THE MAGAZINE FOR HEWLETT-PACKARD ENTERPRISE COMPUTING

OCTOBER 1995

HP Professional

INDUSTRY WATCH:

- **HP Acquires Convex**
- **HP, Novell, SCO Alliance**
- **Tektronix Nudges HP**
- **Windows 95's Dual Role**

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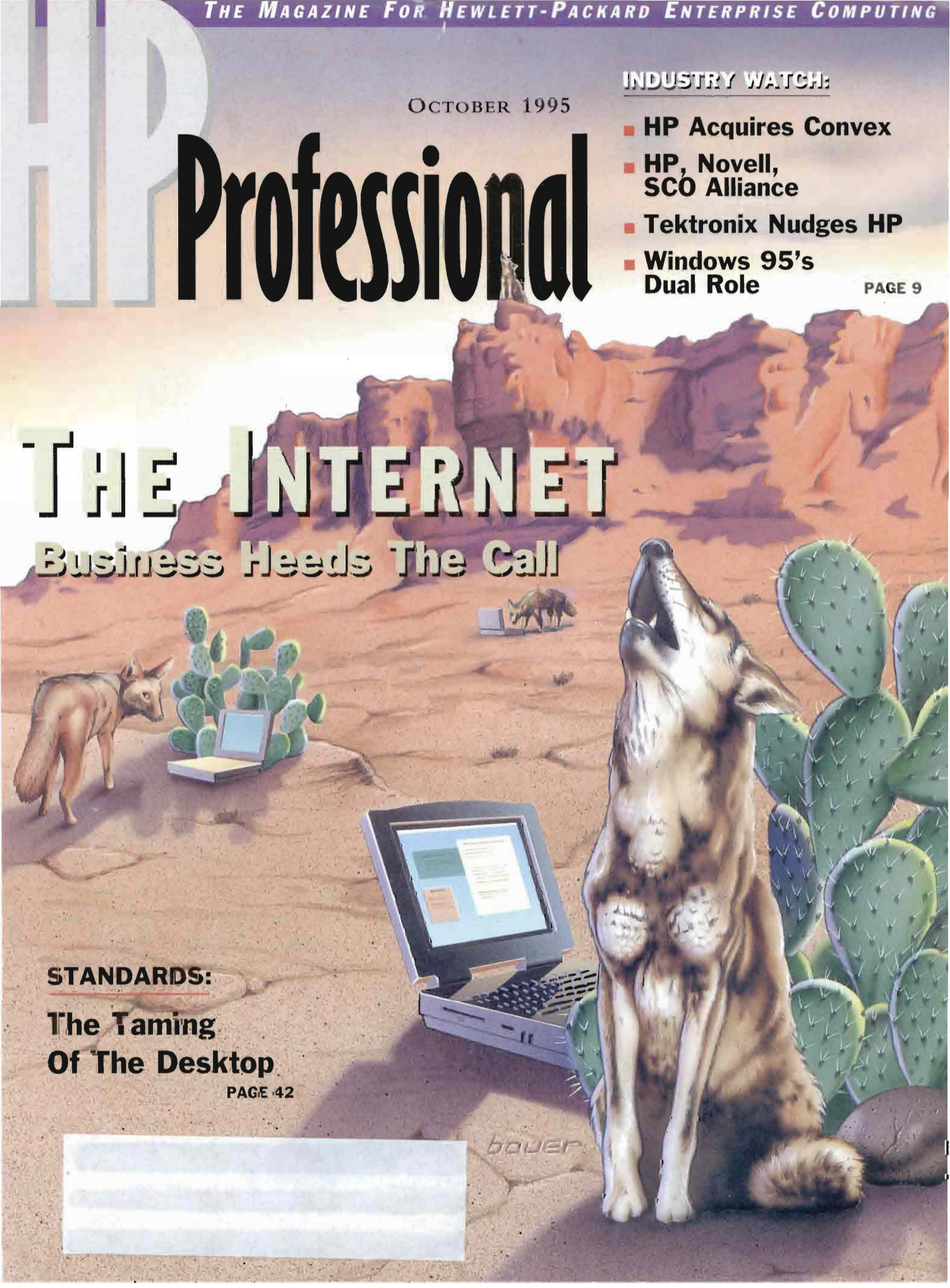
THE INTERNET

Business Heeds The Call



STANDARDS:

The Taming Of The Desktop

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11:30 PM

Firm's working late on big project.
Network's humming along.

11:31 PM

Weird sounds from printer
interrupt your bliss.

GRRRUNK GRRRUNK

11:32 PM

Realize you never learned those
words in fourth-year French.

11:33 PM

But you have IBM printers. You get IBM service.

11:59 PM

They translate over the phone. Printer's saying,
"Refresh my memory."

12:07 AM

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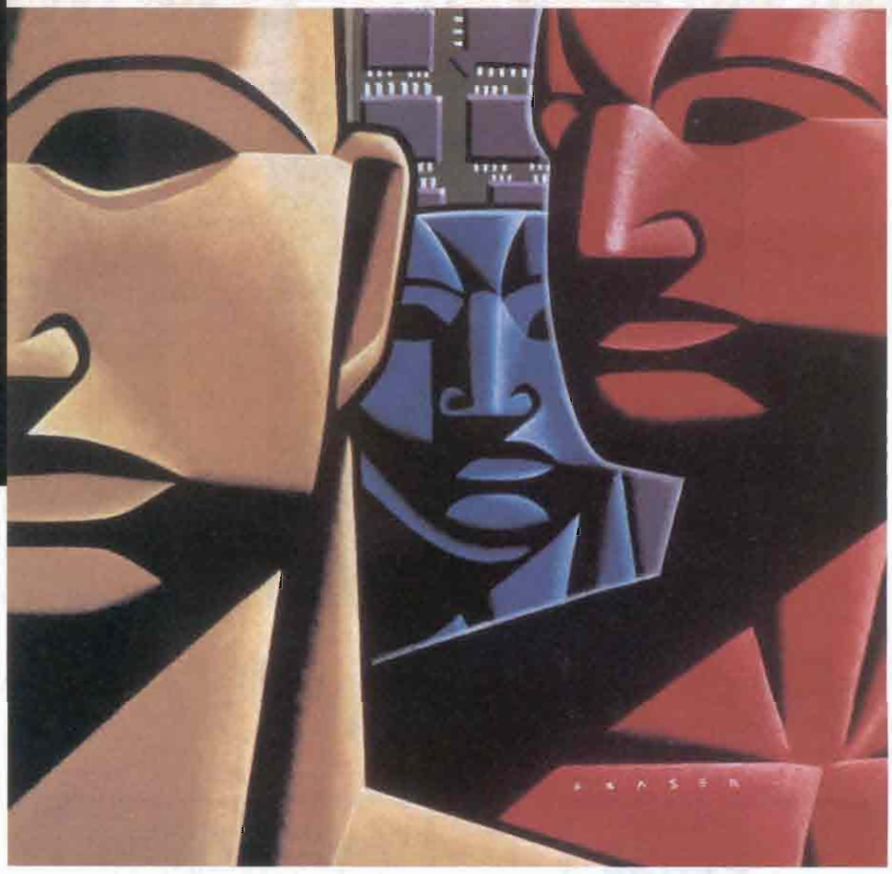

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In the United Kingdom:
IEM, Inc., Colorado House,
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Phone: +44 (0)1608 645000
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All Others:
IEM International Sales
1629 Blue Spruce Drive
Fort Collins, CO 80524 USA
Phone: +[1] 970-221-3005
Fax: +[1] 970-221-1909
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By David Baum and Jim Esch

The Internet. Call it what you like — "Information Superhighway," "The Net," "Cyberspace," "Cyberia." It's a powerful multifunction business tool that allows market and product analysis, research and development and competitive snooping, as well as taking the pulse of your customer base, customer troubleshooting and even recruiting employees. But how can you make it work for you?

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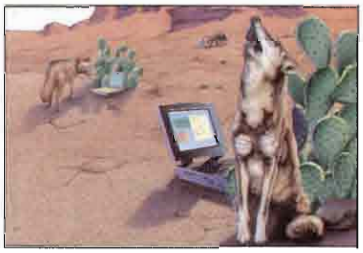

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HP Professional

Cover Illustration By Stephen Bauer

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EDITOR-IN-CHIEF Charlie Simpson
simpsoncm@box101.cardinal.com
SENIOR EDITOR George A. Thompson
thompsonga@box101.cardinal.com
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COLUMNISTS
NETWORKING MANAGEMENT Jill Huntington-Lee
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CONTRIBUTING AUTHORS David Baum, Sam Dickey, Jim Esch, Philip J. Gill Judith Harper, Marty Poniatowski

INTERNATIONAL EDITIONS EDITOR Karine Simpson

DESIGN & PRODUCTION
EXECUTIVE DESIGN DIRECTOR Leslie A. Caruso
ART DIRECTOR Al Feuerstein
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PUBLISHER Leslie Ringe

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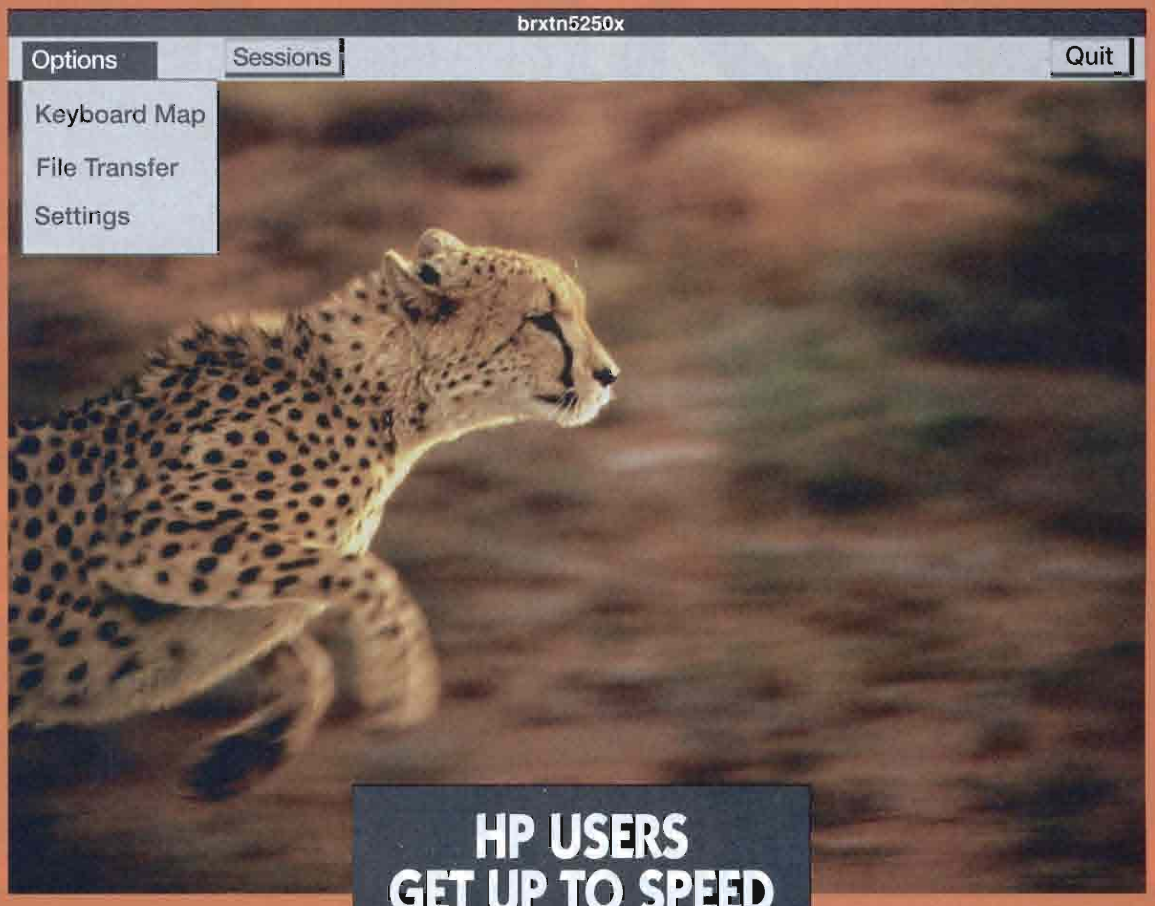

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A Day In The Life

By Charlie Simpson

Not many readers realize the time and planning that goes into the production of a single issue of *HP Professional*. For example, our single-page Product Watch and Strategic Directions articles are not just randomly selected. Our editors research "hot" technologies and then seek out products or companies that we believe our readers would want to know about and possibly invest in.

Most feature-length articles are assigned several months in advance. For although the topic has been selected, we still need to determine the "slant" or approach we will take when writing the article. For example, EDI is a fairly broad subject. Should we cover EDI in academia, in commerce or in business? And what do readers want to know about EDI? Hardware, software or security? And how do we present this information? Through case studies, product roundups or "how-to" white papers?

Once all this is determined and the author is well on their way, it's not unusual for the subject matter to change yet again, because of new products, mergers, changes in technology or the realization that it may just be vaporware.

Once the article is researched and written, we then need time for editing, rewriting and for the editorial, art and production staffs to design and layout each page; not to mention the entire issue, including original art, positioning graphics and advertisements. Finally, departments such as the Industry Watch and Special Update sections are written late in the production cycle to provide the most up-to-date information for our readers and this often leads to the dreaded "deadline crush" for our editors and artists. And that includes me too.

Like August's issue for instance. My editorial "Freedom Of Sleaze," written during the "deadline crush," flushed out the cyber "freedom fighters." The First Amendment is indeed alive and well. And, it is reflected in our Letters department (see p. 14) this month as well as Another Thing . . . column (see p. 64). And as with any healthy debate, there was a wide range of opinions. Thanks to the many who responded. I enjoyed the chance to converse with you concerning the issues of freedom of speech and expression in cyberspace.

Speaking of cyberspace this month, you can "Step Right Up" to our overview of the Internet (see p. 28). Written by contributing writers Jim Esch and David Baum, its about as comprehensive a look at the Net as you can get in one magazine. Besides touching on the basics — service providers, the Web, search tools — our authors also cover some of the issues of the Net as an emerging market for electronic commerce.

And just think, it's only the beginning. There will be more issues than answers in the year ahead. And we will try to tackle some of the most controversial ones right here in these pages. In the meantime, I look forward to hearing from you.

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CIRCLE 294 ON READER CARD

INDUSTRY WATCH

George A. Thompson

HP CONSOLIDATES

Measurement, computer and communication technologies aren't the only things converging at HP these days. HP's Computer Products Organization (CPO), Computer Systems Organization (CSO) and the Worldwide Customer Support Operations (WCSO) were consolidated under Richard E. Belluzzo this past August. All of HP's computer and computer-support related businesses now operate under a single division called the Computer Organization, with Belluzzo as its executive vice president. Belluzzo, a 20-year HP veteran and formerly the senior vice president of the CPO, will report to Lew Platt, HP's chairman, president and CEO. Wim Roelandts and Jim Arthur, the respective executives in charge of the CSO and WCSO now report to Belluzzo instead of Platt.

The consolidation was motivated by several trends: HP's ongoing work with the Intel Corp. on 64-bit CPUs; the demand for networking capabilities on HP PCs and printers; the trend toward moving products through dealers and resellers; the increasing importance of post-sales consulting and integration; and cost structures reflecting high-volume manufacturing. "Large account customers in particular should see the news as a 'catalyst for change' because it's a realization by HP executives that PC and printer workgroup-level products need to be under the same roof as its UNIX products, according to John Logan, president of the Aberdeen Group (Boston, Mass.).

The announcement should quell some of the recent criticism that HP has received for its ambivalent position on Microsoft's Windows NT. The UNIX group has resisted integrating the OS in enterprises with its own HP-UX OS, while the PC group, growing at 60 percent to 70 percent the last two

AT PRESS

Sept. 20, UNIX EXPO, New York — In a move touted as "the future of UNIX and networking," HP, Novell and SCO allied to leverage "overlapping UNIX investments." HP will develop, through its relation with Intel, the 64-bit architecture; Novell will deliver the PC-to-UNIX networking technology with NetWare, and SCO will address the "defragmentation issue" by providing the volume channel.

Sept. 21, PALO ALTO, Calif. — HP and Convex signed an agreement for HP to acquire Convex. Convex will become a wholly owned subsidiary of HP known as the Convex Technology Center of HP. Look to future Industry Watch articles to see how the details unfold.

SOUNDS ALL TOO FAMILIAR

According to systems integrator, Cambridge Technology Partners (CTP; Cambridge, Mass.), many IT organizations are populated with employees for whom training would be a poor investment of a CIO's limited time, money and patience. Choosing not only what they want their IS staffs to learn, but more importantly, who should be taught, CIOs need to identify the employees who can reasonably and swiftly acquire the skill sets necessary to complete the IT mission and weed out those who don't. The following is CTP's list of IT Organizational Pests to help you separate the bits from the bytes. Anklebiters watch out!

Noisemakers: Insatiable readers, they surf the world in search of "new think" sound bites. They like hearing themselves talk, and yet when all is said and done, they haven't implemented anything. More of a nuisance than anything else, they can be saved.

Nomads: They link their self-worth to the number of frequent flier miles they rack up. They generate no tangible output except enormous T&Es. Management must take them off the road and force them to deliver a project, shocking them into becoming humbler and abler long-term employees.

Turf Wonks: They practice an obsessive form of Emersoninan self-reliance, seeking to establish a given rule set as their own. These individuals can be saved by teaming them with high energy, positive, achievers in time-driven, consensus-based projects.

Anklebiters: They take the joy and creativity out of computing. Quick to explain why things won't work, they avoid any and all forms of personal accountability. The only recourse is to remove them from the work environment entirely.

years, has embraced it for use on its Intel-based NetServers. "By merging the CPO and the CSO, HP is demonstrating a commitment to change to meet its customers requirements. If it has the HP label on the box, it should all come from one sales rep with one support organization and one integration organization," says Logan. ●

TO MARKET, TO MARKET

Execution. It's the key to HP's success these days. But like any large company, HP doesn't execute well without a little help from friends. For example, HP recently purchased $1.6 million in software licenses for the WorkStream Distributed Factory System (DFS), a Manufacturing Execution System (MES) from Consilium Inc. (Mountain View, Calif.). Consilium's WorkStream Open and WorkStream DFS applications, running on HP 9000 servers, will first be configured at HP's Singapore Inkjet Supplies manufacturing operation within the year and in at least four other locations over the next two years. HP has already been using Consilium's MES for the past two years or the Components Group Division as well as two plants in Corvallis, Oregon for the Inkjet Supplies Business Unit. ●

NOTABLE QUOTABLES

"Cram people 'full of noncombustible data,' the fire captain explains. Chock them so damn full of 'facts' they feel stuffed, but absolutely 'brilliant' with information. Then they'll fell they're thinking, they'll get a sense of motion without moving."

— Quoted from Ray Bradbury's *Fahrenheit 451* as it appears in the "Information Revolution," by Joel L. Swerdlow in the October 1995 issue of *National Geographic.*

REMEMBER GEOWORKS?

Huh?! You know — GeoWorks. The better-than-Windows operating system that dared to go head-to-head with Microsoft Windows a scant five years ago. Well, GeoWorks (from the company of the same name) is at it again. GeoWorks is hoping that the demand for its new OS, redesigned for small handheld wireless devices like palmtops and PDAs, will eventually create a new fan club. Although unprofitable as yet with revenues of $4.4 million and $3.9 million in 1994 and 1993, respectively, the company certainly has a don't-quit attitude. GeoWorks is already used in the Casio/Tandy's Zoomer PDA. And this past February, the company licensed its software to international telephone conglomerate Nokia AB. More interestingly, GeoWorks licensed its operating system to HP in 1992 which is developing a $300 electronic organizer likely to use the new OS. ●

WINDOWS 95: THE TACTICAL OS WITH A STRATEGIC MISSION

RESEARCH ROUNDUP

Because Windows NT Workstation failed to generate much developer or market interest or acceptance, Microsoft was forced to offer Windows 95 as an alternate, less disruptive upgrade to its DOS and Window 3.1. Consequently, Windows 95 is intended to play two strategic roles: serve as a place holder for Window NT Workstation; and provide an application base and migration path to NT Workstation.

