

May 1995  
Preview Issue

Connecting  
Your BBS to the  
Internet

# Connect News

The Journal of Online Products and Services

DataXchange Connects BBSs to the Internet

## INTERNET CONNECTIONS

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ANY SYSOPS HAVE DISCOVERED, THAT connecting to the Internet is a complicated and involved task. Not only can

the technical challenges be overwhelming but many local Internet access providers refuse to connect Bulletin Board Services. Some providers view BBSs as competitors for retail slip and shell account business and are perhaps understandably reluctant to help a sysop get started. Even if the BBS operator locates a willing Internet provider, the expertise in connecting the Internet and the BBS is likely to be meager.

The DataXchange is a new Internet service provider that operates its own backbone and specializes in connecting BBS systems to the Internet. In a TNS interview, CEO Robert Laughlin emphasized that his company provides not just Internet connections but also supports the sysOp with consultations and "hand holding" as needed to get them online. Laughlin says that DataXchange limits installations to about ten new customers per month in order to assure a high degree of service and personal attention.

Laughlin not only understands the Internet but also operates The Power Exchange BBS, a 160-line system running on Galaticomm software. Laughlin said The Power Exchange was the first commercial Major BBS to fully connect to Internet.

In a public statement on modem user patterns, Laughlin said, "We feel most of the traffic will flow between BBS's connected on the Internet, as users use telnet to hop from one system to another to take advantage of its special features. By having a dedicated BBS-only backbone, DataXchange can provide more predictable performance for BBS to BBS connections. However, the network is also connected to the rest of the Internet as well, so users can reach any Internet site in the world."

### Why Bother with the Internet?

A conventional Bulletin Board Service that supports 100 thousand users is considered huge by

most standards. The major online services claim one to two million users. An Internet presence enables you to reach up to 30 million users. Small companies can develop an international presence as easily as Fortune 500 companies since geography is no obstacle on the Net. You can set up WEB sites to serve customers, prospects, clients, and dealers from around the world.

A World Wide Web server can be used to publish material, advertise products and services, or provide customer service. Users can access any information you want to make available through online databases, documents, catalogs, announcements, and message areas.

Your existing customers can use your system to reach other BBSs for their file leaching. Instead of using hundreds of megs of disc space to store files locally, you can set up hyperlinks to other systems. Many users need access to newsgroups and Internet e-mail and are not going to settle for FIDO. For now, an Internet connection is a competitive edge. In the not-so-distant future, BBSs will have to provide at least Internet e-mail and newsgroups just to stay in the race.

### One Call Hookup

Many of the large national service providers leave it up to the customer or charge extra to coordinate the telecos and handle the administration required to become an Internet provider. Installation fees often cover only the cost of running the connection to your door, sometimes called the demarcation point. After that, the rest of the installation is up to you. If you don't have the experience and expertise to continue the installation, you're hosed.

DataXchange provides one stop shopping for Internet connectivity. They contact your local telephone company, order your local loop, and schedule the installation. DataXchange arranges for your I.P. address, a class C Internet License, and a Domain Name Server. The company also maintains close working relations with many BBS software publish-

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# Welcome to Connect News



YOU'RE COLLEGE EDUCATED; FINISHED school several years ago. You have non-conformist tendencies but are settling down into your career —

rather successfully at that, you say. You make somewhere in the neighborhood of 50 to 100 thousand dollars per year - if not now, you're on track. You are intellectually adventurous, tend to stay on the cutting edge of technology.

How do we know? As a reader of Connect News, you probably downloaded this publication from a bulletin board or an online information service. You may have received it by e-mail or you found it on an Internet site. In other words, you couldn't be reading this at all without a bit of technical savvy. In short, you're connected and you know your way around virtual communities. Demographics tell us the rest.

Connect News will help you stay plugged in. We will report on all issues affecting connectiv-

ity for users, SysOps, and WEB Masters. We'll tell you about new products and services and keep you up to date on legislative issues. And we'll bring it to you twice a month in ten pages or less.

Our editorial mission can be summed up in three words: Timeliness, Accuracy, and Relevancy. Let us know how we're doing.

