

Computer and Information Services Newsletter

This newsletter is an information resource for the University of Minnesota.

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▼ Computer Store News

Williamson Hall: 625-3854

The computer discount program is available to members of the University community, subject to the eligibility rules of the program.

28.8 V.34 Modem

You can purchase external V.34 28.8 Supra Fax modems for IBM-compatibles and Macs for under \$220. As noted in the V.34 sections of University Networking Services' Web page, this modem is compatible with the 28.8 SLIP modem pool the University is preparing. Go to this URL for more details:

<http://www.unet.umn.edu>

Networking Services Fiscal Year 1995

An Abbreviated Overview

Excerpts from a Networking Services FY 95 report by Lawrence Liddiard <liddiard@unet.umn.edu>. The entire document will be on the Web and available via this URL <http://www.unet.umn.edu>

This overview touches on • the status of cabling to University buildings • the current and future SLIP modem pool(s) • managing Internet traffic growth • Novell LANs • Ethernet repeater hubs • and networking experiments.

It Keeps Doubling

The University Backbone Network is a joint production of Networking Services, Telecommunication Services, and many departmental groups. To describe what happened last year and what we expect for next year, we must look at the whole network and say it, again, doubled in size. (Editor's note: for this overview we will look at just a few items.)

Consumer 28.8 V.Fast modems will not work with the newest authenticated modem pool.

We're testing some consumer 28.8 V.34 modems for compatibility with our setup.



Printed on recycled paper.
Addressing & Mailing's
Cheshire labels are recyclable.



Buildings: Fiber Optic Cabling

Most of the fibers connecting buildings to Telecommunications are either 50 or 62.5 micron multimode, which have bandwidth ranges of 500-725 (Mhz-km).

Beginning in FY 1994 all new fiber runs are composite or single mode bundles to enable higher network bandwidth in the future. The unshielded twisted pair (UTP) wiring connecting repeater hubs in closets to host (which had been Category 3) were changed to Category 5 beginning in FY 1994.

Modems: Authenticated Pool

Last Year ↵ We increased the number of authenticated modems a factor of five during FY 1994 (64 to 320).

When the pool, which is on the Health Sciences switch, was expanded to 181 in November 1993, voice service on that switch was damaged. Additional Direct Inward Dial lines were leased by Telecomm from US West to solve the voice-busy signals. Telecomm has been busy installing the modem pool and monitoring it on a daily basis for hung or bad modems.

This Year ↵ In October the SLIP pool was expanded from 320 to 400 modems.

A Telecomm, Networking Services, and Distributed Computing Services committee was formed to select the next level of modems. Quad US Robotics V.34-28,800 bps modems in a compact chassis fed by T1 connections were selected. These are connected to terminal servers able to handle the modem's 115 Kbps digital side.



SLIP access to the University's network is limited. A security system called TACACS (Terminal Access Control and Authority Control System) controls who can connect to a SLIP server.

Late deliveries of the V.34 chassis and US West bundled Centrex lines delayed the new 192 modems beyond the announced January installation. Final checkout and testing are expected to be completed soon.

Next Year ↵ The 192 V.34 modem pool will be doubled to 384.

SLIP and 28.8 Modems

Consumer 28.8 V.Fast modems will not work with the newest authenticated modem pool. We're testing some consumer 28.8 V.34 modems for compatibility with our setup.

Some background ↵ Cisco AS51 terminal server cards allow TACACS authentication and are used in the US Robotics V.34 (28,800 bits/second) modem chassis. On the digital side, before or after compression, they handle up to 115,200 bits/second. The older terminal servers, which also allow TACACS authentication, are Cisco ASM/4s. Digitally, before or after compression, they handle up to 38,400 bits/second.

External Internet

Background ↵ Before November 1993, the University was connected by single T1 (1.544 Mbps) links to the Universities of Wisconsin and Iowa as part of CICNet's Western ring.

Those links were then replaced with two T1 direct links to Downer's Grove in Illinois. In August 1994, an additional T1 connection was added. Our shared connection to the 'information highway' changed in April 1995 from 3 T1 lines to a T3 circuit (28 T1 lines).

Next Year ↵ To keep up with daily traffic more than doubling each year, at least 8 T1 direct lines (29% of the 28 T1s in a T3) would have been needed next year. Thus the T3 shared with MRNet (Minnesota Regional Network) should allow us growth room for about 2.4 years (October 1997). Table 1 shows Internet traffic growth for FY 1992-95.

LANs and Routers

Networking Services encourages users with LocalTalk connected Macintoshes to switch to EtherTalk to get 2 to 4 times more throughput.

**To get 2 to 4 times more throughput,
switch from LocalTalk to EtherTalk.**

Novell LANs

Last Year ↗ The new 4.0 version of NetWare was going to eliminate the directory problems associated with the server-based Bindery of past versions. The initial version of 4.0, not as reliable as 3.11, had a version of NetWare Directory Services (NDS) that changed in the 4.01 release and required reinstalling everything. In addition the needed directory management tools are not expected until the next version.

This Year ↗ Continued slow migration of the 125 Novell LAN servers at the University to 4.1 NetWare. Most users stayed with Novell 3.12 for FY 1995 but are expected to change to 4.1 in FY 1996. A survey in April 1995 revealed 334 Ethernet connected printers on those 125 Novell servers.

Twisted Pair Ethernet Repeater Hubs

Last Year ↗ The number of Ethernet repeater hubs, mainly HP EtherTwist, monitored by Networking Services, increased from 311 in April 1993 to 605 in April 1994.

Networking Services recommends no more than 50 to 60 devices for the average Ethernet LAN. For intensive network use, only 10 to 15 of the faster RISC or Pentium processors should be on the same LAN.

This Year ↗ The older hubs are repeaters that allow every connected device to see all packets on their LAN. Last Fall HP started delivering a more secure Advance Stack hub that, while repeating, garbles the packet information to those ports not having the destination address. At \$50/port, the 24 port secure model has a lower per port cost than the older 12 port hubs. Telecomm installs approximately 300 new Ethernet hubs each year, and University Networking Services (UNS) provides current and future IP addresses for these production hubs.

Next Year ↗ For Ethernet switching hubs, instead of repeating all information on every port, have separate Ethernet connectability for each port. Such hubs will be used for sites needing increased bandwidth for each host. UNS is investigating which Switching Ethernet hub to recommend attaching to the University backbone with normal Ethernet channels (later ATM). These will also have a couple of 100 Mbps Ethernet channels for high bandwidth server use within a department.

Table 1: External Internet Growth

Daily Volume & Path Megabytes per Day	FY 92-93			FY 93-94		FY 94-95	
	Apr-92	Apr-93	Growth %	Apr-94	Growth %	Mar-95	Growth %
U of MN traffic:							
• into U of MN	1,123	2,699	240	5,572	206	11,224	201
• out of U of MN	970	1,619	167	7,797	482	14,812	190
Total U of MN	2,093	4,318	206	13,369	310	26,036	195
Minnesota state traffic (i.e. U of MN & MRNet) via CICNet							
• into Minn	1,774	4,868	274	8,964	184	22,378	250
• out of Minn	1,419	4,890	345	9,638	197	22,174	230
Total Minn	3,193	9,758	306	18,602	191	44,552	240

Cost Crunch ↵ 24 port HP hubs with SNMP protocol average \$1,200; so about \$180,000 was spent to install 154 hubs last year. If Ethernet Switching hubs had been used, the cost would have been \$1,800,000 at the \$500/port cost during this year. Waiting for the cost to decrease often benefits the University when its large numbers are involved. Some users need the increased bandwidth at the extra cost.