Microsoft wants Windows 95 "to preserve the market" during the two to three years it will take for Windows NT Workstation-capable platforms to become common and NT-exploitative applications to become widely available. Windows 95 applications are developed on the same Win32 APIs as Windows NT and Microsoft will issue Windows 95 logos only to those products that comply with these APIs. Architectural differences may prevent 5 percent to 10 percent of these applications from running on both OSes, a problem that should be eliminated in the next release of Windows NT Workstation. This will provide an instant application base for Windows NT and provide customers with a relatively seamless upgrade path to the new OS. Moreover, future machines will be increasingly capable of running Windows NT off-the-shelf, without the need to enhance hardware, making upgrades from Windows 95 to NT a "no brainer." NT Workstation already accounts for 70 percent of total NT shipments (about 300,000 in 1994 and over 600,000 in 1995). More than 75 PC and workstation vendors already offer it preloaded on their machines (albeit as an option). More importantly, a growing number of large corporate customers are coming to see Windows NT, rather than Windows 95 as their strategic OS.— *MarketVision (August 1995), Summit Strategies (Boston, Mass.)*

TEKTRONIX BESTS HP IN X TERMINAL SURVEY

95 customers, representing 15,000 installed X term seats, were surveyed.

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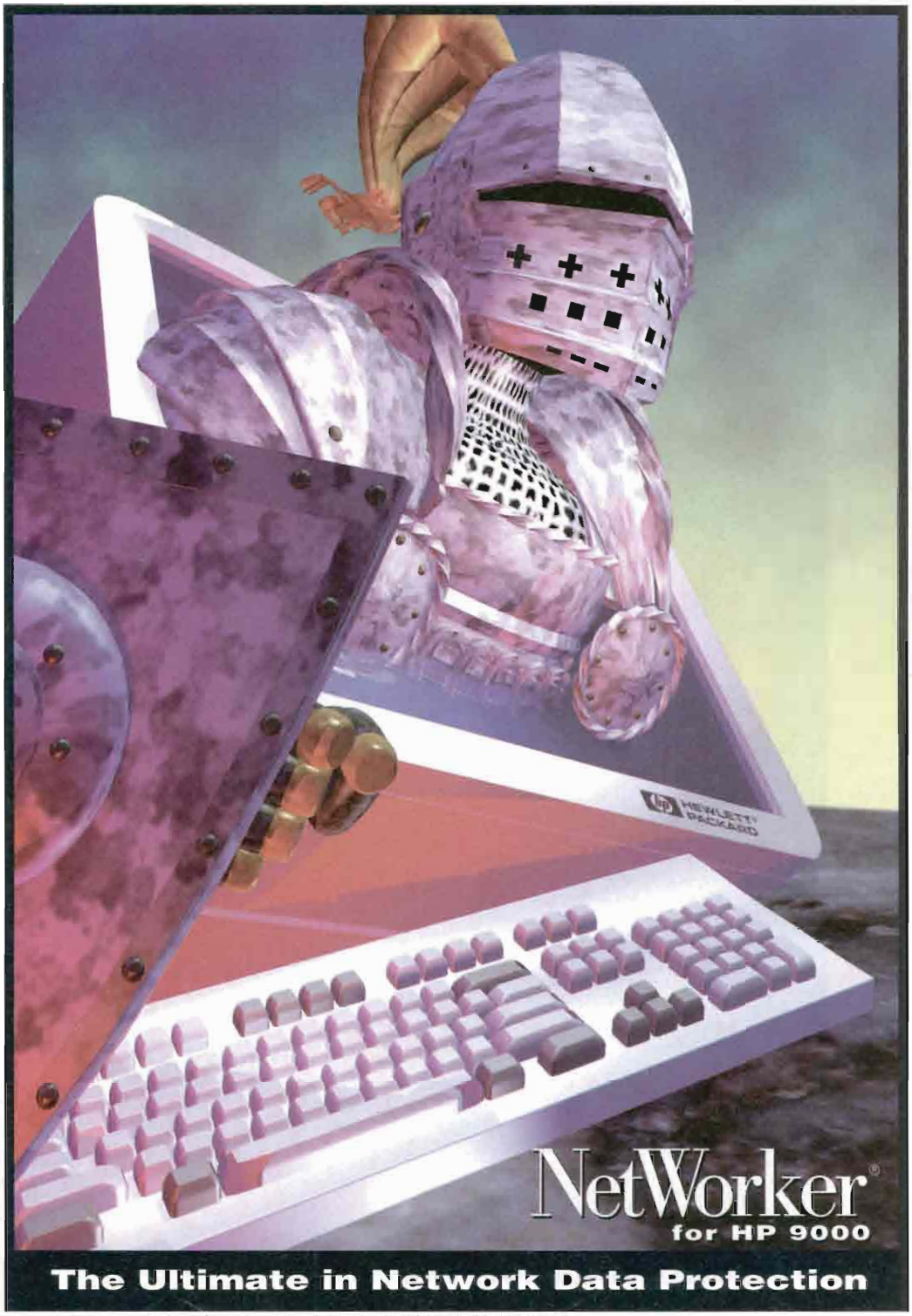

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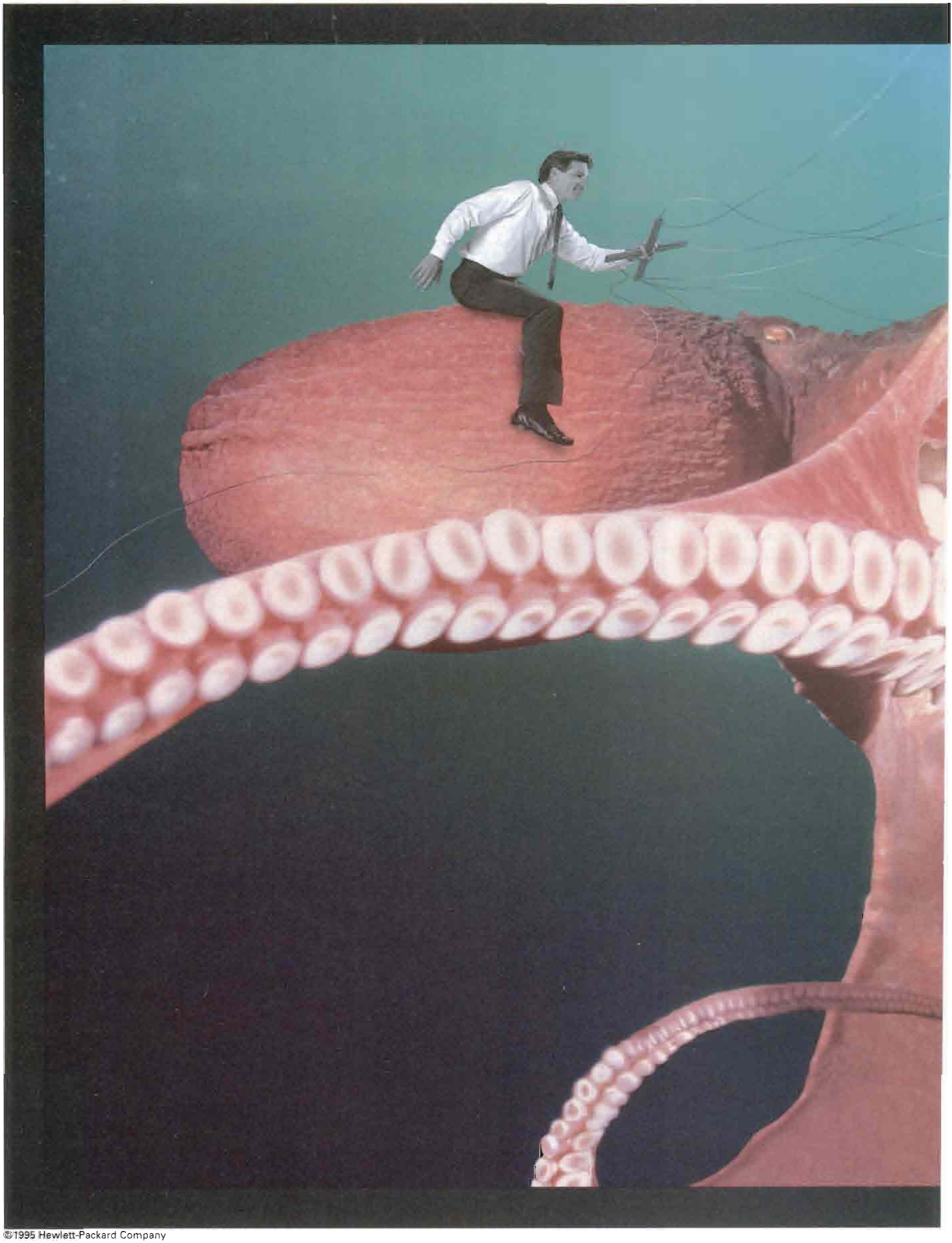

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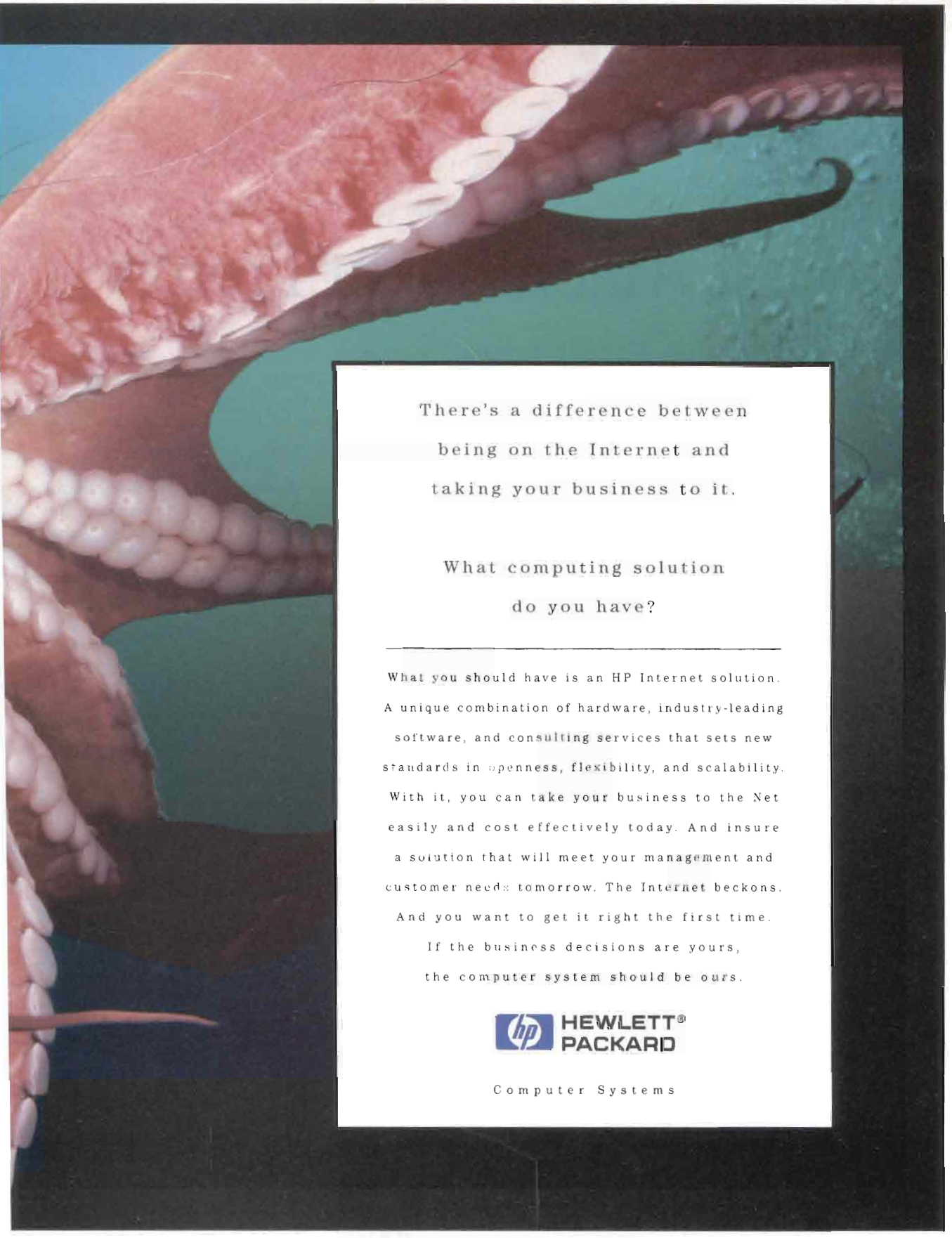

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First Amendment Frenzy

Your editorial "Freedom of Sleaze" in the August 1995 issue was absolutely right on — you really tell it like it is! You've cut through the smoke screen of rhetoric surrounding this issue and put your finger on the reality. There's only one thing I could add: people need to be more concerned about their responsibilities than their rights. Only that way can we have true freedom.

Robert S. Haney

In your August editorial, you wrote the following: "I defend freedom of speech everyday in my job; but when there is speech to defend." How simple. The "pornography" and "dirty pictures" you mention are not worth defending because there just isn't any speech to defend.... What about the racier bits from Hamlet or the Song of Solomon? I'm sure many people out there would agree that these too qualify as "pornography" and are not worth defending.

If something like the Exon amendment ever went into effect, messages and the like would have to be scanned for keywords and anything even remotely questionable would be censored. I would wager that your editorial wouldn't make it.

Zube

Unless you propose to limit the Internet to state and national borders, this whole regulatory debate is just so much political posturing and hot air. I doubt very much that those in Finland really care what U.S. state or federal law may say.

If you don't like what you see on the Internet, don't go get it and then complain or cry for the government to hold your hand and keep you safe.

James B. Pennino

It's not often that I will take the time to write regarding an article I've read, but I have to let you know that I really appreciated and enjoyed your editorial in the August 1995 issue. I think that you hit the proverbial nail smack dab on the head. Hopefully, people will be responsible enough to sort out this type of issue before politicians and police have to become overly involved.

Good writing!

Clifton Sandford

Your August 1995 editorial is fine, but flawed. In order to determine what is "Questionable information," you need a censor and an enforcement system. These are almost impossible conditions to apply to the global Internet. Remember that the Internet helped bring down the revolution in Russia, where the messages would have certainly been deemed "Questionable" — that's the trouble.

Bud Rich

I can see your argument, that "Freedom of Speech" should not be the battle cry when all some of these people are saying is "let me have my smut." The problem that I have is that what is questionable to one person may not be to another.

"Where do you draw the line?" ...The answer is that you must get a consensus..., no matter what the offensive [item] is. The question boils down to Freedom of Speech, no matter how much you don't like to see that. What is offensive to one set of people isn't to another.... Remember, as recently as the old U.S.S.R. typewriters had to be registered. . .

I choose to have an anonymous ID so that I don't have problems.

Gandalf The White

[In regard to your August editorial, "Freedom Of Sleaze"] Thanks, I'm glad to see someone call a horse, a horse.

Charles W. Schoppet

Letters may be edited and should be addressed to HP Professional, 1300 Virginia Dr., Ste. 400, Fort Washington, PA 19034. Fax number:(215) 643-4827. Internet address for editors:
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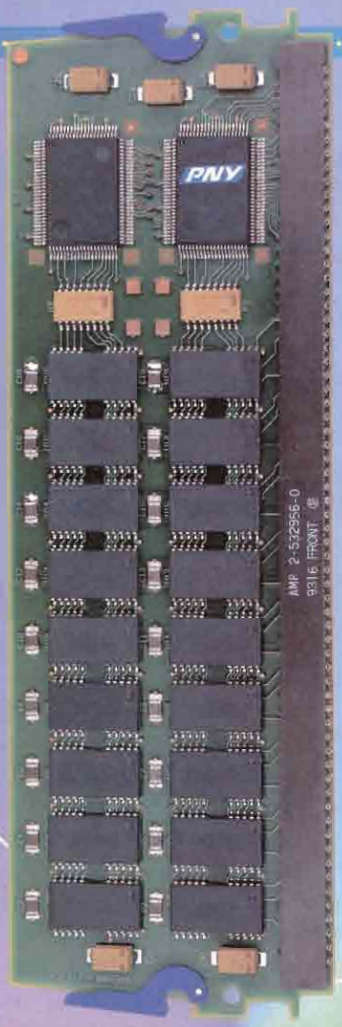
HP 9000 Memory



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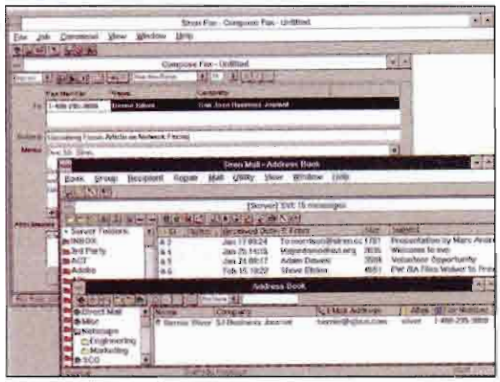
SME 2.0 Answers The Mail And Fax Siren Call



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CIRCLE 355 ON READER CARD

With an increase in faxes and E-mail comes the problem of managing and integrating them, especially in a large company. If the goal of the paperless office is ever to be attained, integrating fax and E-mail is a necessary step in the process. You can get a head start with the Siren Messaging Environment (SME) 2.0 from Siren Software (Palo Alto, Calif.).

With SME 2.0, users in remote locations can send and receive documents from centralized servers. Remote laptop users can fax a document located in a centralized "information warehouse" to anyone, anywhere in the world. Remote users also can receive a fax as an E-mail attachment and then forward that fax to another remote user.

Besides sending and receiving text messages over the Internet, Siren Mail 2.0 also has the capability to send and receive MIME-compliant multimedia attachments such as graphics, bitmaps, faxes and spreadsheets.

Siren Mail users can transmit messages while continuing to compose new ones, allowing one message to be customized for multiple recipients. With the built-in address book, users define personal entries that include E-mail addresses and fax numbers. Users also can access addresses from a public address book.

Siren's support of the IMAP 4 protocol allows remote users to connect to their mail server, download selected messages, disconnect and then forward, reply, save and delete offline. Upon reconnecting, the Siren Mail Server synchronizes mailboxes on the client and the server. Siren Mail's optional Auto-Reply feature can reply to incoming mail with a personalized message when the user is away from the office for an extended time.

Siren Fax 2.0 clients allow users to create, send, receive and print faxes right from their desktop. It also integrates with third-party products and internally developed applications. Siren Fax can handle up to 30,000 fax pages per day.

With Siren Fax, users can delay low-priority faxes to take advantage of discounted off-peak long distance rates. Siren Fax allows incremental fax modems and lines to be added as demand increases.

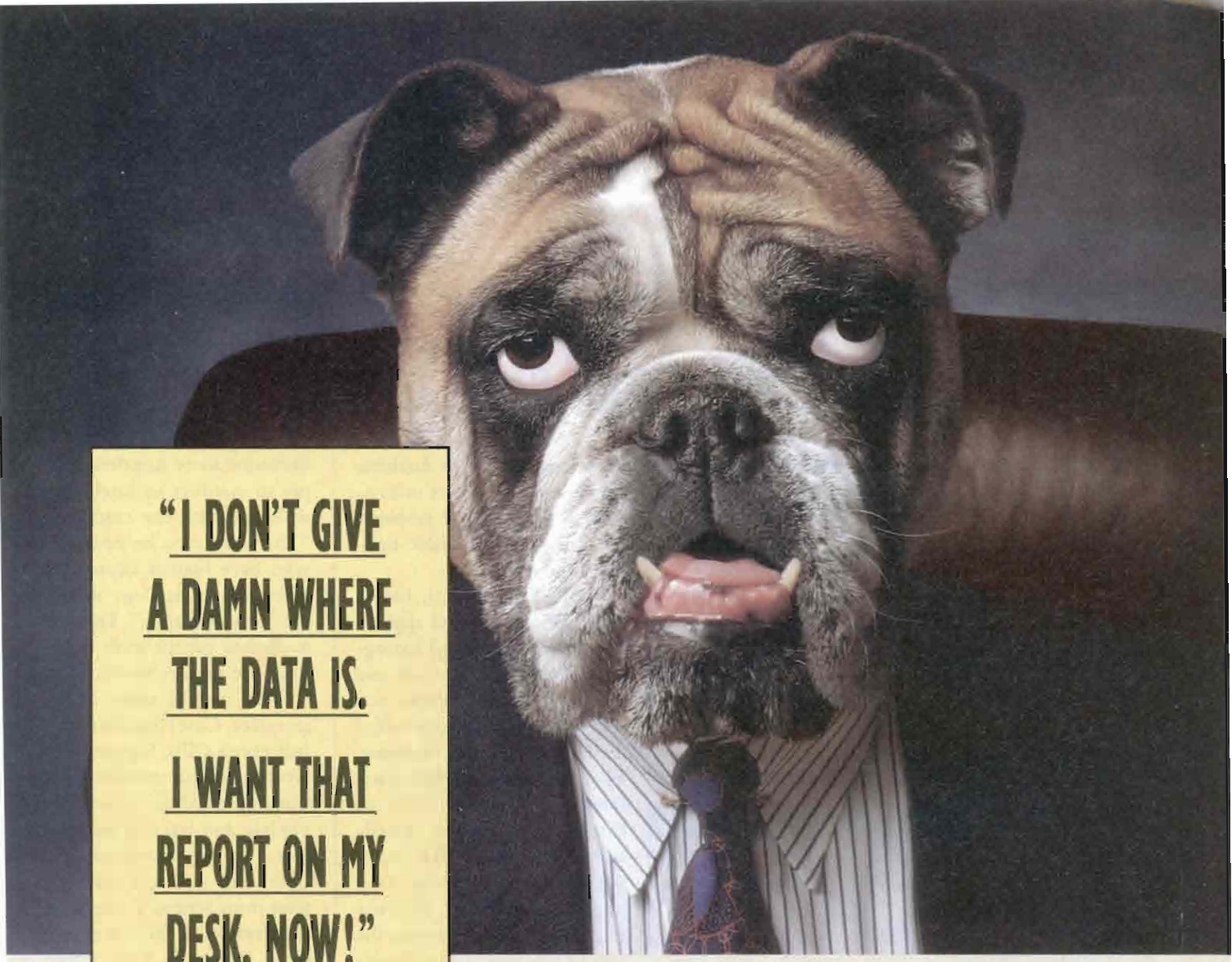
And, it can route incoming faxes automatically to the recipient's desktop with the optional Auto-Router when a Direct-Inward-Dialing (DID) number is set up for each user.

