The Magazine For Hewlett-Packard Enterprise Computing

HP Professional

MARCH 1998

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◆
Windows NT
◆
MPE/iX

A BCI PUBLICATION

ENTERPRISE MESSAGING AND E-MAIL

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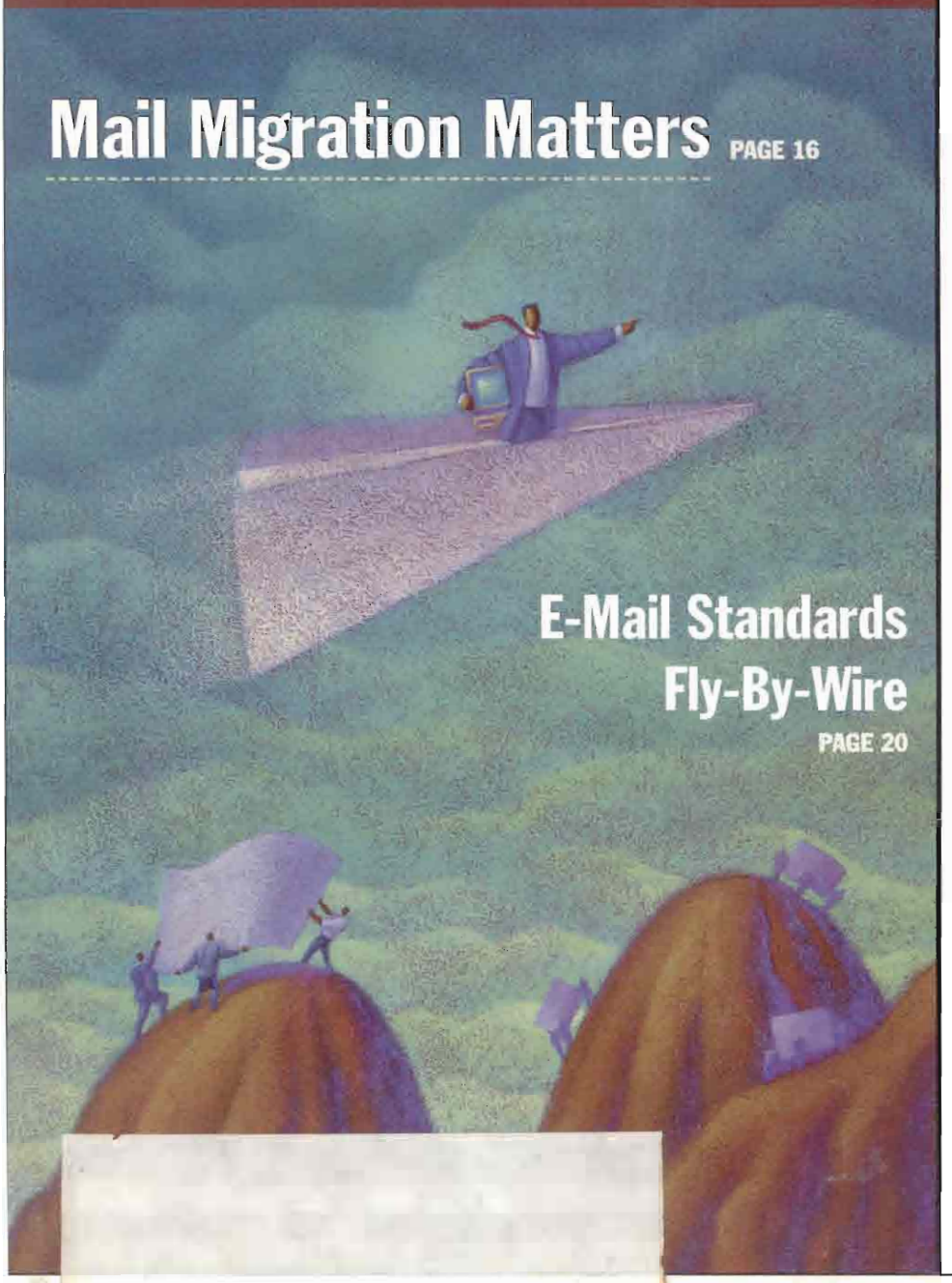

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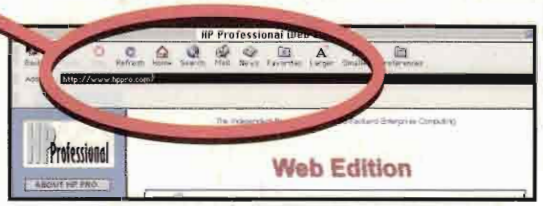

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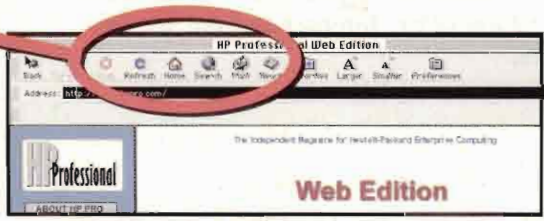

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IT Happens...

George A. Thompson
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And then you die. Right? Not much of a philosophy of life, really; much less IT management. But sometimes, I get the impression that's what IT is all about. Throw it up on the wall. Throw it over the wall. And throw it out to the customer. IT happens.

