes as node administrators
	NETwork	- Statistics about the network
	NODEntry node1 <node2 <…>>	- BITEARN NODES entry for the specified node(s)
	NODEntry node1 /abc*/xyz	- Just the “:xyz.” tag and all tags whose name starts with “abc”
	PATHs snode node1 <node2 <…>>	- BITNET path between “snode” and the specified node(s)
	STATs	- Usage statistics (default option)
	(no function)	- Same as SHOW STATS

Commands Related to File Server Functions

AFD		Automatic File Distribution
	ADD fn ft <filelist <prolog>>	Add file or generic entry to your AFD list
	DELete fn ft <filelist>	Delete file(s) from your AFD list (wildcards are supported)
	List	Displays your AFD list
	For node administrators:	
	FOR user ADD/DEL/LIST etc	Perform requested function on behalf of a user you have control over (wildcards are supported for DEL and LIST)
FUI		File Update Information: same syntax as AFD, except that FUI ADD accepts no “prolog text”
GET	fn ft <filelist> <options>	Order the specified file or package
	PROLOGtext xxxx	- Specify a “prolog text” to be inserted on top of the file
GIVE	fn ft <filelist> <TO> user	Sends a file to someone else
INDex	<filelist>	Same as GET xxxx FILELIST (default is LISTSERV FILELIST)
PW	function	Define/change a "personal password" for protecting AFD/FUI subscriptions, authenticating PUT commands, and so on
	ADD firstpw	- Define a password for the first time
	CHange newpw PW=oldpw	- Change password
	DELete oldpw	- Delete password

List Server Commands, Continued

SENDme		Same as GET

Other (Advanced) Commands

DATAbase	function	Access LISTSERV database:
	Search DD=ddname <ECHO=NO>	- Perform database search (see INFO DATABASE for more information on this)
	List	- Get a list of databases available from that server
	REFRESH dbname	- Refresh database index, if suitably privileged
DBase		Same as DATABASE
DISTribute	<type> <source> <dest> <options>	Distribute a file or a mail message to a list of users (see INFO DIST for more details on the syntax)
	Type:	
	MAIL	- Data is a mail message, and recipients are defined by "<dest>"
	FILE	- Data is not mail, recipients are defined by "<dest>"
	RFC822	- Data is mail and recipients are defined by the RFC822 "To:" / "cc:" fields
	Source:	
	DD=ddname	- Name of DDname holding the data to distribute (default: "DD=DATA")
	Dest:	
	<TO> user1 <user2 <…>>	- List of recipients
	<TO> DD=ddname	- One recipient per line
	Options for the general user:	
	ACK=NOne/MAIL/MSG	- Acknowledgement level (default: ACK=NONE)
	CANON=YES	- "TO" list in "canonical" form (uid1 node1 uid2 node2…)
	DEBUG=YES	- Do not actually perform the distribution; returns debug path information
	INFORM=MAIL	- Send file delivery message to recipients via mail
	TRACE=YES	- Same as DEBUG=YES, but file is actually distributed
	Options requiring privileges:	
	FROM=user	- File originator
	FROM=DD=ddname	- One line: "address name"
FOR	user command	Execute a command on behalf of another user (for node administrators)
SERVE	user	Restore service to a disabled user
THANKs		Check if the server is alive
UDD		Access the User Directory Database (there are 18 functions and many sub-functions, so the syntax is not given here)

List Server Commands, Continued

Syntax of Parameters

filelist = 1 to 8 characters from the following set: A-Z 0-9 $#@+-_:

fformat = Netdata, Card, Disk, Punch, LPunch, UUencode, XXencode, VMSdump, MIME/text, MIME/Appl, Mail

fn = same syntax as “filelist”

ft = same syntax as “filelist”

full_name = firstname <middle_initial> surname (*not* your E-mail address)

listname = name of an existing list

node = BITNET nodeid or Internet hostname of a BITNET machine which has taken care of supplying a “:Internet.” tag in its BITEARN NODES entry

pw = 1 to 8 characters from the set: A-Z 0-9 $#@_-?!|%

user = Any valid RFC822 network address not longer than 80 characters; if omitted, the “hostname” part defaults to that of the command originator

rn Help

To display help about rn, type ***man rn*** at the Unix prompt

Use these commands at the Newsgroup Selection command level:

y, SP	Do this newsgroup now.
.cmd	Do this newsgroup, executing cmd as first command.
=	Start this newsgroup, but list subjects before reading articles.
u	Unsubscribe from this newsgroup.
c	Catch up (mark this newsgroup all read).
n	Go to the next newsgroup with unread news.
N	Go to the next newsgroup.
p	Go to the previous newsgroup with unread news.
P	Go to the previous newsgroup.
-	Go to the previously displayed newsgroup.
1	Go to the first newsgroup.
^	Go to the first newsgroup with unread news.
$	Go to the last newsgroup.
g name	Go to the named newsgroup. Subscribe to new newsgroups this way too.
/pat	Search forward for newsgroup matching pattern.
?pat	Search backward for newsgroup matching pattern. (Use * and ? style patterns. Append r to include read newsgroups.)
l pat	List unsubscribed newsgroups containing pattern.
m name	Move named newsgroup elsewhere (no name moves current newsgroup).
o pat	Only display newsgroups matching pattern. Omit pattern to unrestrict.
a pat	Like o, but also scans for unsubscribed newsgroups matching pattern.
L	List current .newsrc.
&	Print current command line switch settings.
&switch {switch}	Set (or unset) more command-line switches.
&&	Print current macro definitions.
&&def	Define a new macro.
!cmd	Shell escape.
q	Quit rn.
x	Quit, restoring .newsrc to its state at startup of rn.
^K	Edit the global KILL file. Use commands like /pattern/j to suppress pattern in every newsgroup.
v	Print version.