The Siren Fax UniPost Agent acts as a translator between Siren Fax and various E-mail packages such as Siren Mail and Lotus' cc:Mail. Incoming faxes are transmitted to the appropriate mail agent as binary attachments. Outgoing E-mail messages and mail attachments are translated into fax images for transmission by Siren Fax.

Integration between Siren Mail and Siren Fax lets users send a fax from Siren Mail and receive incoming fax messages into Siren Mail. Incoming fax messages can be routed to the recipient as E-mail message attachments. SME 2.0 also includes APIs for creating fax and mail-enabled applications.

Prices for Siren Fax Server 2.0 and Siren Mail Server 2.0 start at $2,895 and $2,995, respectively. Windows clients cost $100 each. Motif and character mode clients also are available.

—John P. Burke, HP 3000 Columnist



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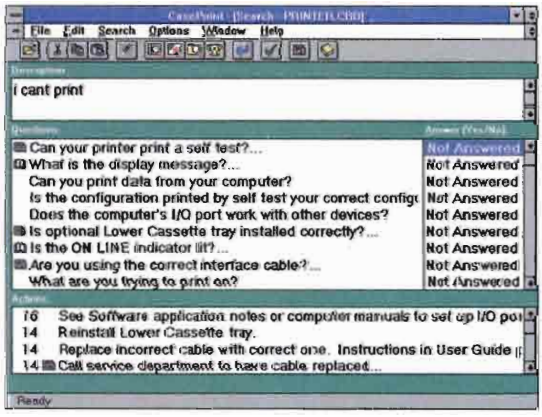
No Federal Cases With Inference's CBR2



CBR2

- $1,495 per seat; 10-20 users including call tracking costs $3,000-4,000 per seat
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CIRCLE 351 ON READER CARD

"Our thought was to move the delivery of support to less technical people," says Narendra Dev, engineering scientist at HP's Multivendor Services Division (Mountain View, Calif.), which oversees HP's worldwide customer support operations. "To do this we needed to understand how engineers actually troubleshoot." To accomplish that goal, Inference Corp.'s CasePoint, one component of its CBR2 software, was chosen over other decision-tree-oriented products. CasePoint, a front office application for viewing casebases, is most often used by companies reengineering their customer service operations and for in-house helpdesks. Casebases or knowledge-bases are databases containing examples of successfully solved customer problems or some other applicable business experience.

CBR Express 2.0, Inference's Windows-based application for authoring and managing automated helpdesk and customer service systems, was tested for a month and a half at the HP call center in Germany. They moved onto UNIX platforms in October 1994 in France and Germany. Hardware consists of HP 9000 Series 700s and 800s. Dev hopes that future product enhancements will alleviate the cost of creating and maintaining the knowledge bases — still a manual labor-intensive process. Also important is the cost of deploying casebases in multiple languages.

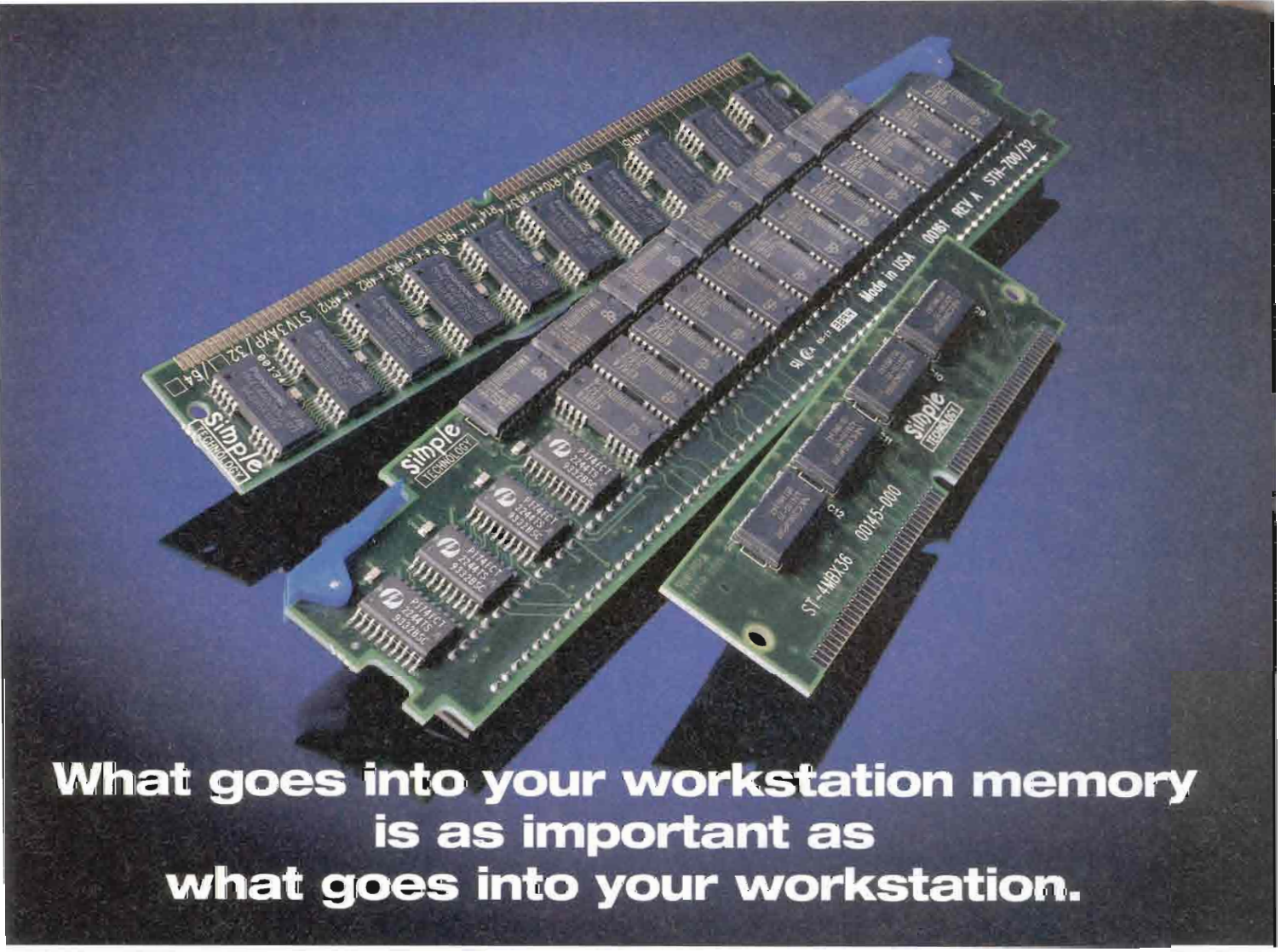
"When you get a call saying 'I'm having this particular problem, can you find me a solution,' you would hit a button or click on a menu item that would take you to CasePoint," explains Nobby Akiha, director of CBR marketing. "There you would type in the free form English text description, which brings back a number of cases that seem a very close match to that description, plus a number of questions that help you further navigate to the right solution."

According to Akiha, the questions allow helpdesk people to conduct an intelligent dialogue with the customer. "This may even be operators who have limited knowledge about the technology system they're supporting." Training needed to use the tools ranges from one to three weeks.

You would most likely interface CasePoint through Inference's CBR Express Help Desk Series that includes a call tracking module, inventory module and training module. But you can also integrate CasePoint with call tracking tools from Scopus Technology (Emeryville, Calif.), Remedy Corp. (Mountain View, Calif.) and Vantive Corp. (Mountain View, Calif.).

New to the CBR2 are two authoring modules: The Generator, which takes documents and indexes them for use in CasePoint; and The Tester, an automated casebase testing tool. Inference is also providing pre-packaged casebases for popular PC software programs via Serviceware's KnowledgePaks and KnowledgeBroker's KnowledgeBases. CasePoint costs $1,495 per single user; 10 to 20 users including call tracking costs $3,000 to 4,000 per seat.

—Jim Esch,
Contributing Author



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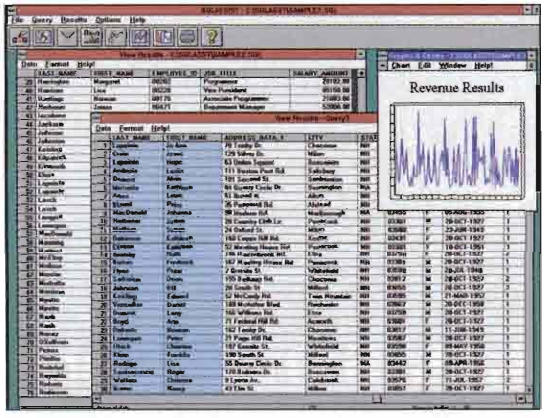

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CIRCLE 352 ON READER CARD

It's not uncommon in large corporations for each division or department to have its own "standard" RDBMS. But beware: Because each vendor's implementation of SQL is not compatible, getting and retrieving the information stored in those databases has become a problem. However, you can get an assist from SQLAssist from Software Interfaces (Houston, Texas) which allows users to access and retrieve information and generate reports from multiple RDBMSs stored on multiple servers with a single query.

From desktop clients running Microsoft Windows or Windows NT PCs, OSF/Motif workstations or character-mode terminals, users launch queries against the server portion of SQLAssist. That can include Oracle, Sybase, Informix, CA/Ingres, IBM's DB2 and DEC's Rdb. Finally, these databases can reside on any of the UNIX server platforms, including HP servers running HP-UX.

SQLAssist can handle complex queries against large databases, such as those typically found in data warehouses, according to Rahul Mehta, the company's product marketing manager. "We use the full power of the underlying database to enhance our performance," says Mehta. "We have designed SQLAssist to do all the sorting and filtering on the server. Some of our competitors bring all the data down to the client and try to do the work there, but that slows performance considerably."

David Richoux, a systems analyst with Shell Oil (New Orleans La.), says his department has been using SQLassist to generate standard reports from an Oracle database running on an HP 9000 server using a character-based user interface. Using the cron facility on HP-UX, SQLAssist has been programmed to send a standard set of queries periodically to the database, then automatically generate reports.

Recently, Richoux says his department added Hypertext Markup Language (HTML) headers to selected SQLAssist queries, which return documents suitable for immediate posting to internal Web servers. Only Shell employees have access to these Web pages. "Because we run these queries through cron, they automatically update the Web pages as the information is updated."

SQLAssist also includes several features aimed at the non-technical user. For example, users can directly access the metadata in any of the supported relational databases without having to set up or maintain a separate data dictionary. It also includes an ad hoc report writer and is easily customizable for either individuals or groups. For administrators, SQLAssist supports multiple levels of security. Administrators can enforce database and system access restrictions on rows, tables and columns.

ProReports, a separate product from Software Interfaces, includes all the query, reporting, security and customizable features of the standard SQLAssist, but adds new report formatting and type font capabilities for presentation-quality reports.

Prices start at $695 for a Windows or Windows NT version, and at $1,500 for an OSF/Motif version running on a UNIX workstation. A Windows 95 version will be available by year end

— Philip J. Gill, Contributing Author

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CIRCLE 299 ON READER CARD

The Adager Times

For information that's fit to store and retrieve

So much has happened since Adager began serving you in 1978. Hewlett-Packard and independent software vendors have developed several landmark technologies that Adager supports automatically for you. Let's review a sample of questions and answers from the 1990s.

Instantaneous capacity changes? Adager supports dynamic detail dataset expansion (DDX), which HP implemented beginning on RISC MPE/iX 5.0. As a bonus, Adager can do instantaneous detail capacity *decreases* on any computer (CISC or RISC) with any version of MPE.

Are you still on an older HP 3000? Adager also runs on *Classic* CISC machines and does its best to perform as fast as possible within their limited environment. We work hard to update our CISC software when we update our RISC software (as we did for *instantaneous decreases* of detail dataset capacities, for example).

RISC? Adager has XLs with ***fast*** proprietary native-mode technology. Adager automatically—and dynamically—loads these RISC run-time libraries on RISC computers.

Third-party indexing? Adager supports TPI when repacking detail datasets and when copying or renaming databases.

Very large datasets? Adager supports master and detail datasets with more than four gigabytes ("jumbo" posix datasets).

Client/Server? Adager automatically updates SQL DBEnvironments as it transforms attached IMAGE/SQL databases. You do not have to detach them before transforming them with Adager and you do not have to reattach them afterwards.

NetBase? Adager Corporation and Quest Software developed a protocol. NetBase now captures the Adager changes you perform on a primary database and automatically shadows your transformations.

Cruise control? Adager's Console (priced separately) constantly monitors your databases and keeps them within your specified requirements for capacities, repacking, and so on. Adager's Console has a *client* component that runs on a PC under Windows and a *server* process that runs on the HP 3000 (even on older *Classic* CISC machines).

How about tier pricing? If you have large RISC HP 3000 computers, relax! We ***do not*** apply tier pricing according to the type or size of your hardware. We have *one* price. With Adager, you get native-mode RISC support at no additional cost to you—a nice thing to have in these greedy 1990s!

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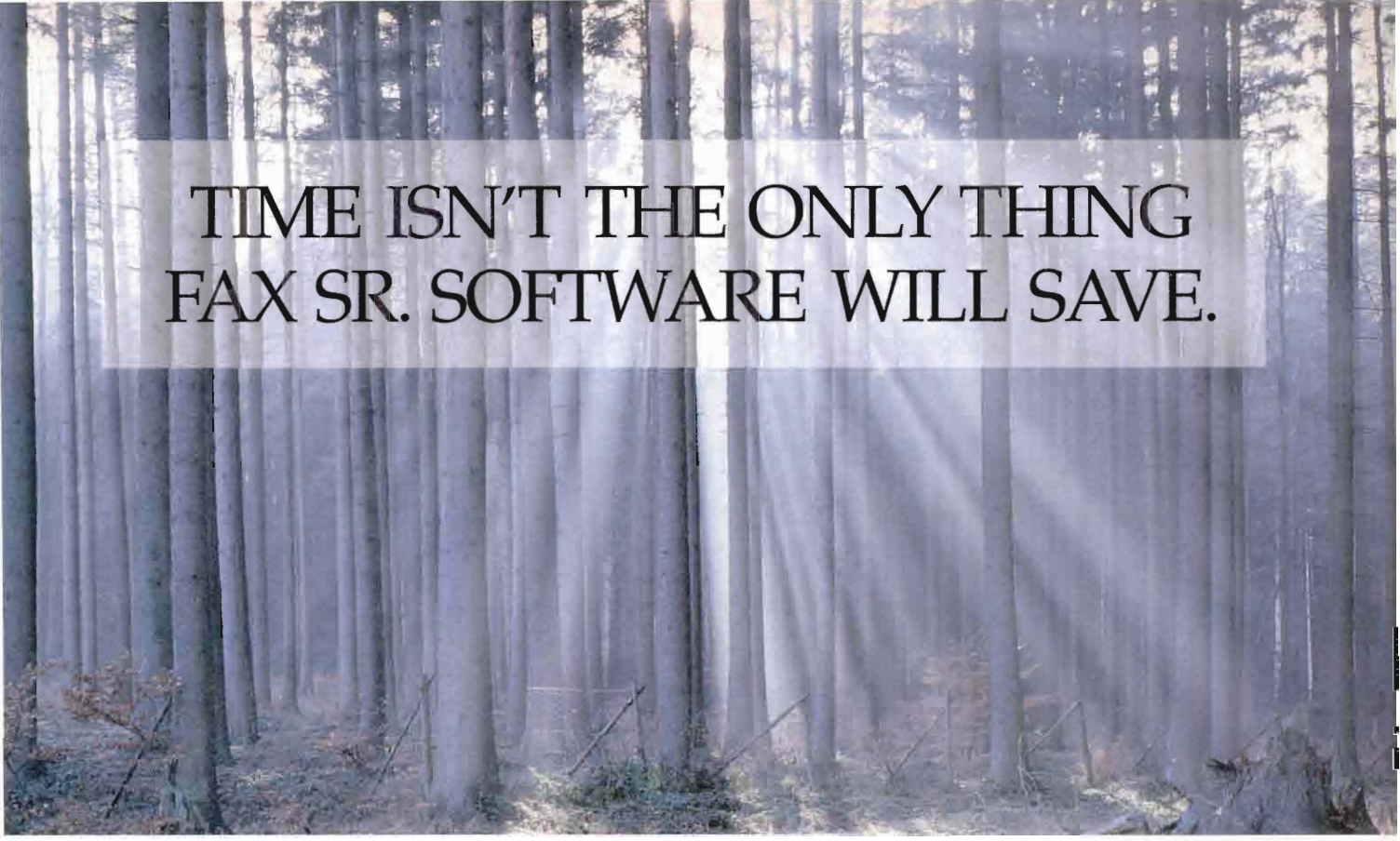

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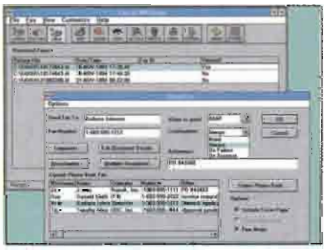

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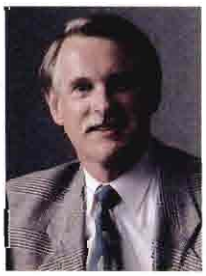
Inside "Intel Inside"

Intel Corp. Looks Around And Sees PCs Here, There And Everywhere



"Job One for Intel is to continue increasing performance and improving price/performance in the microprocessor industry ."

David House
General Manager of the Enterprise Server Group
Intel Corp.

Intel Corp.
2200 Mission College Blvd.
Santa Clara, CA 95052
tel: (408) 765-8080
fax: (408) 765-9904

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If the computer industry doesn't live up to its smaller, faster, cheaper billing, don't blame the Intel Corp. (Santa Clara, Calif.). In 1971, Intel manufactured the world's first microprocessor — the 4004. All of four bits wide, it used 2,300 transistors. However, by 1985, Intel's 16 MHz 386 chip (with 275,000 transistors) set a standard as the first 32-bit CPU. In 1989, Intel's 33 MHz 486 had more than 1 million transistors. In 1993, Intel's 60 MHz, 64-bit Pentium (300 times faster than the 4004) crammed more than 3 million transistors on a silicon die. Not bad for a company founded in 1968 as a DRAM supplier.

So it's no surprise "that 'Job One for Intel,' is to continue increasing performance and improving price/performance in the microprocessor industry," according to David House, Intel's general manager of the enterprise server group. Intel also provides its i960 RISC CPUs which are used as embedded controllers in networking and printer products. And, Intel is a worldwide competitor in the flash memory and LAN management markets. In 1994, it all added up to $11.5 billion in revenues, a 31 percent increase over the previous year. Although net income was relatively flat at $2.3 million, Intel stockholders could still claim an average 27.3 percent return on equity.