Does IT have any relevance for the real world? If IT does, then why are so many IT projects failing? Airport baggage systems. ATM and online network outages. Air traffic control systems. Just a sign of the times, you say? The Year 2000 Problem has gone unresolved for the past fifty years. Why? No time. Scott Adams is making a living out of IT. He's laughing all the way to his virtual bank, no doubt.

I started to shake off the thought as just one of those nihilistic moods that tend to overcome editors as a deadline approaches, until I read this:

"I .. reconsidered the vice president in her plain but excellent suit, whose billions in electronic funds were riding around the planet atop fifteen-year-old assembler code. Suddenly, I forgave her for saying that 'programming is the smallest part of the process.' I understood her not wanting to dwell on the slip-space between the seventy two million transactions and the tangled human-built logic they must traverse. No, it's best not too care too much about the people who wrote the code. Just let it all 'go off to programming.' Let three lucky programmers take care of it: There: Gone. Done. Deployed."

— *Close to the Machine: Technophillia and Its Discontents.*
by Ellen Ullman
1997 City Lights Books (San Francisco, Calif.)

Ullman, according to her book jacket bio, runs her own computer consulting business out of a live-work loft in San Francisco's Multimedia Gulch. Perhaps some of you even know her. If so, then you know that Ullman is certainly no Tracy Kidder.

Kidder's *Soul of A New Machine*, published in 1981, was a paean to the then nascent computer age. Ullman,however, speaks up from behind the millions of lines of programming code since then to question the her own role and those of the systems she helps to build. "We lead machine-centered lives ... We live in a contest of the fittest, where the most knowledgeable and skillful win and the rest are discarded; and this is the working life that waits for everybody. Everyone agrees: be a knowledge worker or be left behind."

But before the depression could overtake me, I distracted myself by doing some research on the Web for our next issue. And what do you know? There's an Ellen Ullman interview on HP's Web site for its *Electronic Business* e-zine (*www.hp.com/Ebusiness/index_ullman.html*). The serendipity of it all cured my cyber-blues, but not my lingering doubts about IT. Are you adopting a technology or business practice that provides value to your customers or are you merely "working on a groovy thing?"

.....

While you're thinking about how groovy IT is, take some time to check out our new back page. Called *NetGains*, its objective will be to reflect and occasionally reflect on online life inside and outside the HP community. If you know of a site that helps you in your personal or professional life, let me know.

Also, starting in this issue, the formerly back page guest editorials move to the front to emphasize its new name — *Get IT In Gear* — and message. *Get IT in Gear* editorials will emphasize our focus on IT solutions that have a business and hopefully humanistic outcome. To submit an opinion, talk about a trend, expose a problem, or offer an insight, drop me an e-mail note. Dialogue is part of a healthy community, let's hear from you.

MAIL BONDING

FINANCIAL HIGHLIGHTS

Re: your December Product Watch on LMT's EXPO/Web. I gasped when I saw it, and gasped again when I read it. It looked great. And more importantly, it made sense. It's difficult to write material for a mixed audience, especially when the material is technical. On the other hand, you guys did it.

S. E. Gallagher
Leading Market Technologies

THE COLOR OF MICROSOFT

Your magazine has taken on a distinctive Microsoft hue. Too bad. I used to get good HP-UX advice in it.

Wayne Richards

With HP's strategy of selling both HP-UX and Windows NT servers, we can hardly ignore Windows NT as a technological issue. Like it or not, HP has reorganized to sell both HP-UX and Windows NT server solutions. And they are doing very well with both platforms. Our coverage reflects that position.

You may be interested in our April issue focusing on HP 9000 systems and HP-UX.

George A. Thompson,
Editor-in-Chief

ANOTHER KIND OF Y2K PROBLEM

I read with interest your editorial in the January 1998 issue of HP Professional. I may be too picky about this, but with all the hoopla scheduled for December 31, 1999 to bring in the 21st century I must speak my mind.

I guarantee there is a Y2K problem in the IS industry but fixing the flaws of bringing in the Year 2000 successfully on computer systems is entirely different than saying that January 1, 2000 is the beginning of the 21st century.

The year 2000 is STILL in the 20th century!!! The 21st century does not start until January 1, 2001. The reason... There was no year 0. History records the year 1 AD as the beginning of the first century. Therefore, the Year 2000 is still in the 20th century.

Let's not get to anxious and paranoid just because we go from 1999 to 2000. Big deal. Except for the Y2K problem of course.

Perry L. White, Sr. Database Administrator
Excel Corporation

For an interesting and entertaining look at the universal relevance (outside the IT conundrum) of the turning of the new millennium and the human tendency to try to fit all things into neat, decimal boxes, please read ***Questioning the Millennium : A Rationalist's Guide to a Precisely Arbitrary Countdown*** *by Stephen Jay Gould (Random House, 1997).*

After all, if the whole world is celebrating the turning of the century on December 31, 1999, does it really matter when the new millennium actually begins?

Ken Deats,
Associate Editor

DROP US A NOTE

We welcome your comments, thoughts and suggestions.

