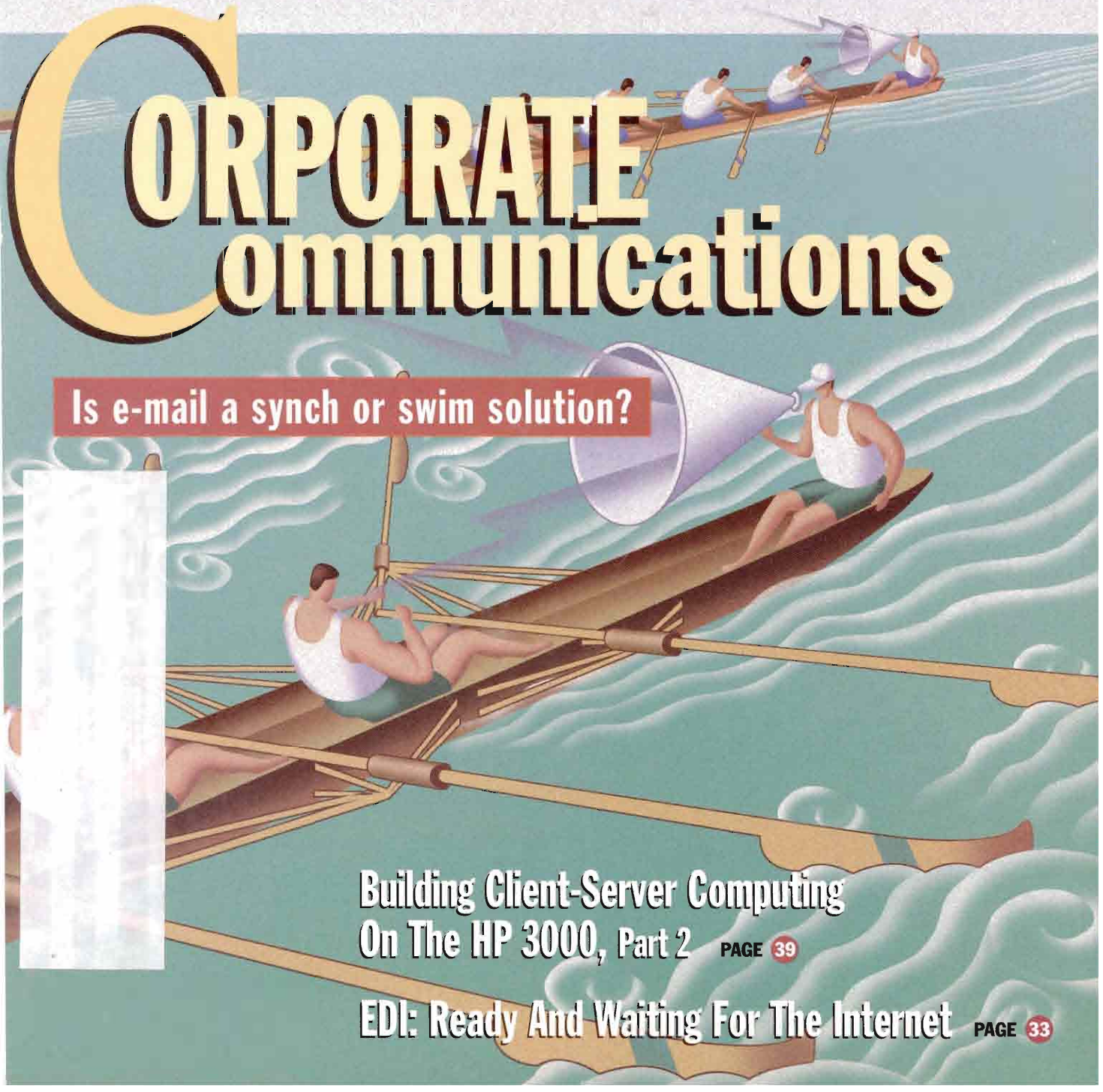
THE MAGAZINE FOR HEWLETT-PACKARD ENTERPRISE COMPUTING

SEPTEMBER 1996

HP Professional

NEW COLUMN:
The Internet Digest
PAGE 56

CORPORATE Communications



Is e-mail a synch or swim solution?

Building Client-Server Computing On The HP 3000, Part 2 PAGE 39

EDI: Ready And Waiting For The Internet PAGE 33

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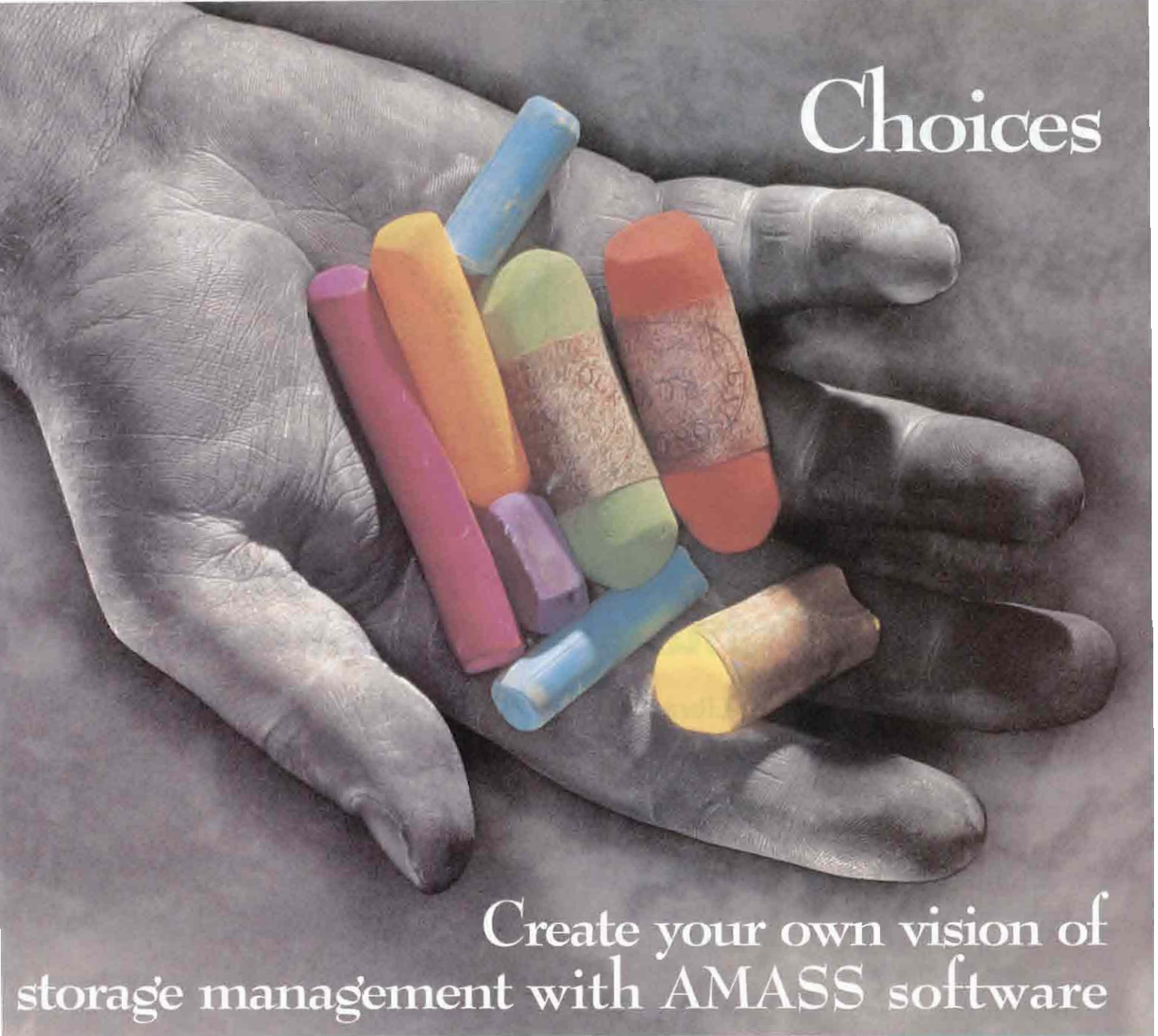

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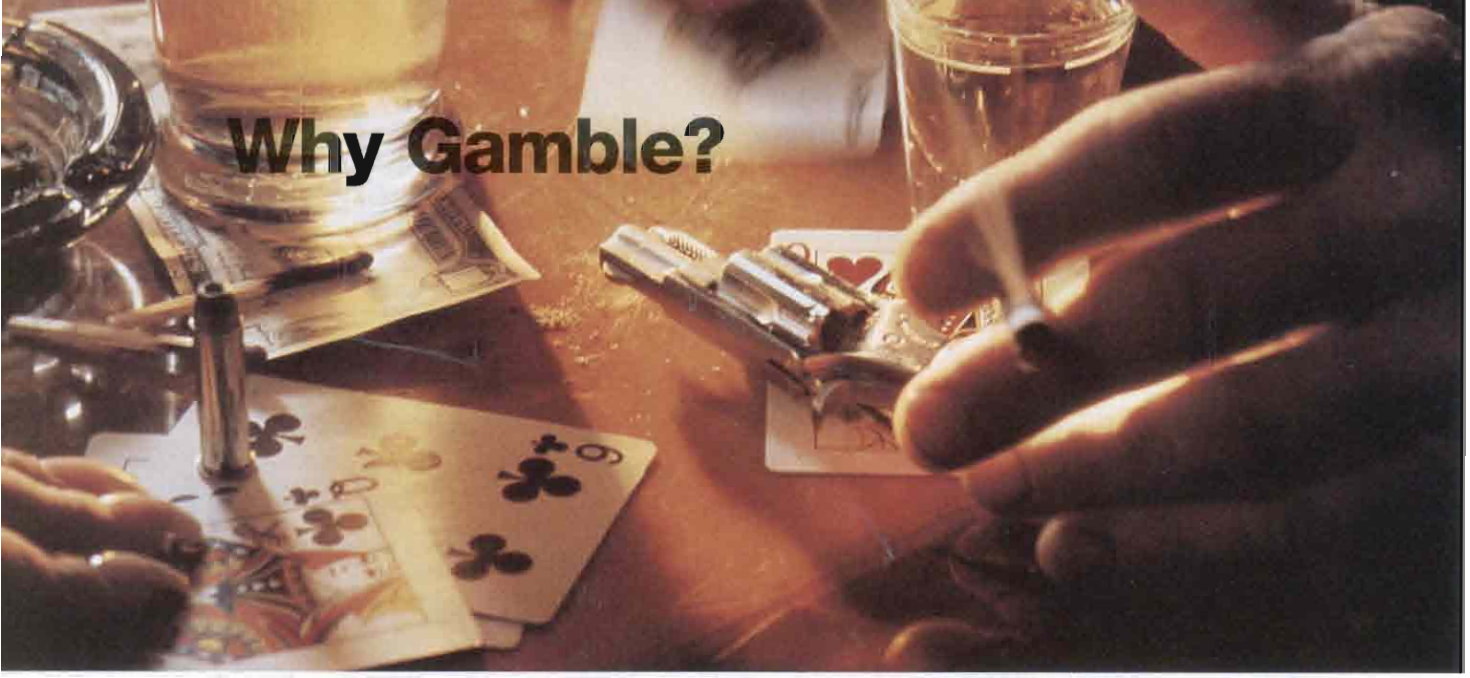

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It's In The Mail 23

By Barry Slawter

As the World Wide Web captures the imagination of the public, corporations today often act overanxiously when examining the Web's incredible "potential." Still, everyone needs e-mail. Granted, in the world of office communication, e-mail may not be the hippest topic these days, but not having it in your company can be disastrous. Here's a look at the part e-mail plays in the new realm of interactive messaging.

EDI & The Internet...Right Now 33

By Pushpendra Mohta

Despite 15 years of government and industry advocacy, EDI hasn't grown as rapidly as most expected due to the high cost, as well as the dedicated, proprietary value-added networks required. However, companies are finding that the Internet provides a flexible vehicle for electronic collaboration, information distribution and business-to-business interactions.

A White Paper: Building Client-Server Applications On The HP 3000, Part 2 39

By Rohan Hall

Last month, Part 1 of Building Client-Server Applications On The HP 3000 introduced the "notion of client-server on the HP 3000" by explaining the elements of the server as well as defining the terms commonly used in client-server computing. This month, Part 2 looks at the client, including hardware, programming software and networking requirements.

COLUMNS

Industry Watch *By George A. Thompson*
HP reports a 26 percent decline in net earnings; HP releases the first HP 9000s based on the 64-bit PA-8000 CPU; Ira Goldstein returns to HP as Internet technology officer and chief technology officer for HP's CSO; HP introduces the Enterprise NetServer Operation (ENO); Compaq announces a new Workstation Division; HP's next generation OS time table; and the HP 3000: Alive and well in HP's world. **8**

UNIX At Large: Waxing Eclectic *By Fred Mallett*
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Inner Networking: The Webification Of OpenView *By Jill Huntington-Lee*
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PREMIER: Internet Digest: Spam, Spam, Wonderful Spam. Not! *By Mark McFadden*
You can get Eggs, Spam, and Spam, or Eggs Spam, Spam, Spam, Spam, hold the eggs or Spam, Spam, Spam, Spam.... Enough with the Spam already! **56**

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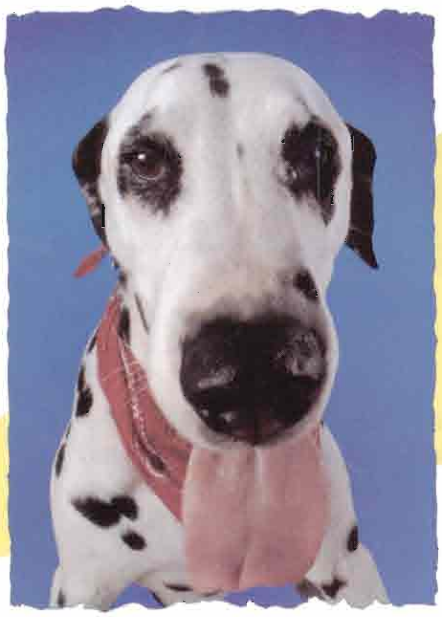

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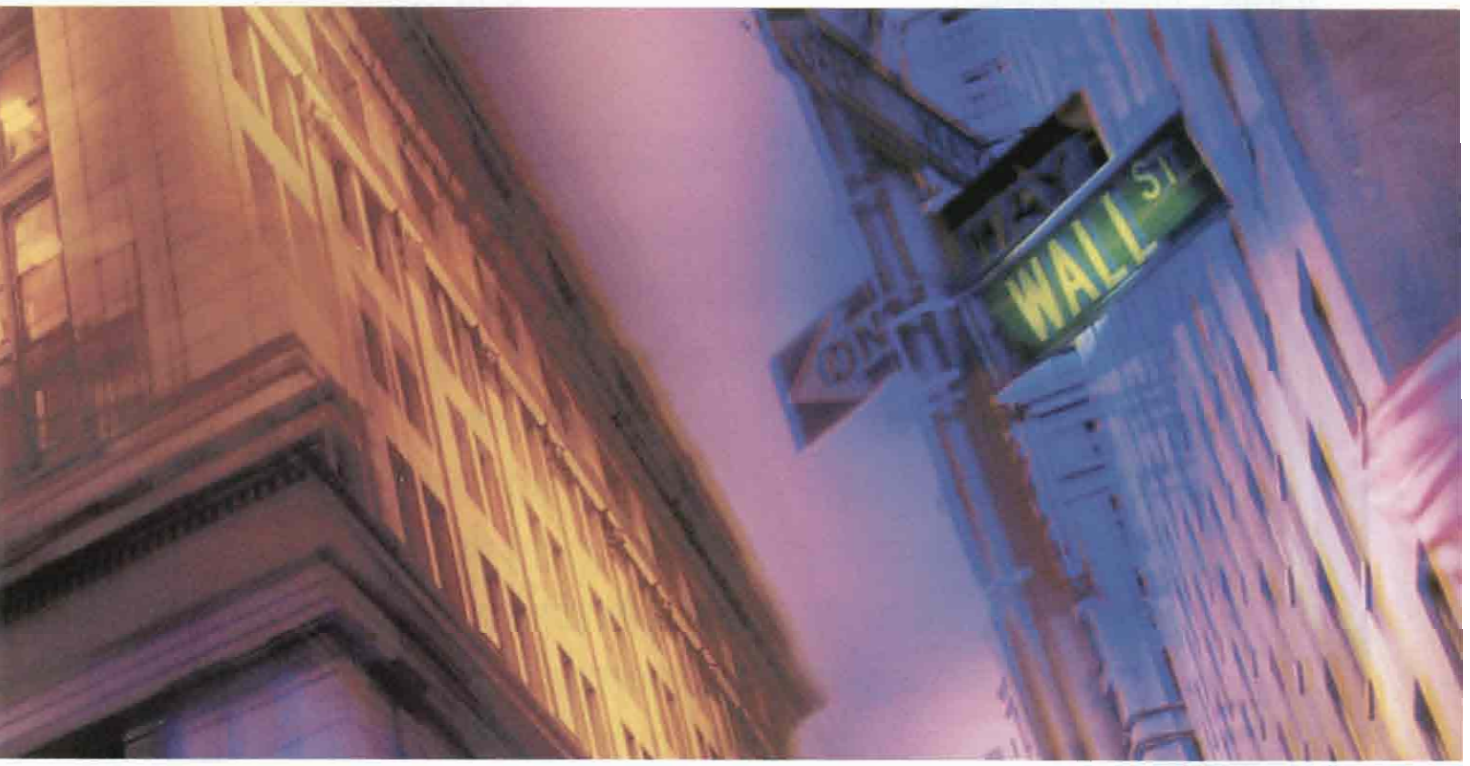

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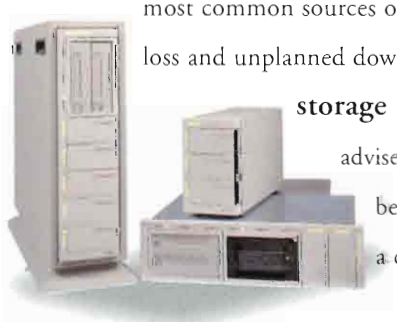

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Of Dogs And Ponies

Charlie Simpson

Last month during HP World in Anaheim, Calif., *HP Professional* was privileged to have several exclusive one-on-one interviews with HP executives. However, things began the week before the show in our *HP Professional* offices with a visit from Carol Mills, general manager for HP's General Systems Division. Mills came to announce that HP is releasing the first HP 9000 servers based on the 64-bit PA-8000 CPU (see this month's Industry Watch).

Mills thinks that in the future, there will be fewer than the five hardware platforms that exist now (Alpha, PowerPC, SPARC, RS/6000 and HP 9000). She predicts that by the turn of the century, there will be a "pervasive UNIX," obviously referring to HP and SCO's plans for a unified 64-bit UNIX OS. HP is betting on its relationship with Intel and the Merced chip they are co-developing, not co-developing, designing, helping with, or whatever, depending on whom you ask, to provide the "next generation CPU" for that one single UNIX. And of course, there's the Internet. Mills concluded our briefing by forecasting that "the distribution industry as we know it will go away." And she must speak for HP because the firm just announced the return of Ira Goldstein, Internet guru and chief Web weenie.