## Our Promise

- ◆ We promise to strive to report relevant news as objectively as possible.
- ◆ We promise to report all sides of controversial issues.
- ◆ We promise not to let our advertisers influence editorial decisions.
- ◆ We promise to correct mistakes promptly and publicly.
- ◆ We promise to meet our deadlines.
- ◆ We promise to listen.

## Get Your Next Copy



CONNECT NEWS MAY BE DOWNLOADED from our BBS at (301) 773-7428.

Connect News will be offered free by Internet WEB page by June 1.

We also plan to offer automatic delivery to your e-mail address by Internet listserve at about the same time. Connect News will also be available on CompuServe, AOL, and Genie. Check next month's issue for details.

## Distribution Permissions and Restrictions

SysOps and WEB Masters may arrange for a distribution license by calling us by voice at (301) 773-8899 between 10pm to 6pm, Monday through Friday. Distribution licenses will be granted free to those who call before July 1, 1995. Casual users may freely distribute complete and unaltered file copies of Connect News to friends or business associates. Content may not be quoted in advertisements or promotional materials without written permission. If you want to re-print any item, call us for permission information.

## Thanks, Tom



WE WOULD BE REMISS IF WE DIDN'T CREDIT the people and companies that made this publication possible. Tom Gregory is the "Angel" that has provided the startup funds over the last few months. Without his financial and moral support, you wouldn't be reading this.

Alan Bechtol, SYSOP NEWS... and Cyber-World Report Publisher has offered invaluable advice and encouragement. We view SYSOP NEWS as a sister publication and look forward to working with Alan on future publishing efforts — including jointly operated Websites.

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## Technical Credits



WE CONNECT TO THE INTERNET THROUGH THE DataXchange, a service provider that specializes in bringing the Internet to BBSs. Our router is FRAD, a FAST-COM product. The T-N-S Webserver and Internet site utilizes S&H Computer, Inc's TSX-Operating system with TSX-BBS and Internet software.

Stories are produced and tracked with Perfect Office, layout with Microsoft publisher. The electronic version of Connect News is published using Adobe Acrobat Pro.

## Satan Loosed



SATAN (SECURITY ADMINISTRATOR TOOL For Analyzing Networks), the program some security experts believe will wreak hell on computer systems worldwide, was unleashed on the public April 5, the birthday of the program's creator. The software was developed by security expert Dan Farmer and a security programmer at the Netherlands University of Eindhoven, Wietse Venema. SATAN was originally designed by the authors to help system administrators locate system security flaws.

The program is supposed to recognize several common networking-security problems and report them to the system administrator. After identifying a problem, SATAN reports on the type of security weakness, its potential impact, and offers a fix, i.e., a configuration file correction, a bugfix, or access restrictions.

Security experts fear that the program can be used by computer experts or even novices to break into sites with poorly designed or nonexistent "firewalls". Silicon Graphics, Farmers former employer, terminated him after the company learned that he intended to release the program, according to wire reports.

Harry Bruestle, deputy program manger for computer security technology center, US Energy Department at Lawrence Livermore Lab in Livermore, California, was quoted in the San Francisco Chronicle as saying, "If someone were to take advantage of the vulnerability in your system, they could literally shut down your business, either taking information and giving it to a competitor or altering information or just

erasing it." Other experts are downplaying the danger as product hype, pointing out that serious hackers can collect CERT lists (Computer Emergency Response Team) which categorize the security holes in all existing system platforms. Livermore Labs has designed Courtney, a counter-SATAN program that alerts systems administrators if a user attempts to use SATAN.

## O'REILLY Prices WebSite



O'REILLY & ASSOCIATES, INC. ANNOUNCED that WebSite, its 32-bit World Wide Web server for Windows NT 3.5 and Windows 95 users, will have a list price of \$499 US. This is a releatively low price — about \$700 less than any other publicly announced NT Web server. The easy-to- use server makes it possible for small, non-technical businesses, organizations, educational institutions, and home users to publish and transact business on the Internet's World Wide Web. WebSite development is progressing on schedule for its announced May release.

"With WebSite's power, ease of use, and low price it opens the Web up to thousands of people who want to create and control their own publishing and business presences," said Gina Blaber, O'Reilly's WebSite product manager. "Many Web users get excited by what they see out there on the Net. Then they get frustrated because they don't want to deal with an expensive, complicated server to put up their own information. We've designed and priced WebSite to enable anyone to start publishing information on the Web within minutes."