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Getting Even With The UNIX And NT Odds

Doug Akers, Market Research Coordinator, MKS, Inc. (Waterloo, Ontario)

Today's two most popular operating systems — UNIX and Windows NT — are at odds with each other. Obvious interface differences aside, there are differences in the tools the systems offer, the way the tools work together and tools created by third-party vendors. That was exactly my predicament when I had to design and implement a beta program for my employer. For each beta product, I wanted to record and report the contact and progress information of my clients. I needed a highly modular and extendible system which stored, recorded and displayed data simply because the beta program was new and certain to change. Not much of a technical spec, I know; but as a one-man operation I knew what I wanted. I have a technical background, but real programming languages like C, C++, and Java, were out of the question. I did not want maintenance to become a full-time job.

UNIX provides many small specialized tools which, when combined, solve computing problems. So I began writing Korn Shell scripts to access a file-based repository for the storage and retrieval of contact data; scripts to combine with **find**, **grep**, **sed** and **awk** for searching and reporting; and scripts to physically manipulate files. Quite the mish-mash of scripts and utilities, but they all worked.

OUT TO LAUNCH

The launch of the beta program was a success. But a friend in sales made an interesting observation: the information I was collecting would be useful in the sales cycle because some of the beta clients were also sales prospects. So, without abandoning my existing system or leaving behind the amazing benefits of the UNIX toolset, I had to make this system salesperson friendly. YIKES! So, I traded in the UNIX command line for a Web-based, forms interface.

I couldn't expect others to access the system with commands like **nbuild -e -p si -v 7.3 emmerson.log**. I converted **ksh** scripts to a combination of Perl and PScript-files and used **mkscgi** to process the CGI-Bin scripts. Among other things, PScript, like JavaScript, allows you to imbed Perl behind ActiveX controls while **mkscgi** converts form field values into environment variables for script processing. Ultimately, I had an automated, easily maintainable, accessible and understandable miniature contact system which relied on a dozen or more UNIX and UNIX-like utilities developed specifically for NT.

CURVE AHEAD

Did I mention that my development platform was Windows NT using Netscape Enterprise server to host the application? The differences in today's browser technology threw me another curve. Currently, Microsoft's Internet Explorer is the only browser that supports ActiveX controls, so in order to take advantage of the PScript engine, I had to supply both an ActiveX and non-ActiveX version for a section of the site. Using search and replace utilities (**grep** and **sed**), I maintained one source base generating the two versions. I did, however, have one advantage over most application developers: although I could have used a similar search and replace method to account for many different configurations, I knew the hardware and software of my target audience.

Nevetheless, I faced the same situation as today's corporate IT shops: a hybrid development environment mixing UNIX and NT. It wasn't an either-or choice. I needed a solution that fit my company's mixed environment. Although the actual UNIX tools I used came from the MKS Toolkit (the editor was **vi**), the solution combined the best of both worlds. So, perhaps the development environment choice isn't a "choice" after all.

AT PRESS

HP Data Warehouse Goes Platinum

At the end of February, HP announced that they had signed a letter of intent with PLATINUM technology, inc. that will sell HP's Intelligent Warehouse and DataMart Manager products to PLATINUM. According to Janice Hoffman, general manager of HP's High Performance Systems Division, the move enables HP to focus on providing more innovative data-warehouse solutions that will partner HP with third-party hardware, software and service providers. "Transitioning Intelligent Warehouse to PLATINUM is part of our strategy to expand our investment...through a closer alliance with development and delivery partners."

For their part, PLATINUM expects to expand Intelligent Warehouse and DataMart Manager's reach. "We will integrate them with PLATINUM's Microsoft repository and add support for more platforms," says Tom DePasquale, senior vice president of data-warehousing solutions for PLATINUM. Also, DePasquale says that PLATINUM will immediately begin porting Intelligent Warehouse and DataMart Manager to Windows NT and Microsoft SQL.

Under the agreement, there will be a three month transition period where HP will continue to service and support the products. Both HP and PLATINUM plan to sell Intelligent Warehouse and DataMart Manager.

HP E-Commerce Security Goes Global

HP president and CEO Lew Platt on February 27th announced that HP has received U.S. government approval to export their VerSecure technology, "the most comprehensive encryption technology solution available for the control of international data security and integration."

VerSecure, formerly known as HP's International Cryptography Framework (ICF), followed a two year U.S. government approval process that was only finalized after meeting all government policy objectives that balanced IS infrastructure's protection needs against cyber-piracy, while, at the same time, making information accessible to law enforcement and national security organizations. "This divergence of views makes encryption policy one of the most nettlesome public policy issues that we face today in the information age," Platt says.

As background for the announcement, Platt painted a scenario where a cyber-criminal with a $50,000 computer system can take one second to break a 26-bit encryption key, and up to 30 years to break a 56-bit key. That same hacker, with a $1 million system can break that 56-bit key in 10 days.

To date, VerSecure has been approved for export to Canada, the United Kingdom, Germany, France, Denmark and Australia, with Japan in the discussion phase. In addition, Platt stated that the VerSecure technology was embraced by IBM, Microsoft and Motorola for use in future implementations of their E-commerce products.