Use these commands at the Article Selection command level:

n, SP	Scan forward for next unread article.
N	Go to next article.
^N	Scan forward for next unread article with same subject.
p, P, ^P	Same as n, N, ^N, only going backward.
-	Go to previously displayed article number.
number	Go to specified article.

rn Help, Continued

```
range{,range}:command{:command}
                        Apply one or more commands to one or more ranges of articles.
                        Ranges are of the form: number | number-number.  You may use “.” for
                        the current article, and “$” for the last article.
                        Valid commands are: e, j, m, M, s, S, and |.
/pattern/modifiers      Scan forward for article containing pattern in the subject line.
                        (Use ?pat? to scan backwards; append “h” to scan headers, “a” to scan
                        entire articles, “r” to scan read articles, “c” to make case sensitive.)
/pattern/modifiers:command{:command}
                        Apply one or more commands to the set of articles matching pattern.
                        Use a K modifier to save entire command to the KILL file for this
                        newsgroup.  Commands “m” and “M”, if first, imply an “r” modifier.
                        Valid commands are the same as for the range command.
f, F                    Submit a followup article (F = include this article).
r, R                    Reply through net mail (R = include this article).
e dir{|command}         Extract to directory using /bin/sh, uudecode, or specified command.
s …                     Save to file or pipe via sh.
S …                     Save via preferred shell.
w, W                    Like s and S but save without the header.
| …                     Same as s|…
C                       Cancel this article, if yours.
^R, v                   Restart article (v=verbose).
^X                      Restart article, rot13 mode.
c                       Catch up (mark all articles as read).
b                       Back up one page.
^L                      Refresh the screen.  You can get back to the pager with this.
X                       Refresh screen in rot13 mode.
^                       Go to first unread article.  Disables subject search mode.
$                       Go to end of newsgroup.  Disables subject search mode.
#                       Print last article number.
&                       Print current values of command line switches.
&switch {switch}        Set or unset more switches.
&&                      Print current macro definitions.
&&def                   Define a new macro.
j                       Junk this article (mark it read).  Stays at end of article.
m                       Mark article as still unread.
M                       Mark article as still unread upon exiting newsgroup or Y command.
Y                       Yank back articles marked temporarily read via M.
k                       Kill current subject (mark articles as read).
K                       Mark current subject as read, and save command in KILL file.
^K                      Edit local KILL file (the one for this newsgroup).
=                       List subjects of unread articles.
u                       Unsubscribe from this newsgroup.
q                       Quit this newsgroup for now.
Q                       Quit newsgroup, staying at current newsgroup.
```

CIAC Electronic Bulletin Board and ftp Summary Guide

The following information was provided by the guide's author. Note that the name of the anonymous ftp server will be changing to "CIAC" at a later date.

The FELICIA Virus Bulletin Board System and the CIAC Anonymous FTP Server Computer Security Information Sources for the DOE Community—Executive Summary

by
William J. Orvis

The Computer Incident Advisory Capability (CIAC) operates two file servers for the DOE community, FELICIA (formerly FELIX), and CIAC. FELICIA, is a computer Bulletin Board System (BBS) which is available via telephone using a modem. CIAC is an anonymous FTP server on the Internet. Both of these file servers contain all of the publicly available CIAC, CERT, NIST, and DDN bulletins, virus descriptions, the Virus-L moderated virus bulletin board, copies of public domain and shareware virus detection/protection software, and copies of useful public domain and shareware utility programs.

ACCESSING FELICIA

FELICIA is a BBS connected to the telephone system. To access it with a modem and a terminal, set up your system as 8 bit, no parity, and one stop bit. The access numbers (commercial and FTS) are:

(510) 423-4753 - 2400 baud or slower
(510) 423-3331 - 9600 baud V.32 or slower

The first time you call in, you will have to register your name and address. To download or read files, switch to the file section and follow the directions. Most of the popular downloading protocols are available, including XMODEM, YMODEM, SEALink, and Kermit.

ACCESSING CIAC

CIAC is an anonymous FTP server on the Internet, so you must have Internet access to use it. Note that CIAC.llnl.gov will change to ciac.llnl.gov in the near future. Use one of the following commands to run FTP with CIAC' Internet address:

```
    ftp CIAC.llnl.gov
or
    ftp 128.115.19.53
```

When you are connected to CIAC, if you get the username prompt, type ***anonymous***; otherwise, type ***user anonymous***.

when you are asked for a password, type your E-mail address (e.g., jones@llnl.gov.)

There is a document explaining the directory of downloadable files stored in the file 0-index.txt in the first level directory. All the computer security-related files and documents are in subdirectories of the directory /pub/ciac.

CIAC Electronic Bulletin Board and ftp Summary Guide, Continued

To download files, use the GET or MGET command (see below). The file 0-index.txt in each directory lists the other files in that directory and briefly describes their contents. The file news.txt in the /pub/ciac directory contains a list of the new files placed in the archive.