Ethernet Connections Between the Backbone and Buildings

Last Year ↵ Most buildings are connected to Telecommunications by 600 total miles of either 50 or 62.5 micron, multimode fibers, which have bandwidth-ranges of 500 to 725 (Mhz-km).

At the request of Networking Services, Telecommunications has been adding 8.7 micron, single mode fiber to new runs. Single mode has a bandwidth-range of 20,000, which allows future OC-48 signaling of 2.4 Gbps to go 8 kilometers. The first 10,000-foot composite of 12-62.5 multimode and 12-8.7 single mode fiber strands was installed by April 1994.

Buildings connected via fiber or full Ethernet from April 1993 to May 1994:

- Agronomy, Appleby, Architecture
- Boynton Health, Burton Hall
- Child Development, Christiansen Lab,
- Como Yard, Comstock Hall
- Elliott Hall
- Ferguson Hall, Food Stores, Fraser Hall
- Gortner Lab
- Law Building
- Masonic Cancer Center, Middlebrook Hall
- Rarig Center
- Shevlin Hall
- Variety Club Research Center, Veterinary Teaching Hospital,
- VFW Cancer Research
- Weisman Art Museum, Wulling Hall

This Year ↵ Those buildings connected via fiber or full Ethernet from May 1994 to May 1995:

- Asbestos Group
- Bierman Athletic
- Centennial Hall, Ctr for Magnetic Resonance, Chemical Store House, Children's Rehabilitation, Coffman Memorial Union
- Eddy Hall
- Ford Hall, Frontier Hall
- Gibson/Nagurski FPF
- Heavy Equipment Yard

Most buildings are connected to Telecom by 600 total miles of fiber.

- Johnston Hall, Jones Hall
- MN Daily Offices
- Northrup Memorial Auditorium, North Central Forestry
- Pattee Hall, Pioneer Hall, Police Department (University)
- St. Paul Student Center
- Territorial Hall, Transportation & Safety
- YMCA (old),
- 19 St. Ramp (West Bank)

Several buildings are multi-connected to the backbone network (some in a shared load mode) to increase their total bandwidth. Buildings with more than one Ethernet:

(S are shared loading)	93-Apr	94-May	95-Apr
Amundson Hall	1	3	3
Elec Engr/Computer Sci	1	2S	2S+1
FMC (1300 2nd)	1	1	2S
Lauderdale Computer Facility	2S	4S	5S
Lind Hall	1	3	3
Mechanical Engineering	1	2S	2S
Shepherd Labs	2	2	2

Next Year ↵ Composite fiber will be laid to several University sites that require the bandwidth-distance capacity of single mode fiber. In addition Telecomm will continue to replace the slower 960,000 bps LANMark product available through the University's IBX phone system with Ethernet connections when feasible.

Cost Crunch ↵ Twenty-four strands of composite fiber costs \$2 per foot. Connecting 48 buildings in the past two years cost Telecommunications \$300,000 for fiber runs.

The entire FY 1996 Telecomm fiber budget will be required for the 144 single mode fibers being installed from the Telecomm building through West Bank to 1300 2nd (the Trans-River Project). The last quotation for new fiber to Saint Paul was \$340,000 and should be done sometime in late FY 1996.

Networking Experiments

This Year ↗ Remote dial-in products for Novell IPX and AppleTalk ARA were tested, but found lacking in some aspects. The announcement of V.34 standards for modems in Fall of 1994 further delayed delivery of this service. Telecomm expects shortly to deliver a departmental modem pool service.

A six-month trial of ATM (Asynchronous Transfer Mode) switching, involving Networking Services in Lind Hall, Computer Science, Health Sciences, and the Minnesota Supercomputer Institute, was completed. This used both single and multimode fiber to transmit to hosts and switches at 100 Mbps (TAXI) and 155 Mbps (OC-3).

Next Year ↗ UNS plans to begin an interoperability test/limited production ATM service. This will include the current departments using ATM and add the Center for Magnetic Resonance, the Geometry Center, Electrical Engineering, and some work with the Saint Paul NSF grantees. The ATM switches will be FORE ASX200s and Cisco LS100s. The ATM Forum expects vendors to provide LAN Emulation (needed to connect ATM switches with our legacy routers) sometime in FY 1996.

Training: Computer Short Courses

▼ Networks and Multimedia

We've expanded our classes to include more hands-on Internet training and two multimedia courses. We'll offer these popular courses again during the school year. Brief descriptions of these new offerings are below.

Complete information on all our classes is available electronically through the Internet, as shown below. For more information you can call our office at 625-1300.

- Internet Gopher ↗ follow this path:
Computer Information/Computer & Information Services Short Courses
- Web at this URL:
<http://www.micro.umn.edu>

▼ An Introduction to Using Internet Tools and Services

These hands-on Gopher, World Wide Web, Telnet, FTP, and Usenet News classes are offered in a new 3-hour format in order to cover each tool in more detail.

Each Mac and PC class begins with a 10-minute discussion of networking basics. Prior experience using a Macintosh or PC/Compatible is required. The fees for each 3-hour class are \$5/15/30.

Gopher ↗ Use TurboGopher or Minuet to access the wealth of information known as "Gopherspace." By completing this class and individual exercises, you'll learn how to create bookmarks to easily access your favorite sites, search Gopherspace using VERONICA, use Gopher subject catalogs, and jump directly to given Gopher items.

World Wide Web ↗ Learn how to use a World Wide Web (WWW) client such as MacWeb or Minuet to browse the Web. You'll learn how to create bookmarks to quickly access your favorite sites, to search the Web for particular topics, access WWW subject catalogs, and jump to given locations.

Telnet and FTP ↗ The first part of Telnet and FTP will explain how, why, and when to use Telnet to communicate with certain computers on the Internet. Examples will be given of connecting to systems that provide you with useful information, such as library computers (LUMINA). You will also complete some Telnet exercises. The second part will explain how and why to use the File Transfer Protocol (FTP) to transfer files to and from a remote computer system and how to search Internet FTP sites using Archie. Related file concepts will also be discussed. Examples of useful FTP sites will be given, along with some interesting exercises.

Usenet News ↗ Be introduced to the hidden world of Usenet and Usenet news groups. We will discuss what Usenet is and isn't in detail and talk about netiquette, the news group hierarchy, reading and subscribing to news groups, different types of news groups, news threads, etc. We will also give examples of some very useful news groups for new users and for people in the University community. Exercises in this section will help guide you through this new and exciting world.

▼ Introduction to Director

This 5-hour class is for experienced Mac users who want to learn how to use Director to author multimedia materials. During the class you'll create a basic multimedia presentation containing text, graphics, animation, and sound.