. . .MEANWHILE BACK IN THE MAGIC KINGDOM

Our first morning in Anaheim began with Glenn Osaka, general manager for HP's Commercial Systems Business Unit, who says it's time to "think of the industry as an ecosystem. In other words, it's biological." Always candid, Osaka admits he worries about Sun's perceived "halo" surrounding the Internet with Java.

Next, Rick Belluzzo picking up on Lew Platt's opening comments, emphasized a convergence of the enterprise, workgroup, small business and home office computing in the future. When asked if he had a message for HP 3000 users, who often feel left out of HP's future plans, Belluzzo said, "We recognize their importance and their investment." So take heart gang.

Later that day, Harry Sterling, general manager for HP's Commercial Systems Division, explained to me just how HP is "recognizing" what we here at *HP Professional* refer to as the "fanatical fringe." He pointed to PA-8000 CPU support with Release 5.5 of MPE/iX, as well as support for Java. "As UNIX and NT exist, so will the HP 3000 and NT coexist."

In a quieter moment away from the show, Nigel Ball, marketing director for HP's GSY, clued us in on "the social side" of HP computing. By the time you read this, HP will have made a joint announcement with the United Nations to bring the power of the Internet into "information ghettos" around the world, with the first system going live in Mexico in the last week of August. Our journey ended with an early morning interview with Dick Watts, vice president and general manager of the CSO. Watts told us that Comaq and the PC industry with their low cost, high volume business model keeps him awake at night. "They are changing the rules of the game." Watts should know. He was the former manager of the PPG, HP's PC division. When it comes to Sun's Java, Watts plans to leverage the "halo" by "first asking, 'What *is* Java?' then demonstrating a range of alternative solutions."

NEW STUFF

HP Professional is pleased and proud to welcome Harry Sterling to its Editorial Advisory Board. And speaking of introductions, this month on our back page, we kick-start a brand new column — the Internet Digest. Written by Mark McFadden, who manages a Gopher server for the Wisconsin Department of Natural Resources, the column will cover the latest news and technologies about the Internet.

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INDUSTRY WATCH

George A. Thompson

WHAT GOES UP, COMES DOWN IN Q3

In August, HP reported a 26 percent decline in net earnings including the effect of exiting disk mechanism manufacturing (announced in July) for the third quarter of its fiscal year. HP cited slower order growth (although orders for the quarter increased by 8 percent), order cancellations in the disk mechanism business, a significant order decline in the components business and ordering patterns by resellers in the inkjet printer and PC businesses.

Lower demand for semiconductor test equipment and workstations also contributed to slower order growth. However, overall orders which amounted to $8.7 billion (United States and international markets) increased 8 percent over the same period a year ago. And net revenue increased 18 percent. HP also noted that demand for HP OpenView and HP OpenMail products was strong.

NOW SERVING THE PA-8000

HP is now releasing (by the time you read this) the first HP 9000 boxes based on the 64-bit PA-8000 CPU. The PA-8000 chip is finding a home in HP's existing D- and K-class Enterprise servers, which were first introduced earlier this year. HP is also dropping the PA-8000 into its T-class (the T600) and Enterprise Parallel Servers (the EPS21 and EPS31).

The HP 9000 D270 ($22,260) and D370 ($25,250), supporting up to two 160 MHz PA-8000 CPUs, are considered by HP to be entry-level platforms. The K250 ($52,200), K260 ($61,200), K450 ($68,200) and K460 ($77,200) are considered to be midrange platforms. The new D-class servers will be available November 1 from distributors and resellers. The new K-class servers are available immediately.

The 64-bit PA-8000 CPU is now available in the D- and K-class models of the HP 9000 Enterprise Server product line.

The T600 ($95,000) will be available in the first quarter of 1997. The EPS21 will be available in the third quarter of 1996, whereas the EPS31 will be available in the first quarter of 1997.

THE INTERNET: AS GOOD AS GOLDSTEIN

HP, which has been struggling with getting out in front of the Internet bandwagon, announced that Ira Goldstein recently returned to HP to take on the newly created position of Internet technology officer and chief technology officer for HP's Computer Systems Organization. Goldstein left HP (as research and development manager for HP's former Technical Systems Sector) to join the Open Group Research Institute where he served as executive vice president and chief scientist.

This is a quite a coup for HP which currently finds itself behind Sun Microsystems in the Internet mindshare game. However, according to an exclusive interview with Dick Watts, HP's vice president and general manager for HP's Computer Systems Organization, he sees a "huge opportunity to deliver value-added services on the Internet. For example, we have a large and growing Internet practice [referring to HP's new Internet Consulting Service]. So we are very excited to have Ira come back to HP."

Prior to his work at HP, Goldstein was a scientist at Xerox's Palo Alto Research Center (PARC) working on the integration of object-oriented languages with artificial intelligence (AI) techniques and on the creation of AI-based personal information environments. In 1986, Goldstein was selected by *Science Digest* as one of the nation's top scientists under 40.

A PC BRIDGE OVER THE RIVER UNIX

Even if you've been living in a cave or just haven't been able to pull yourself away from the Internet, you must know by now that HP intends to be a serious player in both the RISC and Windows/Intel server markets. So, in August at HP World, HP formally introduced the Enterprise NetServer Operation (ENO) part of the Network Server Division, which is itself in HP's Personal Products Group (PPG), responsible for HP's PC servers and desktops.

Maria Cannon, who most recently was HP's worldwide marketing manager for the Commercial Systems

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Division (responsible for HP's PA-RISC/UNIX systems) has been named general manager of the ENO. During an interview with Cannon, she said one of her top priorities will be establishing a Partner Program which will work with top-tier PC application software companies to optimize Windows NT for HP's NetServer.

BEATING A PATH TO 64-BITS

For those a little nervous about HP's move to its highly touted next generation architecture, HP has published a time schedule. Although still a bit nebulous, a full 64-bit HP-UX implementation is expected to be introduced by the middle of next year. Stay tuned.

Expected Announcement Date	HP-UX Version	Significant Features
February 96	10.10	file system size increased from 4 GB to 128 GB
September 96	10.20	file size to increase from 2 GB to 128 GB, 64-bit integer calculation, PA-8000 support
mid 97	11.00	full 64-bit implementation, PA-8200 support, next generation UNIX OS APIs
later 97	—	PA-8500 support, additional next generation UNIX OS
1998	11.x	Intel Merced (IA 64-bit) support
To Be Announced	12.0	Next Generation UNIX OS (based on HP/SCO 3DA)

ALL IN A DAY'S WORKSTATION

While HP gears up for enterprise PC computing, Compaq (Houston, Texas), which has announced its intention to reinvent itself as a global enterprise-wide computer supplier (a la HP), announced the formation of a new Workstation Division within Compaq's newly created Enterprise Computing Group. Chartered to provide industry-standard (read Intel/Microsoft, a.k.a. Wintel) NT-based workstations at costs lower than competitive RISC/UNIX workstations, the new division plans a new worldwide series of systems before the end of this year.

As a part of their plan, Compaq is working with key ISVs in the areas of 3D animation, CAD/CAE, content development and financial services. Compaq is already forging new relationships with ELSA Inc. and Intergraph Computer Systems, two established leaders in the 3D/CAD/CAM and visualization markets.

HP 3000: ALIVE AND WELL IN HP'S WORLD

During the HP World conference and exhibition in Anaheim, Calif. in early August, HP announced the following products and product plans for the HP 3000:

- MPE/iX 5.5 with high availability and improved networking features has been released.
- HP licensed ODBCLink for IMAGE/SQL and ALLBASE/SQL from M.B. Foster Associates. ODBCLink will provide 32-bit ODBC connectivity between HP 3000 servers and Windows 95 and Windows NT clients. When available, it will be automatically shipped to all customers with current IMAGE/SQL and ALLBASE/SQL support contracts.
- Bowing to the customer demands of HP 3000 purists who find themselves constantly at odds with HP's emphasis on UNIX and NT systems, HP announced plans to bring the PA-8000 CPU to the HP 3000. A formal product introduction is expected before the end of this year.
- A much requested ftp enhancement to simplify transfer of MPE file types, support for larger networks and 100 Mb technology for the HP 3000 was also promised to arrive later this year.
- HP also announced that Sun's Java would run on MPE/iX. Although unclear about its availability, HP will be working to "prepare Java for the rigorous demands of business-critical environments."
- HP also announced that it would — by the end of 1997 — enhance MPE/iX and related subsystems to address the "Year 2000" issue.

HP-UX: THE NEXT GENERATION

No one knows for sure what the future will hold. But if Santa Cruz Operation (SCO) and HP have their way it will look a lot like this: a merged version of HP-UX and UnixWare running on Intel's pending 64-bit Merced CPU.

Moving aggressively to that end, HP and SCO announced the initial API specification for their next-generation 64/32-bit UNIX systems has been released for review to strategic software developers and systems suppliers.

In the first phase of the API specification process, strategic ISVs and OEMs — including many of the world's leading UNIX system vendors — are expected to review the first release of the API specification and provide HP and SCO with detailed feedback on features and functionality.

Ongoing updates for this release will be made throughout the next two months, with a new version for wider review expected early in the fourth quarter. A published version of this API specification is expected to be available by the end of the year. SCO plans to support this API specification in its upcoming release of "Gemini," the consolidation of SCO OpenServer and SCO UnixWare, which is expected to be available in mid-1997 (see below).

AND SO IT BEGINS ...

In late July, HP announced that it would incorporate the initial 64-bit API specification in the next release of HP-UX, HP-UX 11.0, which is expected to be available in mid-1997. Optimized for the Intel IA-64 Merced microprocessor and based on the previously announced 3-Dimensional Architecture (3DA), the UNIX OS will provide a single development and porting target for 32-bit and 64-bit applications, enabling OEMs and ISVs to accelerate their delivery of a wide range of innovative customer solutions.

LETTERS

LOOKING AT ALTERNATIVES

I just finished reading [Jill Huntington-Lee's] article "An Event-ual Winner" in the July 1996 edition of *HP Professional*, and wanted to let her know that Tivoli/IBM Systems has had a product called the Tivoli Enterprise Console shipping for the last year or so that does exactly what she desired in terms of consolidation and correlation of events across the disciplines of network, systems, database and application management.

Kiron D. Bondale
System Management Analyst
Enhance Systems Inc.

Thanks for your message. I am familiar with Tivoli Enterprise Console, and have written several technical reports comparing it to other event/console managers.

While the general idea is the same, the implementation is quite different. I encourage you to learn more about HP event correlation services, as the approach to correlation is fundamentally different, and a person in your position may find it valuable to understand both the pros and cons of each approach. —JHL

EASY TO SWALLOW

Good article [Editorial, July 1996]! Lots of food for thought and pretty brave questions about the nature of employee/employer relationships. There is, after all, a down side to downsizing. Keep cutting close to the bone.

Ralph Godwin
Senior Applications Analyst/Programmer
Harvard University Development Office

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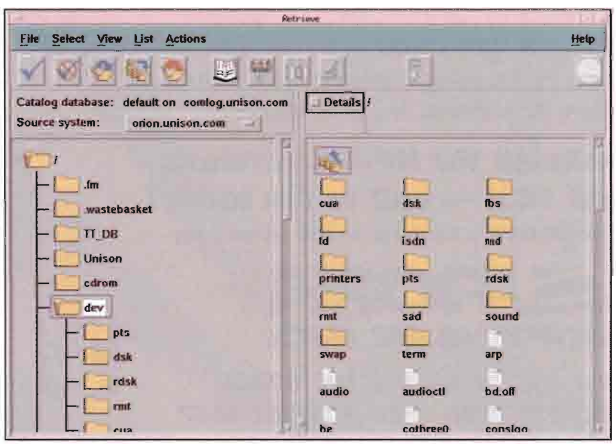
Never Out On A Limb With RoadRunner



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CIRCLE 353 ON READER CARD

Release 3.0 of RoadRunner includes a new fault-tolerant catalog management capability, which is part of Unison's strategy to address organizations' growing needs in the storage management arena. Administrators can manage backup and recovery of data from a Motif-based GUI or from an intuitive command line interface with a command line editor. RoadRunner's architecture allows system administrators to fine-tune performance factors through configurable data compression, parallel backup, data interleaving, tape indexing and configurable block sizes.

Delta Dental Plan of Massachusetts (Medford, Mass.), a provider of dental insurance in Massachusetts, needed to ensure that their entire HP-UX environment, including operating system, data files and an Oracle database of financial information, was backed up in less than two hours. For Joe Short, HP system administrator at Delta Dental, that meant using Unison Software's (Santa Clara, Calif.) RoadRunner 3.0 in conjunction with DLT for high-speed backup. Short has been using RoadRunner on an HP K400 for approximately one year. RoadRunner helps with nightly backups on the K400 as well as an HP E45, both running HP-UX 10.10.

In addition, Delta Dental relies on Unison's Maestro's advanced job scheduling capabilities to schedule the RoadRunner backups and monitor network applications. Maestro's job dependency feature also ensures that the Oracle database is shut down prior to running the backups.

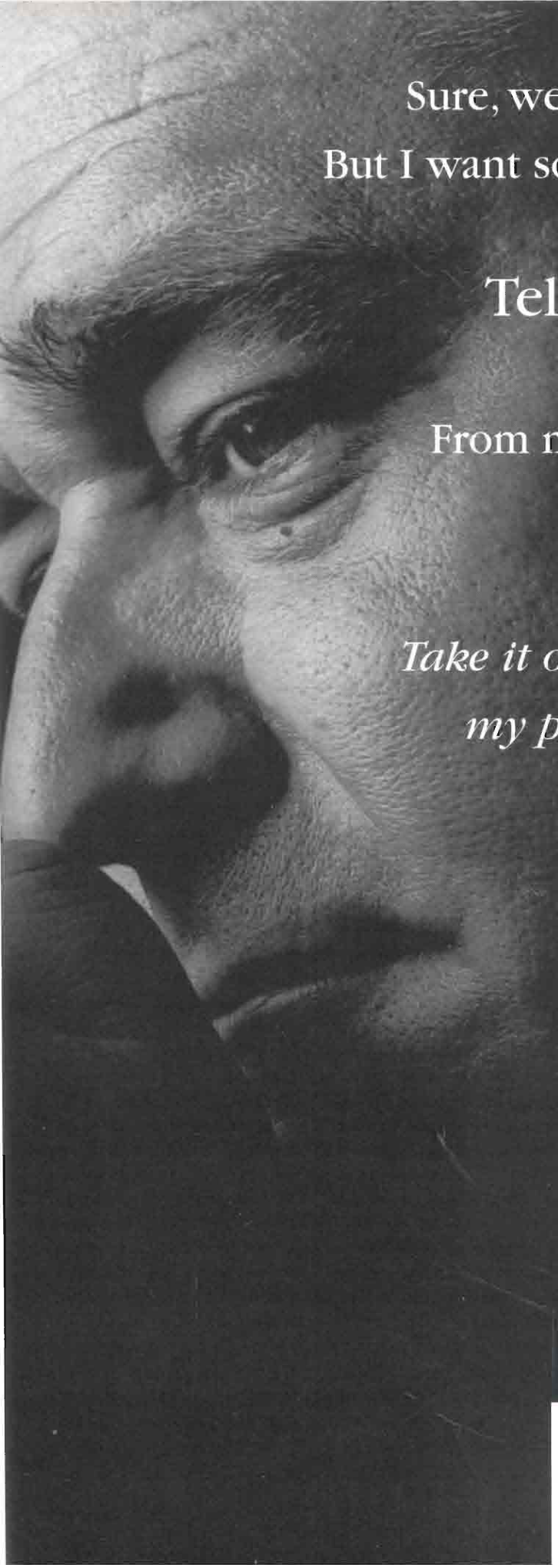
With RoadRunner, backup and recovery management for the entire network can be executed from a single, independent workstation, or it can be distributed across the network for local administration. Backup to locally-attached storage devices or to devices on multiple systems throughout the network is supported. Also, flexible console handling allows operator requests to be directed to the backup device server or to the client where the data resides.

With the catalog management features, the location of catalogs is configurable and independent of the device server. Users can select the catalog type — hierarchical, fault-tolerant, mirrored or local. The volume management capability also allows users to add, label and change the status of volumes. In addition to its advanced catalog management features, RoadRunner 3.0 also includes certification with Sony's DTF high-speed drive, and full integration with HP OpenView IT/OperationsCenter.

New features also enable customers to store online indexes or files, volumes and backups redundantly across the network, so they can quickly locate and retrieve data in the event of a system failure or malfunction.

Overwrite protection is ensured through the use of ANSI-standard tape labeling, and security is maintained through standard UNIX security as well as the preservation of UNIX's ACLs.

—Deborah Schwartz, Associate Editor



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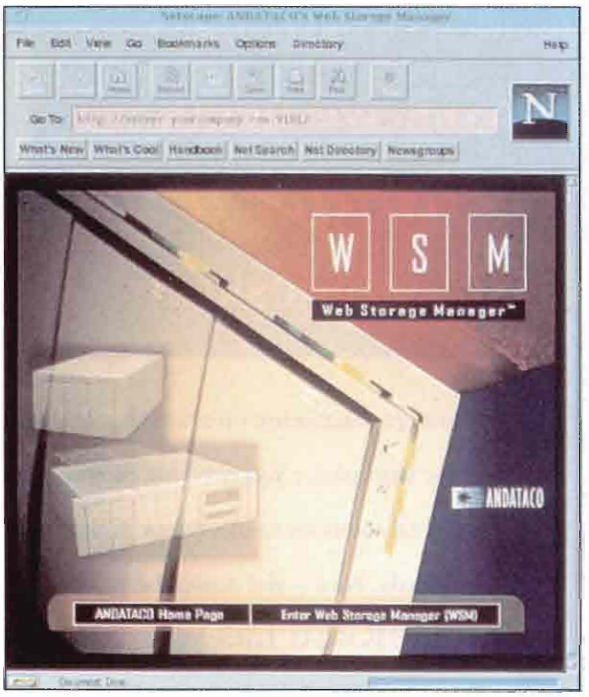
Happy Trails To You With WSM



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CIRCLE 351 ON READER CARD

For system administrators looking to get out of their seats but not loose touch with their system, Andataco (San Diego, Calif.) says "happy trails." The company released their Web Storage Manager (WSM), an application designed for monitoring and controlling storage systems from a local server via the Internet or an intranet.

WSM works in conjunction with Andataco's Enterprise Storage Packaging (ESP) subsystem, which reports on and can control system devices. The information gathered is reported back to the WSM host-based Web server application, which is then displayed and controlled via a Netscape browser. When an alarm condition such as over-temperature, power outage or fan failure is reached, the condition is displayed within the browser. WSM also integrates with SNMP-based products.