QUICK BITS

OpenPix Just a little over a month after the release of HP's OpenPix 2.1, a suite of software tools that give Web designers the ability to manage and distribute photo-quality images on the Internet, HP and Liz Clairborne have sewn up an agreement that will fashion Liz@market, an interactive extranet site that uses OpenPix to allow retail shoppers to zoom in on high-resolution images of products.

Retail Data-Warehousing HP and Red Brick Systems, (Los Gatos, Calif.) hope to stock retailer's IT shelves with a jointly-produced "integrated data-warehousing suite" designed just for the retailing industry. Retail organizations will be able to integrate point-of-sale, finance and merchandise information; assess supply-chain productivity and performance; and enhance forecasting and operational capabilities.

OpenView Desktop Administrator A network administrator's job may get easier as HP integrates OpenView Desktop Administrator with their Top Tools management software. This push towards a comprehensive enterprise-scale desktop management system will allow administrators to power-up desktop PCs and distribute software updates, perform hardware and software inventory, desktop configuration and software licensing metering all during off-hours when the machines are unattended.

Java's Jiving In Port To IA-64 HP is porting Java to IA-64 and is expanding the IA-64 jump-start advantage program to include Java Internet developers such as Ariba and WebLogic to ensure application availability for future HP EPIC systems. HP is creating a porting and testing facility within its partners' lab for ISV developers to ensure for optimal performance with full Java compliance. HP will also be a "Platinum" cosponsor of March's JavaOne Developer Conference held in San Francisco.

TEST AND MEASUREMENT MEETS HP 9000 UNDER OPENVIEW

HP announced a new program last month that will bring products from two parts of the HP organization to "match the Test and Measurement Organization up with the management and communication capabilities of the 9000 platform. This will provide end-to-end service management to ISPs," says Tina Burnside, HP's program manager for Internet/electronic commerce.

The new offering, called HP OpenView Internet Service Management Program, will bring together existing HP products and newly-developed technologies that will focus on Internet service management, including usage, assurance and provisioning that HP claims will help ISPs increase business efficiency and deliver value-added services to customers.

Internet value-added services like e-mail, Web hosting and E-commerce are expected to be an $11 billion business to ISPs by the year 2000, according to Burnside. Typically, it costs an ISP $100 to attract each new customer, who, in turn, pays back an average of $20 per month to the ISP. Heavy customer churning between ISPs, quite often in less time than the five months needed to re-coup the investment, is becoming a heavy burden for Internet providers.

While no new products have actually been announced yet, several existing HP products known to be at the heart of the program are acceSS7, a tool that measures activity on links to the public switched telephone network and OpenView. HP claims that users will be able to get a single screen, drill-down view of network elements on a Web-based, Java interface that will feature full integration with other OpenView products like Network Node Manager, and IT/Operations.

Burnside added that while these OpenView enhancements are currently for ISPs, there will be some applicability for enterprise management in future offerings. Burnside says to look for the first products and pricing announcements to come out of this month's ISP get-togethers Internet World in Los Angeles.

KUDOS, AWARDS AND REWARDS

VISUALIZE This HP's VISUALIZE fx graphics outpaced competitors in both application performance and net value according to the OpenGL Performance Characterization (OPC) Organization's CDRS ViewPerf benchmark. The benchmark measures 3-D rendering performance of systems that run under the OpenGL API. HP's B-Class, C-Class and Kayak PC workstations with HP VISUALIZE fx graphics captured four of the top five positions, the first ever to outperform Silicon Graphic's Infinite Reality systems.

We're On The A-List, Dahling HP's 9000 Enterprise Server family has won a Crossroads 98 A-List award, the only industry trophy based on interviews with customers who use the products in mission-critical applications. Products that win the awards, handed out by Open Systems Advisors, Inc. (OSA), are measured against OSA's criteria for achieving business results, increased sales, improved customer service, shortened time-to-market and interoperability in mixed environments of PC's, UNIX and conventional systems.

Keeping An OpenView A Computer-world survey of 5,000 IT managers from across the country resulted in the choice of OpenView as the winner in the Network and Systems Management category. Asked to evaluate the products they had installed or upgraded in 1997, the managers chose OpenView over Tivoli's TME and CA's Unicenter in returning superior value to their company's efforts in enterprise management.

Rewrite Workstation History International Data Corp. reported in February that HP's combined UNIX and NT workstation shipments exceeded 330,000 units in 1997, planting them firmly at the top of the $15.8 billion worldwide workstation market for the first time in their history. HP surpassed Sun as the primary provider in the rapidly expanding market with a 43 percent workstation growth spurt over 1996.

Engineering A Web Winner The Web Marketing Association has bestowed its Standard of Excellence WebAward on HP's Educator's Corner Website (www.hp.com/info/college_lab103). The site offers engineering students and educators a variety of interactive lab experiments, free software and tutorials, and access to online publications. The tools, most of which have been provided by leading engineering educators from around the world, illustrate technical topics like modulation, phase shift, radio frequencies, filters, distortion and amplifier characterization. Online emulation of HP Basic Instruments allow students to "virtually" practice at their own pace.

PSST! WANNA BUY A SERVER?