▼ Intro to Adobe PhotoShop

This 5-hour class is for experienced Mac users who want to learn how to use PhotoShop to edit photos and create artwork. We'll cover basic painting and editing tools, palettes, and filters. You will use these tools on professional stock photos to create a new composition and design a logo.

New Minnesota Census Information Available through Gopher

University Libraries: information released at Minnesota Census Data Center's annual meeting



All Minnesota Census tables from the STF3 CD-ROM, for counties, cities, and townships, have been made available on Gopher. (Figure 1) Try it out; we hope it will be useful to you.

Cities, Townships, Counties

The Cities and Townships file and the Counties file may be searched for names, or the desired places may be chosen from an alphabetic list. For multi-county cities, you may find data for each county part as well as the full record. For each place, all of the STF3 tables are displayed, with table number (P1-127, H1-71); Figure 2 shows an example. They are grouped by broad subject and displayed in table number order. It is also possible to search for any term in table names, for example race or education.

Give us Feedback

The raw data is also available on Gopher, as an experiment to see if users who want to download the

data into their own programs will find that useful. Some cross-tabulations are also being prepared.

Like many Gopher projects, this remains under development. General comments or suggestions for additions and enhancements are welcome. Send E-mail to the Government Publications Library at the University ([govref@maroon.tc.umn.edu](mailto:goref@maroon.tc.umn.edu)) or phone Julia Wallace at (612) 626-7520.

Minnesota Population Estimates

The University Libraries have also loaded the Minnesota Population Estimates from the State Demographer's Office, and will add other files as available. Feel free to make pointers to these files from your own Gophers or Web sites.

Accessing the Data on Gopher

To point directly to the 1990 Minnesota Census Data, here are the specifics:

Figure 1: Minnesota Census Offerings

U.S. Census Data for Minnesota 1990

About Minnesota Census Data
Cities and Townships in Minnesota
Counties in Minnesota
Cross Tabulations of Census Data for Minnesota
Raw Census Data
Search Cities and Townships in Minnesota by Name <?>
Search Counties in Minnesota by Name <?>

Figure 3: Statistics and Census Data URL

`gopher://cutter.lib.umn.edu:70/11/subject-list/government-pubs`

1. Access the University of Minnesota main Gopher
<gopher.micro.umn.edu>
2. Choose Libraries/Government Information /Statistics and Census Data <the URL is shown in Figure 3>
3. From this menu you may choose
 - U.S. Census Data for Minnesota 1990 or
 - Population Estimates (MN State Demographer's Office), 1993.

Other items on this menu point to census data on other Gophers.

Figure 4 contains additional information if you plan to access it directly.

This project is a cooperative effort of the University of Minnesota Distributed Computing Services and the University Libraries — Julia F. Wallace, Government Publications Library.

Figure 2: Selection from • Minnesota Census Data • Cities & Townships • International Falls • Education and Employment Data

P49. MEANS OF TRANSPORTATION TO WORK		
Universe: Workers 16 years and over		
Car, truck, or van:		
Drove alone.....	2,341	
Carpooled.....	376	
Public transportation:		
Bus or trolley bus.....	234	
Streetcar or trolley car.....	0	
Subway or elevated.....	0	
Railroad.....	0	
Ferryboat.....	0	
Taxicab.....	2	
Motorcycle.....		
Bicycle.....	60	
Walked.....	435	
Other means.....	27	
Worked at home.....	88	

Figure 4: Additional information about Census Data on Gopher

```
Type=1+
Name=1990 Minnesota Census Data
Path=1/census-data
Host=soundgarden.micro.umn.edu
Port=70
<URL:gopher://soundgarden.micro.umn.edu:70/11/census-data>
```

New & Remote Access to COMPENDEX

Ann C. Eastham, Chemistry Librarian, Science, Engineering Library

Bibliographic Database

 The Science and Engineering Library staff is pleased to announce that COMPENDEX, the leading bibliographic database in the field of engineering, can now be accessed remotely by University of Minnesota students, faculty and staff. All you need is a computer with Telnet capabilities. [Information about Telnet accessibility is available at the end of this article.]

COMPENDEX indexes the literature of all engineering fields, as well as the related fields of applied mathematics and physics, electronics, and materials science. Citations are drawn from roughly 2600 sources worldwide, including journals, conference proceedings, and some books and technical reports. Dates of coverage extend from 1987 to the present, with monthly updates.

How to Access

To access COMPENDEX, simply Telnet to

biomed.lib.umn.edu

and type

umn

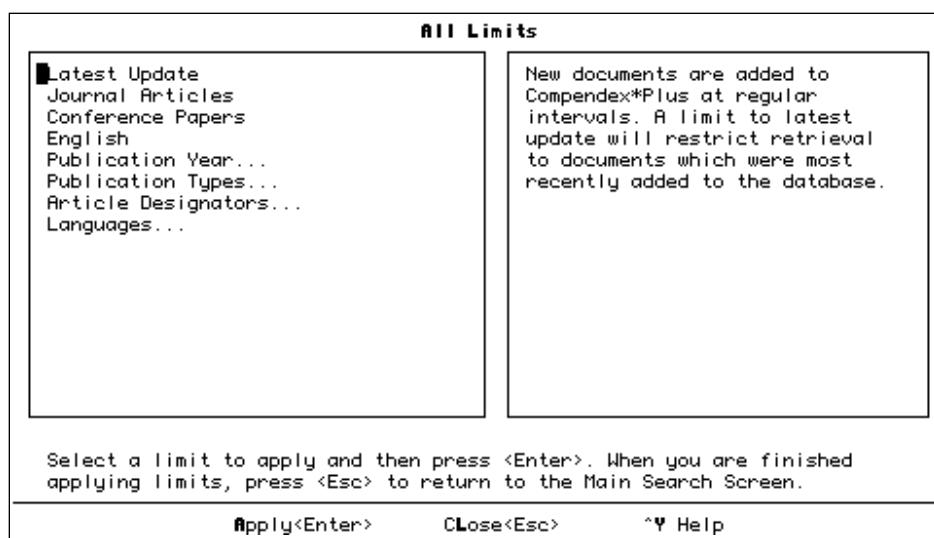
(lowercase) at the login prompt. Follow the prompts and enter your username and password from your Gold, Maroon, or other X.500 account.

Searching Tips

Searching COMPENDEX online is fairly simple: the software provides a nice balance between flexibility and ease of use. Pull-down menus along the top of

Figure 1: COMPENDEX Commands and Searching Using \$ and ? Truncation

^F File ^E Edit ^A Search ^L Limit ^V View ^T Tools ^O Options ^Y Help		
1	steril\$.ti,ab,hw,fs,id. filter?.ti,ab,hw,fs,id.	380 9682
Ovid - Compendex <January 1993 to March 1995>		
[To select option hold Ctrl and letter indicated. Press ^Y for Help.] Enter subject, then press <Enter> <u>_</u> : 1 and 2 ■		
^U Author ^J Journal ^G Limit Set ^N Combine ^B Save ^R Textword ^D Database ^K View Set ^P Print Set ^X Exit		

Figure 2: Some Limiting Functions

the search screen are provided; the “options” menu lets you choose “easy mode,” but the default is almost as simple!