Mike Stelzmer, marketing and communication manager at Andataco, says the company found problems not with the devices inside but with the enclosures themselves. "Typically the system breaks down before the system lights up and tells you there is a problem. ESP is truly proactive in anticipation of events." Both WSM and ESP support HP-UX, IBM AIX, SGI Irix, SunOS and Solaris, and Windows NT.

With a click of a mouse, WSM allows administrators to access a host incorporating an ESP subsystem anywhere on the network for information about the vendor of the disk, firmware level, SCSI ID, capacity and mounted partitions. Administrators can then mount, label, partition or format a disk as well as take it on/offline. The WSM program has e-mail and paging technology available, as well as the ability to power up or down individual devices from the GUI to fix or check on an established or potential problem. ESP and WSM were developed in parallel to work closely with one another.

A zero stub-length design based on SCA technology is Andataco's answer for high performance, while a cableless design with a high degree of redundancy, a passive midplane, self-maintenance capabilities and sophisticated monitoring, shutdown, alarm and recovery mechanisms provide fault-tolerance. The company hopes to acheive flexibility with a building-block architecture that allows scalable configurations ranging from a single device in a desktop enclosure to data center cabinets housing up to 120 removable storage elements.

WSM costs $995. The ESP has four basic sizes: a desktop tower, deskside tower, rackmount chassis and a data center. Price varies for each depending upon the inclusion of a split bus or single bus, 3.5-inch or 5.25-inch removable storage units and their size. The desktop tower ranges from $786 to $1,170, while the deskside tower ranges from $3,013 to $3,995 and the rackmount chassis ranges from $2,542 to $3,240. The data center ranges from $22,232 for seven racks and the least expensive chassis to $54,540 for 15 racks with the most expensive chassis.

—Matt Hengey, Associate Editor

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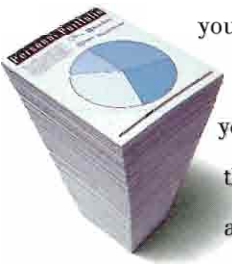

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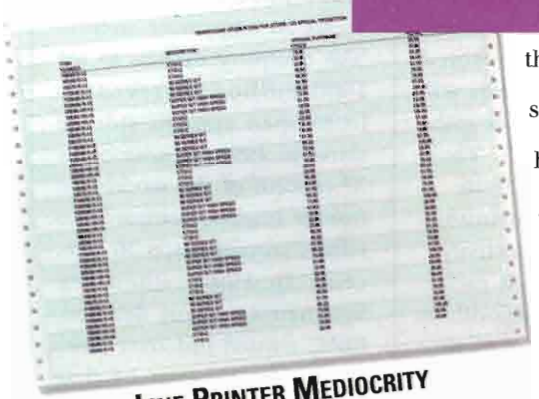

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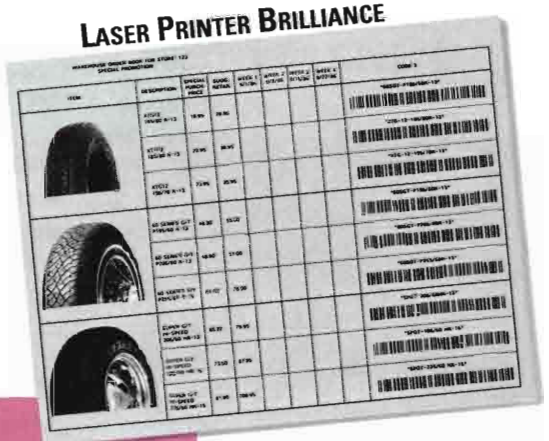

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CIRCLE 115 ON READER CARD

At The Store Front

EMC's Symmetrix 3000 Captures Data And Market Share

"EMC has fundamentally shifted the landscape in the rapidly growing open storage market."

Michael C. Ruettgers
CEO
EMC²

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CIRCLE 352 ON READER CARD

Almost a year into a reseller agreement with worldwide storage leader EMC² (Hopkinton, Mass.), HP is finding that EMC Symmetrix 3000 ICDA (Integrated Cached Disk Array) storage systems reinforce the HP 9000's position as a mainframe alternative. And now, the agreement has been expanded to support the HP 3000 as well. HP and EMC signed the $160 million agreement, which extends to mid-1997, in November 1995 after working together to create a world record-sized data warehouse at EMC's labs in Milford, Mass.

So far, the HP-EMC tie has a been a success; $100 million in revenues was generated in the first six months of 1996. The company is banking on the HP 9000 platform, because it plans to grow sales based on open, client-server systems. EMC has grown by leaps and bounds since the inception of Symmetrix systems in 1990. For multiconnected, scalable, fault-resilient, open storage, Symmetrix ICDA systems range in capacity with models from 35 GB capacity to 1,118 GB.

The systems are based on a development architecture the company calls Mosaic: 2000, their proprietary technology which allows easy upgrades in hardware and code.

EMC asserts that the amount of digital information that will need to be stored over the next five years will double that which was gathered over the last 35. Thus, the Symmetrix 3000 is designed with continuous availability and connectivity.

With up to 4 GB cache, intelligent caching algorithms and disk mirroring, Symmetrix 3000 systems guarantee high performance and continuous availability of data. Up to 32 SCSI channels guarantee standard, mulithost connectivity.

So far, the only hurdle has been price. EMC's high-end Symmetrix 5500, revamped to work with mainframes and open systems, bests rivals IBM and Storage Technology in price per unit. But with the Symmetrix 3500 price as high as $2.4 million (the low-end starts at $805), depending on configuration, the client-server solutions are hardly an inexpensive choice.

For the most part, its largest customers, like The Coca-Cola Company, Delta Airlines and UPS, strongly endorse EMC. But because of the company's rapid growth, stories about an overly aggressive sales with a "take no prisoners" attitude have cropped up casting doubts about EMC's commitment to quality.

But EMC makes no bones about its aggressive nature. The company expects to see $600 million in revenues from open systems storage alone in 1996. It now owns 37 percent of the worldwide storage market, compared to IBM's second-place 36 percent. In 1990, when the Symmetrix systems debuted, EMC owned just over one-tenth of a percent of that worldwide market. "EMC has fundamentally shifted the landscape in the rapidly growing open storage market," says Michael C. Ruettgers, CEO of EMC.

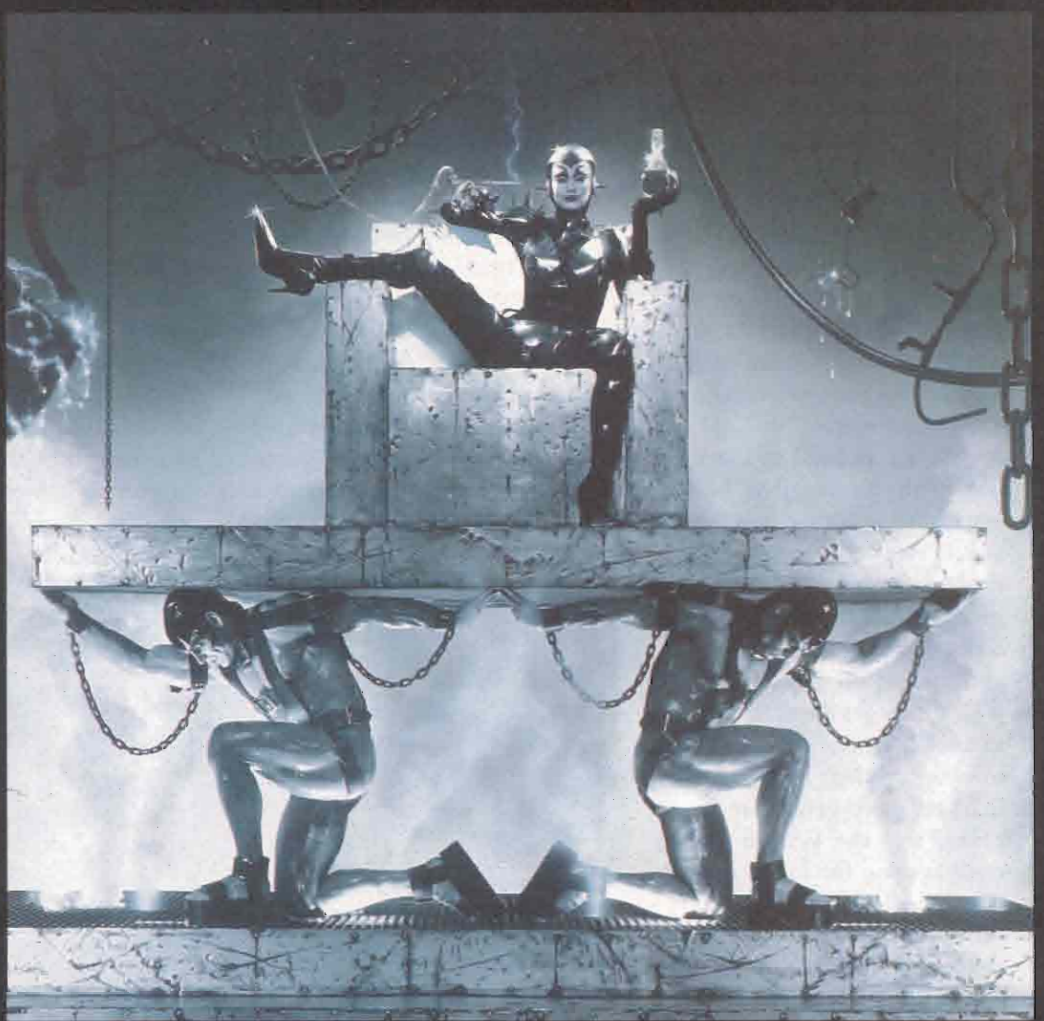
Growth, a constant factor at EMC, did decelerate in 1995, raising questions briefly on Wall Street, and urging company officials to push harder. Ruettgers probably put the company's philosophy best last December when he told the *Los Angeles Times*, "What we try to do is run the business in the best interest of the [company]. If I ran the business to keep Wall Street happy all the time, I'd end up in a strait jacket."

—Barry Slawter,
Contributing Author

UNIX users can

now add Windows to their list of conquests.

(Consider all ties with humility severed.)



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CIRCLE 218 ON READER CARD

IN sites

Case Study Solutions

Investing In Better Performance

BEA Associates And Camelot Music Improve Reliability And Speed With A Database Accelerator From Database Excelleration Systems.

Scott R. Humphrey

BEA Associates, a New York, N.Y.-based investment management firm, solved its crucial system availability problem by moving Sybase tempdb on to a solid-state database accelerator from Database Excelleration Systems (DES; Santa Clara, Calif.). Daily system crashes of its production portfolio management and accounting database, caused by heavy system use and contention for resources, have been eliminated.

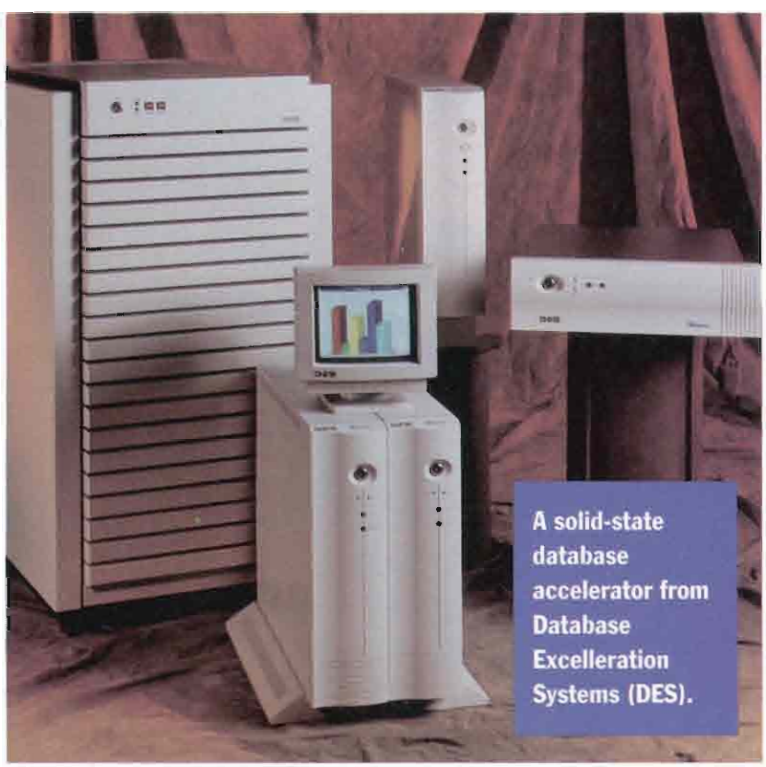
"As we headed toward the end of the trading day, I could guarantee you that our Sybase server was going to crash," recalled Steve Buckridge, senior vice president of systems and technologies for BEA Associates, a division of Credit Suisse, which manages about $28 billion in assets. "Everybody was trying to wrap up their trades as some markets were getting ready to close, and the system would crash because the log in tempdb was filling up.

"Every day was a crisis," Buckridge continued. "We got very good at identifying what reports not to run at particular times to minimize the system crashes, but the overall management of the application got to be more of an art than a science, which was unacceptable. We had tried everything Sybase suggested to ease the contention issue, but nothing worked. Then we moved tempdb on to a Database Excellerator from DES and our system has not crashed since."

ON TIME, EVERY TIME

BEA's 8 GB Sybase SQL Server 4.92 database running on a four-processor HP 9000 K400 database server is the information backbone of the company, supporting BEA global trading. The system runs 24 hours a day, 7 days a week. "We run about 22 hours each day in production mode, while the remaining two hours the system is offline taking backup," said Buckridge. "From a systems standpoint, it is to a large extent the lifeblood of the company. It supports all aspects of the investment operation."

That might be an understatement. The Sybase database allows portfolio managers to perform "what if" scenarios. It's also used on the trading desk to support the trading activity, by the settlement area for the electronic settlement of trades, by the auditing area for the reconciliation of portfolios, by the client reporting group for the production of statements addressed to the clients, by the security file administration areas to set up securities and online restrictions for portfolios, by the compliance group for guidelines and by the



A solid-state database accelerator from Database Excelleration Systems (DES).

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marketing department in pitching new clients. BEA uses a Novell NetWare 3.1 network to support its 200 user system, with 150 simultaneous users the norm. The database is stored on conventional disk subsystems running Fast Wide SCSI.

BEA maintains two identical HP database servers to ensure data availability, but also to provide timely access to historical data. "In our environment, where timelines are key, there is no reason for anybody to tie up our production database by making historical inquiries," Buckridge said. "Sybase doesn't necessarily operate very well if an auditor decides they need to see transactions for the last year on a portfolio," Buckridge quipped, "so we maintain one server for production and another for historical queries. Historical is yesterday."

A PAIN IN THE BOTTLENECK

All BEA temporary work files are stored in tempdb, which exceeds 1 GB daily. "tempdb was creating a major I/O bottleneck for us," Buckridge said. "The way we got around the bottleneck was by having the car that it rides in be capable of much higher speeds, and that's where DES fits into the picture. By moving tempdb on to the DES system, we have eliminated the I/O bottleneck, thus eliminating our system crashes.

"Our daily crashes were beginning to affect the firm's ability to efficiently conduct its business," Buckridge continued. "In some markets we serve, settlements must occur within 24 hours, otherwise the firm is fined 100 percent of the value of the transaction. The DES system has greatly assisted us in stabilizing and enhancing our database environment. The business benefit resulting from this is that we now get trades entered into the system and out in a timely manner, as well as get the information out to the banks and brokers who need to have the trading information as well."

BEA added the current HP database servers in the fourth quarter of 1995, replacing 10-processor Pyramid systems. The CPU upgrade has gained them an additional five-fold performance improvement. Because the DES systems are SCSI-based, BEA was able to move the two DES systems to the new UNIX environment without modification. "The transition in taking the DES systems over to the HP 9000s was flawless," Buckridge said. "We simply configured them for the new HP servers, and they were fully operational, so we were able to preserve our investment in the DES systems."

Dan Kusnetzky, research director of UNIX & Server Operating Environments with International Data Corporation (IDC; Framingham, Mass.), supports the concept of intelligent subsystems as well. "Organizations might find it most cost-effective to consider the addition of solid-state systems like those provided by DES rather than going through the time-consuming process of tuning the system memory, operating system, database network and the application, as these changes would not directly address the I/O contention issue," Kusnetzky said. "Significant performance improvements and system stabilization may be realized by adding a solid-state system which improves access and response time to specific, highly used files or database tables."

NO FAIRY TALE DISTRIBUTION

Camelot Music (North Canton, Ohio) faced a different problem. The music retailer, with 402 outlets located throughout 37 states, had conducted a simulated performance evaluation of its distribution system which showed that processing projected volumes from its stores would take 22 hours. With a three-hour window required for archiving, Camelot knew it needed to dramatically improve system performance to meet anticipated demand.

Camelot's environment consists of a six-processor HP 9000 T500 with 1.25 GB of memory, Oracle 7.0 with 350 tables and 80 to 90 user log-ins, and Oracle Forms 3.0. In all, Camelot implemented nearly 90 process changes to build a faster system, including upgrading to Oracle 7.0, rewriting the company's order processing system from Alpha & Omega Integrated Control Systems, tuning the application and investing in two additional processors for its HP 9000.

According to Camelot Systems Manager Tim Oberschlake, the last piece of the puzzle was to solve the

I/O contention problem Camelot was experiencing with Oracle, especially on complex joins and queries. "Our operation is very data dependent, and as a result we have significant amount of database access, which is very I/O intensive," he said.

Camelot opted to solve the problem by storing its heavily accessed Oracle temp tables on a DES system. Accessing the temp tables via a high-speed DES system enables Camelot to perform complex queries and joins very quickly, conduct arbitrary sorts at very high speeds, as well as create indexes dynamically.

"We incorporated the DES system into our environment as part of an architectural upgrade to improve our Oracle database performance," Oberschlake said. "Our database is 60 GB so we obviously have a lot of disk, and we found we had a lot of issues with I/O contention in the database. Oracle treats the DES system like a disk drive, but it imposes virtually none of the I/O delays associated with disk access," said Oberschlake. "We use it just on the heavily accessed areas of the Oracle database."

For example, Camelot had one particular Oracle SQL statement that was taking up to two hours to run. Camelot changed the SQL statement to use a sorting algorithm that took advantage of the DES system, and the statement ran in less than 10 minutes. "Anytime we sort or create indexes, it's blindingly fast," said Leif Fellague, Camelot's database administrator.

HAPPILY EVER AFTER

"System processors are not typically the bottleneck in database applications," said IDC's Kusnetzky. "The bottleneck is usually in the storage system. IDC has observed several companies focusing on intelligent storage subsystems like the DES system as a way to improve database application performance."

According to BEA's Buckridge, relational database vendors still have not been able to address the I/O contention issue facing high-transaction and query-intensive environments. "Frankly, I think the I/O issue is currently best addressed by products like those provided by DES," he said. "You can design the hell out of a database, but I think each one of the relational vendors have their idiosyncrasies or parameters within which you must operate. The DES system has helped us solve our key Sybase idiosyncrasy.