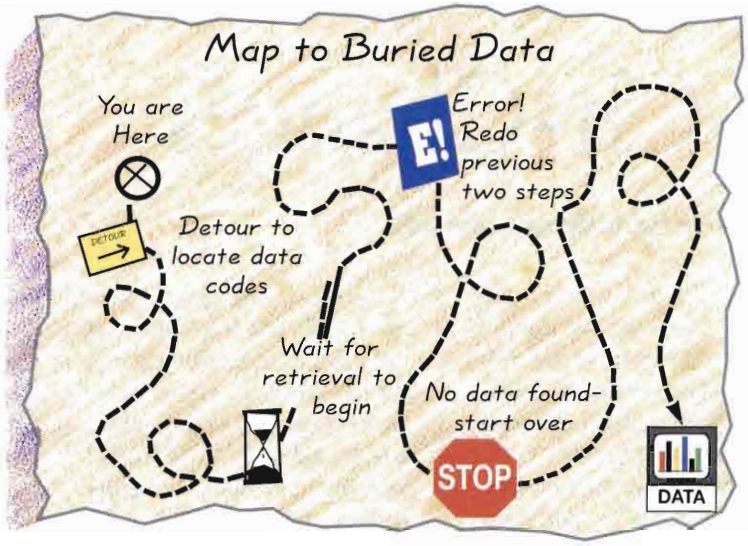
Intel did, however, suffer a minor setback last year when it took a $475 million pretax charge to replace Pentium CPUs with flawed floating point units. Intel's initial response — a selective return approach — was "a result of our engineering culture." But House says, "We learned a lot about consumer marketing from that experience." Nevertheless, Intel shipped 6 to 7 million Pentium CPUs last year. In fact, the Pentium still ramped 10 times faster than Intel's 486 microprocessor.

With a dominant 75 percent slice of the worldwide microprocessor pie, Intel's challenge, emphasizes House, is to "not only increase our slice of the pie, but to increase the size of the [whole] pie as well." That means creating and meeting the demand for PCs (which is projected to exceed 100 million in 1999) as not only a computing system, but as a business communicating device. Or "to make the PC it" as House says. That means establishing desktop standards around Intel's CPU technology. For example, Intel's Peripheral Component Interconnect (PCI), a 64-bit local bus technology, has been adopted by all PC vendors. HP introduced its first PC-based server in October 1994. Other standards in which Intel exerts a considerable influence include the Telephony Application Programming Interface (TAPI), PC Cards and Indeo audio/video compression technology.

The biggest contribution to making the PC it will come from reducing the number of peripheral boards that the PC supports. For example, multimedia and networking capabilities will be compressed onto the host CPU for native signal processing (NSP). Providing NSP is a significant part of Intel's mission "to become a building block supplier to the computer industry worldwide." But getting there will require large capital investments in manufacturing and R&D. In 1994, the company spent $2.4 billion and expects to spend about $3.5 billion in 1995 in capital. R&D expenditures accounted for $1.1 billion in 1994, with $1.3 billion estimated for 1995. So far the money has been well spent. By the end of 1995, Intel's next CPU — the P6 — will have 5.5 million transistors and operate at 133 MHz. Future plans include, the P7, already in the design phase. And by the end of the decade, the first results from the HP/Intel partnership are likely.

—George A. Thompson, Senior Editor

Is Your Business Data Hard To Access?



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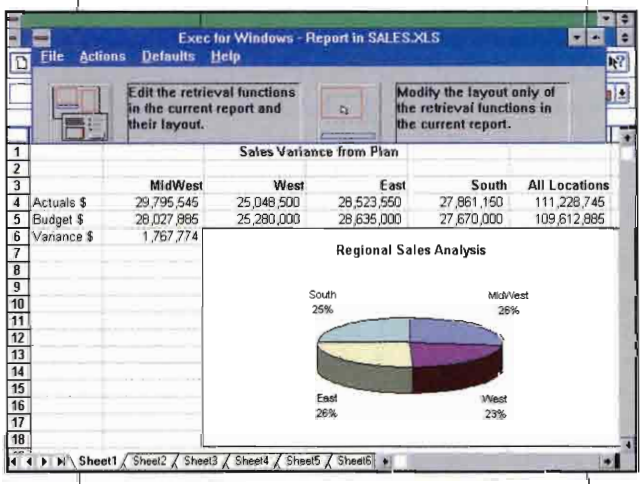

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Ch-Ch-Ch-Changes

Continuus Software Corp. Stares Into The Face Of Change . . . And Smiles

"In the next two or three years, change management must be integrated into configuration management."

John Wark
CEO and President
Continuus Software Corp.

Continuus Software Corp.
108 Pacifica
Irvine, CA 92718
tel: (714) 453-2200
fax: (714) 453-2276
CIRCLE 353 ON READER CARD

Change. Is there a better word that captures the spirit of the '90s? OK, maybe confusion. Either way, that's why Continuus Software Corp. (Irvine, Calif.) offers its configuration management product of the same name to software development organizations where change is the name of the game.

And as if you haven't noticed, developing software is getting more complex, not less. That's why many organizations across all industries are buying software configuration management (CM) tools like Continuus, which according to Ovum Ltd. (London, United Kingdom) will become a $493 million worldwide market in 1995 and $716 million in 1996.

John Wark, Continuus' CEO and president, defines configuration management as groupware for software engineering. "It starts with version control and should expand to include build management," he explains. But the traditional CM approach suffers a litany of problems: duplicate and missing data, unsynchronized project versions, an inability to recreate releases, limited access control-based roles, maintenance of scripts and lack of project visibility.

To help change all that, Continuus (founded as CaseWare Inc. in 1987) changed its name, shipped version 4.0 of Continuus/CM and Continuus/PT, and hired Wark in 1994. So, Continuus embeds a customizable, object-oriented process management data model into its software. In HP environments, Continuus integrates well with HP's SoftBench.

"It helps control how objects [scripts, executables, source code, documentation] flow throughout the development cycle." In other words: "who can do what to [the objects] and when." Although some vendors view them as separate entities, Wark says that in the next two or three years, change management must be integrated into configuration management.

"Continuus was the first company to have an object-oriented system," says Mickey Williamson, lead analyst for the QWERTY Group (Warwick, Mass.). Another way to look at it, she says, is that Continuus helps control, rather than manage, the process of development. It's a subtle difference. According to Wark, Tandem Computer has customized their software and "we are working to get that back into our product." The Defense part of Texas Instruments' also uses Continuus.

Privately-held Continuus goes code-to-code with publicly-held Atria Software (Atria, Mass.), a $9.3 million (1993 revenue) competitor. After receiving a $7.5 million cash infusion from several venture capital firms, including Brentwood Associates (Los Angeles, Calif.), over the last two years, Wark expects the privately held Continuus, which grew 40 percent in 1994, to grow "well over 100 percent in 1995". Although a young company, with its business primarily entrenched in the United States, Wark is looking forward to growth in Europe and Asia.

Europe is especially promising with its top-down management approach. "There's less controversy regarding process management there." And in Asia, Wark cites the current and increasing number of companies already doing software development in the Pacific Rim. "Our leading-edge customers are building team-oriented distributed development environments across the globe."

Recent concerns over "buggy" software (e.g., the Denver Airport) is another important factor in the growth of the market, according to Wark. "CM is a requirement for software quality," says Wark. Ironically, change — in the form technology evolution — is Continuus' only business "threat," says Wark. "It's just something we have to adapt to."

— *George A. Thompson, Senior Editor*

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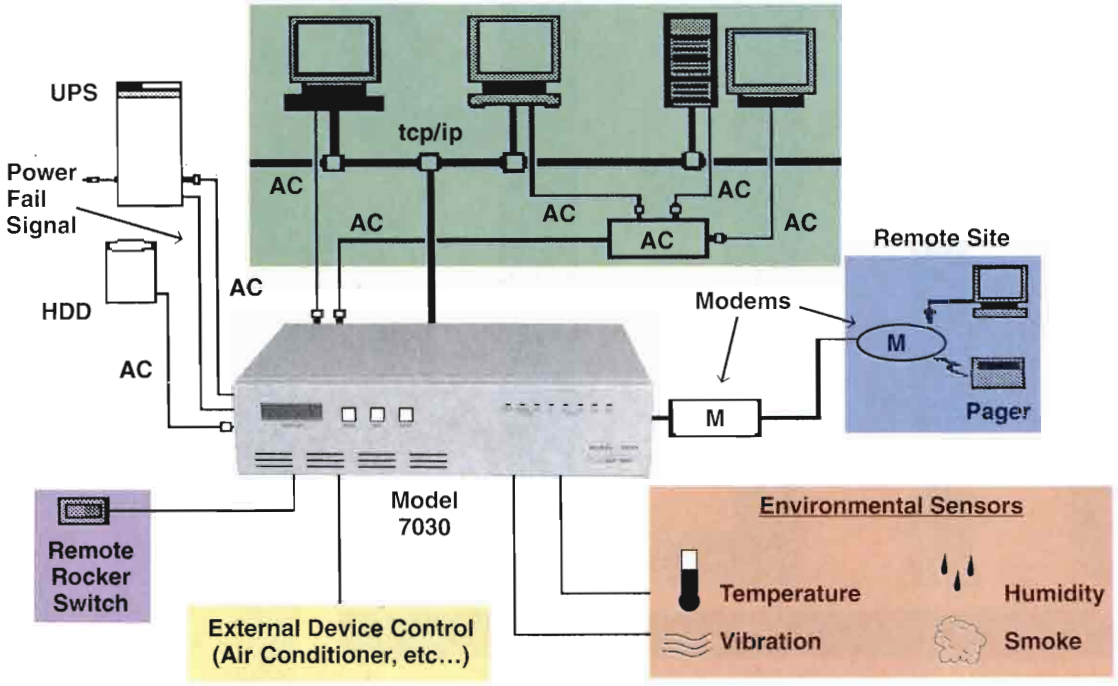

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- Which brings up ***convenience.*** Non-technical users do not need to know shutdown or startup procedures. They can just flick the remote rocker switch off or on and go, or even let the programmable timer do the work. Technical users also benefit. They too can just 'flick and go'. No more shutting down (or starting up) systems one at a time. In fact, you could even remotely shutdown one or several workstations by using the 7030's built in modem port.
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STEP Right UP

David Baum and Jim Esch

Cyberspace Is Open For Business

It cuts more ways than a Ginzu knife. It's as shamelessly promoted as those aerobics videos promising "Buns of Steel." It's just as ubiquitous and annoying as the Energizer Bunny. And, it promises to outlast that pesky rabbit. But that's the Internet. The so-called "Information Superhighway." "The Net." "Cyberspace." "Cyberia." Or as Douglas E. Comer, professor of computer science at Purdue University and author of the *The Internet Book* (Prentice Hall) puts it, "the Internet is a wildly-successful, rapidly growing, global digital library built on a remarkable flexible communication technology."

Traditional usage of the Internet has focused on E-mail. But unless you've been vacationing in another galaxy for the past few years, you already know the Internet is more than that. It's a research tool — you can look for and receive information. It's a marketing tool — you can publish useful information that you or your company already collects. The first two categories take advantage of the Internet's power as a grand information repository — you take from it; you contribute to it. Purposes for research and marketing vary but include market and product analysis, research and development, competitive snooping, linking with experts in your field, taking the pulse of your customer base, client/customer troubleshooting and even recruiting employees.

To use NFS, you could dump all your HP 3000s, set up a new network, and retrain all your MIS staff.

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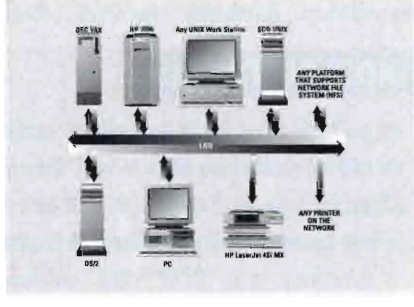

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But before you can do anything, you've got to get "ON" the Net. Knowledge workers on enterprise WANs may already be connected, but smaller companies, tentative about the costs and benefits, may need to seek out a service provider. Service providers devise a way to get a lot out of a little investment. For instance, end-users and companies in the East Bay area of California access the Internet through Zoom.Com Information Services Inc. (Fremont, Calif.). Zoom.Com's services include UNIX shell accounts, SLIP, PPP, UUCP, World Wide Web (WWW), Mail-list servers, 56K leased lines, T1 leased lines, consulting and software development. They offer a scaled pricing scheme to encourage information access rather than penalizing users for their time online. The UNIX shell account is $15 per month. A personal SLIP or PPP account starts at $15 with a sliding scale starting at the high end of $1.75 per hour down to $.50 per hour for more than 20 hours a month.

More than 200 businesses already have turned to Earthlink Network (Los Angeles, Calif.), the largest Internet provider in Southern California. The Network requires little investment — $200 per month, versus the $20,000-$40,000 (and up) required to setup and maintain an in-house Internet connection. Earthlink Network offers two types of service: high-speed connectivity, either ISDN or Frame Relay up to 1.5 Mbps; and server services — renting space on their servers for company Web pages.

According to Sky Dayton, president of Earthlink Network, it's a very new medium to many businesses, and much of the technology is just beginning to be understood. "But it presents such incredible potential that their reaction is usually one of awe.... You can never hit the boundaries; there's always vital information out there," says Dayton.

"I saw the Internet as the merging of technology with what people needed in terms of communication and it does that very well. Business is in the business of communicating — about their products, to the customers, to the vendors. The Internet opens up this channel where they can find their target audience, and their target audience can find them" says Dayton. Keeping up with demand, Earthlink is setting up full commerce for credit card purchasing over the Net, which requires secure servers running encryption schemes. Also planned is higher bandwidth service — 45 Mb and higher.

Three Little Words: World Wide Web

THE WWW, originally developed to allow physicists around the world to share information, links information stored on many Web servers. The Web's popular graphical browsers like Spyglass Inc.'s (Naperville, Ill.) Mosaic and Netscape Communications Corp.'s (Mountain View, Calif.) Navigator deliver cyberspace via clickable, user-friendly GUIs. No longer do you need UNIX gurus to fetch files off remote machines.

Most programming for the Web is done in the perl language or TCL (*see* this month's UNIX column), an interpreted, string-based language available as a public domain offering. It's a good idea to learn one of these languages for Web development, along with establishing expertise with one or more Hypertext Transmission Protocol (HTTP) servers, such as NCSA Mosaic and Netscape's Netsite SE. Gauging the correct server capacity can be tricky for a Web site, because there is often no way to know in advance just how popular the site will be. Network bandwidth is another important factor. "If your pipe isn't big enough, it doesn't matter how powerful your server is because the requests won't be able to get through," says Jennifer Houser, a technology coordinator at Time Warner's Pathfinder division, a new business unit at Time chartered with putting the company's print media on the Web.

Pathfinder's physical link to the Internet includes three T1 network connections which lead to a series of servers from HP and other vendors that vary in configuration according to user demand. Houser says once the servers and network connections are in place, the technical side of creating a home page and other Web content isn't difficult. "Our editors at Time Warner use word processors on the Macintosh to create HTML files, then include tags to indicate links which call images and sound files," she says.

For some developers, the shift to TCL and other Web tools isn't difficult. What throws them is understanding the ways in which information is conveyed in this new medium. "Today's programmers must

HOW SUITE IT IS

You can't talk about the Internet without mentioning TCP/IP. Because without the TCP/IP protocol suite, the Internet would simply cease to exist. Consequently, you can think of the Internet as a Tower of Bable without the bable. And ironically, this most democratic of all electronic media was the brainchild of the U.S. Defense Department's Advanced Research Projects Agency (DARPA) back in 1974.

Now thanks to its TCP/IP "stack" and financially successful stack vendors like FTP Software and NetManage, millions of PCs have been able to tap the power of UNIX servers on the Internet and communicate with each other. FTP's stack is bundled with HP's OpenView for Windows Workgroup Node Manager 1.0. NetManage's Chameleon provides TCP/IP stack and 48 other applications for corporate public and private networking. Both companies are listed in the Top 100 fastest-growing U.S. companies, according to *Fortune Magazine*. Internet Connectivity capabilities also are being added to traditional products. For example, WRQ's (Seattle, Wash.) latest release of Reflection Network Series Version 5.0 bundles a set of courtesy Internet applications: Enhanced Mosaic and the WinVN newsreader. And WRQ was recently listed as the 75th largest private company in Washington in 1995.

— George A. Thompson, Senior Editor

be half techie, half graphic artist," suggests Dan Shafer, president of Graphic User Interfaces Inc. (Redwood City, Calif.) a consulting firm. "The need for visual communicators is mushrooming with the popularity of the Web, he adds, but there aren't a lot of people who are very good at creating visual representations of functionality that work online."

Show Me The Way To Go Home

THE WEB'S popularity can be attributed to the hypermedia qualities of the home page. And these days, everybody's got one. So, it's no surprise that the latest fad in corporate culture is to sport a slick and sexy home page with clickable multimedia hypertext links with formatted text, graphics, video and sound. Hypertext Markup Language (HTML) is the code used to publish those web pages. Although HTML is a subset of SGML, an international standard markup language (*see* Standards column, June 1995), HTML documents are still not quite intuitive enough to build, and they aren't as flexible as some designers would like. By the time you've added the anchors for the hypertext links, what used to be readable text, soon looks like nasty geek-spun code.

"A significant bottleneck on the Internet is the limitations that HTML places on the richness, size and formatting of content," says Kent Summers, director of marketing at Electronic Book Technologies (Providence, R.I.). "HTML is a double-edged sword. Because of its simplicity, it does not require any special authoring tools or expertise, which is one important reason why the Web is so popular. However, it is widely agreed that HTML is ineffective for representing large or highly structured documents. Retrieving and viewing large documents anywhere over the 250K range is unbearably slow."

However, as designers demand more flexibility from SGML, which has been user-developed, HTML could be in jeopardy as a standard if browsers like Spyglass adhere to individual modifications that's not quite compatible with someone else's browser. Anarchy could ensue. The possibility of having multiple non-standard browsers on one desktop is increased. For example, Microsoft Corp. (Redmond, Wash.) has included a Web browser, called the Internet Explorer, in Windows 95. It's based on Spyglass' Enhanced Mosaic Web 2.0 browser. Spyglass licenses its browser technology to other companies (like AT&T, Oracle and Microsoft) who then add value to it and sell it under their own name. For example, this past March, CompuServe paid over $100 million for SPRY Inc.'s (Seattle, Wash.). Mosaic In A Box which gives customers a one-disk solution to Internet access. It automatically establishes a local Internet account through one of CompuServe's 400 points of presence worldwide.

Software for Internet-hip applications will exceed $750 million.

Internet access fees will climb to $500 million.

New Net activities will drive $350 million in hardware sales.

Internet-related services and consulting will hit $225 million.

Source: Forrester Research (Cambridge, Mass.).

Creating good Web content takes technical know-how, but the creative side is just as important, says Chan Suh, a partner with AGENCY.COM (New York, N.Y), an Internet consulting firm that specializes in creating Web content and setting up Web sites (http://agency. com). "The Internet was built for communication, but it has evolved into a shared network of ideas and commerce," Suh says. "Entertainment is the main adjunct to distributing information." For example, NeXT Computer Inc. (Redwood City, Calif.) recently announced WebObjects, an object-oriented browser that makes it

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easier to develop customized Web pages. Customized Web pages play an important role in interactive Net sessions and processing financial transactions. NeXT's WebObjects will be available in 1996 and run on the following platforms: HP-UX, Sun Solaris and Windows NT.

Hit Me With Your Best Shot

SOME COMPANIES brag about the number of "hits" made on their home page. Hits are important if you're putting advertising on someone else's Web page. You want accurate numbers. Who's reading this page? And how many of them are there, really? However, hits, as evidence of a Web site's popularity, are deceiving. A so-called hit discounts the human factor. How do you know if the person's reading it? Or, is it the same person clicking repeatedly on the same links?

Digital Planet's (Culver City, Calif.) subsidiary, NetCount, offers information that would be difficult to achieve locally by a web site or by an advertiser. NetCount is designed to provide two things: First, to track the number of users who are hitting specific pages of a site, how long they are spending there and "watching" to see if they click on certain links. This data is provided to "online advertisers." Second, to report how many domains are hitting their Web sites, what they are doing while they are there and providing their location of origin.

The reports are generated based on a variety of pre-defined, as well as customized, schemes, and are more powerful than available via getstats or other utilities. The stats on your site will be made available to subscribers of NetCount's advertising/media-buying services (not individual web sites) unless you elect to keep the information private. Advertisers looking to place paid links to their own site on your site will be able to locate the most optimal sites for their purposes. Nielsen Media Research (New York, N.Y.) of TV auditing fame, and Internet Profiles Corp. (I/Pro; Palo Alto, Calif.) recently announced an agreement to put the Nielsen name on I/Pro's I/Count and I/Audit software. Designed for Web site operators that depend on advertising, customers can get reports about the traffic on their sites about misleading patterns.