Effective February 1, HP made it easier for small-to-medium size businesses to purchase "self-supported" servers with a 19 to 25 percent price drop. For example, a fully loaded HP NetServer E45 with a 266MHz Pentium II CPU, 4GB hard disk, Ultra SCSI adapter and a 24X CD-ROM should sell for an expected street price of $2,300.

TICKETS, GET YOUR TICKETS HERE, THERE AND EVERYWHERE

Global Ticketing System For The World Cup Is A Big Score For HP's Domain Internet Server

As an official supplier of the 1998 World Cup games in France, HP is providing an integrated hardware solution that will lend support to behind-the-scenes events. By now, you should be aware that HP Domain Internet solutions are at the heart of the entire World Cup information infrastructure, including the communications system, the ticketing system and france98.com, the official Web site of the World Cup (see last month's feature).

For the French Organizing Committee (CFO), the organization behind the 16th World Cup games, ticket sales, as you might suspect, are a mission-critical operation. Ticket sales are the main source of revenue for the CFO. In addition, ticket sales, which began nearly two years before the actual event, provided an early source of revenue for the CFO, enabling them to balance the budget from the start and fund other aspects of the games.

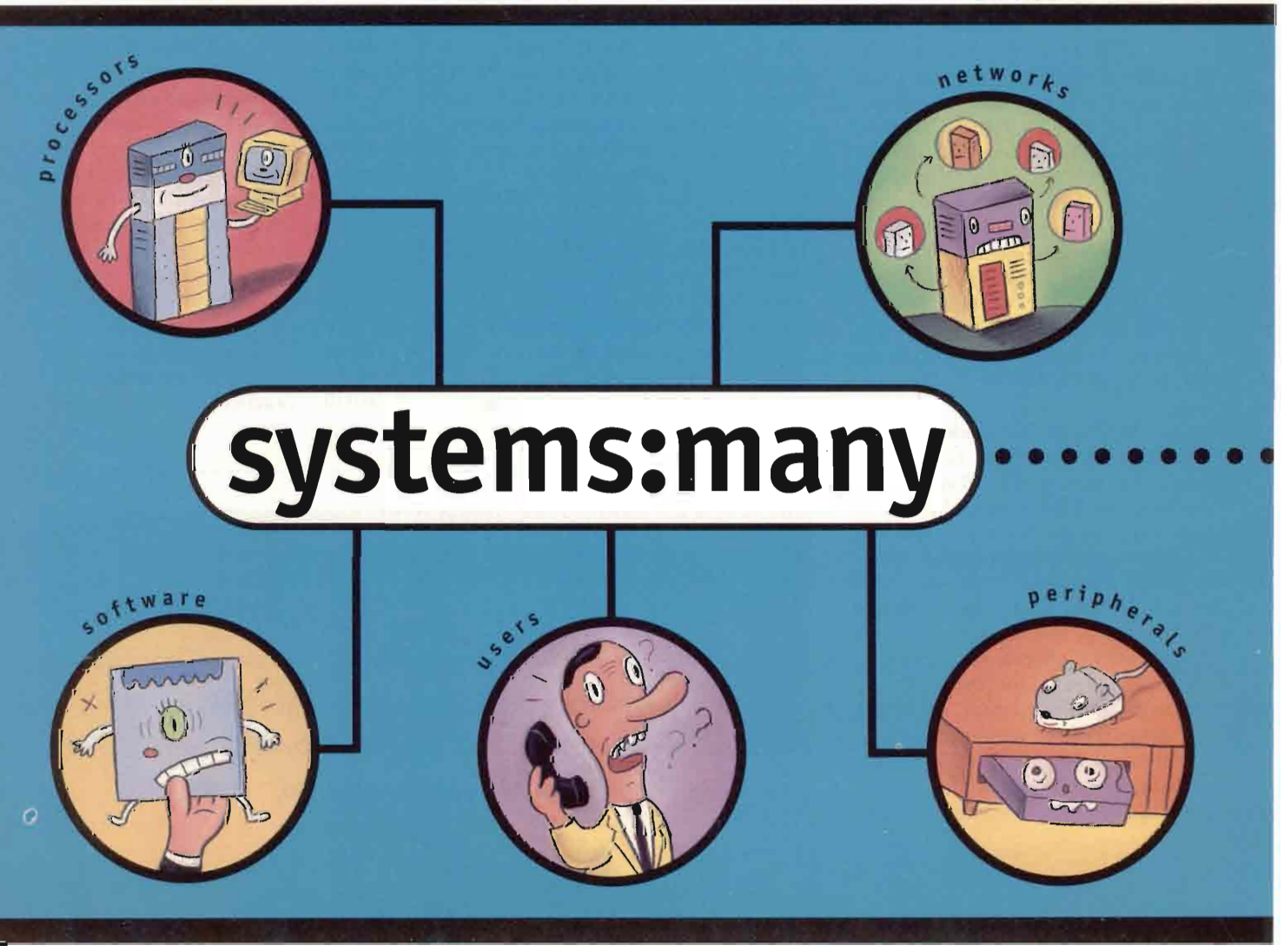
WORKING TOWARDS A COMMON GOAL

Because a secure, scalable solution was a MUST, the primary requirement for this project compelled HP to put its hardware together with EDS software to create a solution to provide direct ticket sales to the French public as well as support sales through a network of Authorized Tour Operators around the world. Consequently, HP and EDS created a ticketing solution, (as part of the overall World Cup 98 operations management system) that enabled direct ticket sales in France, while supporting ticket agents around the world.