"The credibility that we had lost within the organization was enormous," Buckridge said. "It's now a pleasure to come to work — our stock is very high at this point. We're being pulled into situations that we wouldn't have before because of our recent successful track record."

DES can be reached at (800) 287-0373, info@desdbx.com or www.desdbx.com.

—Scott R. Humphrey, Contributing Author

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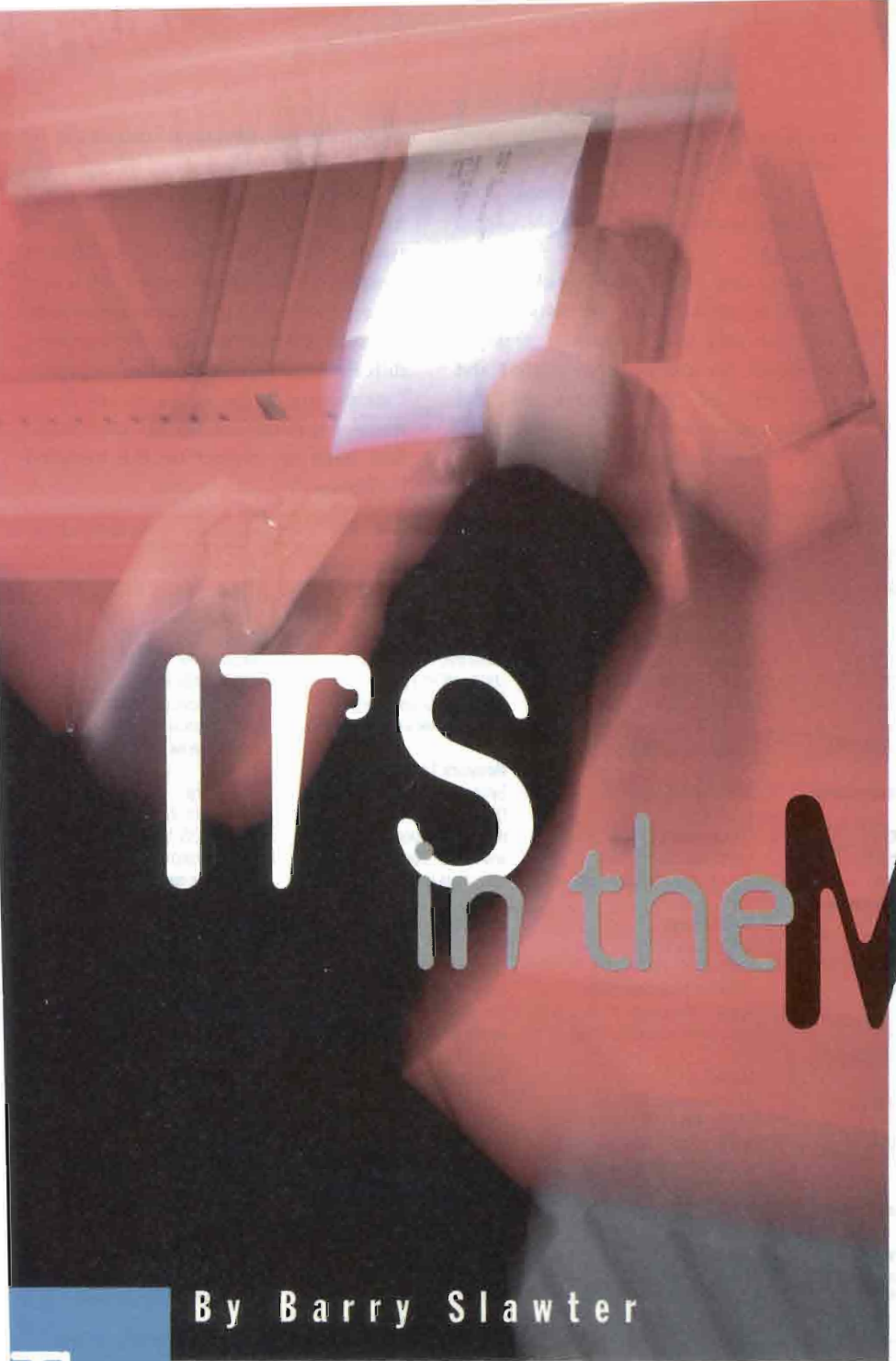

IT'S in the MAIL

Electronic mail is no longer cutting edge. Or is it? A look at e-mail's important bit-part in a crazy new world of interactive messaging. ■

By Barry Slawter

The World Wide Web captured the imagination of the public more than a year ago, bumping good old-fashioned apps like e-mail to the back pages of computer magazines forever. Go to any newsstand, and you will find entire publications dedicated to Web development; yet an article on e-mail technologies is treated like a white paper on Pong.

Still, everyone has a valid need for e-mail, which has come to be thought of as a mere throw-in feature on most Internet packages. In 1996, not having simple electronic mail is a business faux-pas in the high-tech sector, and not being able to communicate via an Internet connection spells doom.

In the world of office communication, e-mail is no longer cutting-edge. Rather, it's an essential part of an overall messaging discussion, much in the way the phone and fax are.

Developing a messaging backbone seems to be an ever-increasingly difficult task. Now, your backbone must support a real bear of a list when it comes to communications services: text and binary messaging, EDI, calendaring and scheduling, multimedia, document management, faxing and voice messaging, not to mention the necessity of a pragmatic approach to network management.

The Great Messaging Challenge then is really managing information overload — how to get all these darn bytes back and forth between talk-happy people, regardless of whether your immediate task is to translate effectively through mail gateways, or to bridge server platforms. E-mail is just a small part of a large puzzle. And so, whether you're choosing an e-mail package bundled in an Internet application suite (such as Spry's Internet-in-a-Box), an online service or an Internet-specific package, "openness" will naturally be your key consideration.

Driving Ms. Business

Messaging drives business, they tell us. And as it does so, our network worlds become more complex. This has led HP to adopt the following slogan for OpenMail: *One aim. One attitude. One rhythm. One end.*

Somehow, this seems to say as much about the problems facing us, as it does the solution. The slogan is based on "powerful team concepts that are the spirit and essence of *Taiko*, a traditional and spectacularly coordinated form of Japanese drumming."

See what you've gotten into? And you just want to send a simple e-mail message.

But, can an e-mail backbone be simple anymore? Einar Stefferud thinks you can still send a simple message. Stefferud, an independent analyst and one of the developers of the Multipurpose Internet Mail Extension (MIME) protocol, says a key to selecting an e-mail backbone is asking where to put the infrastructural complexity or simplicity.

"I always suggest keeping it simple," he says, "with a model in open Internet systems of core [backbone] simplicity complemented by edge [client] complexity. Core simplicity makes it easier to interconnect between different entities within the network. Complexity at the edges means functional improvements to the user interface have no impact on the installed backbone."

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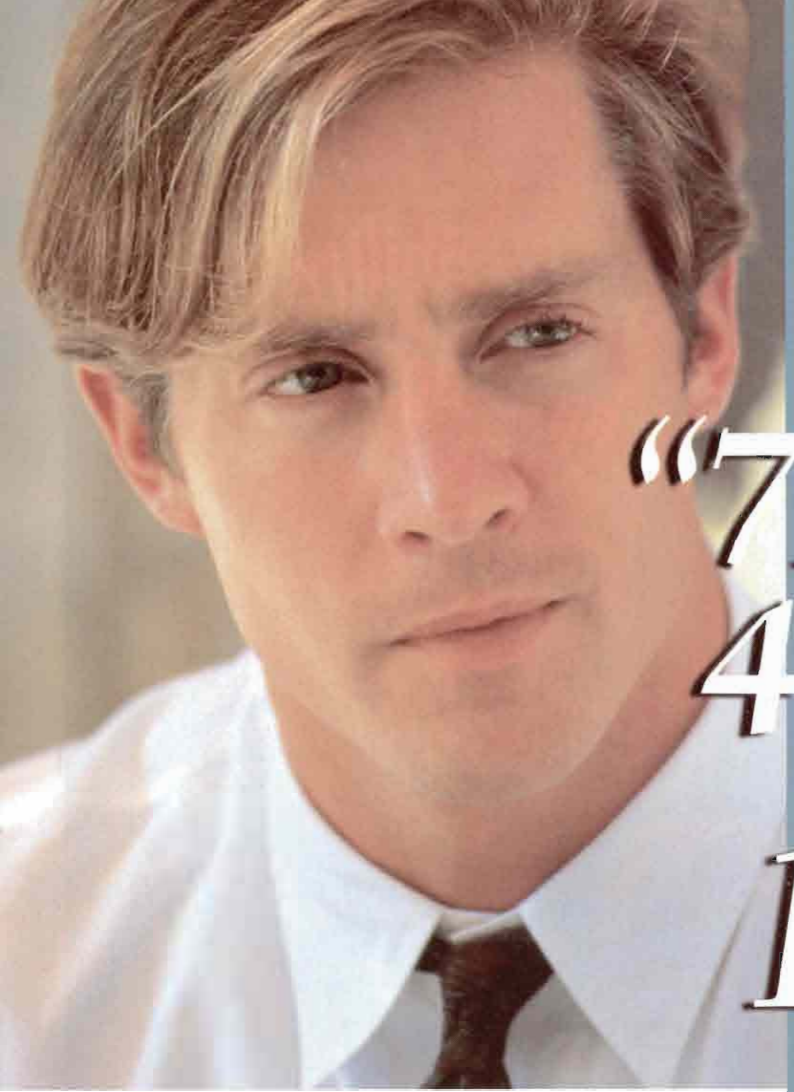

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Reversing the variables reverses their effect. Complexity in the communications backbone increases the difficulties of interconnecting user agents at the edges, calling for the use of gateways, which can result in distorted messages. This is a big reason why closed, proprietary systems are naturally going by the wayside. As we all have learned the hard way, no message has ever been improved by sending it through a gateway.

The basic simplicity/complexity distinction also partially explains the rise of Simple Mail Transfer Protocol (SMTP) as a standard for Internet mail. SMTP makes no effort to be everything to all people, says Stefferud, but instead allows open extensibility in terms of functional elements.

Stephen Layne, vice president and general manager of the SoftSwitch division of Lotus Corp. (Wayne, Pa.), notes that X.400 services remain a primary requirement for many organizations, especially in government, but that SMTP is being applauded, "because it promises almost universal connectivity, and means you only need to manage a single infrastructure."

One result is that strictly LAN-based e-mail packages are finding their market niche shrinking, if it hasn't already expired. E-mail packages written to their own proprietary languages sound more simple at face value, rather tempting to the manager of a small or mid-sized organization that doesn't envision *ever* having a need for, say, multimedia messaging, or even Web access. But the complexities avoided with the right Internet-specific package — not even counting scalability — make these products increasingly seem the smarter choice.

Says Nigel Upton, HP's director of worldwide marketing for OpenMail, "No, it's hard to imagine trying to have a discussion of e-mail services without talking about the Internet." It can be done, but it would be ignorant.

Interestingly, SoftSwitch's Layne, in trying to read into the messaging future for Lotus Development and IBM, envisions messaging and Web protocols eventually becoming integrated, with all client apps enabled for both. The Internet would thus become an even more universal backbone.

"Rather than a one-directional publishing medium, the Web would become a way to carry out business-process applications," Layne says. "Issues confronting administrators as this happens would include accommodating a new generation of 'e-apps' and application frameworks, as formerly standalone applications evolve into client- or server-based applet components. Messaging infrastructure is what provides these capabilities."

Exciting stuff. But, alas, so much for simplicity in *that* vision.

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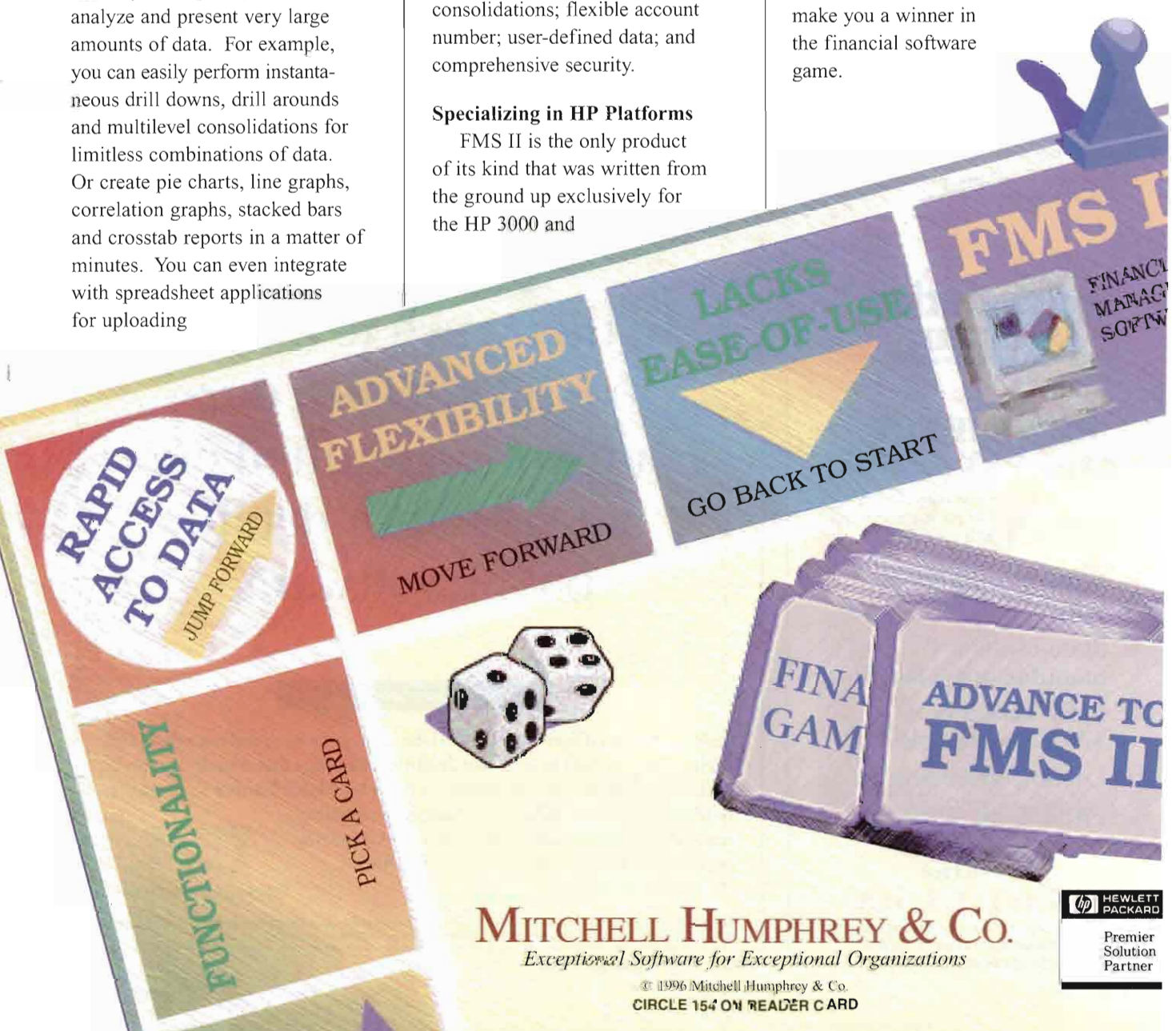

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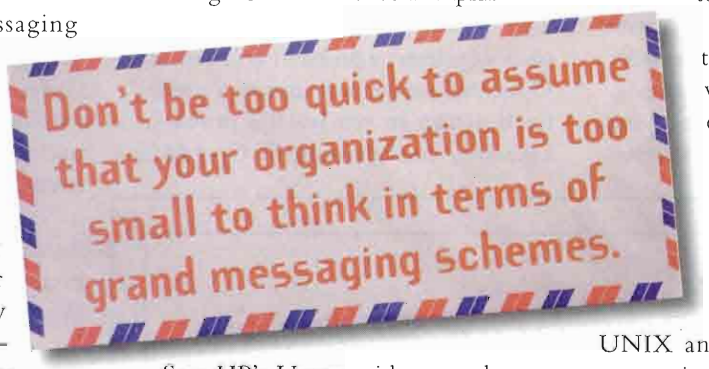
Internet protocols to provide efficient messaging within a LAN or small WAN. Don't be too quick to assume that your organization is too small to think in terms of grand messaging schemes. Setting up and running Internet protocols is not necessarily daunting or overly expensive. Think of intranets strictly as a framework, and Internet-based e-mail as an agent. You'll find that thinking of e-mail and the Net together can add cost/value efficiency while keeping open any messaging migration path you may have.



Who's Opening The Mail?

HP released its OpenMail product for Windows NT this summer, allowing OpenMail on NT to integrate with other OpenMail servers on HP-UX, Solaris, IBM AIX and SCO UNIX platforms. Lotus cc:Mail and Microsoft Mail clients are supported, and HP has plans to use Microsoft API 1.0, providing full support for the Microsoft Exchange Client unveiled in April.

Says HP's Upton with some degree of excitement, "Getting into the NT market with e-mail of course gets us into a tiny scrap with Microsoft." But most industry analysts feel this is not necessarily true, that there is enough interest in Windows NT migration for each to be able to farm their own installed base.

General Manager of HP's Enterprise Messaging Operation (EMO) Korak Mitra says the increased customer interest in Windows NT as a workgroup or departmental server was not the only reason for bringing OpenMail to Windows NT.

"We are also responding to Microsoft Mail customers who want more robust, enterprisewide solutions which don't dictate either the hardware server or operating system," Mitra says. "OpenMail on Windows NT will provide full messaging capabilities across UNIX and NT environments while supporting a variety of desktop platforms. It doesn't require a commitment to a Windows NT-only server environment."

Installed on 2 million seats worldwide, HP OpenMail on UNIX already supports Microsoft Exchange clients through MAPI 1.0. A client-server approach to groupware, based on an X.400 backbone, OpenMail is part of Internet Collaboration Services from HP, which incorporates the use of

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Internet protocols such as SMTP, NNTP, HTML, POP3 and IMAP4. With the stress on an Internet-based architecture, HP has developed the "universal in-box," in which a user receives all incoming voice and electronic mail, including applications messaging.

A key first step toward readying OpenMail's repertoire for the Internet came last fall when HP integrated it with OpenView for centralized management. According to Mitra, OpenView's management-by-exception approach allows network administrators to detect a problem on a remote OpenMail server, and initiate a predefined action to resolve the problem. Likewise, configuration of OpenMail users is simplified by letting an administrator drag-and-drop an icon between two servers.

Security for OpenMail is embedded into the messaging architecture through a public key encryption infrastructure that is based on Nortel's (Mississauga, Ontario) Entrust, and includes transparent client-level encryption and digital signaturing.