Use the following commands to move around the directory system and download files:

cd Change directory, follow with the path to the directory you want to access. Use ".." as the directory name to backup one directory or "/" to backup to the root directory.

ls List the contents of a directory.

binary Change the mode for downloading files to binary. Execute this command before downloading anything but pure text files, to insure that you get an unmodified file.

ascii Change the mode for downloading to ASCII. If you have switched to binary mode, execute this command before downloading pure text files. FTP automatically changes the end of line characters to the ones your machine expects.

get Get a file. Follow this command with the name of the file you want to download to your machine.

mget Multiple Get. Follow this command with a file name that includes wildcard characters to select and download multiple files. The wildcard character "*" stands for any number of any characters, and "?" stands for any single character.

SCANNING DOWNLOADED SOFTWARE

As with any software you obtain, you should exercise caution and scan individual software packages before using the software for the first time. Unless otherwise indicated, all software on FELICIA and CIAC has been scanned for known viruses, but it is advisable to scan all downloaded software using the most recent version of a virus scanning tool. Be sure to scan archived applications after they have been extracted from the .ZIP, .ARC, or SIT archive, as scanning software cannot currently detect a virus within an application until it is in an executable form.

DOWNLOADING CONSIDERATIONS

If you are downloading to a Macintosh, be sure to use the Text version of the downloading protocol (e.g., Text-XMODEM, Text-YMODEM, etc., for downloads from FELICIA and ASCII mode on CIAC) on your Macintosh when downloading pure text files or unformatted documents. The text version of the downloading protocol corrects for the difference in the end of line characters used on the PC and Macintosh systems (the PC wants a CR-LF at the end of a line while the Macintosh wants a CR only.) When downloading a binary Macintosh file such as a program file or a formatted document, be sure to set the MacBinary form of the protocol (e.g., MacBinary-XMODEM for downloads from FELICIA, and Binary mode on CIAC) on your Macintosh. If you forget to do this, you can still do the conversion later using the Apple File Exchange utility included with the Macintosh system.

Downloadable PC-DOS/MS-DOS files are either text files (.TXT), zip or arc archives (.ZIP or .ARC) or executables (.COM or .EXE). Text files and executables can be downloaded directly and used. Be sure to use a binary downloading capability (e.g., XMODEM) for the executable files and archives. Files in ZIP archives must be extracted after downloading with PKUNZIP before they can be used. Macintosh files in SIT archives must be extracted with Stuffit before they can be used. Macintosh files in .CPT archives must be extracted with Compactor or Extractor. SEA files are self extracting archives and need no archiving program. Archiving utilities for both PC and Macintosh files are available in their respective file sections.

USING SHAREWARE

If you are using a shareware package downloaded from FELICIA or any other source, be sure to follow the instructions in the package for compensating the author. The cost is generally minimal ($10 to $50), for some very useful applications.

DOCKMASTER Resource Guide

This guide was provided by the NCSC.

DOCKMASTER has a multitude of resources concerning computer security available to our users. These resources include papers on viruses and other related issues, Internet resources, technical guidelines (Rainbow Series books and pamphlets), and forum meetings. The following information is available to most users on the DOCKMASTER system. To review the documents listed, the user can change his/her working directory to the indicated directory. The command to do this is “cwd pathname” where the pathname will be given above each list of documents in that directory. The “list” command will display the contents of that directory.

example: cwd >site>net>papers

>site>net>papers

. Virus frequently asked questions
. Site security handbook
. GAO report on the Internet Worm incident
. Virus101
. NIST paper on computer viruses and related threats
. Improving Unix systems security
. GOSIP draft 2

>site>net>Internet

. All kinds of information on Internet resources including what it is, its uses, a new user’s guide and many more.

>site>net>irg

. Several directories containing the chapters from the Internet Resources Guide

>site>net>rfcs

. Many Request for Comments (RFC) documents. These documents cover subjects ranging from protocols for system to system communications; standards for network managers; X.400 and other protocols; addressing schemes; etc. The main library is located at the Network Information Center better known as the NIC. There is an index of all RFCs located at the NIC in this directory.

>site>pubs

. Orange book in Hypercard version 2.01

>site>pubs>criteria

- ITSEC (Information Technology Security) paper
- MSRF (Minimum Security Fundamental Requirements) paper
- FC-Scope paper - a joint statement by the NIST and NSA on the Federal Criteria.

>site>pubs>guidelines

- Trusted Database Interpretation (TDI)
- Trusted Distribution Guidelines (TD)
- Audit in Trusted Systems
- Computer Security Subsystems
- Computer Viruses
- Configuration Management
- Degausser Product List
- Design Documentation
- Discretionary Access Control
- Endorsed Tools List
- Formal Verification Systems
- Glossary of COMPUSEC Terms
- Guideline for Vendors
- Office Automation Guideline
- Password Management
- Product Evaluation Questionnaire
- Rating Maintenance Plan (RAMP)
- TCSEC-85 (orange book)
- TCSEC-83 (orange book)
- Trusted Facility Management
- Trusted Network Interpretation (TNI)

DOCKMASTER Resource Guide, Continued

The following forums are publicly available. To access any of these forums, enter the forum subsystem by typing “forum”. At the forum prompt, type the command “go” followed by either the long forum name or the short forum name. The first entry in the forum usually describes the nature of the forum and what information one may expect to find there. To get more information on how to read the forum entries, refer to the New User’s Guide to Multics sent with your account, send mail to “sysadmin”, or call the DOCKMASTER office. There are several other non-compusec related forum meetings that the DOCKMASTER user may be interested in. To get a list of these meetings, type “list_meetings” or “lsm” at the forum prompt.