Located in the EDS Data Center in Paris, the system — one HP 9000 K410/2 server and one HP 9000 K210 — includes applications for accreditation, accommodations, transportation, human resources and volunteers, uniform coordination, protocol, media orders and ticketing.

The ticketing system was implemented with a redundant server architecture with full duplication of data. So, to allow recovery from a disk crash, both HP 9000 servers access a dual stack of disks for system and application data. This mirroring function is handled by the MirrorDisk/UX kernel extension.

The two HP 9000 servers are interconnected to compose a cluster that allows continuous service in case of hardware or software failure of one of the servers. This function, associated with the disk mirroring,



plus extended support services, provides the security and reliability that the CFO requires to support ticket sales. EDS selected, integrated and enhanced an existing ticketing application and integrated it with a CAD management system.

SCORE! ONE FOR THE HOME TEAM

The software was used to manage all ticket requests, as well as to print and mail 2.5 million tickets. The EDS system includes ticketing information and performs ticket tracking, reservations and sales. EDS created systems that linked the ticketing application to the French Minitel system for online ticketing in France.

EDS also provided SCORE!, a suite of software products developed to manage large-scale events. SCORE! is a client/server application used to manage many aspects of the World Cup, including accreditation, human resources, and seating. While the ticketing application is not part of SCORE!, the two are linked in that SCORE! has an application that assigns names to seats, so that the event organizers can find VIPs and dignitaries if necessary.

SCORE! was developed using Sybase System 11 and PowerBuilder. The application can handle 400,000 seat assignments, 128,000 media parking passes and 50,000 accreditations. The server runs on UNIX-based HP 9000s, while the client runs on HP Vectras under Windows NT.

The Web site(www.france98.com) also provides a source of information about purchasing tickets. While the public cannot purchase tickets directly from the Web Site, information is provided about authorized ticket agents around the world.

HP is providing the technologies to bring the world to the games: virtually through www.france98.com, and literally, through ticket sales to stadiums that were not even built when ticket sales began. HP's World Cup plans not only include worldwide ticket sales, but also IT implementation for game results and statistics, communication systems, media management, player health, and security.

Caroline Farmer is a writer and strategic analyst for The Content Group (San Francisco, Calif.).

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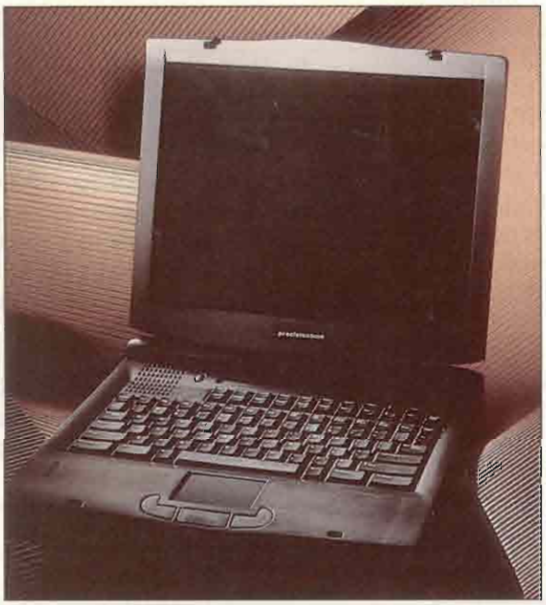

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Using a 132MHz or 160MHz PA-7300LC CPU, 64KB data and instruction caches, 32MB of RAM and HP-UX 10.2, performance is similar to a HP 9000 B-Class workstation. But unlike an HP workstation, weighing 40 pounds, the PrecisionBook weighs 7.5 pounds in a 13-x11-inch package.

The PrecisionBook offers up to 512MB of field installable memory and a removable EIDE (ATA-2) drive that provides 3GB (up to 9GB) maximum) with an average seek time of 13ms. Using the VISUALIZE-EG graphics (with an optional 2MB frame buffer), the PrecisionBook is capable of effective 2-D or 3-D graphic manipulation.

"The performance was definitely acceptable for 3-D modelling operations," says Marc Lee, ME CAD Support Engineer at HP. "Empirically, it seemed as fast as the C180 [workstation] on my desk, probably because at this site we NFS-mount the CAD executable."

The 14.1-inch active matrix LCD has a 1024x768 pixel resolution. Monitors with up to 1600x1280 pixel resolution are supported via an external VGA port.

The following interfaces are also standard: two RS-232C serial ports; one parallel port; 10BaseT and AUI SCSI port, SCSI-II, 16-bit audio port (with internal speaker and a microphone) and a 15-pin connector for an external diskette drive or keyboard or mouse.

The PrecisionBook supports one or two Type II or one Type III PC Card (PCMCIA) slots. Network support includes AutoNET software tools, NCSa, Berkely 4.3 TCP/IPa, and BSD 4.3.