To solidify it's latest "messaging" message, if you will, HP signed a comprehensive agreement with Netscape (Mountain View, Calif.) in May that includes everything from sales and marketing, to reselling Netscape SuiteSpot and Fast Track server software for HP-UX and Windows NT servers. Interoperable messaging between OpenMail and Netscape Mail Server is another step toward the vision of workforce collaboration through intranets.

Says HP's Upton, "Inside HP, for example, I don't think you'd find that people live inside Netscape [Navigator]. But we know that there's more to the Internet than just publishing Web pages."

This is the key thought behind HP's new messaging vision, and it's not surprising because, as Netscape CEO Jim Barksdale noted at the time of the agreement, HP is the owner and operator of the world's largest intranet using Netscape software.

Through Static On The Net

HP is by no means the only organization that recognizes the rise of the Internet when it comes to e-mail and overall messaging. April's E-Mail World trade show in Santa Clara, Calif. was a launch pad for a number of new broader, Internet-based strategies from large e-mail vendors.

For example, Qualcomm (San Diego, Calif.) announced the opening of a storefront on Marketplace MCI, and a three-tiered strategy that begins with a focus on the Internet consumer market. There are about 10 million worldwide users of Qualcomm Eudora according to Matrix Information Directory Services (Austin, Texas), a

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company studying Internet growth, which places Qualcomm among other leading Internet-based packages.

Qualcomm's open-ended solution supports POP3, SMTP and MIME, making it a truly Internet-specific package, and the company added MAPI and Windows 95 support to Eudora last winter. Eudora doesn't route mail to online services such as CompuServe and America Online automatically, so you don't get the "universal in-box" effect. But it does boast Windows NT support, as well as a nifty "active URL" feature that lets the user click on a URL within the e-mail message and link directly to a specific Web site.

Using such "active e-mail" features can crystallize the notion of where messaging is headed, and what role e-mail will play in it. Everyone remembers their first e-mail, because more than anything, it crystallized for them the concept of being on a computer network.

I recall the feeling of entering a new era that came with sending my first e-mail message at Carnegie Mellon University in 1986, on a pioneering system called Andrew, whose chief designer was Nathaniel Bornstein. Bornstein, another primary author of the MIME standard protocol, has been pushing active messaging since well before the recent rise in Web popularity. He has always believed e-mail could be more than a passive, one-way mechanism, and that vision originally had little or nothing to do with the Web.

"Active messaging extends the capability of e-mail to the automation of computer-supported cooperative tasks, allowing it to replace or augment an ever-larger portion of more routine business events and paperwork, as well as providing Web access," says Bornstein.

If you're an administrator of a small- to medium-sized network, all the talk about advanced messaging and forming intranets may sound daunting — expansive and expensive. In truth, it doesn't necessarily have to be either. As usual, the best advice is to know exactly what your organization may need, now and in the future, and then do some careful shopping, because there are a ton of options. But keep in mind that Internet-access boxes are not that expensive, and almost all include some e-mail application. Even if you don't feel the need for the larger, Internet-based e-mail apps that serve as complete messaging solutions, it is easy enough to set up your network to retain options.

Don't ignore Net connections because you may think e-mail is all you'll ever need internally. With the right choice of Internet access solutions, you can position yourself to someday reap the benefits of advanced messaging that are already on the way.

— Barry Slawter is a freelance journalist who specializes in networking and communication issues.

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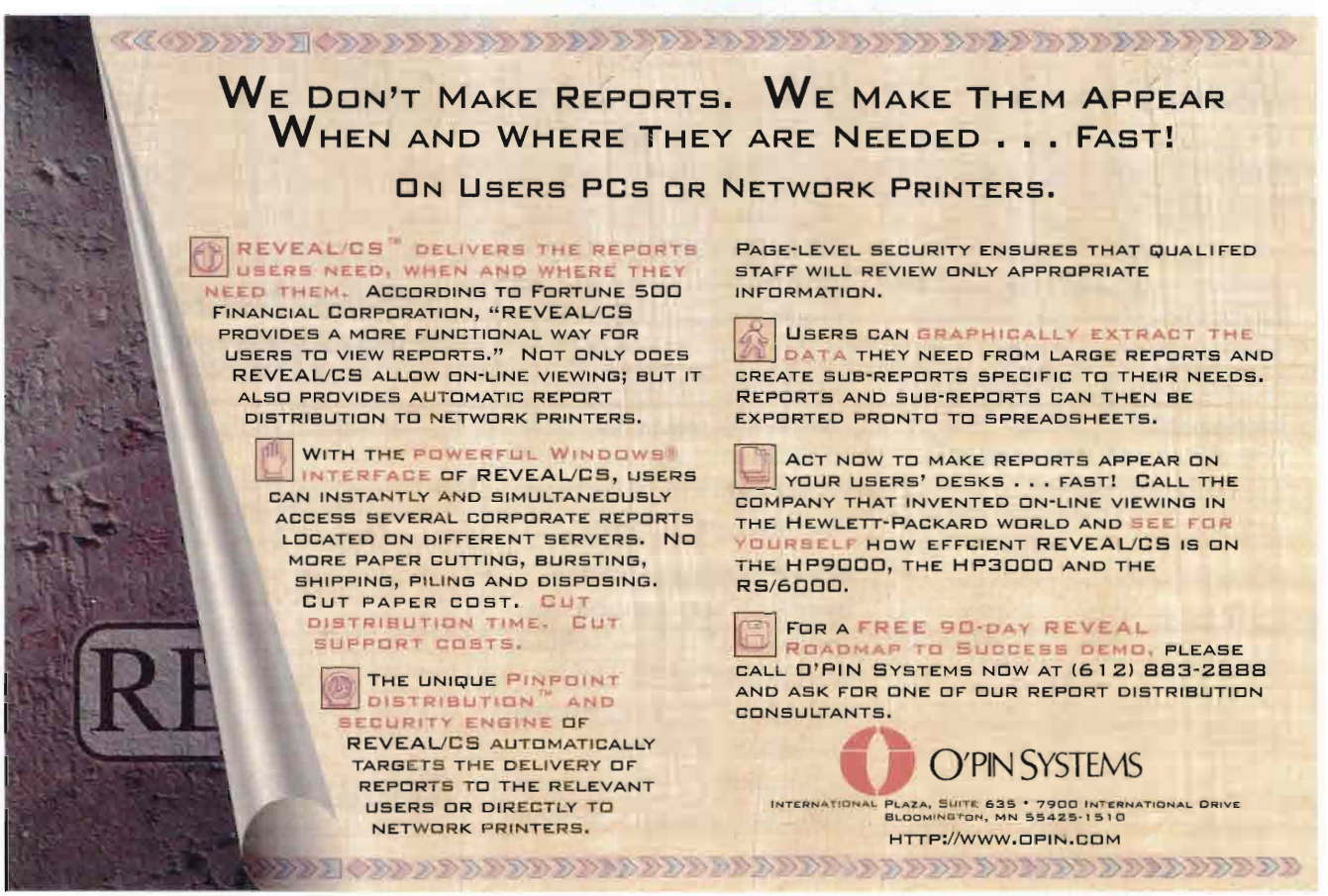

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EDI & The Internet... *Right Now*

The Internet Provides A Flexible Platform For Communications, Alliances And Business-to-Business Collaborations

Today, thousands of firms use the Internet. By the turn of the century, this number is expected to increase to hundreds of thousands — and possibly, a million. While most are attracted by the promise of global sales and "cybercash," the big winners are, and will continue to be, the companies that use the Internet for electronic collaboration and electronic data interchange (EDI).

Despite 15 years of government and industry advocacy, EDI hasn't grown as rapidly as projected because of the high cost and the dedicated, proprietary value-added networks (VANs) required. However, companies are quickly finding that the Internet is an excellent, cost-effective vehicle for information distribution and business-to-business interactions.

Firms are attracted to Internet EDI because it helps them improve the quality and timeliness of information exchange, improve productivity, enhance data accuracy, reduce costs, promote trading partner loyalty and improve inventory management. It also reduces the use of paper as well as paper storage requirements.

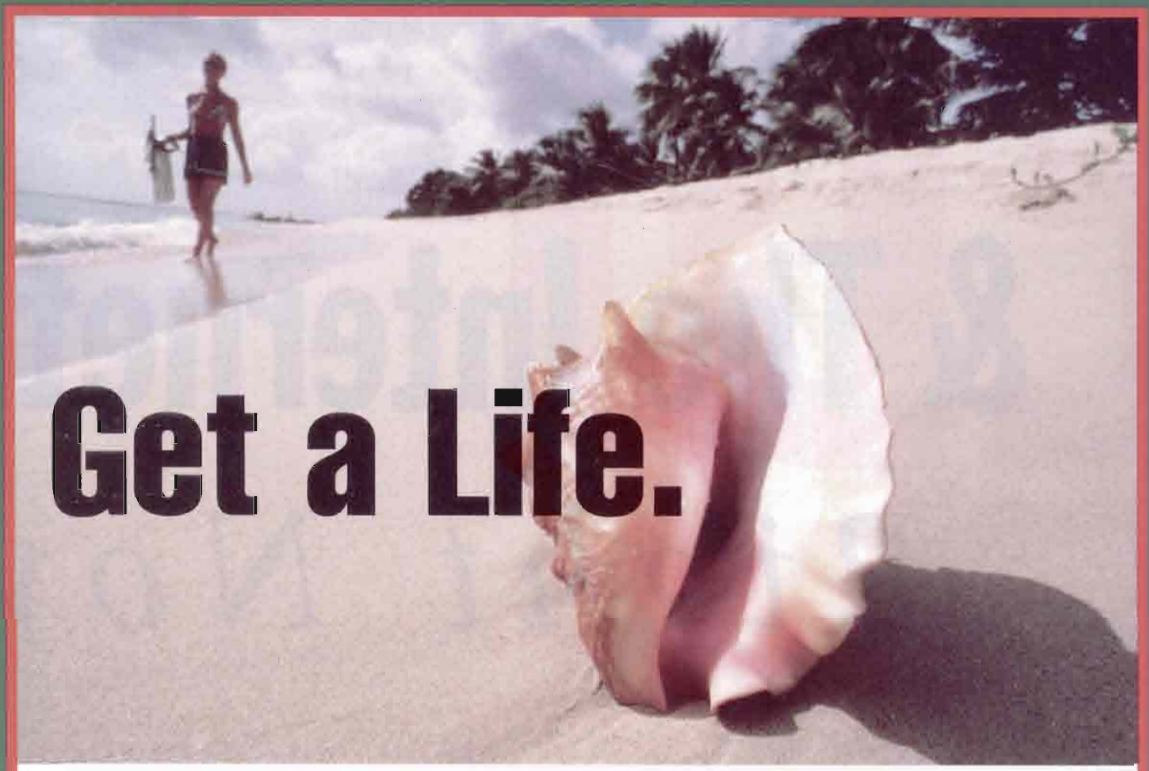
While the benefits of handling the exchange of information electronically are overwhelming for firms of all sizes, the missing ingredient has been fast, easy and secure interfaces between application-to-application and user-to-application efforts. Recent software introductions make it possible to avoid VANs, while providing a direct-connect EDI so that documents and data can be exchanged anywhere in the world over the Internet.

The key for an economical implementation of Internet EDI is to establish EDI standards between trading partners so that documents and data can be securely transmitted and authorized by the system's translator.

Piggyback EDI

One of the key benefits of Internet EDI is it allows organizations to piggyback EDI onto their existing network, rather than having to use VAN networks. In addition, because the Internet is truly a global network, it expands the universe of business trading partners to literally all businesses on the Net.

Pushpendra Mohta



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EDI & The Internet

While secure consumer-to-business Internet transactions provide visions of national and international sales, it is the more mundane business-to-business applications that will have the largest impact on corporate bottom lines. The Gartner Group (Stamford, Conn.), a research firm, predicts that the introduction of Internet EDI solutions will dominate the high-volume exchange of documents, data and information between businesses and multiple trading partners.

According to Len Keeler, author of *CyberMarketing*, private networks, by their very nature and structure, limit the number of firms a single company can reach and interact with, while Internet EDI permits firms to add and subtract partners in real-time. Businesses can offer product informa-

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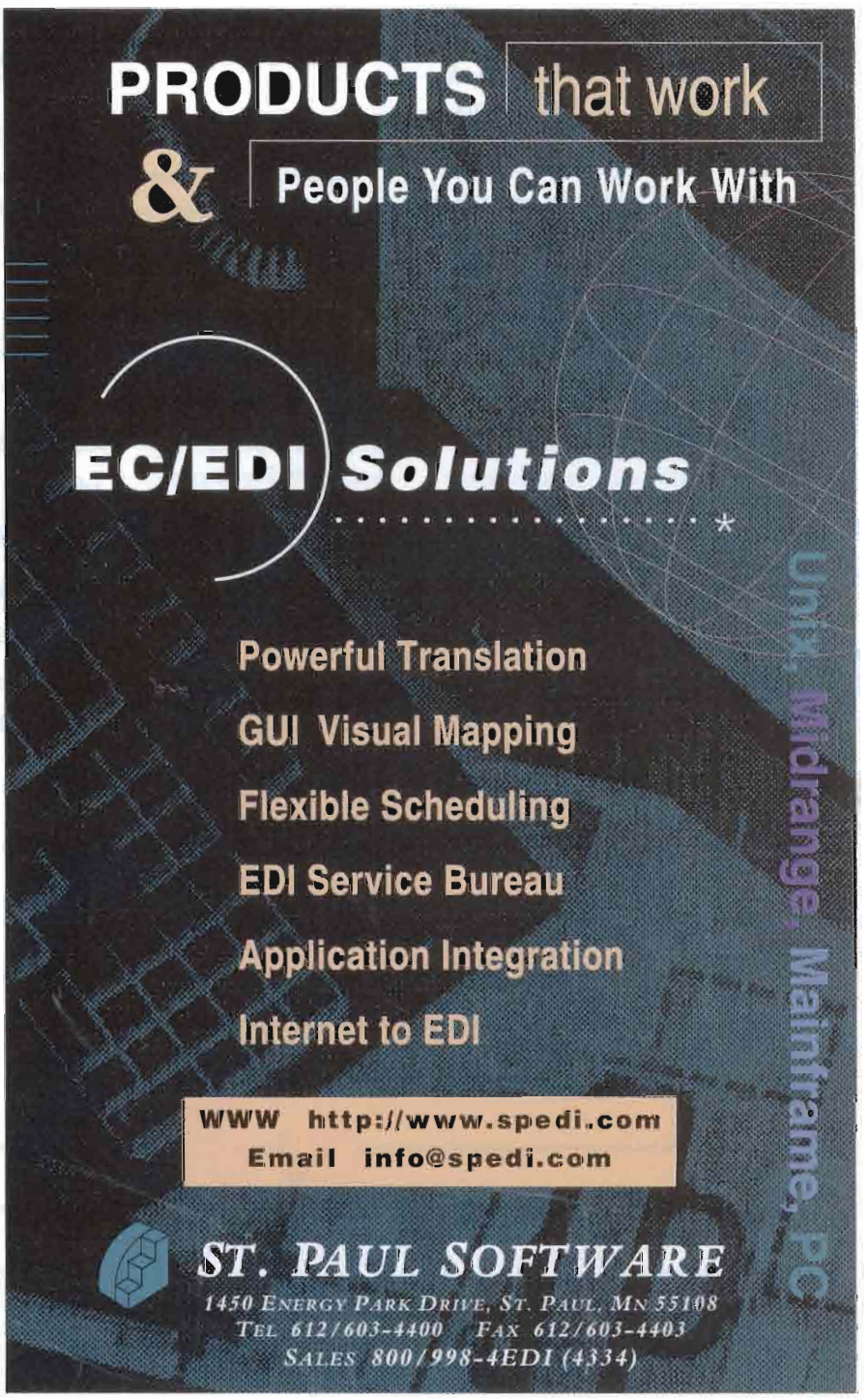

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tion online that virtually never goes out-of-date, and it is available to any firm with access in over 137 countries.

Virtual Private Networks

Rather than global any-to-any "drop-in" commerce, Keeler sees a rapid implementation of virtual private networks using the Internet which will permit organizations to carry on secure and reliable information exchange with authorized members of the network. These networks can connect any member of the corporation's community, including preferred customers and suppliers. All the firm needs is to establish a secure platform, provide certification authority for users and secured applications to members of the virtual private network.

Firms find that they can establish their virtual EDI networks without lengthy and expensive setup procedures. Instead, they only need to agree on the information needs, business procedures and technical arrangements. New business partners can be added or deleted. Almost immediately, organizations can provide requests for quotes (RFQs) and ordering information simply by using translation software.

Recent recommendations from the Internet Engineering Task Force (IETF) have established recommendations for encapsulating EDI objects within Multipurpose Internet Mail Extensions (MIME), so EDI transactions can be handled through Internet e-mail. New capabilities are available which permit firms to provide address authentication, data integrity, privacy/confidentiality/access control and non-repudiation. This permits forms to be filled out online and submitted for immediate processing. For business transactions, ordering, shipping and billing information can be safely encrypted for protection against alteration or replacement.

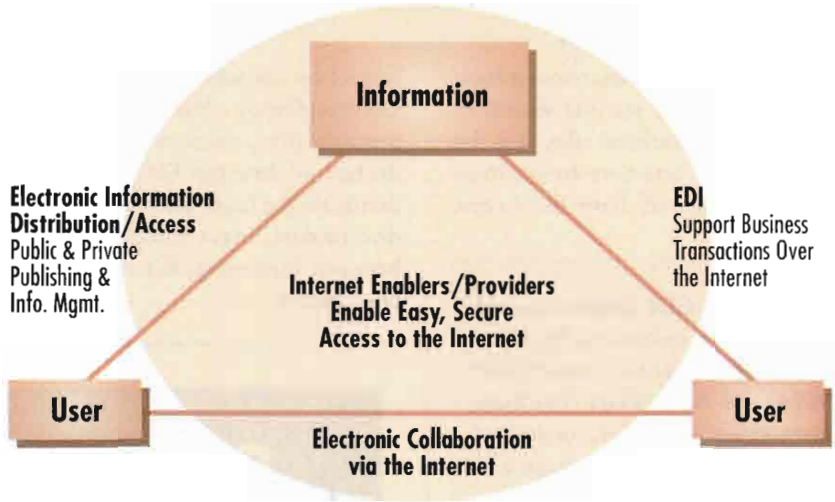

Figure 1: Today, companies find the Internet offers the media for electronic collaboration, information distribution and business-to-business interactions.

The establishment of a virtual Internet EDI network can be 90 percent less expensive than a VAN.
— BIS Strategic Decisions (Stamford, Conn.)

Whether organizations implement virtual private networks on the Internet or use the Internet for collaborative work and development, the EDI capabilities of the Internet provide the potential for far greater returns than electronic commerce, which will ultimately permit consumers to purchase products online.

Internet EDI represents a ready-made platform for reducing their procurement cycles, strengthening relationships with customers and suppliers, and establishing flexible alliances with individuals and organizations.