Long FORUM Name	Short FORUM Name
CERT-TOOLS	cert-tools
Compusec_Papers_Database	cp
Computer_Security_Day	day
Conferences	conf
Criteria	criteria
DDN-News	ddn-news
ETHICS-L	ethics
IEEE_Cipher	cipher
Legislative_Issues	li
NBS_Conference	nbs
Nuance_Discussion	nuance
RISKS	risks
Security_Discussion	sd
Site_Security_Policy	site-sec
Tech_Guidelines_Info_Forum	tgif
Training_courses	tc
VIRUS-L	virus
WG-Security	wgs
announce	(no short name)
cert/accreditation	certify
epl	(no short name)
privacy_enhanced_mail	pem
privacy-digest	pd
privacy-issues	privacy

There is a menu driven program on DOCKMASTER that has information from the Products and Services catalog. To access that information just type “openair” and follow the directions on the screen. To create the menu, however, the user must have the PC or workstation terminal emulation software set to one that Multics supports for menu creation. The most popular ones are heath-19, vt100, vt102, and pcxt. A complete list can see viewed by typing “print >doc>iml_info>video_supported_list”. The openair program will ask for this information if it is required to draw the menu.

Mail Example

This example begins from the Unix command prompt >. User entries are shown in ***bold italics.*** The entries are from two accounts: *richard* and *feingold*, indicated by the square bracketed remarks.

```
[As richard]
> mail feingold
Subject: workshop demonstration
Well, do you think this will work? Remember to type control-d at the end. Okay?
<control-d>
EOT

[As feingold]
> mail
Mail version SMI 4.0 Wed Feb  7 23:10:16 PST 1990  Type ? for help.
"/usr/spool/mail/feingold": 3 messages 2 new 3 unread
 U  1 krvw@cert.org      Mon Nov 16 14:35  936/38857 VIRUS-L Digest V5 #180
>N  2 richard            Mon Nov 16 15:11   12/301   Re:  test
 N  3 richard            Mon Nov 16 15:19   14/358   workshop demonstration
& 3
Message  3:
From richard Mon Nov 16 15:19:21 1992
Return-Path: <richard>
Received: by  (4.1/SMI-4.1)
        id AA00471; Mon, 16 Nov 92 15:19:20 PST
Date: Mon, 16 Nov 92 15:19:20 PST
From: richard (RAF)
Message-Id: <9211162319.AA00471@>
To: feingold
Subject: workshop demonstration
Status: R

Well, do you think this will work? Remember to type control-d at the end. Okay?

& r
To: richard
Subject: Re:  workshop demonstration

Why did you send me this?
<control-d>
EOT
& h
 U  1 krvw@cert.org      Mon Nov 16 14:35  936/38857 VIRUS-L Digest V5 #180
 N  2 richard            Mon Nov 16 15:11   12/301   Re:  test
>   3 richard            Mon Nov 16 15:19   14/358   workshop demonstration
& s workshop_msg
"workshop_msg" [New file] 14/368
& q
>
```

eff Anonymous ftp Example

This example begins from the Unix command prompt >. User entries are shown in ***bold italics***.

```
> ftp ftp.eff.org
Connected to kragar.eff.org.
220 kragar.eff.org FTP server (Version 6.9 Tue Jul 7 15:53:04 EDT 1992) ready.
Name (ftp.eff.org:feingold): anonymous
331 Guest login ok, send E-mail address as password.
Password: feingold@local.sub.gov
230-If your ftp client chokes on this message, log in with a ‘-’ as the
230-first character of your password to disable it.
230-
230-If you have problems with or questions about this service, send mail to
230-ftphelp@eff.org; we’ll try to fix the problem or answer the question.
230-
230-Electronic Frontier Foundation newsletters and other information are in
230-pub/EFF and subdirectories thereof.  If you’re interested in official
230-EFF positions and philosophies, look here.
230-
230-For general information on the EFF, get pub/EFF/about-eff.
230-
230-Please read the file README
230-  it was last modified on Sat May  2 18:10:09 1992 - 193 days ago
230 Guest login ok, access restrictions apply.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
etc
pub
bin
users
ls-lR.Z
.notar
README
226 Transfer complete.
47 bytes received in 0.011 seconds (4.3 Kbytes/s)
ftp> get README
200 PORT command successful.
150 Opening ASCII mode data connection for README (279 bytes).
226 Transfer complete.
local: README remote: README
285 bytes received in 0.0027 seconds (1e+02 Kbytes/s)
ftp> cd pub
250 CWD command successful.
ftp> cd CUD
250 CWD command successful.
ftp> ls
200 PORT command successful.
```

eff Anonymous ftp Example, Continued

```
150 Opening ASCII mode data connection for file list.
Added
Index
.notar
cdugd
alcor
ane
ati
bootlegger
ccc
chalisti
cdc
cpi
cud
dfp
fbi
inform
law
lod
misc
narc
networks
nfx
nia
nsa
papers
phantasy
phrack
phun
pirate
ppp
schools
synd
tap
upi
wview
aotd
Index.~1~
Added.~1~
Added.~2~
Index.~2~
226 Transfer complete.
280 bytes received in 0.037 seconds (7.4 Kbytes/s)
ftp> cd bootlegger
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
bootlegger-6
bootlegger-7
226 Transfer complete.
28 bytes received in 0.0032 seconds (8.6 Kbytes/s)
```