Options include: a 56Kbps PCMCIA fax/modem card with cellular phone support, an expansion dock (called the Peripheral Expansion Module) which supports hard drives, battery packs, diskette drive and CD-ROM and an expansion PCI bus slot.

The PrecisionBook has a 97-key keyboard and an integrated three-button track (finger) pad. "The finger pad was hard to get used to," says Lee. So, using the external 15-pin interface for a mouse may be a good idea. However, as with most portable products, that precludes using an external diskette drive or external keyboard. "I would carry a mouse," advises Lee.

The PrecisionBook uses lithium-ion batteries. RDI engineers have developed an integrated power management system to prolong the battery life. However, Lee notes "the power connector is extremely hard to disconnect if the trap door in back of the unit isn't open already. And once the power connector is connected, you can't open the trap door. So you have to remember to open it prior to connecting the power."

Jim Williams,
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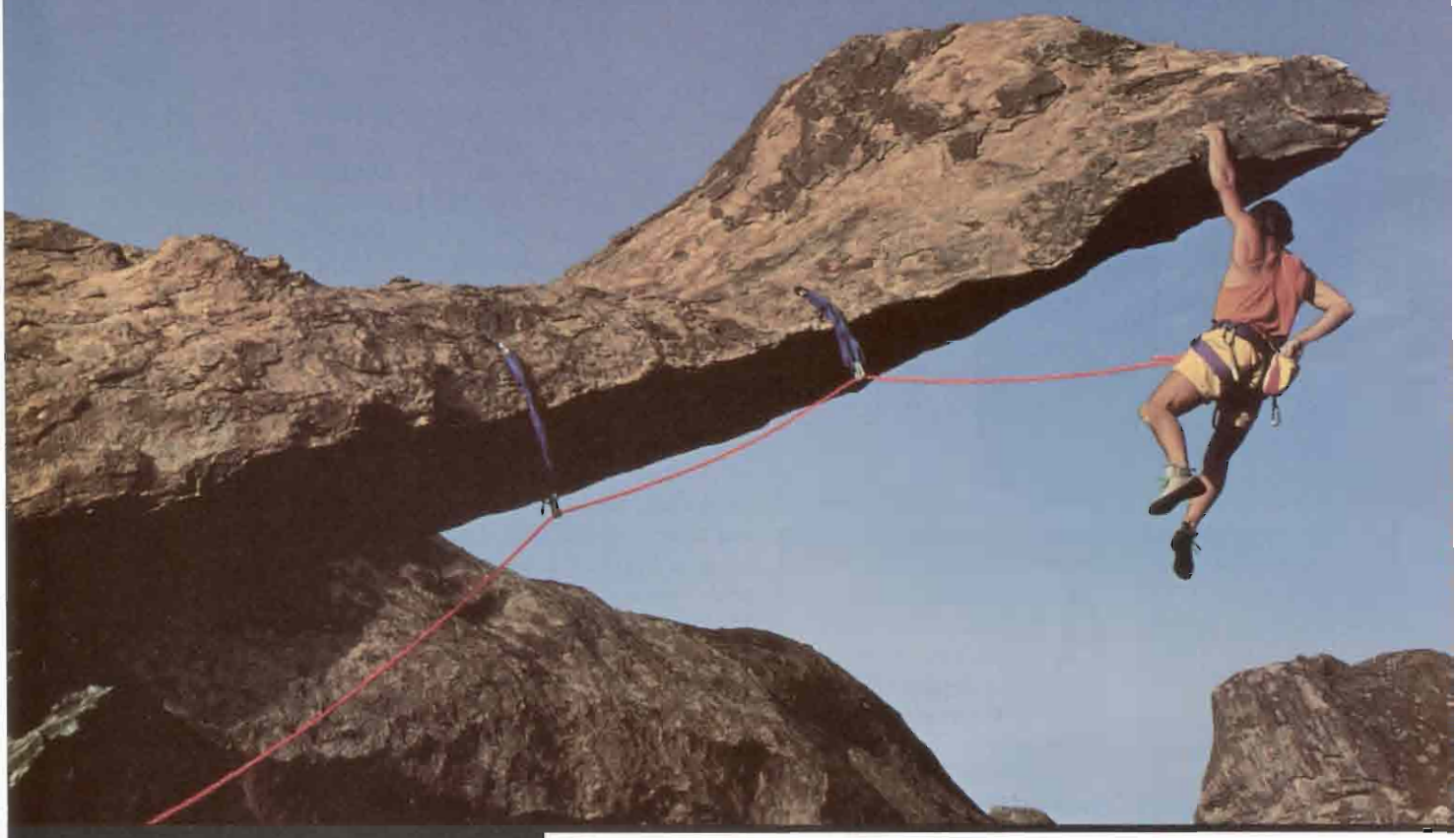