Operational efficiencies will be produced by replacing paper-based business forms such as purchase orders, invoices and shipping slips. Organizations ranging from government agencies to retailers and healthcare suppliers can establish transaction sets that will enhance their ability to provide electronic business documents with trading partners — at a fraction of the cost and with improved accuracy.

—Pushpendra Mohta is chief technology officer at California Education & Research Federation Network (CERFnet; San Diego, Calif.). He can be reached at pushp@cerf.net.

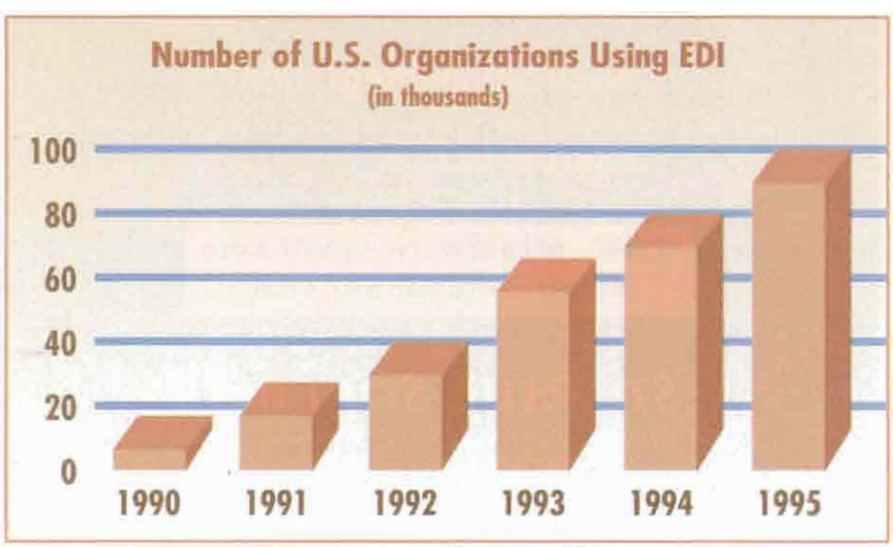

Figure 2.

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A White Paper:

Building Client-Server Applications On The HP 3000

PART 2

➤ By Rohan Hall

Editor's Note: Last month, Part 1 of Building Client-Server Applications On The HP 3000 introduced the "notion" of client-server on the HP 3000 by explaining the elements of the Server as well as defining the terminology of Client-Server computing. This month, Part 2 offers a look at the Client including hardware, programming software and networking requirements.

Would You Believe...

The controller looked at the cash flow summary. She had clicked the new button that was added to her Microsoft Excel application. She compared the retrieved data on her spreadsheet with the report she got this morning. The numbers were different. She studied it a little closer before it occurred to her what had happened. It was 9:45 a.m. Cash had posted at 9:30 a.m. What she was looking at on her spreadsheet was live data from her HP 3000 system. The other report showed data as of the end of yesterday. This new application was showing her real-time information. She could get to like this new client-server application....

The Client

The client's main responsibility is to provide a friendly user interface that facilitates the way data is requested from the server and presented to the user. Based on the current technology, this requirement can sometimes be a challenge to achieve. The main technology involved in fulfilling the client requirements are the hardware, programming language and middleware.

➤ *The Hardware*

The client hardware is typically a Microsoft Windows-based PC. This PC should be outfitted with a lot of memory (RAM), as well as a powerful processor. A 486 with 8 MB of RAM is the minimum requirement. The disk space requirements will depend on the size and responsibilities of the client application.

The client hardware is important in a client-server application, because the nature of a client-server relationship suggests distributed processing. This means that the server and the client may share the responsibility for processing data. The client's responsibility to process this data may include sorting returned data, processing complex calculations, communicating with other client tools, manipulating graphics or many other functions. If the client is not sufficiently powerful, it can create a bottleneck in the flow of data.

➤ *The Programming Language*

Fortunately, most client languages are visual versions of traditional languages. These languages were redesigned to operate in a graphical user environment, and are event driven versus menu driven. These languages use an object-oriented programming (OOP) concept where an event (i.e., a mouse click) that is performed against an

object (i.e., an icon) determines what code to execute.

Behind objects, however, the code is basically the same as traditional languages on any platform. Visual Basic (VB) executes Basic, Axient executes Powerhouse, C++ executes C, and Delphi executes Pascal. There are slight differences and additional capabilities for each object-oriented language, but the general syntax is very similar.

The challenge that an HP 3000 environment faces with these languages is the new programming concepts that they introduce. A Cobol programmer who has to write Powerhouse code on an HP 3000 for the first time will have a learning curve: there are no DB calls to be made, they wonder how the database is opened, how the datasets are linked, what does an "Access" statement really do, and how can they be sure the data was updated? This programmer would also have a learning curve with object programming. How does a mouse click execute code, how can they open an IMAGE database from a PC, how is data displayed in the various objects available?

It is important, therefore, to pick a language that can be leveraged. VB is currently one of the most popular choices for client-server development. It is a very powerful and flexible language with virtually unlimited capabilities via add-on products in the form of VBXs, Dynamic Link Libraries (DLLs) and other Windows-based technology. Most programmers have a Basic background, and therefore find it to be an easy product to learn.

VB also has some of the most advanced and easy to use debugging features currently on the market. These debugging features consistently prove themselves to be invaluable in this type of application development. Furthermore, because all future Microsoft products will have VB as its common programming language or script, VB appears to be one of the better choices for client development.

The Middleware

Middleware is a vague term that describes applications that sit somewhere between the client and the server. Specific to this article, however, middleware will refer to DLLs that facilitate the communication between the client and the server.

DLLs refer to libraries of routines that are commonplace in the Windows environment. These DLLs are similar to XLs on HP 3000 systems. An XL can be used to enhance the capabilities of a language when it is linked into or referenced by that program. Similarly, a DLL enhances capabilities of the program that reference that DLL.

The routines in the DLLs are called Application Programming Interfaces (APIs). These APIs, when called, perform a variety of functions that would normally be outside the scope of the programming language. These functions could include playing music, creating animation, linking computers or a variety of other tasks.

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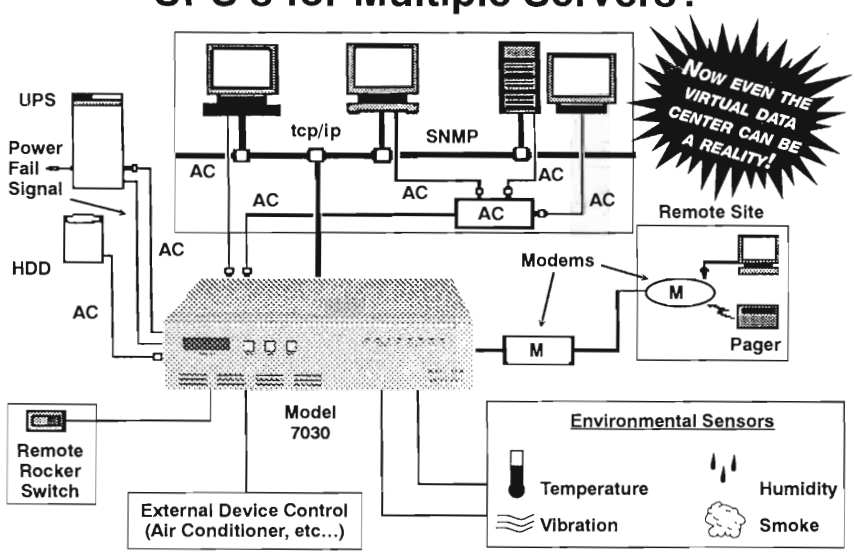

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The DLLs of interest are those that allow communication between the client PC and the server HP 3000. These DLLs are provided by various HP 3000 vendors and allow a network, serial or modem connection from the client to the server. Each uses its own methodology to access the server. Depending on the project, these DLLs could be the determining factor regarding a successful or unsuccessful implementation.

Networks and Communications

Thanks to the introduction of ARPA as a standard part of the software shipped with the HP 3000 system (as of version 5.0), the communication piece of this equation has shifted from being very complex to relatively easy. The two main ways that the client-server communication is established is via TCP/IP or a serial connection.

TCP/IP — The Department of Defense (DoD) Advanced Research Projects Agency (ARPA) devised the concept of sending data via packets (pieces at a time) between computers. These packets contain both data and addressing information (IP address), and are sent across regular telephone wires using a standard protocol they developed called TCP/IP (Transmission Control Protocol/Internet Protocol). Each computer system that has this TCP/IP software is able to communicate with one another, regardless of the platform. Some features of ARPA services include ftp (File Transfer Protocol), telnet and TCP/IP.

Until MPE/iX version 5.0, ARPA services were not a standard part of the HP 3000 operating system.

Until version 5.0, ARPA services were not a standard part of the HP 3000 operating systems. Prior to then, it was necessary to upgrade and install system patches to obtain this feature. Today, however, HP has included ARPA, and therefore TCP/IP, as a standard part of their operating system.

The benefit of TCP/IP is having a global standard of network communication. The greatest example of this is the Internet. The Internet allows the linkage of computers all over the world using TCP/IP and other standard network protocols.

When TCP/IP is used to communicate between computers, an IP address is used to uniquely identify each computer. This same IP address is used by the client to connect to the server. The IP address can be thought of as a street address that identifies the location of a computer on the network.

TCP/IP, therefore, is the recom-

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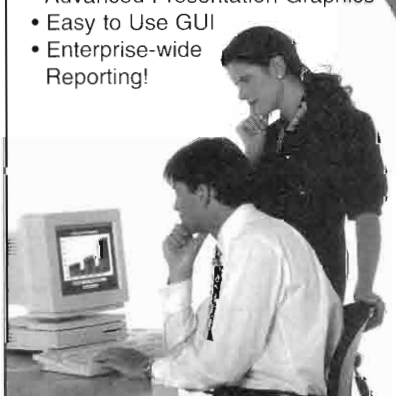

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mended means of communication between an HP 3000 and other computers.

Serial Connections — Client-server communications also can be achieved via serial connections. This entails an actual physical connection between the personal computer and the HP 3000 via a DTC port. Although this communications method can sometimes be very efficient, it usually requires a unique session and port from the HP 3000 system. Assuming that users still require a terminal logon in addition to their client-server access, this can become a systems management problem. The unneeded use of virtual memory for each logon, at least two per person, as well as the use of an additional port per person may negatively affect system resources.

The speed, flexibility, access to resources and options offered by a TCP connection is usually greater than that of a serial connection. Also, most DLLs that provide access to HP 3000s from PC clients use only TCP networks and not serial communication.

Modems — Modems (Modulator/Demodulator) are devices that are used to connect PCs to HP 3000s via communication software available from third-party vendors. This communication is possible again with client-server applications. If a serial connection is used, the modem can make a direct connection to the HP 3000 port to establish communication to the server.

TCP connections, however, require the client to be a part of the PC network in order to allow access to the server. This is possible if the network is outfitted with software that allows the client to be a "node" of the network, even if the client is not physically connected to the network. Once the client becomes a node, it is able to perform tasks against the server. Unfortunately, this type of networking is currently expensive and cumbersome. The technology is available, however, if requested from the network vendors.

Editor's Note: Part 3 of Building Client-Server Applications On The HP 3000, appearing next month, will focus on project management issues such as performance, security and outsourcing.

Would you like to continue to see articles on this topic?
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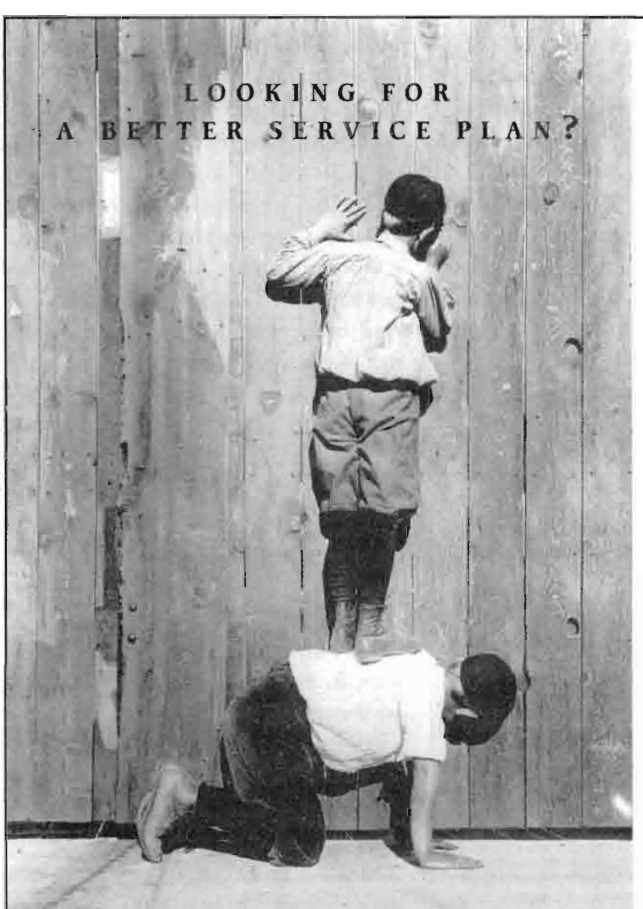
About the Author:

Rohan Hall is a software consultant and co-founder of Hall, Wynter and Associates. He has developed various legacy and client-server applications on HP 3000 MPE/iX, UNIX, VAX/VMS, Data General, Microsoft Windows and DOS systems. He has over 12 years of experience in various areas of systems development. He has worked with Hewlett-Packard, Lockheed/Martin, Hughes Aircraft and Cognos Corp.

Rohan Hall can be reached at: rhcon@aol.com, or (719) 532-9246; (303) 412-8651



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CIRCLE 200 ON READER CARD

Fred Mallett

Waxing Eclectic

You asked for it. So, this month's column is another "eclectic mix" that answers your questions.

So let's dig right in...

SEARCH PATHS

It can be a bit of a challenge when people can access a system using different login programs like rlogin, telnet, getty and the window system login using VUE, XDM or CDE. The problem is in keeping the search paths from the various login methods the same. For example, if you put a new directory in the /etc/profile file's **path** variable, it won't make it to users logging in through VUE. Well, CDE uses a method that I have adopted for all logins. First, I will describe the CDE mechanism, then give an example of using this for non-CDE logins.

On HP-UX 10.10 and higher, there are some files in the /etc directory used to set default paths, they are **path**, **manpath** and **shlib_path**. These files contain path locations, in the same format as the path variables. They can be edited, and will then propagate to all users logging in through CDE. CDE does this with the /usr/dt/config/Xsession.d/0060.srcsysenv file. These files are sourced to the Xsession script at login time. The important line in this file looks like this:

```
export  PATH="$PATH:`cat $PATH_FILE`"
```

The variable **$PATH_FILE** is set to **/etc/PATH** earlier in the script, so this adds all locations in the /etc/PATH file to the user that is logging in's search path. The **manpath** and **shlib_path** variables are set similarly.

This makes it easy to add to, or change, the search path for all users of this system. Just edit the etc/PATH/ file, and it will affect all the CDE logins. This is especially true if you realize that the /etc/PATH file could be automatically distributed (**rdist?**) so that changes could be networkwide very easily. As soon as I saw this method, I liked it. The only drawback is that it's only for login sessions started with the Xsession script. Because this is such an easy way to make paths uniform, I just adapted it to other login methods, having them read the same file. Here is how to get it into command line or telnet logins:

The CDE Xsession script, which starts a login session, sets a variable (**DT**) that is supposed to be used in your .profile (or .login) file to determine if this is a CDE login or not. It is not documented very well, but basically mimics the method used in the VUE environment. Here is pseudo code of the Xsession file when sourcing in the .profile/.login files:

```
export $DT = true
  source users .profile or .login
  unset $DT
```

So, you are supposed to enclose any commands in your **.profile** or **.login** script that should not be run during a CDE session inside an if statement, just like we did in VUE. The example below is a mix of pseudo code and real shell scripting, and shows how you might go about having the shell use the /etc files to set the **searchpath** and **manpath**, as well as keeping **stty** commands out of the CDE Xsession command (note: this is a .profile example, not a .login example):

```
if [ "$DT" != "true" ] ; then
  export  PATH="$PATH:`cat /etc/PATH`"
export  MANPATH="$MANPATH:`cat /etc/MANPATH`"
# stty and other terminal commands not to be
# run during a CDE login go here
fi
```

LROM ON 10.10

I learned about this from the HP-UX System Admin mailing reflector. Someone was having trouble using LaserROM on a 10.10 system with only CDE loaded. And when they called to report the problem to the Response Center, they were told it is not supported under CDE. Interesting. And bothersome. It turns out though, that if the system only has CDE on it, you will have troubles. But if VUE is also loaded, LROM will work.

MANLY MAN -K

man -k is another problem reported on the mailing list that caught my attention. I use **man -k** quite often on HP-UX 10, because there are so many new commands. If you are not familiar with it, **man -k** (also called **apropos** on some systems) allows you to supply a keyword. Then, it searches a text file of one- line man page descriptions, and reports back with lines that match (a grep-like search). For example, the command **man -k dta** would report back a list of all commands descriptions

that had the letters **dta** in them, like **dtappintegrate**, **dtaction**, etc. The problem was, the command that creates this database that **man -k** reads was doing a core dump when you ran it. That command is **/usr/lib/mkwhatis**, which is really a symlink to the /usr/lbin/mkwhatis shell script. Here's what I got when running it:

```
/usr/lbin/mkwhatis[87]: 6625 Memory fault(coredump)
/tmp/whatiscompr: No such file or directory
```

The error message showing the brackets, and a line number means it is a shell script, and the problem occurred on line 87 or so. Because it is a shell script, and I did not feel like waiting for a patch, I decided to look at it. Turns out that most of the script up to line 87 is all one big long pipeline. The problem was, which command caused the coredump. Looking at the dump file reveals the following:

```
core file from 'deroff' - received SIGSEGV
```

So, the offending command seemed to be **deroff**. With some edits to the file, looking at the intermediate stages of the pipeline, this was true, everything worked up to the **deroff** command.

Therefore, as a temporary fix, remove the **deroff |** characters from line 85, leave the rest of that line alone, and you do get a /usr/share/lib/whatis file created, which is the file that **man -k** uses.

Of course, it still has some formatting directives in there, **deroff** was supposed to remove them. This means there will be some funny characters in the output of **man -k**, but at least it works till HP comes up with a patch. By the time you read this, there might already be a patch, but this technique of troubleshooting can be used for other problems in the future.

A LOVELY .PROFILE

If you can't get your .profile or .login startup files read in when using CDE, it's usually caused by using a shell name other than those that CDE expects, like tcsh or bash.