eff Anonymous ftp Example, Continued

```
ftp> get bootlegger-7
200 PORT command successful.
150 Opening ASCII mode data connection for bootlegger-7 (101274 bytes).
226 Transfer complete.
local: bootlegger-7 remote: bootlegger-7
103885 bytes received in 56 seconds (1.8 Kbytes/s)
ftp> quit
221 Goodbye.
```

rn Example

This example begins from the Unix command prompt stc06>. User entries are shown in ***bold italics.***

```
stc06> rn
Unread news in ornl.education.general              111 articles
Unread news in ornl.mail.decstation-managers       21 articles
Unread news in ornl.mail.framers                   141 articles
Unread news in ornl.mail.info-afs                  57 articles
Unread news in ornl.mail.report-card               15 articles

******** 111 unread articles in ornl.education.general--read now? [ynq]n

********  15 unread articles in ornl…read now? [ynq] g alt.bbs.lists
******** 152 unread articles in alt.bbs.lists--read now? [ynq]y
Article 402 (151 more) in alt.bbs.lists:
From: delivery@ixgch.imp.com (Ixgate Delivery)
Newsgroups: ch.general,chcon.general,de.etc.lists,alt.bbs.lists,alt.bbs,comp.bbs
.misc,xgp.general
Subject: BBS-List of Switzerland (October 1992)
Date: 14 Oct 92 01:06:20 GMT
Followup-To: ch.general
Distribution: world
Lines: 976

          ***************************************
          The BBS-List Service of XGP Switzerland
          ***************************************
        distributing the Swiss BBS-List on the Internet!
      (See end of document for more details on this service.)

### BOT ###############################################################################
-------------------------------------------------------------------------
 BYTE RIDER's DREAM BBS LIST OF SWITZERLAND  **************  OCTOBER 1992
                USRobotix oder nix!
     Computers by AMIGA, Modems by USRobotics, support by MTV
-------------------------------------------------------------------------
--MORE--(2%)g
********   2 unread articles in alt.bbs.lists.d--read now? [ynq] g comp.risks
********   8 unread articles in comp.risks--read now? [ynq]y
Article 142 (7 more) in comp.risks (moderated):
From: risks@CSL.SRI.COM (RISKS Forum)
Subject: RISKS DIGEST 13.86
Date: 24 Oct 92 20:39:50 GMT
Distribution: world
Organization: The Internet
Lines: 602

RISKS-LIST: RISKS-FORUM Digest  Saturday 24 October 1992  Volume 13 : Issue 86
```

rn Example, Continued

```
      FORUM ON RISKS TO THE PUBLIC IN COMPUTERS AND RELATED SYSTEMS
   ACM Committee on Computers and Public Policy, Peter G. Neumann, moderator

  Contents:
Software Bombs Out -- Ark Royal revisited (Simon Marshall)
Erased Disk used against Brazilian President (Geraldo Xexeo)
The NSF Net cable-cut story (Steve Martin via Alan Wexelblat)
Risks in Banking, Translation, etc. (Paul M. Wexelblat)
Re: 15th National Computer Security Conference (Dorothy Denning)
Re: Vote Early, Vote Often (Louis B. Moore)
T*p S*cr*t (Berry Kercheval)
Book Review: The Hacker Crackdown (David Barker-Plummer)
Filling station POS terminals: credit card users beware! (Steve Summit)
Int Workshop on Fault and Error Models of Failures in Comp Sys (Ram Chillarege)
--MORE--(4%)
End of article 142 (of 149)--what next? [npq] s

File /usr/u1/fgq/News/Comp.risks doesn’t exist--
      use mailbox format? [ynq]y
Saved to mailbox /usr/u1/fgq/News/Comp.risks
End of article 142 (of 149)--what next? [npq]q

******** 194 unread articles in comp.robotics--read now? [ynq]q
stc06>
```

NIST Dial Up Electronic Bulletin Board System Example

In this example, access is via a Hayes compatable modem. User entries are shown in ***bold italics***. Note that the NIST electronic bulletin board system can also be accessed via ftp.

```
atdt 3019485717

RRING

CONNECT 2400
Welcome to NIST CSRC BBS - Node 2 (Reliable)

For faster login, enter FIRSTNAME LASTNAME PASSWORD

What is your FIRST name?
What is your LAST name? Richard Feingold

Checking Users…
User not found
Are you 'RICHARD FEINGOLD' ([Y],N)? y
What is your CITY and STATE? Livermore, CA

Welcome to the National Institute of Standards and Technology -

[…disclaimer/responsibility information deleted…]

by the National Institute of Standards and Technology.

                      *   *   *   *   *

RICHARD FEINGOLD from LIVERMORE, CA
C)hange FIRST name/LAST name/CITY and STATE, D)isconnect, [R]egister? r
Enter PASSWORD you’ll use to logon again (dots echo)? mypassword
Re-Enter password for Verification (dots echo)? mypassword
Please REMEMBER your password
Welcome to RBBS-PC, Richard.  Your security level 5 indicates that you have
sufficient security to access this BBS.  You have 60 (mins:secs) for
this session.
Logging RICHARD FEINGOLD
RBBS-PC 17.3C Node 2, operating at 2400 BAUD-R,N,8,1

Telling sysop you’re on…
        Welcome to the NIST Computer Security Bulletin Board

This Bulletin Board is maintained by the Computer Systems Laboratory
and is intended to encourage the sharing of information that will help
users and managers beter protect their data and sytems.  The mention
of vendors or product names does not imply criticism or endorsement by
the National Institute of Standards and Technology or by the SYSOP.

Sysop: Marianne Swanson
Technical Questions: John Wack
Voice: (301) 975-3359
```