## America Online Splits 2-for-1



AMERICA ONLINE, INC. ANNOUNCED THAT its Board of Directors has approved a two-for-one stock split of its Common Stock, effected in the form of a stock dividend of one share for each share outstanding.

The stock dividend is payable on April 27, 1995

to stockholders of record at the close of business on April 13, 1995. As a result of the stock split, the number of outstanding shares of the Company's Common Stock will increase to approximately 35,000,000.

The stock split is intended to broaden our stockholder base, as well as enhance the Company's ability to take greater advantage of emerging market opportunities," commented Stephen M. Case, President and CEO of America Online.



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# compuserve

## 5 Mistakes Content Providers Make

Besides expecting to make money in the first two years, SIMBA has identified five common mistakes that content providers make when going online. They are:

1. Not creating unique editorial products, but simply re-publishing print material in online format.
2. Not using full-time system operators (sysOps) to answer e-mail, chat with users and keep conversation flowing -- thus allowing the area to become stale.
3. Over-pricing before demonstrating the valuable and unique qualities of the content providers's service.
4. Signing an exclusive arrangement with a technology provider before considering the downside.
5. Raising expectations within the organization beyond a level that can be achieved.

*Reprinted with permission from "Economics of Online Publishing: Strategies for Making Money.*

### Book Review

## Economics of Online Publishing: Strategies for Making \$\$\$ Online



SIMBA INFORMATION INC. HAS RELEASED THE first of its' reports written specifically for online developers and publishers. "Economics Of On-

line Publishing: Strategies For Making Money Online," details the case histories of many publishers and marketers that have attempted to profit from the growth of online services by establishing an electronic presence.

"We felt that there are still a lot of content providers from all forms of media, including television, cable, retail, and cataloging, who are not familiar with the online environment," said Lorraine Sileo, SIMBA editorial director in a Newsbyte quote.

The volume may appear expensive at first glance. Actually, at \$1,250 it appears expensive at second glance. However, this SIMBA publi-

cation can save marketing departments dozens of hours in research. The intelligence collected in this volume might help a small company avoid fiscal mistakes that could easily prove fatal. And it is must reading for publishers new to the electronic version of Gutenberg's world.

This is not light reading. The book contains almost 300 pages of case histories, statistical studies, financial models, and marketing strategies.

**TIP:** If this sort of stuff bores you, then you should probably NOT invest in online publishing. The marketing and financial mix of online publishing is demanding and has defeated the best attempts by some of the countries largest publishers. This report is replete with case histories of failed electronic publishing ventures.

Hmm, at third glance, the cost of this report is quite reasonable if a company uses it to avoid the pitfalls encountered by other electronic publishing pioneers.

### Contact Information

SIMBA, tel 203-834-0033 ext 178, fax 203-834-1771, Internet e-mail SIMBA99@aol.com)

### Product Announcement

## New Illusion BBS Software Released



KYLE OPPENHEIM AND BILLY MA HAVE RELEASED version 1.93 of its DOS based Illusion BBS software.

### Features in Brief

- ◆ Fidonet standard echomail support
- ◆ Multinode capabilities gives time slices to Windows, OS/2, and DESQview
- ◆ Multinode teleconference
- ◆ Extensive MCI code system allows information to be displayed freely
- ◆ Extensive color system compatible with Celerity (pipe+letter) and other popular softwares (pipe+###)
- ◆ New voting system gives users the option of adding their own choices

- ◆ Configurable logon lets the SysOp configure what is displayed during the login process and in what order.
- ◆ QWK offline mail support
- ◆ New User Voting service lets users vote on who should receive access.
- ◆ A rumor listing lets users share jokes.
- ◆ Support for DORINFOx.DEF, DOOR.SYS, CHAIN.TXT, CALLINFO.BBS. SF-DOORS.DAT, and DOORFILE.SR door drop files.
- ◆ Internal full screen editor and line editor allow messages of unlimited line length.
- ◆ Support for 10 line FILE\_ID.DIZ and DESC.SDI file descriptions
- ◆ ANSI, Avatar/0+, and RIP autodetection.