Other companies are helping PR firms to get online. gina (Marina Del Rey, Calif.), the global Internet news agency, offers news distribution for clients like Manning, Selvage & Lee; Creamer Dickson Basford; S & S Public Relations; Rourke & Company; Bender, Goldman & Helper, and McGrath/Power. The company went online in October 1994, and is currently using E-mail and the WWW as methods of transmitting information to the media. Michael Shuler, account manager for gina, says "the media is realizing how E-mail and the Web can make their jobs much easier too. All of our editorial contacts have indicated their preference for handling this type of information via E-mail and the Web." Companies now using gina include Hitachi, Texas Instruments, MGM/UA, Twentieth Century Fox and Compton's NewMedia.

Surfin' Safari

OF COURSE, THERE is a danger in all this information being out there: people might well drown in it. Fortunately there are many options for easier content-based searching of resources that won't have you spending precious time wiping-out on the endless netwaves. Enter the robots, wanderers, searchers, spiders and crawlers. No, you're not encountering a multiuser dungeon fantasy world, but the realm of search engines and software robots. These programs index Web sites by URL listing, title and even full text. Below are some of the more popular programs.

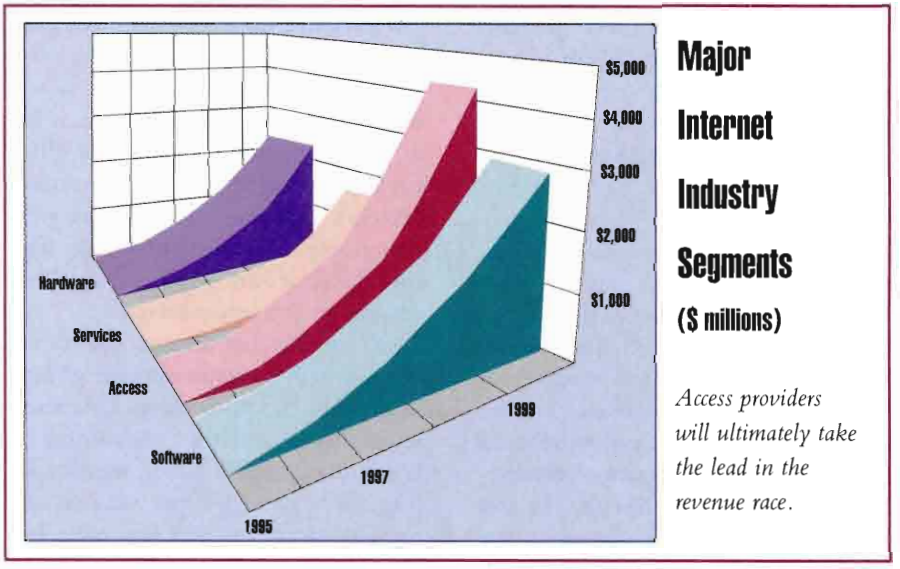
Lycos —http://www.lycos.com/ — Cryptically named after the Latin word for wolfspider, Microsoft signed a non-exclusive license for use of Lycos, an extremely popular, freely accessible Internet search robot. Lycos makes a daily scan of Internet Web space,

gopher space and ftp archives. Then, it updates a database of all the Web pages it discovers. The master index is updated weekly. The method used — probabilistic retrieval — matches the user's query and sends back a sorted list of scored hits above a designated threshold. The site is administered at Carnegie Mellon University (Pittsburgh, Pa.). Lycos as of this writing had catalogued 4.49 million Web pages.

Open Text Web Index — http: www.opentext.com:8080/omw.html — Open Text Corp. (Waterloo, Ontario), known for its text retrieval products, launched the Open Text Web Index in March, as a way to advertise its own text search engine. It allows searching of nearly every word in the full text of all Web pages in the index. You can use the index from a standard HTML browser. Searches can be performed on words, partial words, numbers or phrases. International languages are supported through ISO-Latin encoded texts. Multiway Boolean and proximity searches also can be done. Searches can be ranked and weighted. At this writing, the index holds over 50,000 Web pages consisting of 574 million words and over 11 million hyperlinks. Users can add their own Web pages to the index interactively.

For example, an Open Text search of the words "HP Professional" turned up 22 Web pages with 34 matches in about two seconds. The power of hypertext is that each of those pages can be linked to immediately. One of the links served up a Frequently Asked Questions (FAQ) file on the newsgroup comp.sys.hp.hpux which contained a brief description of this magazine.

Oracle Corp. (Redwood Shores, Calif.) will license Open Text's indexing and retrieval technology for use in future versions of its Oracle Book product. Oracle Book produces and views online documents; users take word processed documents and convert them to hypertext documents for publishing on the Net.



Others include:

- **JumpStation II — http://www.stir.ac.uk/jsbin/jsii**
- **World Wide Web Worm —http://www.cs.colorado.edu/home/mcbryan/WWWW.html**
- **WebCrawler — http://webcrawler.com/**
- **NIKOS — http://www.rns.com/cgi-bin/nikos)**

In March, Network Computing Devices Inc. (NCD; Mountain View, Calif.) announced the release of a Windows-based Internet access tool called Mariner. The product gives a common interface to standard Internet services: WWW, E-mail, net news, Internet relay chat, ftp, gopher and telnet. Mariner deploys a Windows File Manager-like interface with OLE 2.0 drag-and-drop capability. Bundled with the software is NCD's WinSock VxD TCP/IP stack with PPP, SLIP, CSLIP

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and Ethernet drivers. The product is priced at $125. FTP Software's (North Andover, Mass.) OnNet for Windows Version 2.0, a PC-based TCP/IP network access suite for enterprises and workgroups, features KEYview document viewing and information access technology from the recently acquired Keyword Office Technologies Ltd. (Calgary, Alberta).

SIRSI Corp. (Huntsville, Ala.) touts their Internet surfing tool, Vizion, as a personal information manager of sorts for the Internet. Neophytes will be comfortable in the icon-based environment that accesses a built-in database of over 1,400 addresses divided into 18 categories. The database can be added to, organized and managed by country, institution type, service and subject. Filtering can be done through key words and attributes. The product runs on Windows and starts at $49.95.

In June, InTEXT Systems (Folsom, Calif.) announced the release of InTEXT WebPak, a product suite that merges a Windows-based publishing environment with Web applications and Software Developer's Kits. Developers can build Netscape- and Mosaic-friendly applications that support free-form English queries, document routing, real-time summarizing, content searching, relevancy-ranked searches, indexing, auto-hyperlinking and keyword generation. The Developer's Kits are based on InTEXT's Heuristic/Learning architecture. The product runs in HP-UX, Windows, Solaris, SunOS and AIX environments. Cost is $15,000.

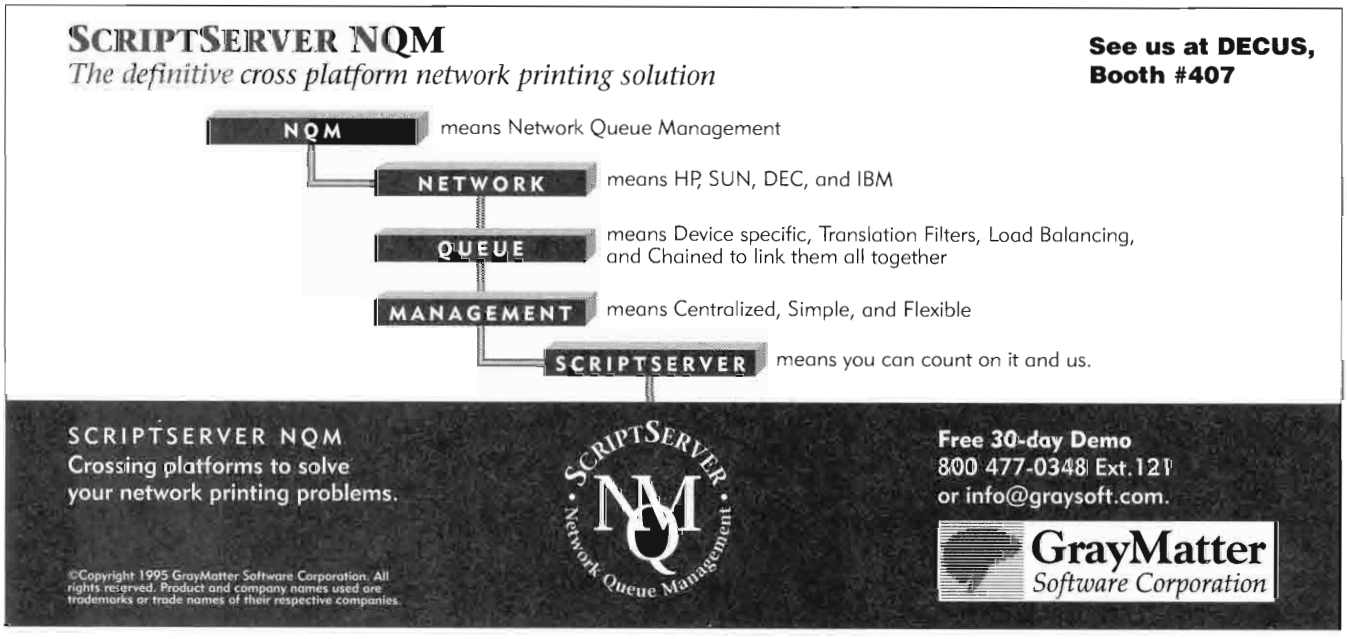
In May 1995, Verity Inc. (Mountain View, Calif.), teamed with Netscape Communications to bring Verity's Topic Agent technology onto the Internet. Netscape will include the Topic Search Engine into its servers. The Topic engine can be found within Adobe Acrobat and Lotus Notes. Topic Agents let users filter information against definable profiles. Alerts can be sent via HTML pages, E-mail or fax. A Topic object can be categorized and browsed by subject. The combined technologies are in use at Knight-Ridder's NewsHound service.

Fulcrum Technologies (Ottawa, Ontario) has trotted out its own content-based Internet search application, Fulcrum Surfboard. The product is based on the company's SearchServer engine. Surfboard databases can be searched by Netscape and Mosaic, as well as other standard Internet clients—Gopher, America Online (AOL) and Delphi. Surfboard complies with the WAIS and Z39 query protocols and with HTTP. Fulcrum Surfboard runs on Sun/OS, Solaris, HP-UX, Windows NT and others. Server pricing begins at $15,000.

Cash And No Carry

EXPERTS SAY electronic commerce is going to emerge in two distinct areas. First, in the form of the Cyber Shop or virtual mall. Cybershopping is more than pretty GIFS and JPEGS of the latest greatest widget. "That's one disappointing hurdle, what I call the Wizard of Oz problem," says Gary Gagliardi, president of FourGen Software (Seattle, Wash.). "You've got this attractive front end, but behind the curtain you can't fill the orders. You need proper billing, done right away, not in two weeks. It's got to be as fast as a catalog service." Users and CIOs alike remain squeamish about security breaches. Still the potential is so great that companies are rushing to find solutions: secure payment systems, encryption and secure servers.

It's less sexy, but the true value of the Internet will be implementing systems to do transaction processing. Customers will order in real time. According to Gagliardi, about 50 billion transactions take place on paper per year. Right now, electronic ordering is possible, but it's complicated. Only $200 million in credit-card transactions occurred over the Internet in 1994. "Today, it takes



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$65 to $85 to process an order — including human costs, back and forth communications. That will change with EDI over the Internet," says Gagliardi.

What's hindering that development? You guessed it: legacy systems. They haven't implemented EDI standards. "Most companies know they have to get there and get there soon, but it's going to require effort and investment," says Gagliardi. FourGen Software and Frontec AMT (Stamford, Conn.) announced an alliance to integrate FourGen's Enterprise supply chain management applications with Frontec's advanced messaging technology, AMTrix. Companies can implement an Internet order processing system. Using a WWW interface, customers can fill order forms for automatic processing. Communication is handled through EDI messaging standards. FourGen's customer base consists of large organizations, distributors and retail chains with companies like Motorola, Texaco and Kentucky Fried Chicken. Approximately 50 percent of their customer base is HP-based.

Open Market Inc. (Cambridge, Mass.), a developer of Internet electronic commerce software, sells an Integrated Commerce Environment, a sophisticated transaction architecture allowing customers to deploy parts of their business on the Internet. A primary example is publishers who offer information products for sale and delivery using a back-end transaction processing system on top of a secure Web server. All of this can be found in use at Time Warner's Pathfinder (http://www.timeinc.com/).

"As you may notice if you link to Pathfinder, there's advertising distributed through the environment. Open Market built mechanisms to insure that those ads get circulated; they rotate through the space, appearing on appropriate pages of content. They can actually audit how many individuals are seeing the advertising, and what they do once they see the ads," says Pierre Bouchard, director of server products. Open Market's secure Web server should be available for HP-UX 9.05 and 10.0 by the time you read this. Will such advertising, given this technology, be tailored to the user profile? Not yet, but the flexibility is there in the system to do it.

According to Tom Kehler, president and CEO of CONNECT Inc. (Schaumburg, Ill.), to successfully conduct business online, you need control over three elements: user interface, usage tracking and integration with other business processes. "Today, the Web, and most of the online services, are being used for simple distribution of collateral material and customer support information. Interactive online applications should speak to the whole depth of the commercial process. A good example would be a computer hardware and software retailer using CONNECT OneServer to do buying research, including database searches, inquire about product availability and pricing, negotiate terms and conduct the purchase transaction. Instead of reading catalogs and talking to sales reps, they can complete the whole process in an hour or so online." CONNECT Inc.'s CONNECT OneServer allows secure access from WWW browsers and custom software over the Internet and X.25 networks.

Up And Away

ALTHOUGH THERE are some hackers who might find the Internet spiritually compelling, commercial uses of the Internet are growing faster than any other sector. However, it's not uncommon for Internet veterans ("Neterans") to tell you that in *their* day there wasn't any business presence on the Internet. The Net was the exclusive domain of government, educational/research institutions and high-tech firms. Its users were mostly programmers and engineers. Anyone who chanced to contribute a posting with the odor of commerciality was promptly flamed and junked out of existence. It wasn't proper "netiquette" to pitch your goods.

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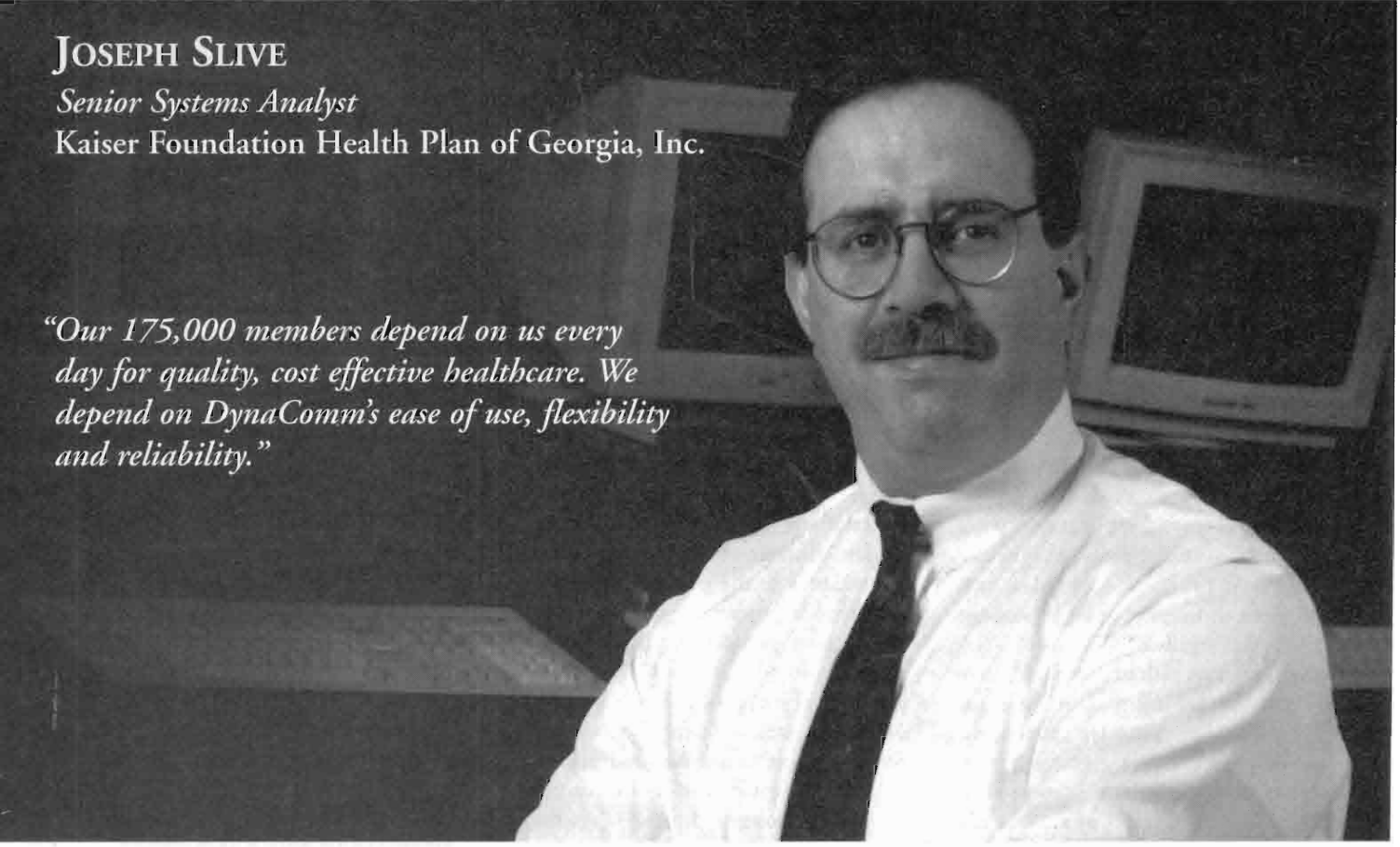

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fingertips, things changed in a hurry. According to the Internet Society, (Reston, Va.), the Internet is now comprised of 25 million users, 400,000 networks and 2.2 million computers in 83 different nations. Growth is estimated at 10 percent per month. The growth has companies positioning themselves around net-centered tactics and Internet-hip applications, scrambling to keep up and find ways to cash in. For example, more than 65,000 people registered to use The Wall Street Journal's Money & Investing Update Internet WWW site (http:// update. wsj.com) since it was established this past July. The site averages about 350,000 hits each day. The service is advertiser supported. The Business Software Alliance (BSA; Washington, D.C.), also has recently established itself on the Web (http ://www.bsa.org/ bsa). Online users will be able to receive information about the software industry, reach most BSA member companies and access reports, statistics, and BSA's Guide to Software Management.

"I don't see any saturation point being reached for at least 5 years," says Dayton of Earthlink Network. "It's just too damn big. IBM just predicted that there would be 700 million people on the web by the year 2000 — that's a crazy prediction, because right now there's 7 million who now have access to the Web. That gives us an 'interesting' challenge in terms of growth. 700 million is like a sixth of the world."