If you have this problem, look in that users ~/.dt/startlog file. If you see the following message: **non-standard shell $SHELL**, here is the cause and fix to the problem. In the CDE Xsession file (/usr/dt/bin/ Xsession), the section that sources in the users login startup file looks like this:

```
if [ "$DTSOURCEPROFILE" = "true" ]; then
  case ${SHELL##*/} in
      sh | ksh)  shellprofile="$HOME/.profile";;
      csh)       shellprofile="$HOME/.login";;
      *)         Log "non-standard shell $SHELL"
  esac
fi
```

The **dtsourceprofile** variable is set to **true** in the users ~/.dtprofile file if they want the login startup file to be read. If it is set, then the second line strips the leading path from the contents of the **$SHELL** variable, and leaves just the shell name (**/usr/bin/sh** becomes **sh**). This is checked against the two cases looking for **sh**, **ksh** or **csh**. If it is not one of those, it falls to the default line (the asterisk), and uses the function **Log** to write the non-standard shell error message to the startlog file. To fix this, simply add the shell names and startup file name you want executed. Here are the corrected lines for the tcsh and bash shells:

```
bash |sh | ksh)   shellprofile="$HOME/.profile";;
tcsh | csh)       shellprofile="$HOME/.login";;
*)          Log "non-standard shell $SHELL"
```

If there are other shells used on your system, just add a line above the default line for that shell name, and assign the **shellprofile** variable to the proper file for that shell.

If you think we've spent too much time on CDE, guess again. HP, at least as of this writing, *will not be shipping VUE* starting with HP-UX 10.20, so start learning it!

*— Just **how** fast can you learn CDE? Tell Fred about your progress at* frederm@aol.com

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CIRCLE 197 ON READER CARD

Jill Huntington-Lee

The Webification Of OpenView

The World Wide Web now touches just about everything. You know Web technology is ubiquitous,

when your kids can recite URLs faster than phone numbers. I half expect to see my Welsh Corgi surfing for www.milkbones.com. Well, maybe not. But HP OpenView is no exception to the Webification of life. HP has indeed added Web interfaces to several of its key networking and systems management products, including a major HP OpenView partnership that includes integration of Netscape products with HP's IT/Operations, PerfView and IT/Administration products, as well as HP's Network Node Manager (NNM).

HP is also expecting to use Sun's Java as possible components of OpenView's distributed architecture. They have even publicly demonstrated a Java-based prototype of NNM. This activity is in response to pressure coming from Web-intoxicated customers. But is Web access really all you need? It certainly provides one answer: convenient access to management data. But does it make the job of network management that much easier?

WELCOME TO MY NIGHTMARE

Since the latter part of the 1980s when customers started replacing proprietary network architectures with heterogeneous TCP/IP infrastructures, network and systems management has been a nightmare-in-progress: different kinds of management data, stored in different formats, in all sorts of incompatible databases. Although most management data is transported via SNMP (thank goodness for one least common denominator protocol), it still comes out in various formats and gets dumped into various flat files, SQL databases and object-oriented repositories across the network.

You want to print out a report showing the average end-to-end response time of a particular application, with a breakout of delays caused by the various routers, bridges, hubs and other links over which that application travels. Dream on. Each network device has its own management application with its own database; and although you can look at it all from an OpenView screen, you still can't just dump the data in a big pot, stir it around and turn it into common sense. So what does this have to do with Web-based management? Plenty.

Some customers naively think that adding a Web interface solves the problem of incompatible management data. Web browsers are platform-independent, right? Java is platform independent, right? Right — almost — they are portable only in the most extreme sense. *But portability and interoperability are NOT the same thing.* Just because a browser can read management data doesn't mean all your existing management applications can process and use that data. What a human being can see and understand is quite different than what a software program expects to see so it can add, subtract or compare data to a result (such as a report on network performance). Without a universally accepted set of standard definitions for management devices, management applications will still be "islands" unto themselves, even if the applications are all written in Java.

IT'S A CONTENT PROBLEM

Why? Because there's a difference between "containers" and "contents." Although you and I can both use Java to write applets for processing management data using the same object class "containers," if our "contents" are described differently, my Java applet won't be able to feed data into your Java applet — unless we agree in advance on how the information about managed devices is to be described. If the industry could move to universally accepted descriptions, then the problems with non-interoperable management applications could be addressed.

HP seems to understand the problem. And I'm guessing that's why they have agreed to assist Microsoft, Compaq and a number of other influential vendors in the industry in a new initiative announced in July called the Web-based Enterprise Management standard. This effort involves specifying and putting a new protocol, a new data model and a new schema into the public domain:

- **Hyper Media Management Protocol (HMMP)** — a new protocol for transporting SNMP and other management data over HTTP.
- **HyperMedia Object Manager (HMOM)** — a new data model for

consolidating management data from different sources.

- **HyperMedia Management Schema (HMMS)** — a new schema for an extensible data description for the managed environment.

INSTRUMENTING AS A WAY OF LIFE

HP is most actively contributing to HMMS, which specifies a standard set of object classes and definitions for developers to use when *instrumenting* network devices, systems and applications. Instrumenting means tagging the important thing that a network manager needs to know when there's a problem — such as device names and address status (up? down?), configuration data, version number, recent operating setting and so on. HMMS will define what management data looks like in a format that programs, as well as the human behind the browser, can understand.

Some customers naively think that adding a Web interface solves the problem of incompatible management data.

The Web-based Enterprise Management effort is truly ambitious — many vendors are involved — so it could easily get bogged down in vendor infighting. But it won't if customers who are tired of struggling with non-interoperable management applications will push HP and the other vendors to write code and turn this announcement into a product. Putting a Web interface onto your management tools is a good strategy. HP has already done this for you. But don't stop there. HP knows this isn't enough. Tell them you know it too.

—Tell Jill what you know about Web-based management at jill@int.snmp.com.

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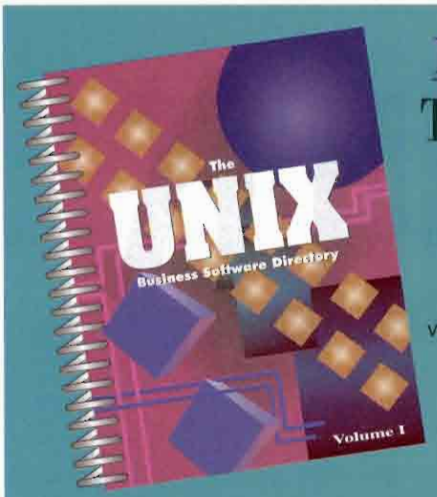

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new Products

Platinum Technology Launches UNIX Version of Desktop DBA

Platinum Technology Inc. announced a UNIX version of PLATINUM Desktop DBA. Desktop DBA for Motif is designed to increase UNIX database administrators' productivity by replacing the need to memorize SQL syntax for hundreds of RDBMS commands with point-and-click commands.

Desktop DBA for Motif is available immediately for HP-UX and Sun Solaris. Support for IBM AIX is scheduled. Desktop DBA for Motif currently supports Oracle, Microsoft SQL Server and Sybase. Prices start at $2,490.

Contact Platinum Technology, 1815 S. Meyers Rd., Oakbrook Terrace, IL 60181; (800) 442-6861; info@platinum.com; www.platinum.com.

Circle 400 on reader card

OneWave, Sterling Sign Agreement

OneWave Inc. (formerly Business@Web) and Sterling Commerce announced they will work together to provide Internet integration to make it easier for small companies to do business electronically with their EC-enabled suppliers, customers and business partners. The Sterling/OneWave solution enables companies to exchange business transactions with large trading partners via simple Web forms that feed directly into Sterling's GENTRAN family of EC messaging servers.

Contact OneWave, One Arsenal Marketplace, 2nd Fl., Watertown, MA 02172; (617) 923-6500; info@onewave.com; www.onewave.com.

Circle 395 on reader card

Net-Scene Provides Point Plus for Netscape

Net-Scene announced its PointPlus Plug-in for Netscape Navigator client software. PointPlus interacts with other objects on the Web page using the Netscape LiveConnect framework. Net-Scene's PointPlus Plug-in users are able to publish PowerPoint presentations into content that can be uploaded to intranets and the Internet via Netscape Navigator Gold.

The PointPlus graphics and compression engine converts the presentation with end user transparency. When using PointPlus to convert presentations, the user can either fill in the required information in one screen, or can be guided, step by step, through the screens with the help of a wizard guide.

Price is $499. PointPlus requires Microsoft Windows 95 or Windows 3.1, or Windows NT 3.51 and PowerPoint 4.0 or later. The Net-Scene PointPlus Plug-in for Netscape Navigator works on Windows 3.1 or later, Windows 95 and Windows NT 3.51.

Contact Net-Scene, 3737 Broadway, Ste. 340, San Antonio, TX 78209; (800) 375-5531; info@net-scene.co.il; www.net-scene.com.

Circle 375 on reader card

LinkStar Announces SmartHost

LinkStar Communications announced that it will license SmartHost, a client-server technology that simplifies the process of Web site hosting and virtually eliminates human involvement in the hosting process by removing the manual set-up requirements associated with current hosting models.

Web sites are uploaded to any SmartHost server using LinkStar's Site Launcher, instant Web site publishing software.

The technology behind SmartHost is called Simple Web Update Protocol (SWUP), which is based on the http, but extends http's capabilities to facilitate automatic account creation, Web page publishing and information dissemination.

Contact LinkStar Communications Corp., 5201 Congress Ave., #C-232, Boca Raton, FL 33487; (561) 995-0005; info@linkstar.com; www.linkstar.com.

Circle 399 on reader card

Confluent Introduces Visual Thought

Confluent announced Visual Thought, a cross-platform diagramming and flowcharting tool for the corporate enterprise.

Visual Thought runs on UNIX and Windows. It can replace many special-purpose tools, such as: CASE tools, flowcharters, graphics packages for documentation, network diagrammers, presentation graphics tools, 2D visualization front-ends and back-ends.

Contact Confluent, 132 Encline Court, San Francisco, CA 94127; (800) 780-2838; info@confluent.com; www.confluent.com.

Circle 398 on reader card

ISIS Selects Simba Technologies

Simba Technologies Inc. announced that Isis Distributed Systems has chosen Simba Technologies' SimbaExpress to be integrated as part of the Isis database replication solution. SimbaExpress is a data access technology that enables Isis to provide their replication customers with quick and efficient access from a Windows-based system to a wide range of important corporate databases.

Simba SDK products include SimbaEngine, SimbaEngine Client/Server and SimbaLib.

Contact Simba 2125 Western Ave., Ste. 301, Seattle, WA 98121; (206) 441-0340; info@simbatech.com; www.simbatech.com.

Circle 396 on reader card

UniSolutions Associates Releases UNISOL JobAcct

UniSolutions Associates released UNISOL JobAcct Version 2.2.5 with expanded resource accounting capabilities, including application-specific accounting functions for ISPs and universities, and enhanced disk usage accounting. UNISOL JobAcct is a complete system monitoring, resource accounting, and billing solution for UNIX systems that allows organizations to provide system access and services to other organizations, or to distribute work across multiple projects to maintain control over system resource usage.

Licenses for single machines start at $1,595. The product runs on HP-UX 9.0.x and 10.x, UNIX SVR4, Digital UNIX 3.2 and 4.0, SunOS 4.x, Solaris 2.x, SGI Irix 5.3 and 6.x, IBM AIX 3.2 and 4.1, NCR UNIX 3.0 and Amdahl UTS.

Contact UniSolutions Associates, 33586 Via Lagos, Dana Point, CA 92629; (714) 488-3960; craig@unisol.com; www.unisol.com.

Circle 393 on reader card

Lucent Technologies Offers Graphics Software

Lucent Technologies' Software Solutions Group announced new versions of RIO for MS-DOS, RIO Designer and RIO Designer Professional.

RIO is an MS-DOS-based object-oriented graphics and animation program that uses vector-based drawing tools and resolution-independent technology. RIO version 7.2 features include enhanced font rendering capabilities and input and output to live video.

RIO Designer runs on Windows 3.1, Windows 95 and Windows NT. It is a 32-bit graphic design and illustration software program for creating high impact photo—realistic images.

This is a 32-bit graphic design software for creating high-impact, photo-realistic images. RIO Designer Pro takes advantage of Windows NT features such as multitasking and multiprocessing.

Contact Lucent Technologies' Software Solutions Group, 2701 Maitland Center Pkwy., Maitland, FL 32751; (407) 662-7724; brad@mss.lucent.com; www.bell-labs.com/org/ssg.

Circle 397 on reader card

AMI Releases AMIDiag 5.0

American Megatrends Inc. (AMI) released AMIDiag 5.0. This latest version of AMIDiag offers a comprehensive list of tests, including diagnostics for the new PentiumPro processor, CD-ROM drives, SCSI devices, PCI bus and Plug & Play devices. AMIDiag 5.0 has tests for motherboards that have up to 16 processors onboard and a maximum of 4 GB of system memory. AMIDiag 5.0 comes on one 3-inch disk, and does not have to be installed on a hard drive to diagnose computer problems.

Contact AMI, 6145-F Northbelt Pkwy., Norcross, GA 30071; (800) 828-9264; www.megatrends.com.

Circle 376 on reader card

Citadel Announces NetOFF 5

Citadel Computer Systems Inc. released NetOFF 5, an automatic logoff software program. The new version adds the ability to save open files at logoff on both 32- and 16-bit applications. The program also is designed to run on all operating systems including Microsoft NT and Novell NetWare.

NetOFF 5 prevents unauthorized access to open workstations and prevents corrupt backups caused by open files. NetOFF 5 employs a unique "virtual user" function which systematically performs all necessary functions to save open files just as if a user were sitting at the console. NetOFF 5 also can be configured to execute logoff commands at a specific time of day, day of the week or day of the month.

System requirements include Novell NetWare 3.x or 4.x, Windows NT, Windows 3.1x or Windows 95.

Contact Citadel Computer Systems Inc., 2950 North Loop West, Ste. 1080, Houston, TX 77056; (800) 962-0701; contact@citadel.com; www.citadel.com.

Circle 374 on reader card

LBM Systems Introduces Forms & Fonts

LBM Systems announced Forms & Fonts, which provides HP-UX users with the ability to enhance their UNIX printed reports and eliminate the need for preprinted forms. It uses forms created by any forms generation package. It also can send merged data and overlays to PCL and PostScript laser printers. And, it permits UNIX, Wang VS and AS/400 forms to be interchanged without conversion costs.

Forms & Fonts: can add up to 99 fonts per page on any UNIX report; produces shading, italic and bold fonts; multiple colors supported on each page; complex job instructions are supported; eliminates "burst and separate" of multiple part forms by sequencing and collating them; merges data from any application with logos, barcodes, postal codes, signatures and MICR fonts; filters and interprets data from any application software; and data can be positioned by field names, not position, so that fields can be tagged and the overlay, not the application, is changed.

Contact LBM Systems Corp., 145 Cherry St., New Canaan, CT 06840; (800) 898-6434; andyw@lbmsys.com; www.lbmsys.com.

Circle 391 on reader card

Suprtool Reads Allbase Tables

Robelle Consulting announced that Suprtool added another database to the list of files that it can access. Suprtool 3.0 adds access to HP ALLBASE/SQL databases on HP 9000 and HP 3000 platforms by means of the select command. The Allbase access module is priced as an add-on module to the basic Suprtool package. The basic package includes the Suprtool extraction utility, the Suprlink multifile linking tool, and the STExport utility to prepare data in formats that can be imported into spreadsheets and

New From HP

HP Precision Engineering for Windows NT — HP announced it has made three of its HP Precision Engineering (HP PE) product-development software solutions available for Windows NT — HP PE/SolidDesigner for 3D product modeling, HP PE/SheetAdvisor for sheet metal design, and HP WorkManager clients for product data and workflow management.

The Windows NT versions offer the same capabilities as the UNIX system workstation version. Also, the Windows NT and UNIX versions work together, which permits concurrent design in heterogeneous environments comprising UNIX system workstations and Windows NT clients.

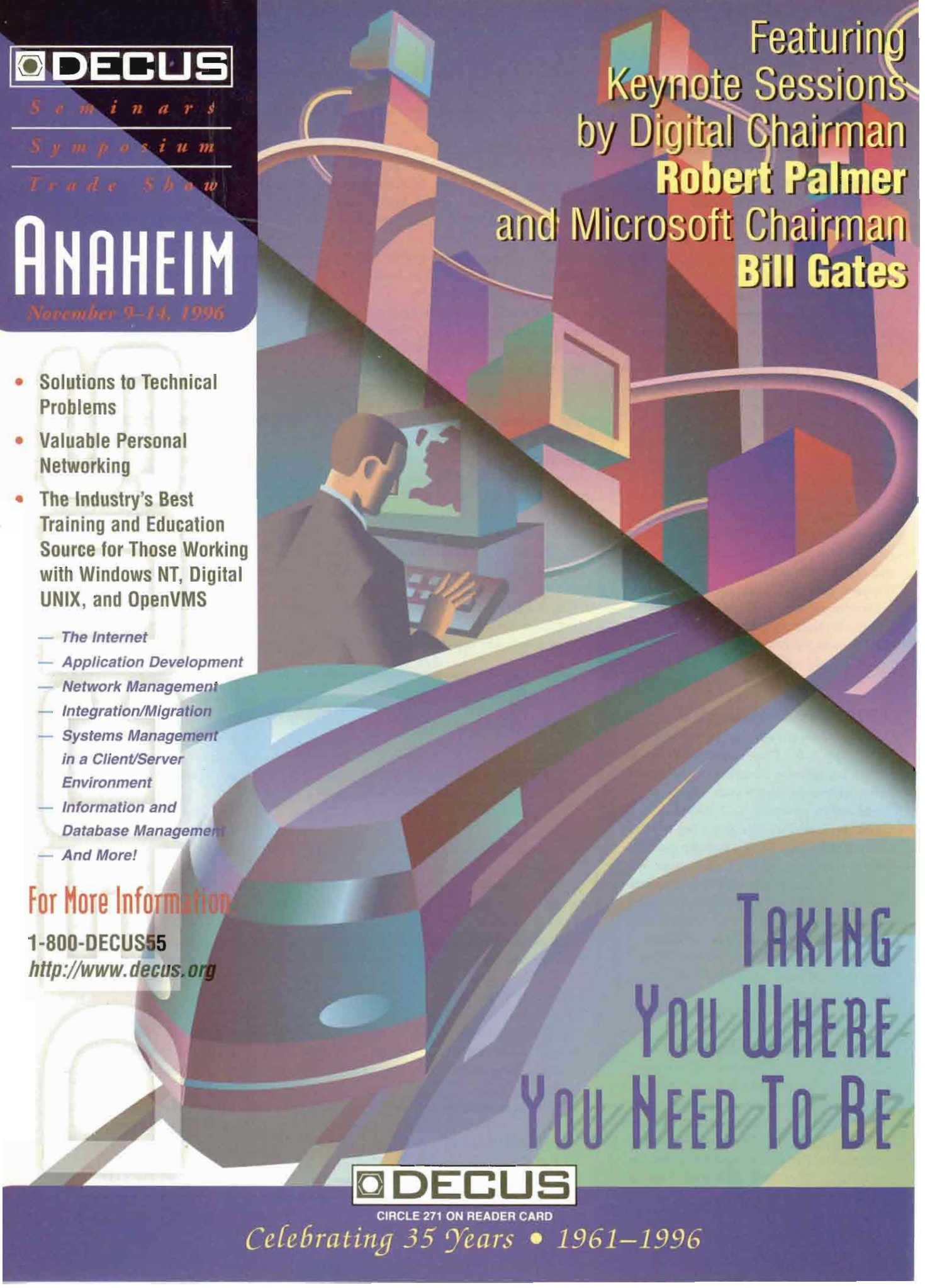
Prices for HP PE/SolidDesigner, PE/SheetAdvisor and WorkManager clients for Windows NT begin at $7,500, $18,000 and $1,000, respectively.