### Contact Information

To get a copy of Illusion, log onto the site listed below or FREQ Illusion using the magic name "IBBS". Paramnesia @ 1.610.481.9932 - SysOp: Archer (Kyle Oppenheim)



# Searchlight Announces Free Upgrade



SEARCHLIGHT SOFTWARE WILL RELEASE Searchlight 4.5 as a free upgrade on May 1st. With version 4.5,

Searchlight Software continues its support for the RIP non-proprietary online multimedia protocol. Searchlight President Frank LaRosa said that one of his primary objectives in this release was to eliminate incompatibilities between Searchlight and RIP 2.0. "Because the RIP 2.0 protocol is still new and a final version of the specification hasn't yet been released," said LaRosa, "it will take longer than we originally planned to implement the full level of RIP 2.0 support that we want Searchlight to have. Our first priority has been to fix incompatibility problems which have cropped up as the RIP protocol has matured into a full-featured multimedia language."

"But we also have a number of exciting new features, like our QWK mail module, that we want our customers to have now. So, rather than delay the release of Searchlight 4.5, we decided to include as much RIP 2.0 support as we can by the May 1st release date and schedule another maintenance update to add more advanced RIP 2.0 functionality later".

Searchlight software still does more with RIP 2.0 than any of its competitors. As an example, one new feature automatically downloads RIP icons and menus to the user. When the user encounters a new icon or menu, Searchlight automatically detects the needed changes and downloads the required files while displaying a thermometer style activity indicator.

Anyone who has spent more than five minutes on America Online will be quite familiar with the process. The automatic RIP download enables Searchlight to run faster. The sysOp's job is also simplified since he or she will no longer need to configure external RIP downloaders. Importantly, callers will never get screens with "old or missing icons" messages.

Searchlight rightfully prides itself on its ease of use and its new built-in fossil emulation feature is another improvement designed to make the sysOps life a bit easier. LaRosa told T-N-S that his company is successfully using the new emulator to run Digiboards on the Searchlight support board. "Our innovative FOSSIL emulation feature lets you run any add-on application that requires FOSSIL communications support, without the need to install a cumbersome external FOSSIL driver. You don't even have to set the port number and speed in your applications — Searchlight handles it for you automatically," said LaRosa.

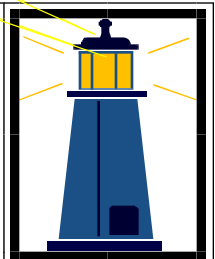
## Searchlight 4.5 Features

- ◆ RIP 2.0 online multimedia protocol compatibility.
- ◆ An internal QWK offline mail module featuring a full screen RIP interface with Point-and-click conference selection. The module also offers local RIP for the sysOp.
- ◆ An internal icon downloader that automatically transfers menu files and icons when needed by the user. Searchlight operators can present larger RIP files without sacrificing performance since the overhead is passed to the caller's machine.
- ◆ A new FOSSIL emulation feature that enables system operators to run doors, DOS programs, Searchlight's built-in communications drivers, or DigiBoard ports. External Fossil drivers are no longer needed.
- ◆ Improved CD-ROM handling procedure that optimizes file transfers from CD-ROM discs and other low speed media. Improvements are substantial on multiuser systems.
- ◆ A new point-and-click method of building subboard and file directory lists. The new system replaces the previously cumbersome internal commands.
- ◆ An "instant reply" feature to chat requests that enable the sysop to chat with users without quitting work in progress. Support for messages is more than double the current 400 line limit. Device support for Equinox intelligent serial cards and generic

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FOR THE BEST RIPPED BOARDS  
CALL SEARCHLIGHT AT 800-988-LITE



# VIRCOM'S MAJOR TCP/IP



MAJOR TCP/IP, VIRCOM'S INTERNET CONNECT add-on for The Major BBS, lets you connect your BBS to the Internet or any other TCP/IP network. TCP/IP is the standard protocol used on the Internet, and Major TCP/IP adds that protocol and TCP/IP applications to your BBS. Released April 1994, more than 300 Major BBS systems are using Major TCP/IP to add Internet Connectivity.