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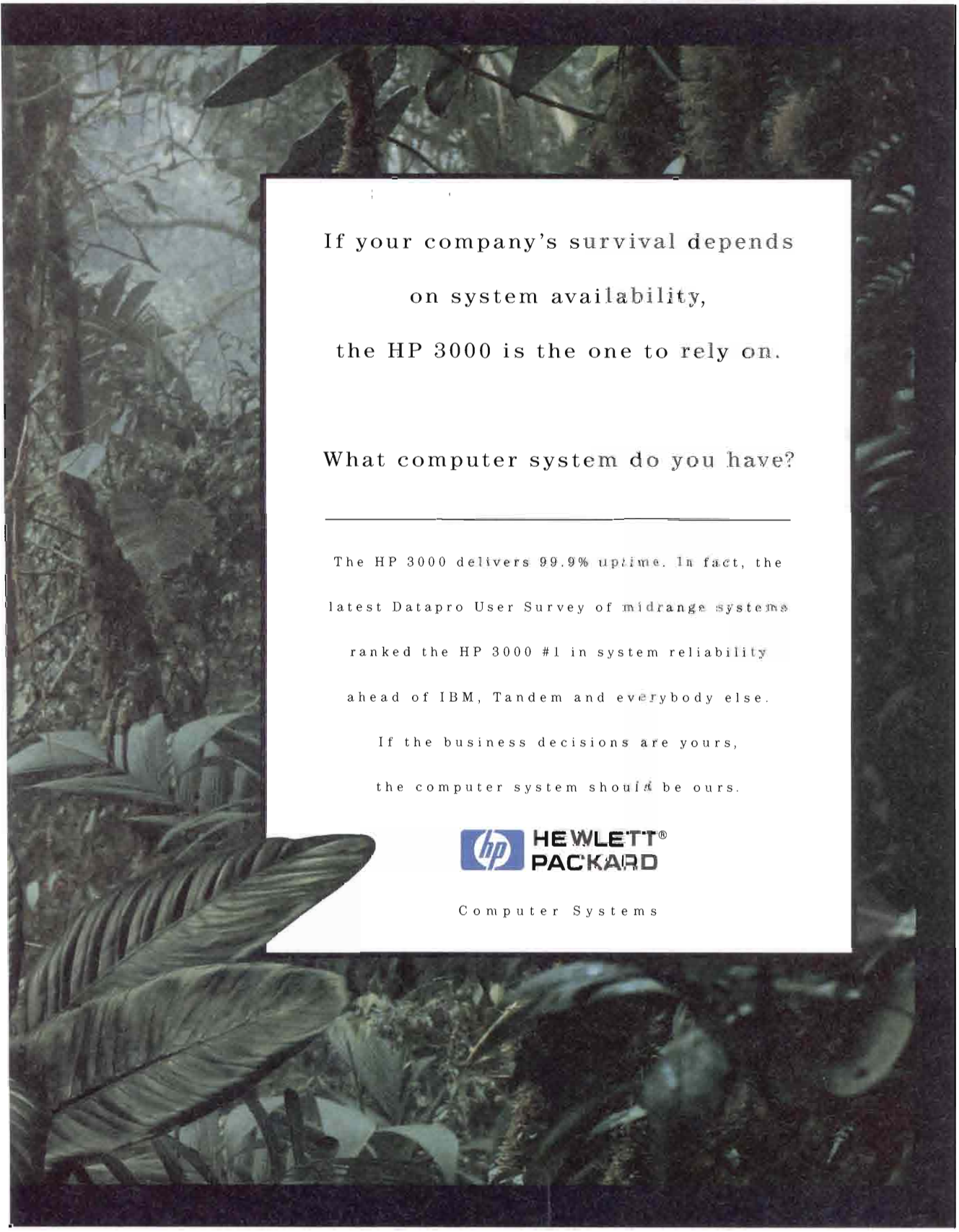

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Miles B. Kehoe

A Jewel Among Languages

Every now and then, a new utility comes on the scene that quickly becomes so popular that no one can remember what life was like before they used the program. Such a tool is the Practical Extraction and Reporting Language or perl. Perl combines most of the best features of the UNIX C shell such as csh, awk, sed and grep, and provides much of the functionality of the C language. And, as if that were not enough to make perl worthwhile, it is available on most platforms including MS-DOS, Windows NT and Windows 95, HP-UX and OS/2.

WHO USES PERL

Software developers are finding perl a great way to write installation scripts that will operate on all platforms, rather than writing scripts and batch files for each specific platform. For example, a single script can install software on MS-DOS, Windows, HP-UX and Solaris. This makes customer support much easier, and allows developers to create better products.

Another major application for perl has been the World Wide Web (WWW). When you connect to a Web site from your local browser, you are actually connecting to a server that understands the http protocol used on the Web. That server, often called the http daemon or http server, can invoke any executable program or script to provide additional functionality such as security, searching or transaction logging. Because perl is multiplatform, many Web developers find perl an ideal way to customize their sites. If you are considering installing a web site, or if you need to support the ongoing operation of a running site, you might want to consider perl as the scripting language of choice.

WHERE CAN I FIND PERL?

Developed by Larry Wall, perl is public domain software, which means its free. You need to have access to the Internet to get a copy; simply use the ftp utility to connect to one of the following sites:

- http://www.yahoo.com/ Computers_and_Internet/Languages/Perl
- ftp:// prep.ai.mit.edu/pub/gnu
- http://www.cis.ohio-state.edu/hypertext/faq/usenet/perl-faq/top.html

The Yahoo site contains pointers to a number of perl resources; the MIT site contains source as well as executable versions of perl; and the Ohio State site is a great place to find perl documentation.

A BRIEF INTRODUCTION

Perl is an interpretive language, so you normally create perl programs, or scripts, using your regular editor. On HP-UX try vi, while on Windows NT use NOTEPAD.

Create a file like the one shown in *Figure 1*.

Note that perl supports several types of variables. Scalar variables can be used by preceding the variable name with a dollar sign, and can hold data of virtually any type. For example, a scalar in perl is not unlike a Variant data type in Visual Basic. The code in *Figure 1* includes scalar variables **myname**, **i**, **suit** and **card**.

Arrays can hold a number of data items, usually of the same data type. Arrays are defined by preceding the array name with an "at" symbol (@). The array named **suits** is an array in the code in *Figure 1*.

Note that to manipulate or display an element in an array, you refer to the elements as if they were scalar variables. For example, to print the first element of the cards array, you would use the code:

```
print $suits[0]
```

The final type of variable illustrated in *Figure 1* is an associative array. This is a special case of an array, and one in which each "row" of the array contains two related, or associated, elements. In *Figure 1*, the cardnames associative array contains one "column" containing an ordinal card number, and its associated column containing the name of the card.

Associative arrays are defined by preceding the name with a percentage symbol. Display or manipulate each element as if it were a scalar variable, but the element number is enclosed in curly braces.

To print the card named "Ace," use the code:

```
print $cardnames{1};
```

Note that the element number is not the determining factor; the value printed is the column associated with the column named in the curly braces.

Much of the remaining code is self-explanatory and very much like most varieties of BASIC. The **srand** function scrambles the random number order; **rand** returns a value between 0 and 1; and, like with the C language, you can increment a scalar variable by using the **++ postfix** notation.

The one interesting point is the difference between how perl treats scalars within double quotes as opposed to single quotes. If a double-quoted string contains a scalar name, the value of the scalar is given. If the string is single-quoted, the characters are displayed "as is." This can be a bit tricky, so be sure to check a good perl reference for more details.

One final note: what's shown doesn't have any code to check for duplicate cards. Before you use this code in your BridhePERL, be sure to add a check where my comment indicates toward the end.

FIGURE 1

```
#
# A PERL Script
#
# Define a scalar, an array, and an associative array (see text)
$myname="Miles";
@suits=(clubs,diamonds,hearts,spades);
%cardnames=(
'1','Ace',
'2','2',
'3','3',
'4','4',
'5','5',
'6','6',
'7','7',
'8','8',
'9','9',
'10','10',
'11','Jack',
'12','Queen',
'13','King',
);
print "This is my first PERL script\n";

print "My name is $myname\n"; # double quotes -> variable expansion
print 'My name is $myname'; # single quotes -> no expansion
print "\nHere's your hand:\n\n";

srand 1000; # seen a random number
$i=1;
# Now select 13 cards

while($i<=13){
$suit= int((rand)*3+1);
$card= int((rand)*13+1);

# Add a check here to prevent duplicate cards!

print " Card is $cardnames{ $card } of ";
print "$suits[$suit]\n";
$i++;
}

print"\nThat's about it!\n";
```

ALL KINDS OF PERLS

Because perl is available on multiple platforms, and because it is freely available in source code format, a number of software developers are enhancing perl for use with specific applications. For example, you can find ORAPERL, a version of perl which integrates the Oracle database calls within the environment and which allows you to access and manipulate data within your Oracle databases from perl. Versions also exist for a number of other vendors, from database manufacturers to helpdesk environments.

Like much public domain software on the Net, perl is available in both source and executable versions. If you are a novice, I strongly suggest getting a copy of the executable version of perl for your platform.

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Gordon McLachlan

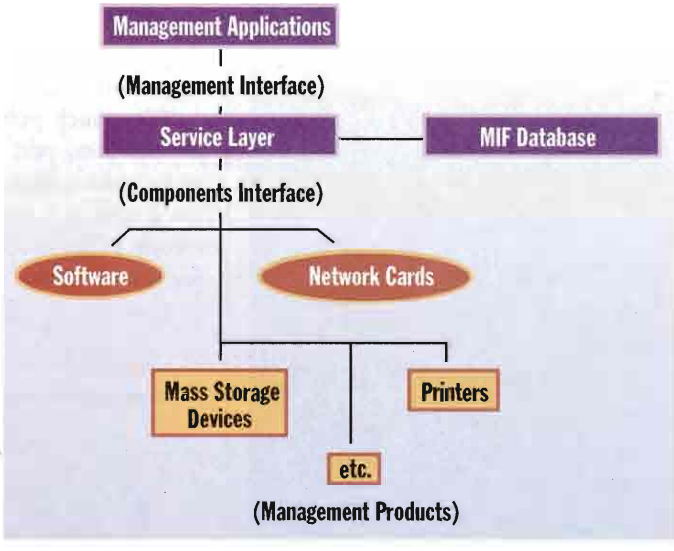
The DMTF And The Art Of Desktop Management

It seems you can do anything with the PC architecture except manage it. But that's where the Desktop Management Task Force's (DMTF) Desktop Management Interface (DMI) comes in. The DMTF, formed in 1992 with a mission to deliver a management framework for PCs and related products, includes DEC, HP, IBM, Intel, Microsoft, Novell, SunConnect and SynOptics Communications as charter members. Since then, more than 300 members have joined the DMTF party.

In 1993, the DMTF delivered the first versions of DMI for early product implementation and showed off 40-some beta DMI product implementations. Last year, the DMTF laid out the final DMI 1.0 specification, and this year we're seeing the management framework starting to hit its stride with compliant products, including HP's new Vectra XM3 systems.

DMI models a manageable system as shown in *Figure 1*.

FIGURE 1



DON'T BE MIF'ED

The core of the DMI is the Management Information Format (MIF) database. MIF is a language, with a specific grammar and syntax, that lays out all the manageable attributes of each type of managed product. A MIF group definition can be as simple or complex as needed for any given product. An attribute may have a single value, or it can be part of a table and looked up using index keys.

So far, the DMTF has released MIFs for the basic system, which includes such things as the processor, operating system and disk drives, as well as MIFs for applications software and equipment used in large mailing operations. Workgroups also are developing specific MIFs for printers, network interface cards and multimedia components.

Management applications include remote or local programs for changing or interrogating the values in the MIF database. A management application can be a local diagnostics or installation program, or an agent which redirects information from the DMI to a network

While the DMI does provide a good framework for managing desktop components, there is a lot of confusion about its relationship to other management standards, most notably Plug and Play and the Simple Network Management Protocol (SNMP)

manager. HP's OpenView for Windows, Intel's LANDesk Manager and the forthcoming Systems Management Server (SMS) from Microsoft are management applications that use the DMI.

Manageable products are the core hardware, software and peripherals that are part of a desktop computer or network server. Each class of product has its own set of MIF definitions. The DMI System MIF includes specs for hardware components such as processors, memory, disks, power supplies and operating system software. A preliminary Software MIF for applications has been issued, and working groups are pursuing MIFs for printers.

In the middle, the Service Layer is a local program that is always running, that collects information from manageable products and acts as an agent to pass that information to management applications as requested. The Service Layer directly manages the information in the MIF database. That information can come from static MIF files provided with each manageable product, or by instrumentation, where software constantly monitors the state of the managed product.

GET, SET AND LIST

The Service Layer controls communication between itself and management applications by means of the Management Interface (MI). The MI commands provide three types of operations to control manageable products: Get, Set and List. There also are commands for installation and registration. Get allows a management application to get the current value of individual attributes or groups of attributes. Set allows writable attributes to be changed. List commands let management applications query a system and retrieve useful information about the contents of the systems, with no previous knowledge of that system.

Manageable products, once installed, communicate with the Service Layer through the Component Interface (CI). They receive management commands from the Service Layer and return information about their status to the Service Layer. They also send "indications" to the Service Layer when needed. An indication is a notification from a manageable product to the Service Layer, used to signal

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management applications that something important has occurred, such as an installation, an error or a failure. The Service Layer then passes this information to each management application that has requested to be notified of indications.

BUT WILL IT PLAY IN REDMOND

While the DMI does provide a good framework for managing desktop components, there is a lot of confusion about its relationship to other management standards, most notably Plug and Play and the Simple Network Management Protocol (SNMP). Like DMI, Plug and Play uses a file, sometimes in firmware, that defines a device and tells operating systems and programs how to manage and control it. Unlike the DMI, Plug and Play is largely done once the system boots up. Plug and Play can be complementary with the DMI, which supports Plug and Play by mapping Plug and Play information directly into the standard PC systems MIF. Backed by many of the same industry players, Plug and Play is, in a way, a first step toward DMI.

SNMP, the most popular of the network management protocols, was originally designed for managing networks based on the TCP/IP. Under SNMP, the format for the stored data is called a management information base (MIB). The MIB stores traffic and equipment, and error-log information and is in many ways analogous to the DMI MIF (or vice versa). The DMI's Get, Set, List model for interaction with managed devices also is very much like SNMP's own, and many extensions have been made to the standard SNMP MIBs to manage classes of hardware and software that overlap with the DMI's functionality.

These similarities make DMI and SNMP a natural pair. But progress to date hasn't been too swift. This is undoubtedly due to the lack of DMI implementations rather than a lack of desire to bring the two management protocols together, so things should start to change soon. The biggest hurdle for DMI is Microsoft. Where have we heard that before?

Microsoft, though ostensibly a DMI supporter, has put sand in the Vaseline by heading off in its own direction. Microsoft's Windows 95 does not yet support the DMI, and its management implementation diverges from DMI by substituting the Windows 95 Registry and the Plug and Play interface for the DMI's Service Layer and Component Interface. This means other vendors have to accommodate two sets of component-level interfaces, and it doesn't take much imagination to figure out that following Microsoft is the higher priority. In the long haul, it probably won't matter much, but it has slowed down initial implementations of the DMI standard.

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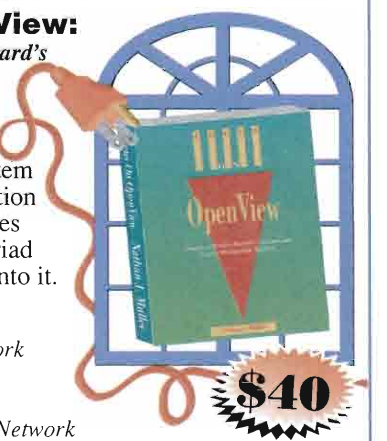

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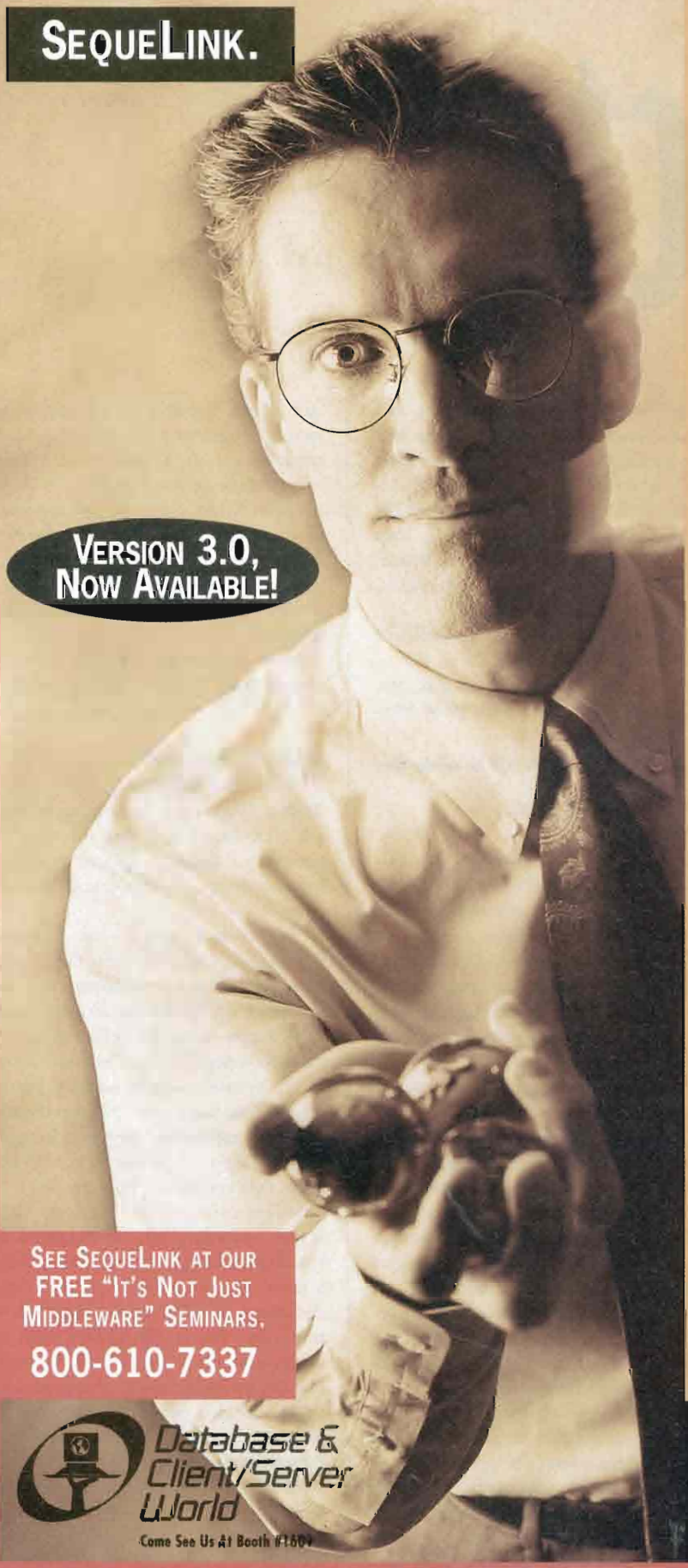

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new Products

SOFTWARE

ORBiT Software Releases BACKUP/9000

ORBiT Software announced it's BACKUP/9000 product for HP 9000 HP-UX systems. BACKUP/9000's advanced features include ultra fast backup and restore, error handling and recovery, network backup, multivolume and multidevice backup, data compression, and backup and restore of popular DBMSs. BACKUP/9000 can be controlled from a command line interface or GUI and includes user-friendly facilities for configuration, scheduling and automated tape library management.

BACKUP/9000 is a companion product to ORBiT's Plan-B/UX product, which fully automates the backup of networked PCs, running DOS, Windows, Windows 95, Windows NT or Novell NetWare, to an HP 9000 system's disk space or backup device. Plan-B/UX is host-based and client-server, backs up multiple PCs concurrently and permits users to perform their own restores.

Contact ORBiT Software, 315 Diablo Rd., Ste. 210, Danville, CA 94526; (800) 89ORBIT.

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Pericom Introduces V3.2 teem Tools

Pericom released version 3.2 of its teem connectivity tools, teemtalk for Microsoft Windows and teemX for X Windows-based UNIX/VMS workstations.

Enhancements include: internal scripting language support for IND$FILE and ftp tool; extended ftp support; script recorder for facilitating the script writing process; Solaris 2.4 x86 port and HP-UX 10 support (teemX); Spanish language support added to French, German, Italian, Swedish, Dutch, Danish, Norwegian and Finish; and 5250, Windows NT and Windows 95 compliance.

The teem products offer text and graphics emulation for any mainframe in a single package. teemtalk for Windows and teemX provide support for DEC VT52, VT100, VT131, VT132, VT220, VT320 and VT340, as well as Ansi, AT&T, Data General, HP, IBM, Microcolor, Prime, Tandem, Tektronix, Retrographics, Viewdata, Westward and WYSE.

Prices start at $195 for teemtalk for Windows, and $395 for teemX.

Contact Pericom Inc., 9 Princess Rd., Ste. D, Lawrenceville, NJ 08648; (609) 895-0408.

Circle 399 on reader card

Syntax Announces TNAS Software

Syntax Inc. announced TotalNET Administration Services (TNAS) software. TNAS is a UNIX-based solution that gives IS administrators immediate access to configuration and status of an entire heterogeneous network, providing efficient user support, increased utility and organization, and lower costs of network ownership to the enterprise.

TNAS uses the graphical framework, hierarchical data storage method and TNadmin APIs supplied with TotalNET Advanced Servers. These facilities enable administration of servers and networked clients attached to those servers. Important TNAS functions include administration of users, passwords, data access rights, configuration data and replication.

TNAS will be immediately available on Sun's Solaris for SPARC and x86, and IBM's AIX. Availability for other UNIX operating systems is expected soon.

Specific functions include: single point of network server administration; flexible graphical framework; progressive disclosure; GUI design; administrative security (zones); start, stop and refresh network services; add, modify, configure and remove; service configurations; start, stop and refresh TotalNET technology-based servers; administer network access security; resource usage accounting; network events/alerts communication and display; SNMP MIB message management; dynamic server and client asset inventory display, and organization browse and search network resources; and interface to SNMP-based network management utilities.