Search commands are listed at the bottom of the screen. To choose one, simply press the [Ctrl] [^] key and the highlighted letter. (Figure 1)

To search for a subject, simply type a word or phrase at the prompt. The software will look for your search term in titles, abstracts, descriptor and identifier fields.

You can use truncation to increase your retrieval:

- use the \$ symbol to stand for many letters,
- and the ? symbol for zero or one.

For example, to look for information about the use of filters in sterilization procedures, you might use both types of truncation. (Figure 1) Note that you can simply combine search statements with “and” (“or” can be used in the same way).

Press [Ctrl] [^] + K to view your search results. If your retrieval set is too large, you can limit it by pressing [Ctrl] [^] + G. This allows you to restrict your results to particular languages, dates, or document types.

More Options

Once you've found a set of appropriate citations, the software allows you to print them, download them to a disk — even E-mail them to yourself.

COMPENDEX is accessible and easy to use — but don't neglect our other databases! INSPEC, available at Walter Library and via LUMINA, is a wonderful source for physics, computer science, and electrical engineering.

Stop in to use GEOREF, the leading database in geology and geophysics, or try our Chemistry Citation Index. And MathSci Disc, the major bibliographic index of mathematical literature, is available at the Math Library.

Stop by the Science and Engineering Reference desk in Walter Library, or call us at 624-0224 for more information about these options.



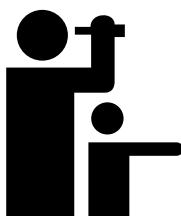
Telnet Software

You have Telnet capability if you use the Maroon and Gold Interactive Access Menu. If you use microcomputer software, such as our Minuet and TurboGopher packages, you also have Telnet capability.

Since Telnet is one of Minuet's components, it's available whether you use a modem and PC SLIP or have an Ethernet (hardwired) connection. For MacSLIP (modem) users, separate Telnet software is included with the start up disk we distribute. Whether you use MacSLIP or have an Ethernet (hardwired) connection, if you access LUMINA through TurboGopher you already have separate Telnet software on your working disk; Telnet is one of the helper applications that TurboGopher calls on. If you need Telnet software, it is available without charge from any Microcomputer HelpLine

Internet Sleuth: Finding People & Organizations via the Internet

Hello World?



Internet E-mail users soon realize they can send messages to many people and organizations through their Internet account. But what do you do if you don't know their E-mail address? Often the most straightforward method is to ask the intended recipient for one. This inelegant answer annoys and astonishes some people because they believe there must be smart software somewhere that can find all existing E-mail addresses. Many people are working on this "problem," as you can see by the length of this article.

A related drawback to searching for people is that some people have E-mail accounts (and, thus, addresses) on more than one system, but do not check their mail on all systems on a regular basis. People who have more than one account at the University, often can forward mail sent to the address they rarely use to the one they usually use. For example, the Maroon and Gold systems provide "mail forwarding" as part of their Validation Utilities and Services options.

But if you like "sleuthing" and have a mission, such as • you want to know the real name behind that mysterious E-mail address • you hope to correspond with a distant cousin attending another University • you want to find out how many people have the same name as you — then many options are at your disposal.

Be An Informed User

This article will introduce you to resources and topics that will interest many people who have no interest in being a detective, such as:

- adding a nickname or alternate name to your University directory listing
- using addresses harvested from Usenet postings
- using Web Yellow and White Page search services
- registering your name with the Four11 Online User Directory (a Web service)

- exploring the new US Postal Service and UPS Web sites to look up ZIP codes and track packages
- obtaining or searching the College E-mail Addresses FAQ
- trying Ph to get CSO server information with TurboGopher
- observing some common sense and "netiquette" rules

"Sleuthing" Tools

This article also briefly covers these other options:

- using the = symbol to limit searches of the University's electronic directory
- trying the Knowbot Information Service when you don't know someone's institutional affiliation
- using Netfind, a solution accessible through the Gopher's Phone Book section
- trying Whois and Finger
- using the X.500 directory service

The U's Electronic Phone Book

The University maintains a CSO-type phone book that contains the names, phone numbers, E-mail addresses, and other information about University students and employees.

CSO?

CSO was the acronym for the Computing Services Office at the University of Illinois. The CSO nameserver software was developed at the University of Illinois.

Client-Server Software

Like many Internet services the CSO software is based on the client-server model. A computer called a server maintains the actual database. A client program sends requests to the server; the client software is frequently called Ph. Many Gopher and Web clients (browsers) include built-in support Ph support.

Many other universities also run the CSO nameserver database software. A collection of these servers is accessible from Internet Gopher inside the *Phone Books* section.

Using the Electronic Phone Book

If you know someone's name, you can search the University's electronic phone book for their E-mail address. This service is available through Internet Gopher. To find it, follow this path:

Phone Books/U of Minnesota Phone Books
/Search U of M Directory

X.500 Common Names

At the University of Minnesota the *X.500 Common Names* maintained in the "phone book" include a hyphen (-) followed by a number. This naming scheme accommodates those with more than one E-mail address. The first address is labeled -1, the second -2, and so on.

Initiating a Search

To initiate a simple search, type in: (1) a person's first name followed by a space and their last name or (2) a single word, as shown in the examples below.

Pattern	Example to Type
one name	
last name	Guru
first name	Athena
a nickname (aliases)	Olympus
two names	
firstname lastname	Athena Guru

You can also enter partial names, as long as one of the partial names has three characters, such as

At Gur
Ath Gu

When we entered At Gur the system displayed three matches. When we entered Ath Gu, the system displayed 25 matches; many last names begin with Gu.

Whether you enter full or partial names, the software processes the query by returning all matches that contain whatever text pattern you type in.

Limiting a Search

A recent addition to this service is the ability to limit your search to an exact match. To do this you begin your search pattern with

=

for example

=Dan Lund-*

This avoids receiving multiple responses to your query, such as: Dan Ecklund-1, Dana Lundell-1, and Danielle Asplund-2. You can use the = symbol with the * wildcard character. This is useful if, for example, you want to match first and last names but do not know whether the person's database entry includes a middle initial.

Nicknames and Aliases

The University's phone book setup allows you to add a nickname or alternative name to your phone book listing. This is useful if you change names or if many people know you by a nickname, such as Flash, Maggie, or Jake. Once you've entered your nickname, anyone who searches the University's phone book using that name will find your entry. To add a nickname to your listing follow this Gopher path:

Phone Books\University of Minnesota Phone Books\Validation Utilities and Services\View & Change U of M Directory Information\Set Nickname (Alternate or Abbreviated Name)

Anyone who uses a Gopher+ client, such as TurboGopher, Minuet, or the Interactive Mail Shell, may fill out an on-screen form and submit their nickname information, as shown in Figure 1.

Figure 1: Add Nickname to Electronic Phone Book

Click on send after filling out the form.

Nickname	<input type="text"/>	Send
Middle Initial (maximum one letter!)	<input type="text"/>	
Get help?	<input type="radio"/> NO <input checked="" type="radio"/> YES	

Mac TurboGopher and Ph

For the “=” qualifier to work with TurboGopher version 2, you must install the helper application called Ph. This software works with CSO nameservers; it is free but is copyrighted by Northwestern University.