## Connect Product Overview

### MajorTCP/IP can be used to:

- ◆ Create an On-Ramp to the Internet
- ◆ Integrate applications running on other computers into your BBS
- ◆ Make your BBS telenetable, thus accessible by users all over the world
- ◆ Set up and run a WWW server.

MajorTCP/IP is a product designed from the ground up to work on a Major BBS and does not require a second computer of any kind.

### MajorTCP/IP features

- ◆ Incoming/Outgoing Telnet and RLogin
- ◆ RLogin-Plus Protocol (for Unix applications integration)
- ◆ Outgoing remote shell
- ◆ FTP Client Software
- ◆ Finger Client/Server Software
- ◆ Finger Information Server
- ◆ Basic WWW (World Wide Web) HTML Server
- ◆ Telnet/Rlogin Dial Out Channels
- ◆ Distributed Major BBS Architecture

If you have a local UNIX system, you can use RLogin-Plus protocol to give your BBS users access to any Unix-type applications, such as IRC (Internet Relay Chat), Gopher, Archie, MUDs (Multi-User Dungeons), and Slip Server Connections.

### Supported Internet Connections

Major TCP/IP natively works with SLIP or ETHERNET packet drivers. It also runs, with "shims", on top of ODI (Netware) and NDIS ETHERNET drivers.

You can either connect to the Internet through a router of some sort, (dedicated router, Unix or KA9Q for example) or directly connect your BBS over a SLIP link. Major TCP/IP supports 14.4K or even 9600 SLIPS to T-1 or T-3.

### Performance and Expansion

The software supports up to 255 simultaneous TCP/IP connections, the maximum limit for a Major BBS running on a single Pentium class machine. Vircom claims Major TCP/IP has been able to process more than 600 packets per second during peak load tests.

### UNIX Application Integration

Major TCP/IP's RLogin module features an exclusive RLogin-Plus protocol, which helps sysOps integrate Unix applications into BBS menu systems. Users pick a menu item as if it were any other MBBS module. They are automatically logged into the Unix computer and the selected applications starts. This integration is often used to bring applications like IRC, LYNX, GOPHER, UNIX DATABASES and UNIX Doors to users.

System operators can use RLogin-Plus to AutoLogin (using .hosts), Query for Full Name, Internet Alias, BBS User ID, Check ownership of keys, change credit consumption rates, conduct ANSI flag checking, and evaluate text variables.

### TELNET Dialout Channels

You want to connect your BBS to other services/Bases on the Internet? You don't want to wait for your favorite linking software vendor to modify their API to support telnet channels? You want to be able to run dial-out scripts over telnet channels?

All of that is possible with Major TCP/IP's Dialout Channels. Major TCP/IP takes a Telnet (or RLogin) connection and make it look like it is a modem connection, allowing your BBS to connect to other services via the Internet. Telenet connections can save you hundreds of dollars in long-distance or X.25 costs. Major TCP/IP works with most add-ons de-

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**Major TCP/IP  
Provides Full  
Internet  
Connect  
Options  
Including a  
WEB Browser  
for Major BBS**

***Get Your BBS Connected to the Net with DataXchange***

**Call 1-800-863-1550 for Free Consultation**

(Continued from page 1)

ers. If you run into technical glitches or interface problems, DataXchange will work directly with the vendors to resolve the issue.

### Recommended Configurations

Rather than mislead readers with a minimum requirements list, the following is a recommended configuration. Although you may get by with less, you can be assured of adequate performance and user satisfaction with the following recommended system.

- ◆ A Pentium class PC with 16 meg of Ram and 500 meg hard drive to run BBS software.
- ◆ A 486 file server with 16 Meg of Ram and one gig hard drive.
- ◆ Most Internet service providers require a specific brand of router. DataXchange requires customers to use FRAD, a combination Router, Digital Service Unit, and Customer Service Unit. DataXchange supplies and pre-programs FRAD for your system as part of their installation service.
- ◆ A 56kb connection to your local telephone company. (Arranged by DataXchange).

Optional: A second machine to handle e-mail, SLIP accounts, or other value added services. At one time running an Internet site without a Sun work station was almost unheard of. Now a 486 running LINUX, the widely praised and free UNIX operating system, is often quite satisfactory.

### Start-up Costs

Assuming your BBS is up and running on appropriate hardware, figure about \$1700 for the FRAD router. Add \$750 for first and last month's service with DataXchange. Total startup cost: About \$2500 to \$3000.