Contact Syntax Inc., 840 S. 133rd St., Federal Way, WA 98003; (206) 838-2626.

Circle 397 on reader card

Trident Systems Produces SDDGen

Trident Systems Inc. announced SDDGen, a UNIX-based tool that automates the process of developing and generating software designs and supporting documentation.

Featuring an easy-to-use X window interface, SDDGen supports the construction of a software design, and then automatically generates multiple design documents from the schematics. This multiple-output feature enforces consistency across customer-ready reports, engineering notes and code specifications. Multiuser capabilities support collaborative engineering while controlling configuration management. The product also provides customizable software design styles including object-oriented and structured design. A templating feature allows customization of the design document. SDDGen comes equipped with templates for DOD-STD-2167A and object-oriented design reports, as well as text export to word-processing packages. SDDGen also generates code outlines which enforce software design compliance during development.

The product will be available for Solaris, SunOS, HP-UX and IRIX. A Linux version is planned for the first quarter of 1996. SDDGen is priced at

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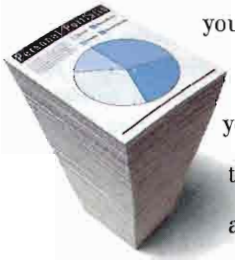

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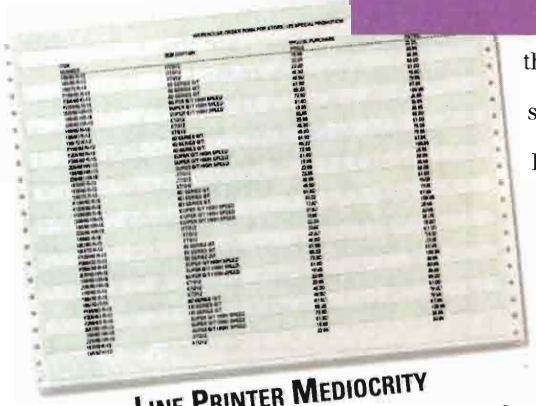

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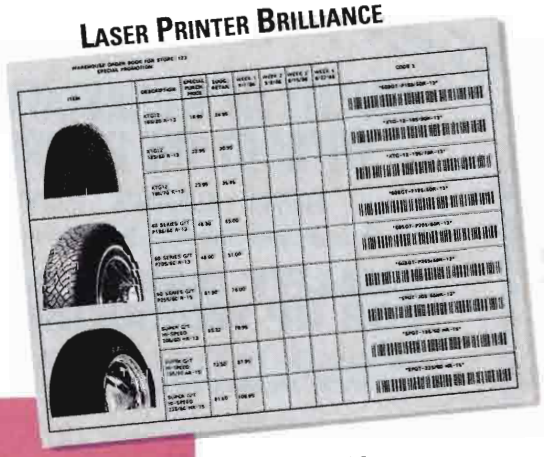

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$1,195 for a single-node, multiuser license. Contact Trident Systems Inc., 10201 Lee Highway, Ste. 300, Fairfax, VA 22030; (703) 691-7778.

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Bluestone Announces Sapphire/Web

Bluestone announced Sapphire/Web, a visual development tool for building client-server applications for the WWW. Sapphire/Web creates applications that use HTML as the cross-platform user interface, running with Oracle, Sybase and Informix databases, as well as legacy application code. Sapphire/Web has a visual programming paradigm that reduces the coding effort normally associated with developing applications; an open, three-tier architecture; and generates C or C++ code for power, performance and portability.

Sapphire/Web's open architecture works with any HTML Editor, ny HTML Browser and any Web Server. Sapphire/Web's end result is pure C or C++ code. No runtime environment is required.

Additionally, Bluestone offers a full range of support services for Sapphire/Web including an online WWW service. Capabilities of the service include instant problem resolution through Bluestone's Technical Search database, Explorer; the ability to browse and search development newsgroups; and submission of questions, as well as product ideas and suggestions.

The initial development platforms include SunOS and Solaris, SGI, HP-UX, Digital UNIX and IBM AIX. Version 2 expands development support to Windows NT, Windows 95 and Macintosh. Sapphire/Web works with any HTML V2 or later browser, any HTML V2 or V3 Authoring tool, and any http, shttp or ssl Server. Pricing is $2,495 per developer seat. No runtime license is required.

Contact Bluestone, Inc., 1000 Briggs Rd., Mount Laurel, NJ 08054; (609) 727-4600.

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APPIC's StarJet Supports HP Printers

APPIC announced the availability of support for HP color LaserJet printers or compatible printers as a standard feature of its forms management product, StarJet.

StarJet is a software solution providing across the complete range of PCL printers from HP (LaserJet II up to HP 5000 from C30 or 40 to F135 XP) and Xerox (4220, 4230 or DOCUPRINT 92 ppm) an "at speed" printout of merged data and electronic forms.

A WYSIWYG interface, StarJet-Design, provides users with the ability to draw its form upon its ready-to-print data avoiding any discrepancy, and thus reducing forms development costs and efforts. Once designed, the form description file generated by StarJet-Design, including paper size, duplex requirements, input trays, fonts and logos, is uploaded in ASCII format to the host for immediate availability. StarJet on the host is in charge of merging this electronic form and the actual data generated by application.

StarJet doesn't require any application program modification and is fully integrated in host OS (File Equation on MPE, lp command on UNIX, DCL PRINT command on VMS and Windows drivers on Microsoft Windows). It also emulates multipart forms, associated with duplex, input trays and output trays management.

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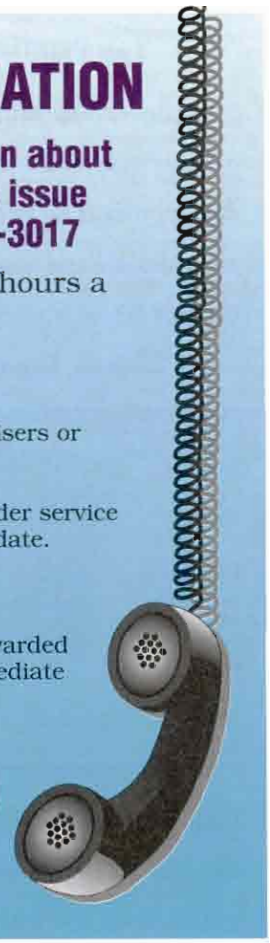

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Call (617) 229-6100.

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Unison-Tymlabs is a supplier of networked systems management solutions for both UNIX and MPE. Product areas include workload management, storage management, print automation and desktop integration.
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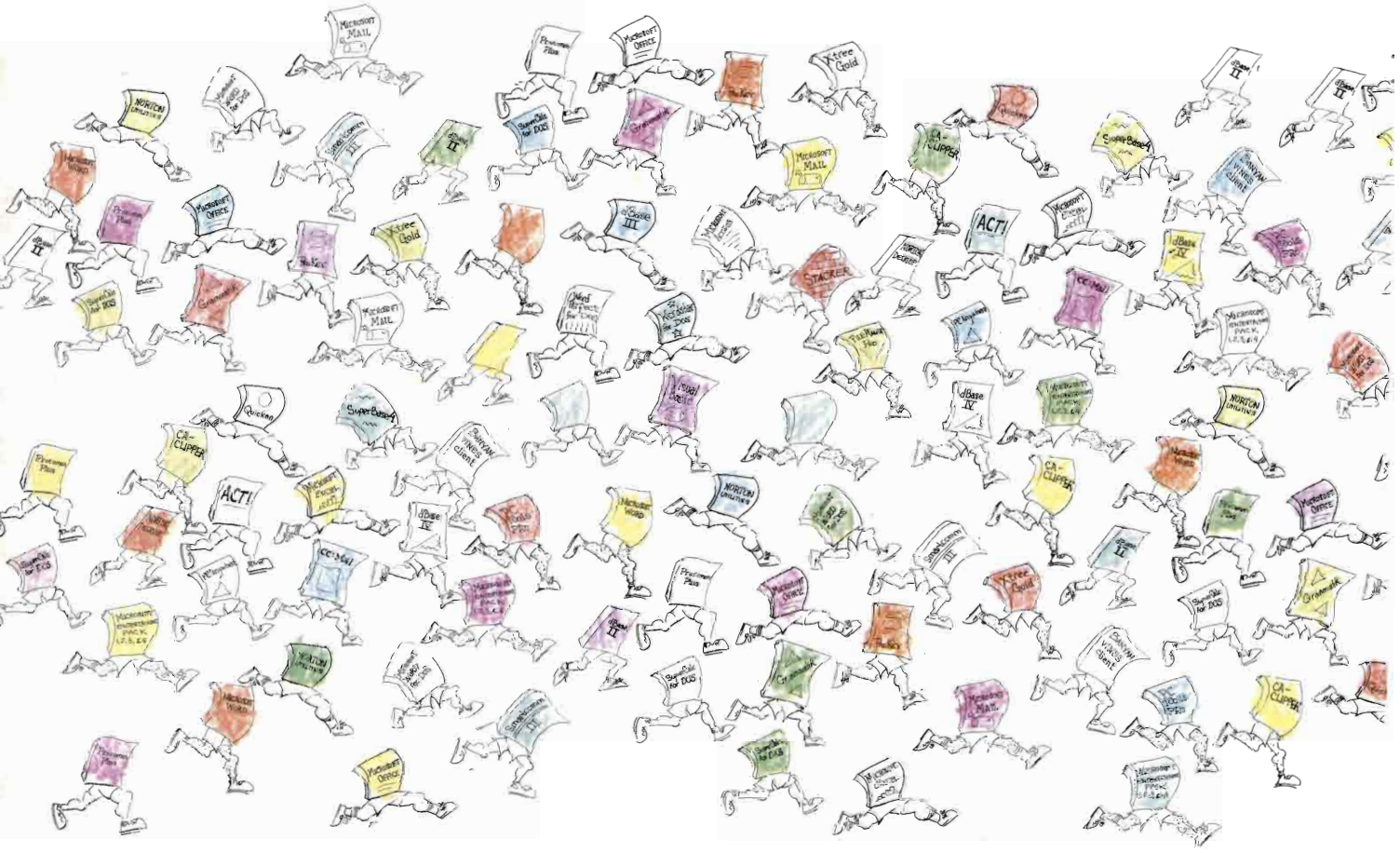

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StarJet is available on HP 3000 (MPE V, MPE XL, MPE/iX), HP 9000 (HP-UX), DEC VAX (VMS, OpenVMS), DEC Ultrix, DEC Alpha (Digital UNIX and OpenVMS), IBM RS/6000 (AIX), Bull DPX20 (AIX or BOSX), SNI-RM400 (Sinix), SunOS, Sun Solaris and PC (SCO, DOS and Windows).

Contact APPIC, 1153 Bordeaux Dr., Ste. 201, Sunnyvale, CA 94089; (800) 872-7742.

Circle 394 on reader card

DataMirror/400 Available On HP 9000s

DataMirror Corp. and HP announced the availability of DataMirror/400^{ora} and DataMirror/400^{syb} for the AS/400 and HP 9000 computers. AS/400 users will now be able to replicate data from any AS/400 file system to an HP 9000 running either Oracle 6.0 or greater, or Sybase System 10, without re-programming either the source or the target system.

Data replication is the process of managing copies of data to support distributed applications. With the DataMirror/400 family of utilities, changes to the original copy of the data on the AS/400 can be reproduced and applied to copies on other platforms, including the HP 9000s. Data can be replicated either continuously or periodically on a net change basis.

With DataMirror/400, AS/400 applications can co-exist with the new HP systems and migrate to them at a manageable pace.

Contact DataMirror Corp., 7030 Woodbine Ave., Ste. 100, Markham, ON L3R 6G2; (905) 415-0310.

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E-Manager GUI Integrates Into HP OpenView

E-Comms Inc. announced the integration of its E-Manager GUI into HP OpenView for Windows. This adds environmental and facilities/wiring management to the HP OpenView for Windows platform, using the E-Commander System.

The E-Commander System is a network addressable, SNMP-based remote monitoring and control system that allows a network administrator to cycle power (rebooting) to network devices at remote sites, monitor environmental variables like temperature, smoke, fire and moisture, and access and share network assets like modems and network analyzers. The E-Commander is controlled by the E-Manager GUI at the administrator's site.

HP OpenView offers users an integrated network, system, application and database management for multivendor, distributed computing environments.

E-Commander systems are autodiscovered and represented by E-Commander icons during map layout. When a network administrator clicks on the E-Commander icon, the E-Manager application is opened, providing a front panel view of the E-Commander rack. Finally, all traps generated by the E-Commander are fully integrated into the HP OpenView Trap Manager.

Price for the HP OpenView-integrated E-Manager GUI is $100. Price for the E-Commander Control Module is $3,500. Both include the E-Manager plus the setup software needed to launch the application from HP OpenView. Application modules that perform individual functions are priced separately.

Contact E-Comms Inc., 5720 144th St. NW, Gig Harbor, WA 98332; (206) 857-3399.

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DataLynx Inc. Ships Guardian

DataLynx Inc. shipped a new release of Guardian which offers many new features to enhance your system security.

The latest version adds a Motif-based GUI coupled with online help for creating and maintaining user accounts. The new release augments Guardian's multitiered assignment of security privileges by allowing the system administrator to grant password change authority to a designated password manager. Also new is password updating over multiple NIS domains. It also permits activation of an alarm script whenever a potential security violation occurs and provides enhanced detection and auditing of invalid login attempts.

Guardian also features: comprehensive security management for all sizes of systems, including complex heterogeneous networks; extensive account and password controls (including FIPS-181); valid and invalid password dictionaries that are site-editable; login time windows with automatic logoff options; access controls for modem lines, remote hosts and specified ports; additional validation for rlogin, telnet and rsh access attempts; account inactivation after a selected number of invalid login attempts; extensive system configuration options; a command file interface for account administration and maintenance; and a wide array of detailed reports, comprehensive audit logs and powerful utilities.

Guardian is available for AIX, DG/UX, HP-UX, SCO, Sun and most other UNIX

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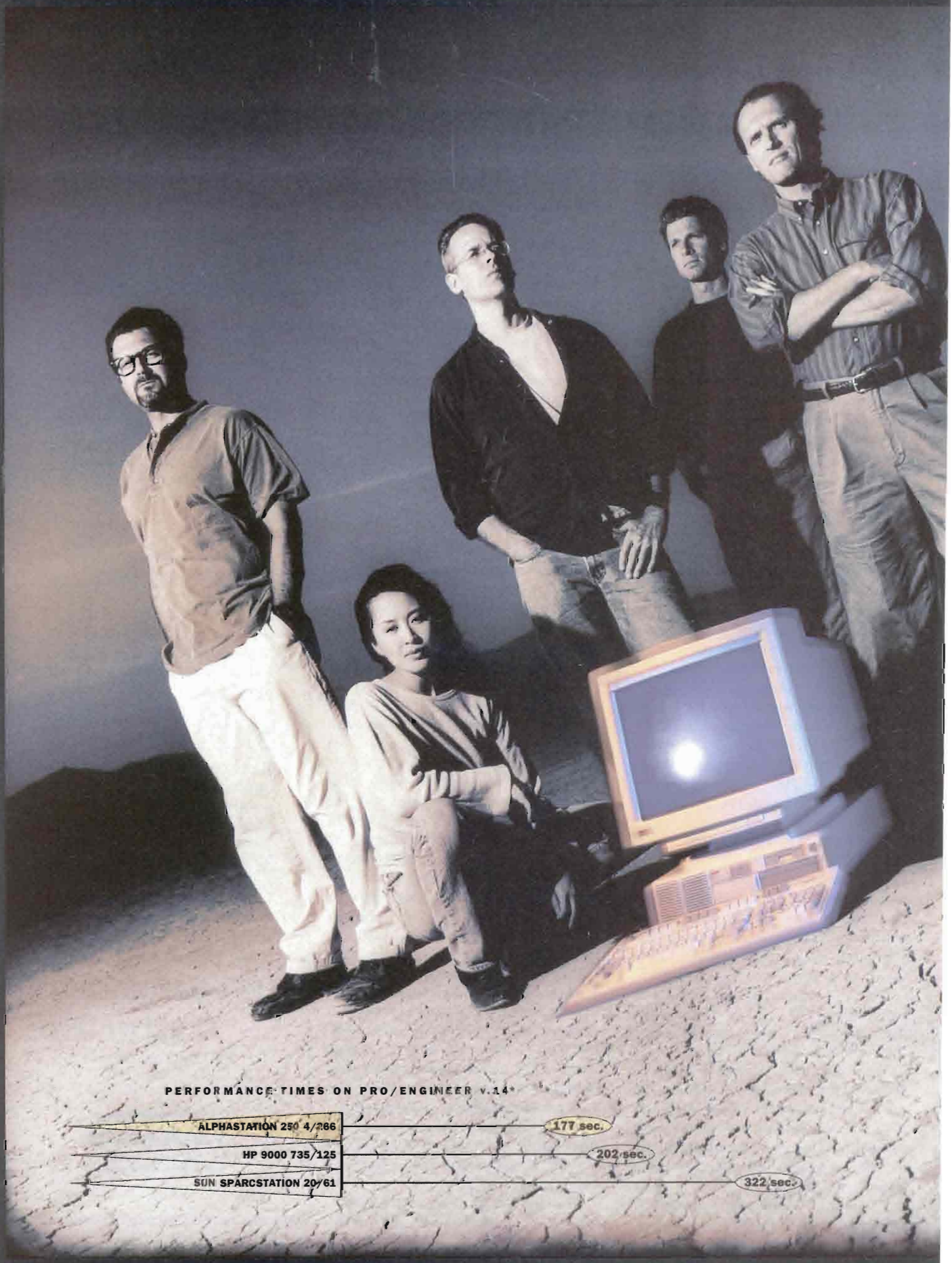
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operating environments. Price ranges from $600 to $3,000, depending on login counts.

Contact DataLynx Inc., 6633 Convoy Ct., San Diego, CA 92111; (619) 560-8812.

Circle 391 on reader card

Diamond Optimum Provides VCS Release 4.5

Diamond Optimum Systems announced release 4.5 of its configuration management tool set called Version Control System (VCS). VCS used the client-server technology to provide a single point of control for the software development and distribution activities on the UNIX, MPE/iX, Microsoft Windows, Macintosh and OS/2 platforms.

Release 4.5 fully supports the Powersoft Corp. Powerbuilder environment by providing automatic documentation, impact analysis, versional control and distribution for the Powerbuilding libraries and objects. VCS allows the users to view the change history for any file, object, developer, project, release and date, as well as compare multiple releases and recover old versions, if necessary.

Contact Diamond Optimum Systems, 22801 Ventura Blvd., Ste. 105, Woodland Hills, CA 91364; (818) 224-2010.

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Datalogix, Oracle Deliver Oracle GEMMS Solution

Datalogix International Inc. and Oracle Corp. announced a marketing agreement which has Andersen Consulting as a preferred provider of implementation support services for the Oracle GEMMS (Global Enterprise Manufacturing Management System) product line. Datalogix' product GEMMS is resold internationally by Oracle as Oracle GEMMS. Oracle GEMMS is tightly integrated with Oracle Financials, and is being sold and supported jointly by Oracle and Datalogix.

Oracle GEMMS is an open systems client-server software application designed to manage the manufacturing, logistics and financial operations of worldwide process manufacturing companies.

Oracle GEMMS manages centralized or decentralized operations for large process manufacturers requiring multidivision and multiview capabilities. It supports multiple language and currency requirements, and is interoperable across leading hardware platforms such as HP 9000, IBM RS/6000, DEC Alpha, Data General, Sun, Unisys, Sequent and Intel-based PCs.

Contact Datalogix International Inc., 100 Summit Lake Dr., Valhalla, NY 10595; (914) 747-2900.

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Raxco Distributes Oracle And Rdb

Raxco Inc. announced that it entered into an agreement with Oracle to re-license Oracle and Rdb for use with their helpdesk and asset management products.

Helpline is a multiplatform, client-server helpdesk and customer service application which is available on SunOS, Solaris, Digital UNIX, HP-UX and VMS. Each of these platforms may be concurrently accessed via Windows, Motif or character cell clients. A Windows NT version is under development. Helpline costs $2,300 per user including Oracle or Rdb. For installations with existing Oracle or Rdb licenses, price is $1,500 per user.

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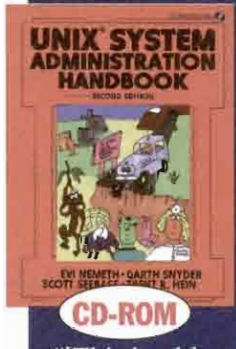

CD-ROM

The *UNIX System Administration Handbook, 2nd edition,* is now available! Practical and hands-on in approach, it covers every aspect of system administration and provides explicit instructions for dealing with the six most popular versions of UNIX.