High-Resolution Broadband Test Solution — HP introduced a sweep/ingress analyzer designed to enable broadband communications engineers and technicians to test the forward and return paths and to quickly troubleshoot their cable TV systems despite the presence of ingress.

The solution is based on HP's DigiSweep technology — a fast, high-resolution, digital services-compatible sweep. It uses on/off signals to sweep the forward and return paths without interference. The sweep technology is compatible with cable modems, telephony, interactive TV, digital music services and Internet communications.

The new sweep/ingress analyzer consists of a portable field unit — the HP CaLan 3010R — and a rackmount-headend unit — the HP CaLan 3010H. Both units are priced at $5,950 each.

For more information, contact your local sales office or call (800) 533-1333.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Magic Software Announces Magic V7

Magic Software Enterprises released Version 7 of the Magic Rapid Application Development system. This 32-bit release for Windows 95, Windows NT and the Internet brings a new emphasis on component reusability, along with support for OLE 2.0. This release also includes improved GUI functions and significant performance enhancements for the Magic client and server architecture.

Price for a single-user Windows development network system begins at $3,500. Pricing for enterprise client development begins at $3,500, and enterprise server development starts at $4,750.
Contact Magic Software Enterprises Inc., 1200 Main St., Irvine, CA 92714; (714) 250-1718; uzi@magic-inc.com; www.magic-sw.com.

Circle 394 on reader card

Miros Inc. Announces TrueFace CyberWatch

Miros Inc. announced TrueFace CyberWatch, which uses face recognition technology to allow only authorized users to access sensitive data such as medical, financial, criminal or military records.

TrueFace CyberWatch uses Miros' software and a small video camera on top of the monitor to verify computer users when they try to access protected data from their computers.

The TrueFace CyberWatch client runs on Windows 95 and Windows NT. The client software is priced at $199 per computer, while a complete client package, including Connectix camera and software, is priced at $298. The server software runs on Windows NT, NetWare 4.x and UNIX, and is priced by the number of users.
Contact Miros Inc., 572 Washington St., Wellesley, MA 02181; (617) 235-0330; michaelk@miros.com; www.miros.com.

Circle 392 on reader card

CenterLine Unveils QC/Advantage

CenterLine Software introduced QC/Advantage, an open lifecycle software quality management system automate software testing and test management. QC/Advantage helps developers and quality assurance professionals develop, manage and execute consistent, repeatable tests for multiple application releases and versions for more frequent and thorough testing. It consists of six components: a uniform user environment; an object-based test foundation; a distributed test designer; a parallel execution executive; a consolidated results analyzer; and an open integration platform.

It is available for HP 9000 HP-UX, and SunOS and Solaris for SPARC and UltraSPARC systems, as well as Windows 3.1, Windows 95 and Windows NT clients. Prices for a starter pack, which includes five licenses, onsite installation, training and consulting is $37,995.
Contact CenterLine Software, 10 Fawcett St., Cambridge, MA 02138; (617) 498-3000; info@centerline.com; www.centerline.com.

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new products

Data Express ODBCLink Optimized For Axiant 4GL

Cognos and M.B. Foster Associates announced that DataExpress' ODBCLink, M.B. Foster Associates' ODBC interface for HP 3000 users, is now optimized to work with Axiant 4GL, Cognos' client-server development tool. DataExpress' ODBCLink provides Axiant 4GL users with robust multiuser, multitransaction read and write capabilities to file systems residing on MPE/iX. Supported file systems include TurboIMAGE, KSAM, MPE files, OMNIDEX and Oracle, as well as PDL dictionaries and PowerHouse subfiles.

Contact Cognos, One Burlington Business Center, 67 S. Bedford St., Ste. 200W, Burlington, MA 01803; (800) 426-4667; www.cognos.com.

Circle 388 on reader card

Silvon Software Adds Interfaces To Helpline

Silvon Software enhanced its Helpline incident management system with the addition of a Macintosh client interface and Internet access through the Web. Helpline currently runs on HP-UX, SunOS, Solaris, OpenVMS, Digital UNIX and Windows NT, with Windows and Macintosh client interfaces.

The system features a common GUI across system platforms, character cell interfaces, along with interfaces to e-mail and the Internet.

Contact Silvon Software Inc., 420 Bedford St., Lexington, MA 02173; (800) 262-8296; helpinfo@silvon.com; www.silvon.com.

Circle 387 on reader card

Integration Alliance Corp. Introduces Business Builder

Integration Alliance Corp. launched Business Builder, a process for developing resellers' business plans to set long- and short-term direction. Business Builder's training and strategic planning are designed to help resellers handle the high level of growth in the HP channel.

It evaluates opportunities and matches them with resources. And, the process helps resellers audit their company's core competencies and develop a clear mission statement, as well as analyze market segments where resellers are likely to succeed.

Contact Integration Alliance Corp., 5445 DTC Pkwy., P4, Englewood, CO 80111; (303) 770-5980; info@icorp.com.

Circle 385 on reader card

HARDWARE

Lexmark Releases Color Jetprinter 2050

Lexmark International Inc. announced the Color Jetprinter 2050, which combines superior performance, 600 x 600 dpi four-color print quality and Lexmark's third-generation Windows printing system.

The announcement also marks the debut of the Lexmark Workshop, a CD-ROM that provides the user with an array of full-function applications that will be packed with each 2050 printer at no additional charge.

It is compatible with Windows 3.x, Windows 95, Windows for Workgroups 3.11 and DOS applications running under Windows. Price is $299

Contact Lexmark International, 740 New Circle Rd., NW, Lexington, KY 40511; (800) 358-5835; www.lexmark.com.

Circle 384 on reader card

Accton Rolls Out Ethernet/FAX Modems

Accton Technology Corp. shipped a new family of Ethernet/FAX Modem multi-function PC adapters.

The EN2218-3 combines Accton's MPX Ethernet adapter with a 28.8 Kbps FAX modem. The Ethernet Y-cable has RJ-45 and RJ-11 connectors making it easy to connect to a 10BaseT network and a telephone outlet simultaneously; no extra cabling or additional accessories are required. The EN2218-4 uses Accton's Combo Module which allows users to connect to a 10BaseT or 10Base2 network, as well as a telephone line at 28.8 Kbps. The EN2218-1 combines Accton's MPX Ethernet adapter with a 14.4 Kbps fax modem and Y-cable cable.

The EN2218-1 14.4 Kbps modem /Ethernet adapter with Y-cable is $379. The EN2218-2 14.4 Kbps modem/ Ethernet adapter with Combo Module is $399. The EN2218-3 28.8 Kbps modem/ Ethernet adapter with Y cable is $529. The EN2218-4 28.8 Kbps modem/Ethernet adapter with Combo Module is $579.

Contact Accton Technology Corp., 1962 Zanker Rd., San Jose, CA 95112; (408) 452-8900; support@accton.com.tw; www.accton.com.

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ADIC, Access Graphics Offer Automated Tape Libraries

ADIC and Access Graphics announced an agreement which offers ADIC's complete line of high-performance automated tape

libraries and standalone subsystems to the Access network of VARs.

Products in the offering include ADIC's family of DLT tape storage products, including the multiple-drive, midrange Scalar DLT libraries, the seven-cartridge VLS DLT tape libraries and single-drive subsystems. Also available will be ADIC's line of 4mm (DAT) and 8mm desktop tape storage products, including single- and dual-drive compact libraries and standalone subsystems.

Contact ADIC, 10201 Willows Rd. NE, P.O. Box 97057, Redmond, WA 98073; (800) 336-1233; support@adic.com; www.adic.com.

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4824 Adapter Broadens Interphase Performance

Interphase Corp. announced the 4824 EISA 100BaseT Adapter for HP 9000 servers and workstations. The 4824 offers a 32-bit bus mastering architecture, full-duplex operation, auto-negotiation and adaptive FIFOs.

Price for the 4824 EISA 100BaseT Adapter is $750.

Contact Interphase Corp., 13800 Senlac, Dallas, TX 75234; (214) 654-5000; fastnet@iphase.com; www.iphase.com.

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Model 3100 Stacker Available For HP 5Si Laser Printers

Stands & Stackers Inc. (SASI) announced the Model 3100 stacker for the HP 5Si printers. It is capable of stacking up to 3,100 sheets of 8.5- x 11-inch paper face down when used with the 2,000 sheet feeder. The unit comes fully assembled, just insert the casters. Price is $389.

Contact SASI, 14 W. Front St., Monroe, MI 48161; (313) 242-0826; patl@annis.com; www.stacker.com.

Circle 379 on reader card

Hybrid Networks Introduces Wireless Cable Modem System

Hybrid Networks Inc. introduced a new cable modem/router and a Point of Presence (PoP) server tailored to the wireless cable technology market, which uses microwave transmission to deliver data at very high speeds from the Internet directly to a subscriber site.

The HAS wireless PoP server is centrally located in a computer room or networking hub connected to the Internet backbone.

The Client Cable Modem 161 Wireless is an external modem/router that connects to a LAN or directly to a PC via a standard 10BaseT Ethernet connection. When it is connected to a LAN, a single Hybrid Networks modem/router can support up to 20 PCs.

System configurations start under $50,000. The Client Cable Modem 161 Wireless supporting a LAN is $995.

Contact Hybrid Networks Inc., 10161 Bubb Rd., Cupertino, CA 95014; (408) 725-3250; info@hybrid.com; www.hybrid.com.

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U.S. Robotics Ships Courier I-Modem

U.S. Robotics shipped the Courier I-Modem with ISDN/V.34, which combines the features of an ISDN terminal adapter and U.S. Robotics' V.Everything analog modem in a single device.

The I-Modem includes an integrated NT-1, providing a direct connection to an ISDN wall jack and an analog device port to connect telephone, fax or answering machine. The Universal Connect feature automatically detects ISDN or analog calls and connects at the highest possible speed supported by the device on the other end. Price ranges from $495 to $695, depending on configuration and form factor.

Contact U.S. Robotics, 6600 Silicca Way, Gilroy, CA 95020; (800) 881-7256; sales@usr.com; www.usr.com.

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DILOG Produces Ultra Windjammer

DILOG/Diverse Logistics Inc. introduced a new RAID controller that furnishes throughput rates of 40 MBps and supports concurrent RAID 0, 1 and JBOD configurations without the need for on-board cache memory. The Ultra Windjammer RAID controller provides a single-ended ULTRA SCSI host channel and two single-ended SCSI-2 Fast/Wide disk channels. An optional differential ULTRA SCSI host channel also is available. Price is $2,185.

Contact Diverse Logistics, 2862 McGaw Ave., Irvine, CA 92714; (800) 345-6432; www.dilog.com.

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Mark McFadden

Spam, Spam, Wonderful Spam. Not!

Not long ago, the Internet was governed by an Acceptable Use Policy, which included strict provisions about what could be sent across the Internet. Commercial traffic was nearly taboo and a culture emerged that effectively censured anyone attempting to market goods or services. When the NSFnet, the federally-sponsored backbone for the Internet, was shut down in favor of a privately provisioned network, the Acceptable Use Policy no longer applied. The Internet was, as they say, "open for business."

GREEN EGGS AND SPAM

While many businesses leveraged the advantages of the Internet with respect for its traditions, a new brand of entrepreneurs emerged that found the Internet (especially the vast number of electronic mail and Usenet newsgroup readers) an irresistible place for scams. The combination of huge electronic mail address lists and human greed has made junk e-mail a serious problem.

"Spamming," the practice of sending unwanted, unsolicited commercial messages on the Internet, is at an all-time high. Once considered simply an annoyance, spamming is now a danger to many network managers. Many unsolicited advertisements are returned to their sender via a reply feature in electronic mail software. The backlash against spamming has caused some overzealous Internet users to return not one, but tens of thousands of messages to the spammer. This attempt to overload the source of the junk mail, sometimes called a mailbomb, often has the consequence of shutting down the spammer's Internet Service Provider's mail server. But it can have unintended consequences as well.

THE LAW OF UNINTENED CONSEQUENCES

One particularly ruthless marketer on the Internet found that nearly every message he received in response to his marketing survey was a antagonistic message questioning his practice. After receiving thousands of these messages, he retaliated by returning a mailbomb to those who dared complain about the junk mail. The resulting chaos left several networks incapacitated until mail servers could be restarted and mail feeds flushed.

Anyone on your network who has subscribed to mailing lists or has responded to Usenet messages is likely to receive unsolicited commercial electronic mail. Electronic mail addresses are not private or unlisted to the outside world. Several companies have emerged that harvest lists of electronic mail addresses from Usenet newsgroups and shared interest mailing lists for the purpose of mass electronic mailings. Several of the companies that maintain these lists are reputable and have reasonable practices, but there are always those looking to make a quick dollar on unsuspecting networked users. With the unintended consequences that are possible, what's a network manager to do?

A basic approach is to respond to the sender of the message. Many legitimate mass mailing operations honor requests to be removed from mailing lists. The sender's reply address should be listed in the mail message header. Look for "From:" or "Reply-to:" fields in the header that can be used for requests to stop commercial messages. Unfortunately, these headers can be "forged" to make it impossible to trace the source of the message. Replies to forged messages are simply returned to the sender with an error message.

If you are the victim of a network full of unwanted messages from a single, forged source, you can also attempt to contact the mail manager at the originating site for relief. If you can figure out the sender's site, sending a request for help to the POSTMASTER at that site may help. Look for a field in the message headers marked "Message-Id: and note the host and domain name to the right of the @ symbol. A short message with a copy of the offending message to the POSTMASTER of that site often brings quick results. Remember, the system manager at the source site is often unaware that one of their own customers is creating the problems.

Electronic mail spams are likely to continue, but an active approach to limiting the scope of the problem will limit the accumulated effect on you and your users. Check out the Internet Abuse Frequently Asked Questions page at www.cybernothing.org/faqs/net-abuse-faq.html for further information.

— *Have you been spammed? Tell Mark about it at* 73740.1101@compuserve.com.

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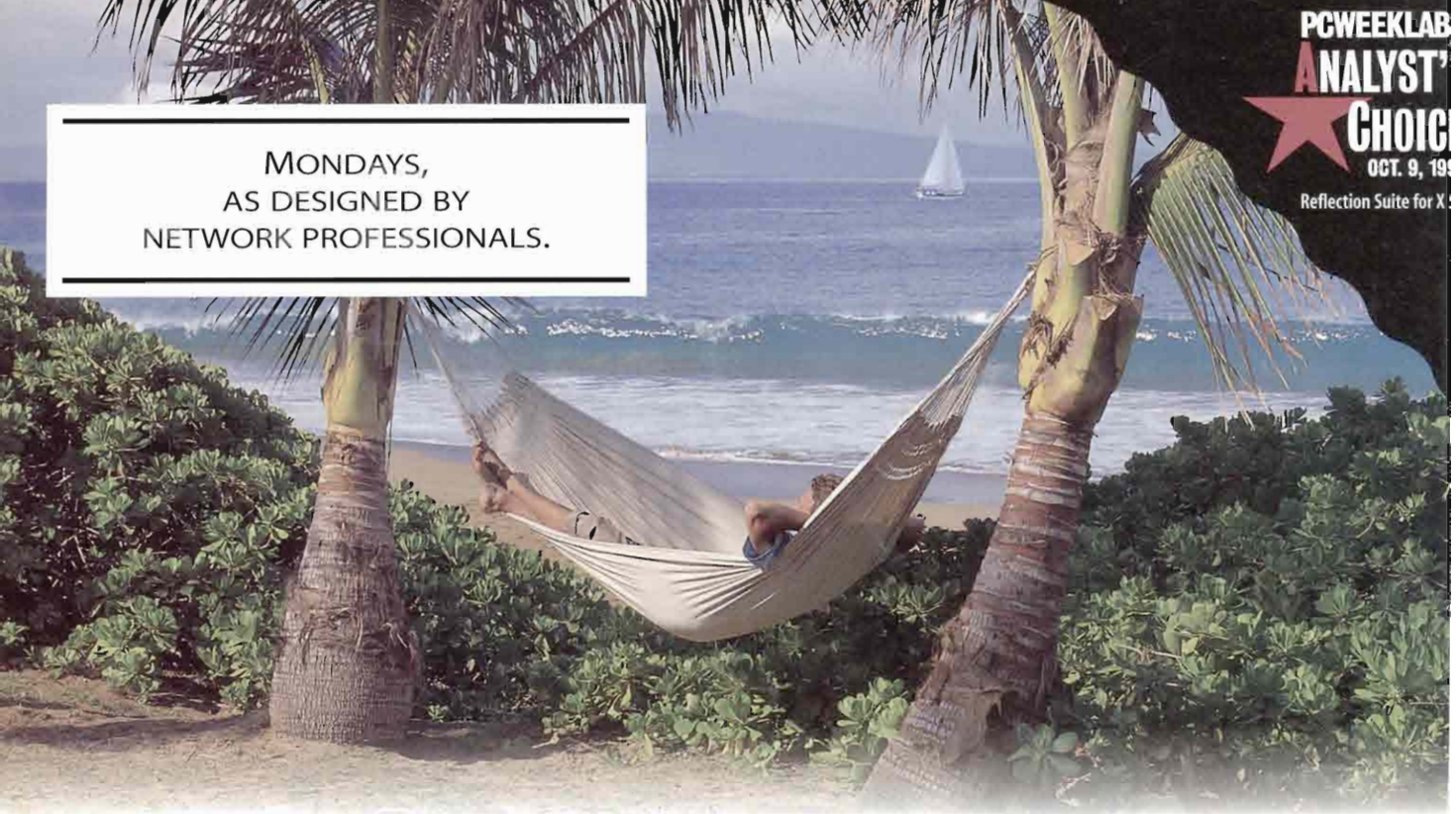

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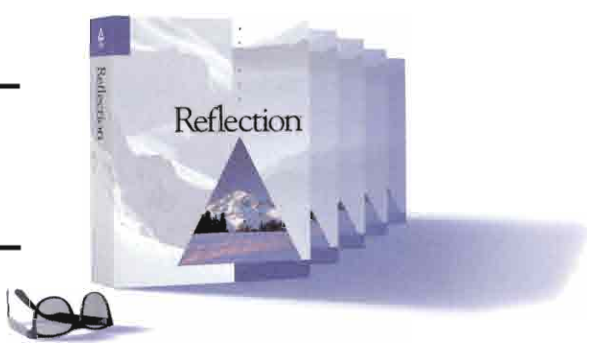

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