### Operating Costs

A DataXchange 56KB connection will cost between \$450 and \$1,000 per month. Faster connections are proportionately more expensive. DataXchange connection costs are fixed — you pay a flat monthly rate.

Sylvan Corazzi, Vice President of Marketing at DataXchange, says the average system operator spends between \$550 and \$675 per month in connection costs — about half the industry norm. The figure includes the \$375 subscription fee charged by DataXchange for its basic 56KB service. The balance goes to cover local teleco charges for your 56KB loop. Your actual cost will depend on local telephone company rates and the distance from your BBS site to the teleco office. DataXchange can tell you exactly what your monthly connection will cost once you give them your area code and the first three digits of your BBS number.

### Yeah, But I Really Want a T-1

DataXchange offers T-1 connections but you should be aware that they are considerably more expensive than 56KB. Your equipment budget will increase by approximately \$2000 and you'll pay three times as much for your local loop and your access feed. Aside from the increased costs a T-1 may be more than what you need. Read on.

### Bandwidth and 56KB Lines

Yes, you can get fractional or full T-1 connections but DataXchange recommends that newcomers start with the smaller 56KB pipe. Bandwidth on Internet is a complicated issue because you only have control of the very last part of the "pipe" connecting you. Generally you are at the mercy of others to use reasonable size connections, and frankly because of growth pressures, that assumption is usually wrong today.

To be more specific, the lines that DataXchange uses to connect from the local Wiltel switch to you is a full 56KB. (Wiltel is the telecommunication wholesaler that connects the DataXchange backbone to the Internet). Data that you send or receive travels full duplex from a set of send and receive buffers at the pop to you at that speed. From the buffers it is then transferred to a DataXchange hub site which is a T-1 connection. From the DataXchange hub, it will travel over as many as 15 segments before reaching a final destination. The only part of this you can specify is the last segment to and from you. When you select an Internet provider you are selecting several other segments and a network topology. But you usually have little if any control or knowledge over these segments because

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<http://sandh.co>

**Why Wait? Get TSX - BBS  
& Get SMTP Support Today!**

(Continued from page 7)

the information is not available to you and is, in any case, constantly changing. DataXchange's network is built using frame relay, so if you want to dig into the details of the speed of that final segment, you have to know about how frame relay works, or at least a little about it.

### Frame Relay and PVC Options

Frame relay sends traffic over PVCs (permanent virtual circuits). These are software defined routes that the information will follow to go from one place to another. Data flows over the network at tremendous rates: millions of bits per second, but the paths are shared on a packet by packet basis with all network users. PVCs do not really exist in any real sense. This concept is very important to understanding the performance of information flow over Frame Relay.

DataXchange offers a number of different PVC options to phase in the cost and speed of your Internet connection. PVC changes are easily made when the need arises. DataXchange buys its bandwidth from Wiltel, a telephone service wholesaler. Since Wiltel's circuits are busier during daytime hours, you will often get the use of more bandwidth than for which you are actually paying.

PVCs come with two numbers. The first is the guaranteed or committed rate; the second is the peak rate which is available when the network is

not saturated. DataXchange offers five options. (See box for details.) The CIR rate is the Committed Information Rate, i.e., the rate that Wiltel guarantees will be available to transmit data. The CIR is used by Wiltel to ensure adequate capacity exists on the backbone. The sum of all the CIRs of all PVCs is the minimum they must have available to meet contractual obligations. The MSR is the Maximum Sustained Rate, i.e., the maximum rate data will flow. The hardware is conditioned to throttle data to not exceed this rate. DataXchange offers several speed/price options, but encourages all sysOps

to start with the lowest speed/cost connection, then upgrade as the need arises. Why?

- 1 It costs less.
- 2 The difference between the CIR and MSR is that Wiltel has the "right" to drop packets in excess of the CIR rate if they chose to. This would happen under conditions of network congestion. However, as a matter of policy

Wiltel is not dropping packets.