The Ph software is available from several locations, including the Mac Information Server and the *Information About Gopher/Gopher Software Distribution* section of Internet Gopher. Ph version 1.2 works seamlessly when you search phone books at other institutions. If you’re using an older version, please upgrade.

Setting up Ph to work with TurboGopher version 2 is easy. Simply copy the Ph software to your hard disk. (The *Helper Applications* section of the *Other Preferences* menu is preset to use Ph.) If you’re upgrading from an older version of Ph, you may need to discard the old Ph preferences that is located in your System Folder.

Phone Books at Other institutions

The *Phone books at other Institutions* section of Gopher contains access to electronic White Page type services. You can use this section to look for the name of a specific institution, such as the Library of Congress and the NASA Goddard Space Flight Center (North America) or the National University of Singapore (Asia Pacific).

To search most of these services you can immediately type in your search query; for others, Gopher must first establish a Telnet connection. The *About Phone Books* document in that section gives a longer overview of the types of resources you may encounter.

The results of your search may be displayed in one document named *Raw Search Results* or you may receive multiple documents. To actually view your search results, be sure to select the document in question.



What's Best?

The search methods you should use to find someone vary. Since all entries are not cross-posted or “cross”-searchable, you frequently must try several resources. So if you try the easy looking solution of

? Search All the Directory Servers

but don’t get satisfactory results, try again at a specific institution, such as Harvard University. If you don’t know the institution, you might want to try

Knowbot Information Service

It is listed in the *International Organizations* section. Figure 2 shows the partial results of an attempt to search on the name John Kennedy. We entered our query after the > prompt; our query is highlighted in Figure 2.

If you look at the responses shown in Figure 2, you will see that someone named John Kennedy was found at several Internet addresses, such as: Sea-Land Service in Seattle and several .com (company) addresses.

Figure 2: Partial Results of Knowbot Search

Knowbot Information Service
KIS Client (V2.0). Copyright CNRI 1990. All Rights Reserved.

KIS searches various Internet directory services
to find someone's street address, email address and phone number.

Type 'man' at the prompt for a complete reference with examples.
Type 'help' for a quick reference to commands.
Type 'news' for information about recent changes.

Backspace characters are '^H' or DEL

Please enter your email address in our guest book...
(Your email address?) >

► > **john kennedy**

Trying whois at ds.internic.net...
The ds.internic.net whois server is being queried:
No match for "KENNEDY and JOHN"

The rs.internic.net whois server is being queried:

Kennedy, John (JK61)	noname@secondsource.com	(301) 858-7777
Kennedy, John (JK1512)	noname@secondsource.com	uunet!opel!johnk
		(301) 858-7777
Kennedy, John (JK297)	noname@CSUCHICO.EDU	(916) 898-4515
Kennedy, John (JK428)	noname@nbnet.nb.ca	(506) 383-1941
Kennedy, John Robert (JRK2)	noname@NETAXIS.COM	203-544-8232

The nic.ddn.mil whois server is being queried:
*
* WELCOME to the NIC.
*
* Sorry, the NIC system load is temporarily too heavy.
(Press RETURN to continue)
*
* Please wait a while and try again. Thanks
*
Trying mcimail at cnri.reston.va.us...
Multiple matches found, results may be incomplete.

Name: JOHN KENNEDY
Organization: Sea-Land Servic
City: Seattle
State: WA
Country: US
E-Mail: 999-9999@mcimail.com
Source: mcimail
(Press RETURN to continue)

Note: (1) to focus this example, we deleted some information and (2) to help protect the privacy of the people we found, we altered their E-mail names slightly.

Figure 3: Samples from Whois Server List

whois.dfcf.harvard.edu	Dana-Farber Cancer Institute C=US
gte.com	GTE Laboratories C=US
seda.sandia.gov	Sandia National Laboratories C=US
ac.nsac.ns.ca	Nova Scotia Agricultural College C=CA
sangam.ncst.ernet.in	National Centre for Software Technology C=IN

What to Type?

Depending on how things are implemented on the machine the institution uses, you may get results from typing

- first and last name
- or just last name

X.500 Gateway

The X.500 Gateway is experimental and frequently unavailable. When you attempt an X.500 search, you type in the name of the person, organization, country, etc. that you are looking for.

Whois

The responses you get from a Whois query can contain information such as institutional affiliation and phone number.

The document called *whois information and server list* contains the preferred server name for whois service for various institutions. You can access this service from the Unix shell on the Maroon and Gold systems. For many people using this option involves a

lot of steps. For those who want to use this option, the steps you need to follow are discussed in more detail below.

The Whois Server List

The list of servers is not in alphabetical order. To give you a flavor of the type of server names you will encounter, some examples from the list are printed in Figure 3.

The notation after *C=* indicates the country code; for example, US is the code for United States.

The Unix Shell

To get to the Unix shell, select

Special Utilities

from the Interactive Mail Shell's main menu. From the resulting menu select

Shell Access

Figure 4: Using Whois from the Unix Shell

WARNING: Entering UNIX Shell Environment

Use of this option requires familiarity with UNIX shell concepts.
To return to the menu system, type "exit" at the shell prompt.

> **whois -h whois.dfcf.harvard.edu kennedy**
 Kennedy, Bettye Bouvine (BK5)
 Phone number: (617) 999-8257
 Fax number: (617) 999-8237
 >

Figure 5: Examples from Usenet Addresses

```
as999@yfn.ysu.edu (Tanya Noname)
73324.9999@compuserve.com
xyzlisa@aol.com (X Lisa)
noname@delphi.com
David Noname <dnoname@nps.navy.mil>
Ingrid M Noname <M99999%epic@MWMGATE3.mitre.org>
moeling@noname.gds.nl (M. Moeling)
n9999999@scooter.cc.wwu.edu (Chewbacca)
noname@medusa.men.lu (Jean-Paul Noname)
Rae Noname <richa@noname.CO.UK>
noname@faatcrl.tc.faa.gov.rdr2.tc.faa.gov (Mark Noname)
aoki@noname.co.jp (Aoki)
```

If you're using Minuet or TurboGopher, you need to access the Telnet program so you can log onto your assigned host machine, whose names are listed below,

maroon.tc.umn.edu
gold.tc.umn.edu

and access the Interactive Mail Shell.

For our example, whose simulated results are shown in Figure 4, we will query the server at the Dana-Farber Cancer Institute. We've displayed the command line in Figure 4 in boldface. The parts of that query are:

command: whois -h
whois server: whois.dfcf.harvard.edu
name to search: kennedy

Internet-wide E-mail Address Searches

The Gopher *Phone Books* section provides additional tools for finding information from institutions that do not run the CSO phonebook software. As a rule of thumb, the less you know about the person and the institution they are affiliated with, the less likely you are to find the information you seek.

This section contains Netfind, Usenet, and X.500 directory overview documents that contain more tips than we cover here. The Nefind and X.500 directory services are not run by the University of Minnesota; to use them you must log onto another system's computer.