NIST Dial Up Electronic Bulletin Board System Example,
Continued

```
         301-948-5717 -->     300/1200/2400     Node 1
                      -->    300/1200/2400     Node 2
         301-948-5140 -->   1200/2400/9600    Node 3
                      -->  1200/2400/9600    Node 4

         Internet:  telnet to cs-bbs.ncsl.nist.gov (129.6.54.30)
                    download files available via anonymous ftp
                    from csrc.ncsl.nist.gov (129.6.54.11)

*********************************************************************
* Note: by continuing, you explicitly acknowledge that all messages,*
* private and public, may be read by others, including the sysop(s).*
*********************************************************************

* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *

************************   NEWS   ***********************************
   February 18, 1993

   The draft Federal Criteria is now available in ascii.  Bulletin 39
   describes the document and lists all of the available formats for
More [Y]es,N)o,C)ont,A)bort,J)ump? y

   dowloading.

   NIST Special Publication 800-5 and 800-6 are also now available in
   ascii.  Several new alerts have been posted as well as a proposed
   guideline on sentencing criminals.

   We have been having periodic problems with our Internet connection.
   Efforts are being made to correct the situation.

**********************************************************************
At least 0 NEW file(s) since last on

* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *

                         BULLETIN TOPICS MENU

   1   Using the BBS - READ THIS!         NOTE: Viewing Bulletins is NOT
                                          straightforward!  The BBS makes
   2   Computer Security Alerts           you view all bulletins from this
                                          menu only.  For example, after
   3   NIST Publications                  displaying sub-menu 1 you want to
                                          view Bulletin 16, return to this
   4   Upcoming Events & Activities       menu and then enter '16' at the
                                          prompt at the bottom of this menu.
   5   Of General Interest
                                          TO DOWNLOAD BULLETINS, first note
   6   Resources                          the bulletin numbers. Quit this menu,
                                          go to the Main Menu & type 'F' to go
   7   Computer Security Organizations    to the File Menu. Then type 'D' to
                                          download. To download Bulletin 24,
   8   Virus-L and Risks Forum            ex., use filename 'BULLET24'

Read what bulletin(s), L)ist, S)ince, N)ews ([ENTER] = none)? 2
```

NIST Dial Up Electronic Bulletin Board System Example,
Continued

```
* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *

                             Computer Security Alerts (2)

The Alerts are placed in chronological order according to the date --
most recent at the top of the list.  There are nine bulletins listed
at any given time.  The old bulletins are located in the file section
under the "Alerts" Directory.  The old bulletins can only be viewed by
downloading them.

   Date                   Topic                             Bulletin #
 --------              ------------                      ------------


02-18-93      Revised Commodore Amiga UNIX finger               29
              Vulnerability
              CERT Advisory

02-17-93      Failure to disable user accounts for              21
              VMS 5.3 to 5.5-2
              CIAC Information Bulletin
More [Y]es,N)o,C)ont,A)bort,J)ump? n

[…Menu repaint omitted…]

Read what bulletin(s), L)ist, S)ince, N)ews ([ENTER] = none)? 1

* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *
                        Using the BBS (1)

The following bulletins contain information on how to use this bbs.
It is advisable to read these bulletins first before attempting to
use the board.  The instructions for downloading bulletins and files
offers a step by step approach that should prove very useful.

 Bullet #   Last Updated    Topic
 --------   ------------    -----
    11        09-28-89      General Information

    12        03-25-92      Accessing the BBS

    13        11-21-91      About Bulletins

    14        11-21-91      About Files

    15        09-28-89      Messages to the "Sysop"

    16        03-25-92      Download and FTP Bulletins and Files

    17        03-27-90      Upload Policy

    18        02-06-92      Obtaining this BBS software

    **NOTE:  An extensive User's Guide is available by either contacting
      Clare Lucey at 301-975-3359 or by downloading the file "BBSGUIDE.TXT"
      from this BBS.
* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *
```

NIST Dial Up Electronic Bulletin Board System Example,
Continued

```
[…Menu repaint omitted…]

 Read what bulletin(s), L)ist, S)ince, N)ews ([ENTER] = none)?<cr>
Checking messages in MAIN….    ..
Sorry, RICHARD, No mail for you

RBBS-PC 17.3C Node 2

Caller #  63477  # active msgs: 719  Next msg # 2899

             ------*>>>   RBBS-PC  MAIN MENU   <<<*------
----- MAIL ---------- SYSTEM ---------- UTILITIES ------ ELSEWHERE ---
 [E]nter Messages  [A]nswer Questions [H]elp (or ?)
 [K]ill Messages   [B]ulletins                            [F]iles
 [P]ersonal Mail   [C]omment to Sysop                     [G]oodbye
 [R]ead Messages   [I]nitial Welcome  [X]pert on/off      [Q]uit
 [S]can Messages                                          [U]tilities
 [T]opic of Msgs   [W]ho's on          * = unavailable
----------------------------------------------------------------------
   Current time: 11:19 AM  Minutes remaining: 55     Security: 5
----------------------------------------------------------------------
MAIN: 55 min left
MAIN command <?,A,B,C,E,F,G,H,I,K,P,Q,R,S,T,U,V,W,X>? g
Log off (Y,[N])? y

Now: 03-02-1993 at 11:20:54
On for 5 mins, 54 secs
 60 min left for next call today
RICHARD, Thanks and please call again!
```