- 3 Wiltel Frame relay network is more lightly loaded in the evenings when the majority of BBS traffic occurs. So network congestion is less of an issue.
- 4 DataXchange says they have found that the lowest cost option performs as well as the more expensive options in most cases. You get access to the bandwidth in most circumstances without having to pay for it.
- 5 Performance, depending on how the customer uses the Internet, seems to be controlled by the MSR rate rather than the CIR rate.
- 6 Finally, the learning curve for the technology is so steep that it makes the golden arches look like the golden prairie. Most sysOps won't miss the bandwidth for a while. Don't pay for resources until you need them.

### How Many Users Can 56KB Support?

The simple answer is, "it depends." A more useful answer comes from examining the kinds of traffic an Internet feed carries and the bandwidth required to support that traffic. Most of the popular Internet features are interactive-text based, which have a high burst rate, but a low average rate.

For example: A customer on an active IRC channel might generate about 100 characters of data per second. 56KB could support 56 such customers simultaneously.

Another example: A customer browsing in gopher space might generate bursts of 1000 characters every 15 seconds for an average of 66 characters per second. 56KB could support 84 such customers concurrently.

The most bandwidth intensive Internet service is FTP, yet this service requires an interactive interface requiring operator action. In addition, the routers are usually configured to prioritize telnet traffic ahead of ftp traffic. Let's assume eight persons use ftp parallel with 50% duty cycle and 80% of the available bandwidth. They would each have an effective rate of about 14,400.

Remember that quoted bandwidth is seldom achieved continuously on the Internet because traffic must often pass through congested nets. Increasing the connection speed on your end might or might not increase the throughput to a given address.

### Will I Still Need UUCP?

System operators should be aware that almost no BBS software program directly supports SMTP (Simple Mail Transfer Protocol) or NNTP

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#### PVC Options

Out bound from BBS	Inbound to BBS
32/48	16/48
32/48	32/32
32/48	48/64
32/48	64/46
64/64	64/64



(Continued from page 8)

(Network News Transport Protocol) at this time. This is not a minor limitation. An Internet service without e-mail is like a televised college course. You might get the same information from the professor but the interaction with other students is a big part of the educational experience. Similarly, a user who can't access Internet mail or newsgroups is missing an important part of the Internet experience. The vast majority of users expect e-mail service from their Internet providers and BBS callers are no exception. Below is a summary of the options for adding Internet-mail to your BBS until SMTP technology for BBSs becomes available.

- 1 Wait for the support.** This is the simplest, least expensive, and least desirable option. Many vendors are working on integrated e-mail support although none are publicly committing to a delivery date. You can reasonably expect to see SMTP support sometimes this year for Major BBS from Galacticom and Vircom. Reliable sources report that SMTP support for multi-node BBS platforms including PCBoard and Wildcat! will soon appear as well.
- 2 Most BBS packages today can support the old UUCP (UNIX-to-UNIX) protocol.** PCBoard comes with UUCP support built-in while Searchlight, Wildcat! and Gcomm offer UUCP mail options. Third party developers are releasing UUCP add-on programs for BBS software almost monthly. Setup a UUCP account with a good provider like Holonet and transfer your Internet mail and newsgroups to your BBS. This can be done using a mail server or as a scheduled event. UUCP is a 30 year old technology and is not very satisfactory. Look at this as just a stop gap measure.
- 3 Add a mail server.** This solution also enables you to offer shell accounts to your users. DataXchange recommends a 486/Pentium machine running the LINUX version of UNIX. (LINUX is freeware).
- 4 Have your customers establish e-mail accounts on a freenet system and telnet for**

**their mail.** Kind of cheesy but works well, meets your customer needs, and buys you time until the software companies finish programming the mail features for your BBS platform. And it doesn't cost you anything.

Both UUCP and satellite feeds can be used for USENET (Internet Newsgroups) and UUCP can be used to exchange mail. Once you have a direct connection to Internet you can transfer both USENET (using NNTP) and e-mail (using SMTP) if you wish. However, depending on your hardware and software configuration this may or may not be to your advantage. In most instances you will need a UNIX computer to use NNTP or SMTP.

If you are running The Major BBS, you should know that both Vircom and Galacticom have said they intend to add NNTP support soon. If you already have a UUCP or satellite connection, DataXchange recommends you NOT discontinue that service, at least not immediately.

**Note:** One BBX package is an exception to the UUCP only rule. TSX BBS supports SMTP. We'll take a look at this program next issue.