Usenet Contributor E-mail Addresses

There is a process to harvest the names of people who contribute to Usenet. (Usenet is an electronic bulletin board type service.) The results of that harvest are searchable through Gopher; you can also obtain the huge list for yourself. If you have enough space on your disk you can download the list via anonymous FTP from this site and directory

penguin-lust.mit.edu
pub/usenet-addresses/lists

A Privacy Issue

Figure 5 contains twelve samples from that list. Since most Usenet posters are unaware that their names are available in this manner, and we did not ask permission to publish their names, we altered their names slightly. We've included the list to give you a flavor for the type of information that is available. If you examine Figure 5, you will see that the list contains names from a wide variety of sources, such as commercial services like American Online (@aol) and Compuserve as well as educational (.edu) and governmental (.gov) institutions.

**The Nefind and X.500 directory services
are not run by the University of
Minnesota; to use them you must log
onto another system's computer.**

Figure 6: Using Netfind to Boulder

SunOS UNIX (bruno)

Login as 'netfind' to access netfind server

Note: to focus this example, we deleted some information.

► login: **netfind**

=====
Welcome to the University of Colorado Netfind server.
=====

I think that your terminal can display 24 lines. If this is wrong, please enter the "Options" menu and set the correct number of lines.

Top level choices:

1. Help
2. Search
3. Seed database lookup
4. Options
5. Quit (exit server)

► -> **2**

► Enter person and keys (blank to exit) -> **kennedy harvard**

Please select at most 3 of the following domains to search:

0. attar.com (attar software usa, harvard, massachusetts)
1. axonetinc.com (axonet, inc, harvard, massachusetts)
2. bakery.com (swiss maid bakery, dba kurt stricker, harvard, illinois)
3. coffees.com (harvard espresso company, seattle, washington)
- ...
56. stat.harvard.edu (statistics department, harvard university, cambridge, massachusetts)
57. student.harvard.edu (harvard university, cambridge, massachusetts)
58. tch.harvard.edu (the children hospital, harvard university, cambridg

► Enter selection (e.g., 2 0 1) -> **56 57 58**

```
( 1) SMTP_Finger_Search: checking domain stat.harvard.edu
( 3) got nameserver brewer.tch.harvard.edu
( 3) got nameserver tchns1.tch.harvard.edu
( 3) got nameserver tchdns.tch.harvard.edu
( 3) SMTP_Finger_Search: checking domain tch.harvard.edu
( 3) connect timed out
( 2) SMTP_Finger_Search: checking domain student.harvard.edu
```

The domain 'student.harvard.edu' does not run its own name servers,
and there is no aliased domain IP address/CNAME/MX record for
this domain -> Skipping domain search phase for this domain.

Domain search completed. Proceeding to host search.

```
( 2) SMTP_Finger_Search: checking host rkim.student.harvard.edu
( 4) SMTP_Finger_Search: checking host cbarzun.student.harvard.edu
( 5) SMTP_Finger_Search: checking host abrown.student.harvard.edu
```

Netfind

Netfind is software from the University of Colorado. You can use it to obtain E-mail addresses of people on the Internet. It is designed to allow searches in terms of geographical and other kinds of information. Netfind has a “seed” database that it uses to map names to Internet domains. This means you can give Netfind the name of a person and some description of where that person’s Internet account is located, for example

```
kennedy (person) harvard (location)
```



Netfind Servers on Gopher

When Gopher presents you with a list of Netfind servers, we suggest you start with a server close to you. For our example in Figure 6 we queried the University of Colorado server in Boulder, Colorado. When you pick a server you will be given a guest account; for the Boulder system the login name is

```
netfind
```

After logging in you must tell the system what you want to do next. From the menu of choices we selected the one named search, option 2 in their menu. Then, as instructed, we entered the name of a person and keys (location); that is, we typed:

```
kennedy harvard
```

Since this is a vague request, the system asked us to narrow the choices and presented us with a list of 58 possibilities, some of which are shown in Figure 6. After we made our choices, the actual search began.

Help and Busy Signals

As shown in Figure 6, Netfind includes on line help, which can answer questions such as: Sometimes Netfind is unable to locate someone that I can “finger” and locate myself. Why?

The Netfind services can be busy. When attempting to use Netfind you may encounter this message:

Too many Netfind sessions are active.
Please try again later.

X.500

The X.500 directory services project can help you find information about people and the organizations they are affiliated with, for example their E-mail and postal addresses.

You don’t want to use this service when you’re in a hurry; it can be slow in accepting input and in responding.

Search Options

When you first log on you are presented with several search choices, such as:

- User-Friendly
- Browsers
- I Instructions explaining the program modes and how to use the program.

When composing a search be prepared to provide this information:

- 1) Name you are searching for
- 2) Department (optional)
- 3) Organization
- 4) Country in which the organization is based
 - the Country Code for the United States is US

Search Results

The X.500 displays its search results in what it calls a “pager.” When you want to exit the pager to make another selection, you type **[E]** to “Exit pager.”

User Friendly Search

We selected the *User Friendly* search. Our inquiry and the partial results are shown in Figure 7a. For our example we boldfaced the information that we typed.

To actually get information about a person, we needed to select a name from the list that was presented to us. The results of our selection are shown in Figure 7b.

Figure 7a: An X.500 User Friendly Search Example

```
► User-friendly name, m for menu, q to quit, ? for help!  
:- guru, univ minnesota, us  
  
Searching under root of directory for us...  
Searching under 'US' for univ minnesota...  
Searching under 'University of Minnesota, US' for guru.....  
  
US  
University of Minnesota  
Twin Cities Campus  
Students  
Lib Arts-TC  
  2 Cyclops Guru-1  
  3 Epimetheus Guru-1  
  4 Themis Guru-1  
  5 Helios Guru-1  
  6 Poseidon Guru-1  
  7 Artemis Guru-1  
  8 Prometheus Guru-1  
  9 Athena Guru-1  
 10 Rhea Guru-1  
 11 Oceanus Guru-1  
 12 Medusa Guru-1  
  
► Enter number, or press RETURN if none of these entries is the one required  
: :- 10
```

When composing a search be prepared to provide this information:

- 1) Name you are searching for
- 2) Department (optional)
- 3) Organization
- 4) Country in which the organization is based (the code for the United States is US)

Figure 7b: Narrowing our Search

```
US  
University of Minnesota  
Twin Cities Campus  
Students  
Lib Arts-TC  
Athena Guru-1  
  surname          Guru-0  
  description      Senior  
  electronic mail  guru0003@gold.tc.umn.edu  
Miscellaneous information Winter Qtr 1999
```

White Pages on the Web

You can search Four11's directory services. They offer free searches of their White Pages and more services if you become a paying member, such as the ability to enter an alternative name.

Enter Your Own Free Listing

To enter your free listing and search the directory, connect to the Four11 Web page at this URL:

<http://www.Four11.com/>

Free Basic Searches

They plan to make the service "self-sufficient by providing value-added services through user memberships and the assistance of a limited number of

corporate sponsors." In a recent announcement that was E-mailed to those who've already entered a listing, SLED Corporation says it expects to have 100,000 users by the end of June.

When we searched on the last name of Kennedy we received one match; a search on Johnson generated 11 matches. When we searched only on Minneapolis, we got 24 matches. Figure 8 shows the Four11 Search Form.

To cull bad and discontinued addresses, they do several things: date stamp all listings and verify each listing at least once a year.