CIAC Anonymous ftp Example

This example begins from the Unix command prompt >. User entries are shown in ***bold italics.*** Note that the name *CIAC* will be changing to *ciac*.

```
> ftp CIAC

Connected to CIAC.llnl.gov.
220 CIAC.llnl.gov FTP server (Version 6.22 Wed Jan 27 09:36:28 PST 1993) ready.
Name (CIAC:feingold): anonymous
331 Send e-mail address, name, organization, and phone number as password.
Password:  feingold@sub.domain.gov, Richard Feingold, CIAC, 510.555.1212
230-  This is the CIAC archive, provided and maintained by
230-  the Computer Security Group, Lawrence Livermore National
230-  Laboratory.
230-
230-  All activity is logged with your host name and e-mail address.
230-
230-  If your FTP client crashes or hangs shortly after login, try
230-  using a dash (-) as the first character of your password.
230-
230-  Send comments/questions/problems to: ciac@llnl.gov
230-
230-
230 Guest login ok, access restrictions apply.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
lost+found
etc
bin
pub
usr
dev
.login_message
0-index.txt
incoming
226 Transfer complete.
76 bytes received in 0.016 seconds (4.8 Kbytes/s)
ftp> cd pub
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
spi
ciac
felix
tmp
util
sun
patches
```

CIAC Anonymous ftp Example, Continued

```
226 Transfer complete.
43 bytes received in 0.011 seconds (3.9 Kbytes/s)
ftp> cd ciac
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
virus-l
news.txt
docs
.private
pcvirus
pcutils
macvirus
macutils
atarivir
reviews
books
ciacdoc
certdoc
ddndoc
nasaspan
nistdoc
ihg
226 Transfer complete.
149 bytes received in 0.023 seconds (6.2 Kbytes/s)
ftp> pwd
257 “/pub/ciac” is current directory.
ftp> cd ciacdoc
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
fy89
a-fy90
b-fy91
c-fy92
d-fy93
xref.txt
226 Transfer complete.
48 bytes received in 0.0097 seconds (4.8 Kbytes/s)
ftp> cd d-fy93
250 CWD command successful.
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for file list.
d-01.ciac-novel-access-rights
d-02.ciac-(*limited-distribution*)
d-03.ciac-vms-MONITOR-patch
d-04.ciac-sunos-18-patches
0-index.txt
```

CIAC Anonymous ftp Example, Continued

```
intro.txt-introduction-to-CIAC
ciacreqs.txt-ciac_doe_requirements
d-05.ciac-hp-NIS-ypbind
226 Transfer complete.
230 bytes received in 0.016 seconds (14 Kbytes/s)
ftp> get d-03.ciac-vms-MONITOR-patch
200 PORT command successful.
150 Opening ASCII mode data connection for d-03.ciac-vms-MONITOR-patch (7249 bytfes).
226 Transfer complete.
local: d-03.ciac-vms-MONITOR-patch remote: d-03.ciac-vms-MONITOR-patch
7382 bytes received in 0.12 seconds (61 Kbytes/s)
ftp>  bye
221 Goodbye.
>
```

CIAC Electronic Bulletin Board System Example

In this example, access is via a Hayes compatable modem. User entries are shown in ***bold italics***. Note that the electronic bulletin board system can also be accessed via ftp.

```
atdt 5104234753

RRING

CONNECT 2400

                WARNING:  Unauthorized access to this
              computer system is prohibited.  Violators
             are subject to criminal and civil penalties.

                         WELCOME TO FELICIA

This BBS is run by the Computer Incident Advisory Capability (CIAC).
All users must register and truthfully answer the newuser questionnaire.

First Name? Richard
Last Name? Feingold
Searching User File …
Calling from (City,State)? Livermore, CA

TBBS Welcomes RICH FEINGOLD
Calling From LIVERMORE, CA
Is this correct? y
# Chars per line on screen(10-132)? 80

<A>VIDTEX       <B>TRS-80 1/3   <C>VT-52        <D>ATARI        <E>H19/H89/Z19
<F>IBM PC       <G>Televid 925  <H>VT-100       <I>Mac Versater <J>Dum TTY

Enter letter of your terminal, <CR> if not listed: h

Terminal Profile Set to:
No ANSI codes Allowed
No IBM Graphics Allowed

Upper/Lower Case
Line Feeds Needed
0 Nulls after each <CR>
Do you wish to modify this? N
Do you wish to have a pause after each display page (Y/N)? N

Please Enter a 1-8 character Password to be used for future logons.   This
password may have any printable characters you wish.  Lower case is considered
different from upper case and imbedded blanks are legal.  REMEMBER THIS
PASSWORD.  You will need it to log on again.

Your password? mypswd
You have read through message 0
Current last message is 191
You are caller number 1726
You are authorized   60 mins this call
```