### How to Contact DataXchange

**Voice 1 (800) 863-1550**  
**Fax (703) 903-7413**  
**Internet sylvan@ dx.net**  
**Majornet robert@tpe**  
**TPE BBS (703) 749-9150**

TPE (The Power Exchange) is a 160 line Major BBS run by Bob Laughlin, CEO of the DataXchange. Login with user i.d. dxnet and password guest. Choose menu item #1 to see board. You can telenet to the system at tpe.com.

**Authors Wanted**  
**Contact Steve Graves at Connect News**  
**(301) 773-8899**

## Major TCP/IP

(Continued from page 6)

signed to dial over modem channels without any change to the add-on itself! Vircom says it has tested its program with Worldlink, Chatlink, Interlink, Maillink, Entertainment Teleconference Link-up, and Galaticomm's Dial-out module. Major TCP/IP's Dialout Channels support RLOGIN and Telnet Dialout Channels.

### About User Count Licenses

Galaticomm sells node licenses in groups of six, referred to as six packs. Major TCP/IP does not use any outgoing channels, saving your precious six-packs for revenue generating incoming lines. If you are currently connecting your users to a TCP/IP capable computer over serial lines, you can probably save much more than the cost of Major TCP/IP just by freeing six-packs and serial ports. Note that Vircom's WWW server does NOT consume user count licenses from your six-packs.

### Costs

The Major TCP/IP OUTGOING Version supports up to 32 TCP sessions, Telnet/RLogin+, and includes FTP Client Software. Ideal for sysOps who want to offer only outgoing Internet connections. PRICE: \$500 You can upgrade to the full version for \$300.

### MajorTCP/IP INCOMING

Supports incoming RLogin/telnet and up to 32 TCP sessions. This version opens your doors to an estimated 30 million Internet users but your BBS subscribers won't be able to leave your system. Some sysOps like it that way. PRICE: \$500 You can upgrade to the full version for \$300.

### MajorTCP/IP COMBO (In & Out)

Supports incoming and outgoing traffic. Gives your callers complete access to the net and net callers access to your board. The combo supports Rlogin & Telnet (In & Out), Finger Client and Server, Finger Information Server, WWW Server, FTP Client, FTP Server (Free upgrade when Available), and up to 64 TCP Sessions.

PRICE: \$700 (This is the same as buying a one-way version and then upgrading to a combo version, except you save \$100.)

### MajorTCP/IP "UNLIMITED" Option

Brings any of the above modules to a maximum of 255 TCP sessions. PRICE: \$500

## How to Order Major TCP/IP

**MajorTCP/IP can be  
purchased  
from the following vendors.**

#### DIGITAL CONSULTING SERVICES

Orders: +1-800-899-2002

Fax: +1-212-949-8083

majornet: sysop@dcs

Internet: Mehrmann@digiconsult.com

#### TESSIER TECHNOLOGIES

Orders: +1-800-473-3177

Fax: +1-305-473-2122

Internet: sysop@society.com

WorldLink: sysop@hs

MajorNet: tti@gcm

#### DATASAFE PUBLICATIONS

1-800-870-0004

sysop@dump.com

Fax: +1-505-294-82225

#### DIGITAL CONCEPTS

Tel: +1-602-292-1300

Internet: jcoleman@indirect.com


***SYSOP NEWS...and  
CyberWorld Report***  
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(Continued from page 5)



- ◆  A new internal program structure that reduces Searchlight's conventional memory footprint, reducing memory-related configuration problems.
- ◆ A badly needed copy function that allows the sysOp to duplicate existing menus and RIP styles in the Config program.

In addition to these features, version 4.5 implements dozens of minor changes that were suggested by Searchlight customers including changes to color code and macro handling, RIP

picklists, address lookup functions, and the direct video door driver used to run DOS programs online.

Searchlight 4.5 will be released on Searchlight's support BBS in Cleveland on May 1st. Current customers using version 4.0 will be able to download free patch files for upgrading their systems to the new version.

**CONTACT INFORMATION** Frank LaRosa at 216-631-9290 (voice), 216-631-9285 (BBS), 216-631-9289 (fax) or frank@searchlight.com.

## Connect News

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