Figure 8: White Page (SLED's Four11) Search Form

The figure shows a screenshot of the SLED's Four11 White Page search form. At the top left is a logo icon. Below it are fields for 'First' (Given name) and 'Last' (Family name). The 'Last' field contains 'kennedy'. Below these are fields for 'City' and 'State/Prov.'. To the right of the 'City' field is a note: 'Country US List USA/Canada: MUST Use Abbrev.' Below these fields is a section titled 'Group Connections' with two dropdown menus labeled 'Current Organization'. Underneath these are several search options: 'Paid USERS ONLY' (checkbox), 'Surf' (checkbox), 'All Wildcard' (checkbox), 'SLEEPER SEARCH' (checkbox), 'DOMAIN' (text input field), 'Clear' (button), and 'Search' (button). At the bottom are links: 'USER MENU | SEARCH GUIDELINES | SEARCH BY OLD E-MAIL'.

Yellow Pages on the Web

You can search the *New Riders' Official World Wide Yellow Pages* for organizations that have Web pages at this URL

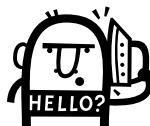
<http://www.mcp.com/nrp/wwwyp/>

The New Riders' Yellow Pages have many categories including business, cities, colleges and universities, commercial, conferences, and countries. When we searched on Minnesota we got several responses, including: SiouxLAN, Twin Cities FreeNet, and University of Minnesota.

This Web site is part of Macmillan Computer Publishing (MCP) USA's offerings; their URL is

<http://www.mcp.com/newriders/>

Unsurprisingly, MCP also offers an Internet Yellow Pages book that you can purchase.



Other Web Delivery Services

Two new Web pages are slightly related to the theme of this article; the United States Postal Service and UPS Web pages at these URLs

<http://www.usps.gov/>
<http://www.ups.com/>

U.S. Postal Service

The United States Postal Services' Web page allows you to find ZIP+4 codes if you know the rest of the address. It also includes 1994 and 1995 stamp images. And, of course it lets you look up postal rate information.

UPS

The UPS page features such items as a Packing Tracking form and information about COD delivery.

Finger

An information lookup program called Finger has been around for quite a while. If you have someone's E-mail address, you can use it to learn their full name and sometimes get other information, as shown in Figure 9.

The information you get back from a "finger" varies from computer site to computer site. In addition, not all sites allow remote fingering. Although you can "finger" many Internet addresses you cannot finger Bitnet addresses.

To use the Finger program you enter someone's E-mail address. The pattern and an example are listed below.

```
finger username@machinename  
finger coke@cs.cmu.edu
```

Finger is included with the Minuet software for IBM's and is available from Maroon and Gold's Unix Shell in the same way whois service (discussed earlier) is available.

Figure 9 contains a brief example using the Unix Shell. The information we typed is in boldface.

.plan

As you can see by the response shown in Figure 9, the owner of the coke@cs.cmu.edu address has something to say about a coke machine. That information was stored in coke@cs's .plan file; an optional file that can contain a wide variety of information. When you "finger" someone you frequently will get a "no plan" message.

The address we used has a story: someone at Carnegie-Mellon University (cmu.edu) hooked a coke machine up to the Internet so they could tell whether the machine was full or empty before they made the long walk to the machine.

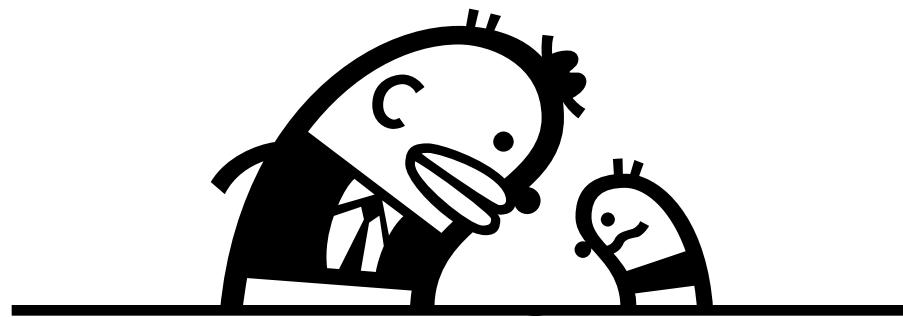
Figure 9: Using Finger from the Maroon/Gold Mail Shells

```
► WARNING: Entering UNIX Shell Environment

Use of this option requires familiarity with UNIX shell concepts.
To return to the menu system, type "exit" at the shell prompt.
*****
> finger coke@cs.cmu.edu
[cs.cmu.edu]

[ Forwarding coke as "coke@l.gp.cs.cmu.edu" ]

[L.GP.CS.CMU.EDU]
Login: coke                               Name: Drink Coke
Directory: /usr/coke                         Shell: /usr/local/bin/tcsh
Last login Wed Oct 12 (1994), EDT on ttys1 from PTERO.SOAR.CS.CMU.EDU
Mail came on Tue Jun 20 21:48, last read on Tue Jun 20 21:48
Plan:
Thu Sep 29 17:33:39 1994
M&M validity: 0      Coke validity: 0 (e.g. da interface is down, sorry!)
Exact change required for coke machine.
      M & M          Buttons
      /---\          C: CCCCCCCCCCCC.....
      |       |          C: CCCCCC..... D: CCCCCC.....
      | **   |          C: CCCCCC..... D: CCCCCC.....
      | *****|          C: CCCCCC..... D: CCCCCC.....
      | *****|          C: CCCCCC..... S: CCCCCC.....
      \---/
      |
      |          Key:
      |          0 = warm;  9 = 90% cold;  C = cold;  . = empty
      |          Leftmost soda/pop will be dispensed next
      |
      --^-->
```



The United States Postal Services' Web page allows you to find the ZIP+4 code if you know the rest of the address.

College E-mail Addresses

You may want to look at the multi-part College-Email Addresses FAQ (Frequently Asked Questions). The FAQ concentrates on how to find E-mail addresses for undergraduate and graduate students, faculty and staff at various colleges and universities; it also provides some of the same information covered in this article.

The FAQ is available at the Web URL shown in Figure 10.

Available via Usenet, Anonymous FTP, and Mail

The FAQ files are also available via anonymous FTP from the sites and directories listed below. The FAQ is available as four documents. Parts 2-4 are divided alphabetically and contain information about specific colleges.

ftp.qucis.queensu.ca
pub/dalamb/college-email

rtfm.mit.edu
/pub/usenet/mail/college-email

To get your own copy you can also E-mail the send command shown below to the address listed here

send dalamb/college-email
archive-server@qucis.queensu.ca

In addition, an updated version of the FAQ is posted periodically to these newsgroups: soc.college, soc.net-people, and news.answers.

Netiquette

Part 1 of the College E-mail document covers some common sense and etiquette rules that are worth repeating.

“Most universities have restrictions on the uses of directory information. So don’t use this info for commercial purposes or whatnot without securing permission from the individual colleges and universities. ”

“It is considered rude to widely distribute (e.g., in a Usenet posting) anyone’s E-mail address without prior consent, even if the address is publicly available...It might seem that having one’s E-mail address listed in a publicly accessible database is equivalent to distributing it, but this is not the case in practice...