CIAC Electronic Bulletin Board System Example, Continued

```
                     Policies of Felix

[…Policy and disclaimer omitted…]

      |  The Computer Incident Advisory Capability Bulletin Board  |
      |          Voice:Com/FTS (510)422-8193                       |
      |          Data:Com/FTS (510)423-4753  2400 baud             |
      |               Com/FTS (510)423-3331  9600 baud             |
      |       Your friendly Sysops are Bill and Karyn              |
      +------------------------------------------------------------+

      This board is run by CIAC for the Department of Energy.

[…Informational messages omitted…]

New User Registration Section

Do you work for a DOE site?
<Y>es
<N>o
<S>kip registration.

Command: y
Registration for DOE sites.
Enter your full name:Richard Feingold
Organization:LLNL
Address Line 1:L-303
Address line 2:P.O. Box 808
City, State, ZIP:Livermore, CA 94551
Commercial Telephone Number:510.422.1783
FTS Telephone Number:510.422.1783
Responsible DOE field office (SAN, ID, etc.):SAN
Richard Feingold
LLNL
L-303
P.O. Box 808
Livermore, CA 94551
510.422.1783
510.422.1783
SAN

Is this correct (Y/N)?y

FELICIA BBS - Main Menu
Computer Incident Advisory Capability
=====================================

<*> Information on TBBS
<N>ew Files On Felicia
<B>ulletins and System Notices
<F>ile Transfer Section
<M>ail and dialog with Felix users
<V>irus Database
<R>ecent callers
<T>ime on the system
<U>tilities Section
<G>oodbye
```

CIAC Electronic Bulletin Board System Example, Continued

```
Command: f

FELICIA BBS - File Transfer Section
Computer Incident Advisory Capability
=====================================

<D>ownload Area
<U>pload Area
<->Previous Menu
<T>ime on the system
<G>oodbye

Command: d

FELICIA BBS - File Download Section
Computer Incident Advisory Capability
=====================================

Select A Download Area From The Following List

<M>acintosh Files
Macintos<h> Utility Programs
<P>C Files
PC <U>tility Programs
<A>tari files
<L> Incident Handling Guidelines
<C>IAC Documents
C<E>RT Documents
<N>IST Documents
<D>DN Documents
NA<S>A-SPAN documents
<V>irus-L Moderated News
<R>eviews of anti-virus software
<O>ther useful stuff.
<->Previous menu
<T>ime on the system
<G>oodbye

Command: o
Type P to Pause, S to Stop listing

                         ETC DIRECTORY
 This directory contains useful things that don't fit into our other
 categories.

  ---------- Notices and Guides ----------
BIBLIO.TXT      3463   2-05-92  Bibliography of virus books.
GRADSCH.TXT     3537  12-09-91  Grad schools with Comp Security Progs.
CIACDB.ZIP    110025   3-25-91  CIAC virus database (big)
DES.TXT        22455   1-30-90  General information on DES encryption
FATHER_X.TXT   41966   1-11-90  A full report on the Father Xmas worm
GUIDANCE.TXT   13568  12-17-84  General guidance on computer security
FTPSITES.TXT   35737   1-11-90  Common FTP sites on the Internet

<D>ownload, <P>rotocol, <E>xamine, <N>ew, <H>elp, or <L>ist
Selection or <CR> to exit:<cr>
```

CIAC Electronic Bulletin Board System Example, Continued

```
FELICIA BBS - File Download Section
Computer Incident Advisory Capability
=====================================

Select A Download Area From The Following List

<M>acintosh Files
Macintos<h> Utility Programs
<P>C Files
PC <U>tility Programs
<A>tari files
<L> Incident Handling Guidelines
<C>IAC Documents
C<E>RT Documents
<N>IST Documents
<D>DN Documents
NA<S>A-SPAN documents
<V>irus-L Moderated News
<R>eviews of anti-virus software
<O>ther useful stuff.
<->Previous menu
<T>ime on the system
<G>oodbye

Command: g

FELICIA BBS - Termination Section
Computer Incident Advisory Capability
=====================================

Do you want to leave a message for the
SYSOP?

<Y>es
<N>o

<->Return to previous menu

Command: n

Logged on at 13:17:45
Logged off at 13:20:38

Thanks for calling FELICIA
Please Hang Up Now
```

References

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LaQuey, Tracy, with Ryer, Jeanne C., *The Internet Companion—A Beginner's Guide to Global Networking*, Addison Wesley, 1993

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Appendix B: Contacting CIAC

Contacting CIAC

Phone	(510) 422-8193
Fax	(510) 423-8002
STU-III	(510) 423-2604
Electronic mail	ciac@llnl.gov
Emergency SKYPAGE	800-SKYPAGE pin# 855-0070
Anonymous FTP server	ciac.llnl.gov (IP 128.115.19.53)
BBS	(510) 423-3331 (9600 Baud) (510) 423-4753 (2400 Baud)

Reader Comments

CIAC updates and enhances the documentation it produces. If you find errors in or have suggestions to improve this document, please fill out this form. Mail it to CIAC, Lawrence Livermore National Laboratory, P.O. Box 808, Mail Stop L-303, Livermore, CA, 94551-9900. Thank you.

List errors you find here. Please include page numbers.

List suggestions for improvement here.

Optional:

Name ______________________________ Phone ______________