"[This book] presents an easy-to-read, easy-to-understand...approach to system administration. I HIGHLY RECOMMEND this book."
—Chris Curtin, *hp-ux/usr magazine*

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Xircom Announces Netwave Release 2.5

Xircom Inc. announced the availability of second-generation software for the Credit-Card Netwave Adapter and Netwave Access Point, the company's wireless LAN system.

Netwave Release 2.5 enhances performance, provides seamless roaming, and integrates a unique suite of utilities for added convenience. The software-only upgrade is available to current Netwave users free of charge, preserving these users' hardware investment.

The CreditCard Netwave Adapter is a PC Card that supports wireless peer-to-peer networking or, when used with Xircom's Netwave Access Point, offers wireless connections to a wired enterprise LAN.

Features: provides wireless LAN users with maximum mobility and ease of use; has an integrated antenna an no external circuitry; design allows users to roam freely within the office without attaching an external device to their laptop to maintain an LAN connection; includes second-generation Windows- and DOS-based Xircom installation software that automatically configures computer, adapter and network operating system providing plug-and-play installation that has the user up and running on the network in minutes.

The Netwave Adapter and Access Point costs $399 and $1,499, respectively.
Contact Xircom Inc., 2300 Corporate Center Dr., Thousand Oaks, CA 91320; (805) 376-9300.

Circle 380 on reader card

FarPoint Communications Introduces 1284Port

FarPoint Communications introduced the 1284Port, a new PC board that provides a high-speed, "intelligent" connection to the new generation of Extended Capabilities Port (ECP) compatible printers including HP LaserJet 5P. The 1284Port offers the new IEEE-1284 Type C parallel port connector. The 1284Port also connects to any standard Centronics printer interface.

The 1284Port combines a fully compliant IEEE-1284 Level II parallel port with two high-speed 16550 serial ports. The parallel port supports a fast Centronics mode as well as the Enhanced Parallel Port (EPP) and Extended Capabilities Port (ECP) protocols. Data transfer rate is up to 2 MB per second. In addition, the advanced EPP/ECP capability upgrades the user's computer to Windows 95-ready status.

The 1284Port's IEEE 1284 Type C parallel port connector is a 36-pin mini-connector that uses simple clip latches for cable connection. With this new connector, cumbersome thumbscrews are eliminated and the user can simply snap and unsnap the cable from the connector. A DOS LPT printer drive is included with the 1284Port.

It also offers two 16550-compatible UARTS (Universal Asynchronous Receiver Transmitter). This capability enables optimal performance when the board is connected to 1440 baud data or fax modems and other high-performance serial peripherals operating under Windows.
Contact FarPoint Communications, 104 E. Ave. K-4, Ste. F, Lancaster, CA 93535; (805) 726-4420.

Circle 378 on reader card

MountainGate Offers Stampede

MountainGate announced the Stampede, a new line of high-capacity, removable and transportable storage systems capable of storing up to 400 GB of data on a single SCSI bus.

Stampede drives are available in capacities of 1.0 GB, 1.7 GB, 2.1 GB, 4.2 GB and 9.0 GB. For increased usability, Stampede is available with a SCSI expander device — a Logical Unit Translator (LUT). When used with the LUT, each SCSI address is capable of accommodating over 63 GB of data. Stampede docking stations also can be daisychained together. As a result, Stampede systems offers over 400 GB of removable hard drive storage capacity per SCSI bus.

Stampede is available in two-, four- and eight-bay desktop docking stations, an eight-bay deskside pedestal and an eight-bay rack mount configuration. Within each drive module, users can insert whichever drive is demanded. Each drive module can accommodate either a Fast SCSI-2 (singled ended or differential) hard drive or Fast and Wide SCSI-2 (single ended or differential) hard drive.

Stampede drives offer outstanding hard disk performance with access times as fast as 8 ms and transfer rates up to 20 MBps. The product also supports a MTBF of up to 800,000 hours ensuring the highest levels of data integrity. Stampede drive modules also are hot swappable.

Stampede is compatible with Macintosh, PC, PowerPC, Silicon Graphics, Sun SPARC, IBM RS/6000 and HP workstations. Price is $1,750 for the eight-bay rack mount docking station. Removable module prices are dependent on drive capacities and requirements.
Contact MountainGate Data Systems Inc.,

9393 Gateway Dr., Reno, NV 89511; (702) 851-9393.

Circle 377 on reader card

Phase X Releases S+ Series X Terminals

Phase X Systems introduced the S+ Series of X terminals which provide multimedia capabilities including telephony across the network with integrated audio and video. They can be used with online training, integration of LAN audio with telephony or audio information dispersion. A high-speed S-bus expansion allows for expandability, including connection to ISDN for multimedia applications.

Powered by Intel 960 RISC processors and custom ASIC circuitry, these terminals range in benchmark performance from 124K Xstones/1.9 Xmarks to 180K Xstones/3.2 Xmarks. The standard 4 MB RAM memory configuration can be increased to 64 MB, and a 4 MB flash memory option is also available. Ethernet interfaces using twisted pair, thin or thick are available, as well as two serial ports and one parallel port. Energy Star compliant color monitor choices range from 14- to 21-inch with a resolution of 1024x7687 to 1280x1024. A 19-inch gray-scale monitor also is an option.

Prices range from $2,695 to $3,495. Contact Phase X Systems, 19545 NW Von Neumann Dr., Beaverton, OR 97006; (503) 531-2400.

Circle 376 on reader card

Box Hill Announces RAID Box 5300 Turbo

Box Hill Systems Corp. introduced a new standard for RAID performance: the RAID Box 5300 Turbo.

The RAID Box 5300 Turbo achieves up to 4,500 I/Os per second, and a total sustained throughput of over 60 MB per second. Additionally, the RAID Box 5300 Turbo can accommodate capacities from 4 to 432 GB and support up to 512 MB of data cache that can be user specified as either write-back or write-through. The RAID Box 5300 Turbo can implement RAID levels 5,4, 1, 0+1 or 0.

Contact Box Hill Systems Corp., 161 Avenue of the Americas, New York, NY 10013; (212) 989-4455.

Circle 374 on reader card

ITAC Debuts MOUSE-TRAK

ITAC Systems Inc. introduced the MOUSE-TRAK trackball which is designed for point-and-click power users.

MOUSE-TRAK lets the hand and arm remain in a natural resting position during operation. There are no unnecessary movements like those required to use a mouse. It has a padded rest that supports the hand, maintaining the optimum "straight wrist position." The three middle fingers are used to rotate the ball, keeping them free from the button pushing motions that lead to tendinitis. Buttons are located in the ergonomically correct 3, 6 and 9 o'clock positions and are easily controlled using the thumb and pinky finger. Also, ball movement force is reduced through the use of precision stainless steel ball mechanical components.

MOUSE-TRAK is available for all high-performance workstations, PCs and Macs, complete with interface cable, instructions and a one-year warranty.

Contact ITAC Systems Inc., 3113 Benton St., Garland, TX 75042; (214) 494-3073.

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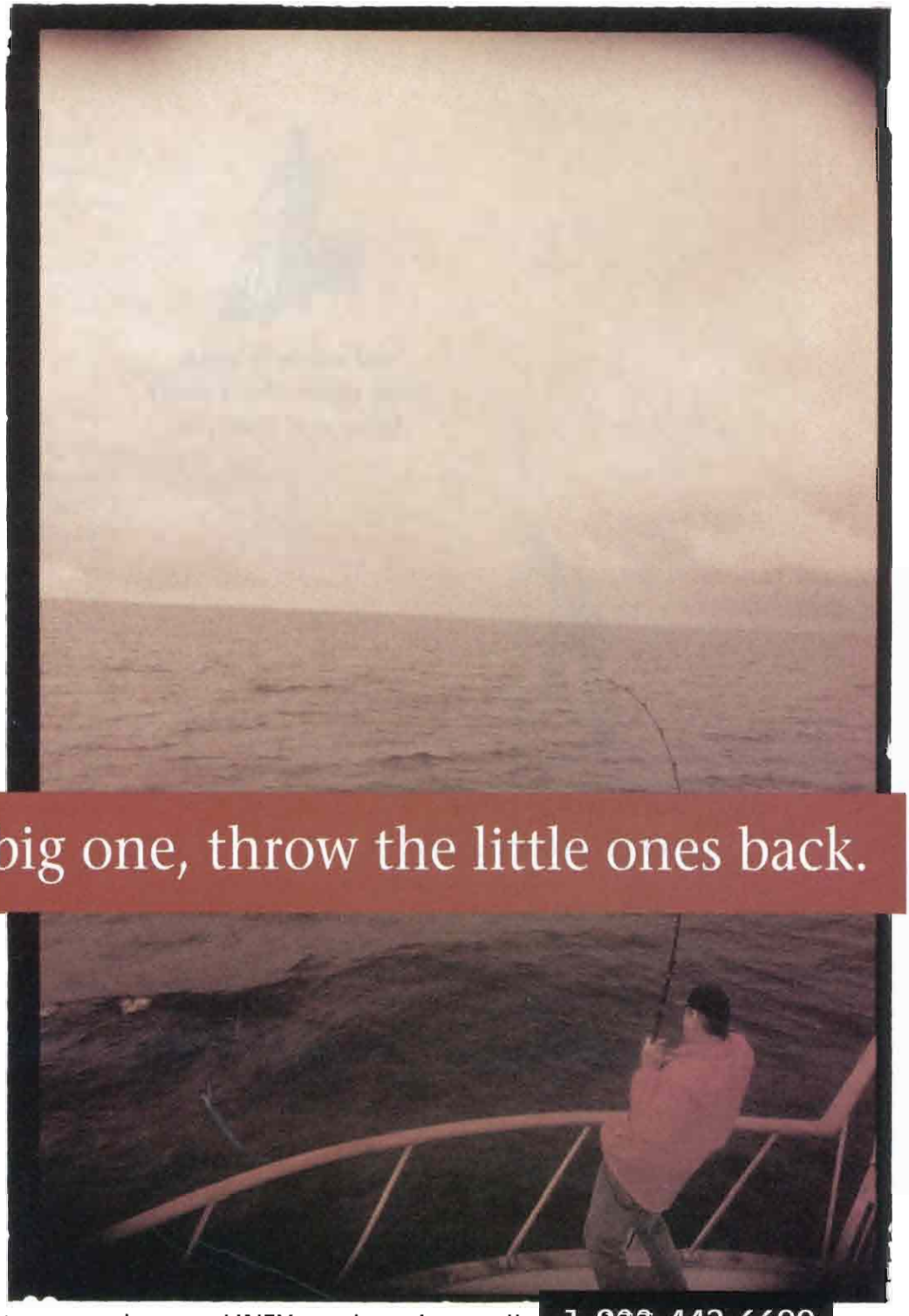

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Server Technology Upgrades Remote Power On/Off

Server Technology Inc. introduced an upgraded version of Remote Power On/Off, a telephone-activated power switch for remote PCs. The upgraded version includes several new reBOOT enhancements to support remote computing users that leave their host PC running 24 hours a day.

The new Power On/Off reBOOT support E-mail systems, BGS systems and host remote computing system, and include the following reBOOT features: no answer automatic reBOOT; eight-ring, no-answer forced reBOOT; infinite power on feature; forced power off feature; locked modem safeguard; and one second reBOOT.

It also features a new AUX Port Mode that allows homes or offices with single phone lines to share a PC's modem with an answering or fax machine.

Remote Power On/Off +Aux costs $169.95. It is also available bundled with pcANYWHERE for $199.95. It is fully compatible with pcANYWHERE, Carbon Copy, Co-Session, Close-Up, ProCOMM and LapLink.

Contact Server Technology, 1288 Hammerwood Ave., Sunnyvale, CA 94089; (408) 745-0300.

Circle 372 on reader card

IEM Releases DLT Products

IEM introduced a new line of DLT (Digital Linear Tape) products.

The DLT products have a sustained transfer rate of 1.5 MBps without compression and up to 4 KBps with compression turned on. Each DLT cartridge holds 10 GB of uncompressed data and up to 20 GB of compressed data. The average access time on a 10 GB tape is 45 seconds from BOT.

IEM offers a standalone DLT drive, as well as a DLT building block for the Building Block enclosures.

Contact IEM Inc., 1629 Blue Spruce Dr., Fort Collins, CO 80524; (970) 221-3005.

Circle 371 on reader card

DTS Wireless Offers ZAP-it

DTS Wireless announced ZAP-it, which allows your laptop computer to become a mobile messaging center, without phone lines, when used in conjunction with a wireless radio modem.

Users can: send E-mail messages (1,000 characters) to any Internet or ZAP-it address, as well as receive E-mail to the laptop; compose and send faxes anywhere in the United States or send pre-stored faxes; send text-to-voice phone calls to anyone in the United States; send messages to alphanumeric pagers; and receive messages on your laptop called into the ZAP-it 24-hour toll-free message center.

ZAP-it requires: an IBM 386 (or higher) portable computer or compatible with either Microsoft Windows or MS-DOS, or an HP 95/100/200 LX series palmtop computer; compatible wireless modem; and ZAP-it for Windows, ZAP-it for DOS or ZAP-it for the HP Palmtop software.

Contact DTS Wireless, 10 Woodbridge Center Dr., Ste. 1050, Woodbridge, NJ 07095; (800) 967-0943.

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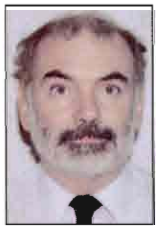

Robert Bruen

I'd like to toss my two cents into the well on the issue of pornography and the Net. It is one of the most public and emotional of the issues before us, and has resulted in some very quick legislation that attempts to restrict free speech on the Net. Actually, I consider it a very minor issue when compared to so many others, but it has gotten more than its fair amount of mind share. Hackers and hacking is the only other computing topic that seem to get as much attention.

First, I am suggesting that pornography is just a threshold that individuals and groups set for themselves and it should not be forced on other people. And that our U.S. Constitution protects free speech on the Net. Definitions differ widely. Please note the U.S. Supreme Court's idea of community standards, which are obviously different in different parts of the country. Also, bear in mind that there is a great deal of difference between social sanctions and legal sanctions.

Social sanctions can include criticism, shunning and even "suggestions" that I behave in a more socially acceptable manner. But legal sanctions, such as arrest and confiscation of equipment, have no place in American society. I have yet to find anyone whom I consider qualified to decide for me what I am allowed to think, read or write. When it comes to the Net, I see the same definition and rules applying as they do elsewhere in life — namely away from the Net.

On my computer, I can decide what I want to see and store on my hard disk. When communicating over the Net with others, I decide what we exchange. I do not send unwelcome items to others, so the control freaks should not try to restrict me or anyone else.

A major issue that is unique to the Net is the lack of any sort of borders or local community. Only the Net community is worldwide, with its own culture and norms. And like any community, these norms are in flux as the number of people in the community increases. However, introducing more restrictive legal rules is a wrong ideal for this community to adopt.

I suggest the issue is really about those who would restrict and control our lives. They have finally realized the power of the Net. So they are doing what they do best.

One issue has been selected — child pornography — upon which most people will agree to begin the efforts of tighter restrictions yet to come. With such an emotional issue at the center, it's difficult to have a logical and rational discussion about the restrictions of free speech. It is not unlike the McCarthy era game of "red baiting." At that time, if you cried for free speech, you were promptly labeled a Communist and your life was ruined by a prison sentence or you were prevented from getting employment. Similarly, if you protest the legal restrictions on the Net, you get labeled as being in favor of child pornograpy, thereby losing your credibility.

Thinking things through is a better approach than sound bites. When making decisions, we must always consider long-term consequences as well as short-term gains, otherwise we may give up something in haste that will cause more harm later on. The real test of freedom is at the blurry edges and not in the ordinary. So, to paraphrase, "I may not agree with what you say, but I will defend to the death your right to say it."—*Robert Bruen is the Computing and Networking manager at the MIT Lab for Nuclear Science, and an* HP Professional *reader. These are his views alone and not that of MIT Lab nor this publication. He can be reached at* bruen@mit.edu.

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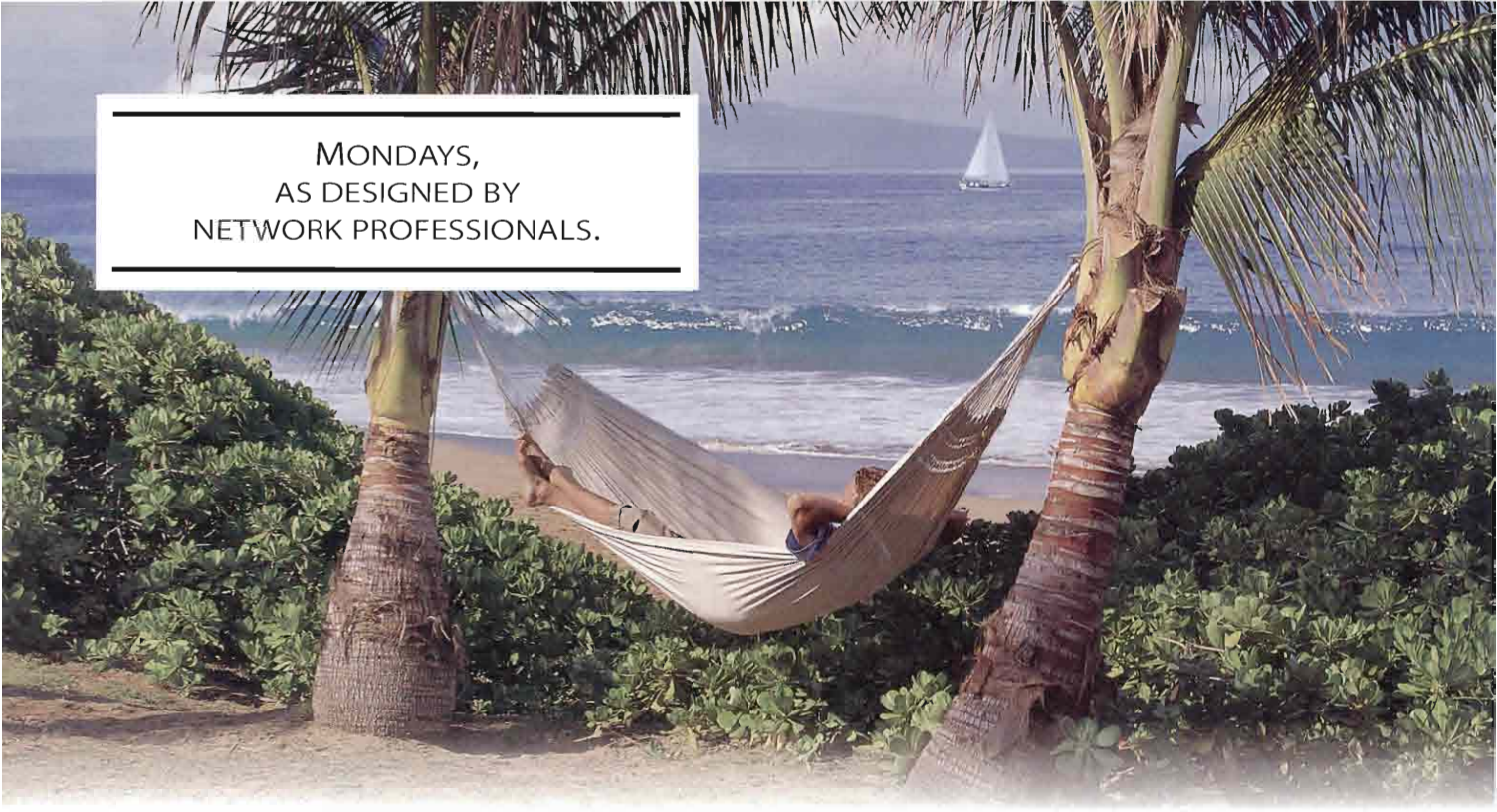

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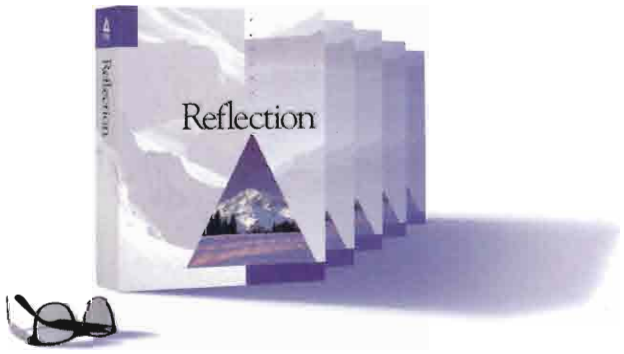

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