- * Some people may not be aware that their addresses are available for others to locate. For example, the majority of Usenet posters are unaware of the database of Usenet E-mail ...
- * When some effort is required to locate a person’s address, ...only people who have a specific reason to send mail will go to the trouble. However, if the address is mentioned in a Usenet posting read by thousands of people, no effort is required to obtain it, and many more people will send mail....”

List Service Subscribers

People who join electronic mailing lists frequently have similar interests. If you lost the address of someone who is on a list that you subscribe to, you may be able to peruse a listing of the group’s subscribers. We covered that topic in our June issue’s *Electronic Mailing Lists* article.

Conclusion

As you can see, at this stage of the Internet’s development, a willingness to experiment is important. Because unless you’re directly searching an institution’s electronic phone book, slogging through the current name and directory “lookup” options can seem like an endurance test.

Figure 10: URL for Web Site of College E-mail Addresses FAQ

<http://www.qucis.queensu.ca/FAQs/college-email/college.html>

Free Help: Computing & Information Technologies

University of Minnesota Accounts

Phone

Help Line Hours

Distributed Systems: Microcomputers, Workstations, LANs

Software, hardware, peripherals, local area networks	626-4276	M—F	9 am to 4 pm
<input type="checkbox"/> East Bank 152 Shepherd Labs above above	above
<input type="checkbox"/> West Bank 93 Blegen above above	1 pm to 4 pm
<input type="checkbox"/> St. Paul 58 Biological Sciences Center above above	1 pm to 4 pm

Central Systems

These systems require a user name and password, which you get when you open an account.

Qualified users can apply for grants to cover some computing related costs.

<input type="checkbox"/> EPX (Unix), NVE (NOS/VE), UZ (Ultrix), VX and VZ (VMS)	626-8366	M—F	9 am to 4 pm
<input type="checkbox"/> VM1 (IBM/CMS) 90 Coffey Hall walk-in consulting	624-6235	M—F	9-11 am, 2-4 pm

E-mail and Internet

<input type="checkbox"/> Call for help using your University account	626-7676	M—F	9 am to 4 pm
<input type="checkbox"/> Forgot your password? Staff: call 626-8366. Students: go to any Computer Facility – e.g., 14 Folwell, 26 Lind, 305 McNeal, HHH 50. Troubleshooting: if Maroon or Gold are down, you'll hear a status report at 626-1819.			
<input type="checkbox"/> LUMINA: call if you have trouble connecting	626-7676	M—F	9 am to 4 pm

General Information

Computer Store

Williamson Hall Book Center 625-3854
(inventory and prices also available on Internet Gopher)

University Computing & Information Services

Administrative Information Svcs. (AIS) Help desk ...	4-0555
Biomedical Graphics, various locations	6-3939
Central Computing Services, 100 LaudCF	6-1600
Accounts: EPX, NVE, UZ, VX, VZ	6-8366
Data Entry	6-8351
Statistics Services	5-2303
System Status	6-1819
Tape Librarian	6-1838
Computer Facilities (also call individual facilities)	5-1300
_FolH 5-4896 _Lind 6-0856 _McN4-5367 _HHH 4-6526 +more	
Disability and Computing Services, voice/TTY	6-0365
Distributed Computing Services, 190 Shep Labs	5-1300
Engineering Services, 103 LaudCF	5-1595
Equipment Repair and Warranties	5-1595
Faculty Resource Center (for appointment)	5-1300
Gopher Hotel (server set up for a fee)	5-2303
Kodak Printer Service	6-1661
St. Paul Computing Services, 50 CofH	4-7788
Accounts: VM1 (IBM/CMS)	4-7788
Tape Librarian	4-3482
Statistics Services	4-6235
Software Services (contract programming)	5-2303
Supercomputer Center Help, 3030 SCC	6-0808
Telecommunications, 30 Telecomb	
Networking Services Information	6-7800
Networking Services Repair	5-0006
Training, Course Registration, 190 ShepLab	5-1300
U Libraries, Integrated Information Center	4-2020
University Networking Services, 130 Lind	5-8888

Associate Vice President for Academic Affairs and Information Technologies

Donald R. Riley, Professor 626-9816

Access Information

SLIP: 2400/14,400 626-1920

SLIP: ADI-100 and ITE (with MKO) 3-0291

<input type="checkbox"/> Terminal settings for these systems are 8-1-N (8 data bits, 1 stop bit, no parity) unless otherwise noted. The number you dial may depend on the modem's bps or baud rate.	<input type="radio"/> Internet addresses.
<input type="checkbox"/> Dial-in Server: 626-0300, -1200, -2400, -4800, -9600	
<input type="checkbox"/> At 9600 Telecomm supports V.32 and MNP level 5 error correction.	
<input type="checkbox"/> On campus ADI-100 and ITE setups use 626-2400.	

LUMINA: 300/1200/2400 625-6009

V.32 4-7539

Telnet & tn3270 ____ PUBINFO.AIS.UMN.EDU

E-mail and Internet Service and Servers, Twin Cities MAROON.TC.UMN.EDU GOLD.TC.UMN.EDU

Gopher, alternate access (log in as gopher) 300, 1200, 2400, 9600 see Dial-in Server

____ CONSULTANT.MICRO.UMN.EDU

Consulting via E-mail: low priority Central System ques Format ____ CONSULT@HOST.UNIT.UMN.EDU

AIS SecureID V.32 626-1061

300/1200/2400 6-7770

tn3270 & Telnet ____ ADMIN.AIS.UMN.EDU

EPX, NVE, UZ, VX, VZ 300, 1200, 2400, 9600 see Dial-in Server

EPX or UZ or VX or VZ or NVE.CIS.UMN.EDU

EPX, NVE: 300/1200/2400 625-1445

up to 19.2 campus data phone 3-2400

VM1 (IBM/CMS) at 7-1-even 9600 624-3668

1200/2400 & <19.2 campus data phone ..4-4220

____ VM1.SPCS.UMN.EDU

Please be legible. Help us keep our costs down by using a campus mailing address whenever possible. Thanks.

Computing & Information Services Subscription Request

Newsletter

Short Course Bulletin

Both publications

Add

Cancel

Change as shown

Name _____

If University of Minnesota Twin Cities Campus Mail:

Do not use your office address; Campus Mail only delivers bulk-mailed items with department addresses.

Department _____

Building _____

Room _____

If U.S. Postal Service:

Address _____

City _____

State _____

Zip _____

University of Minnesota Affiliation. Please check one box.

Department Faculty Staff Student Alumni Other

E-mail and FAX Options:

You can also send us your subscription requests by fax or E-mail. Fax a subscription request coupon to 612/625-6817 or E-mail this Internet address: newsletter-subscription@boombox.micro.umn.edu

Free E-mail Services (also see Book Center News)

- We receive notices of software and hardware fixes, seminars, helpful hints, and various computer related items from many sources. This information may be of immediate importance or interest to the University community. To make this information available in a timely manner, we periodically send out E-mail "news" bulletins. To subscribe to *Microcomputer News*, send E-mail to: news-request@boombox.micro.umn.edu
- To keep up-to-date on the growth of Internet Gopher servers, send a subscribe request via E-mail to gopher-announce-request@boombox.micro.umn.edu

Computing and Information Services

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