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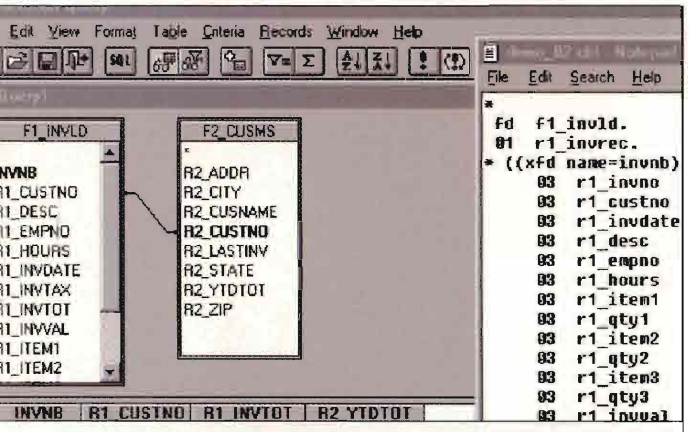

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Any product that reduces the effort necessary to move data from a legacy COBOL file to a Windows application is sure to be met with high praise from those responsible for the tedium of re-keying data, that is, unless you're in an organization that makes aids for carpal-tunnel syndrome sufferers. Because with Acucobol, Inc.'s new AcuODBC 1.1, carpal-tunnel flare-ups are sure to lessen.

AcuODBC 1.1 is a new 32-bit ODBC driver for Acucobol's "Vision," the indexed file system supplied with ACUCOBOL-GT which runs across multiple hardware and software environments including AIX, Digital UNIX, HP-UX, MPE/iX, Solaris and Windows NT. Based on Microsoft's ODBC standard, AcuODBC lets users read, write, and update Vision data directly from Windows 3.x, 95 or NT applications regardless of where that data resides on the network.

"In the past, users had to literally extract data and then re-key it into their desktop application," says David Thompson, manager of systems engineering at Acucobol, Inc. "Now they can directly access that data from a desktop reporting and query tool like Microsoft Access."

Thompson points out several enhancements made to the new version of AcuODBC: full support for the Microsoft Office 97 Suite and similar packages like Seagate Technology's Crystal Reports, read-only protection to protect the legacy COBOL files down to the field level and encryption for data dictionaries.

A typical AcuODBC workflow would allow a user to run a SQL query, update COBOL data, read COBOL data into an Excel worksheet, print graphical reports of that data, read that data into a Word document and mail-merge COBOL records into predefined locations.

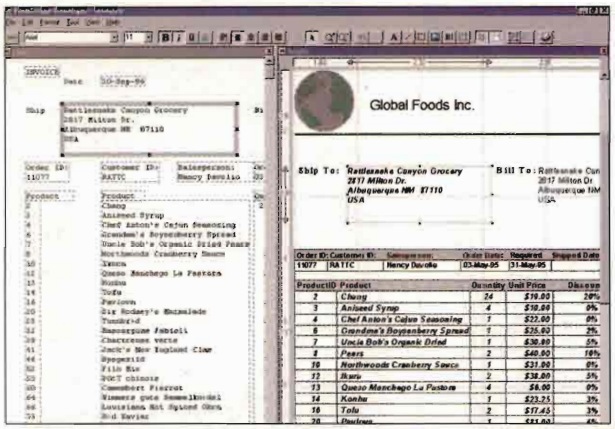
Deneb, Inc., a Dayton, Ohio-based supplier of accounting and financial packages to construction companies across the U.S. and Canada, used AcuODBC to make it easier for their customers to view and manipulate economic data. "Our basic applications are written with ACUCOBOL," says Arley Webb, a senior programmer with the firm. "We wanted to make that data more available to users who have third-party query and report writers."

While Webb points to Microsoft products Excel and Access as the typical desktop applications most users will work with as doorways into their AcuCOBOL data files, "some of our more sophisticated users might use Microsoft SQL," he says. "So far, all the desktop query tools have integrated fine for us." Initiating AcuODBC at the desktop was done by recompiling Deneb's Acucobol application with the ODBC hooks enabled.

Webb says that Deneb, Inc. runs versions of their software across platforms from DOS stand-alone to UNIX servers. "More and more of our users are using UNIX and Windows 95 or NT desktops," he added. "AcuODBC works real well in that environment."

Ken Deats,
Associate Editor

Winning The Paper Chase



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By now, just about everyone knows that the paperless society is at least many years away, if not complete pulp fiction. The trick is not to do away with the paper, but to organize, store and present the printed form as efficiently and cost-consciously as possible.

That's why Reynolds & Reynolds (Dayton, Ohio), one of North America's leading providers of information management systems for automobile dealers, turned to AFP Technology's Formscape 2.0 in an attempt to minimize their customers expenses yet maximize the power of their forms handling application.

"Our customers pay Reynolds & Reynolds for hardware and forms," explained Darren Ghanayem, product manager on their advanced products team. "We wanted a way to cut down on the number of printers dealers need." Ghanayem explained that dealers will use one printer to print invoices, and another to print service orders. "It is very impractical to change forms in the printer each time a different one is needed."

Formscape 2.0 allows Ghanayem to merge a UNIX-based data stream with an electronic template and direct any document to any printer regardless of the paper installed. "We may want to print a dealer-specific logo on the bottom of a form one month then switch to a discount coupon the next," he says. "Formscape allows us to dial in, make the changes remotely and get out without taking the dealer's system down."

Ghanayem also touts Formscape's transition to a document management system. "We can store the actual data separately from the single template image," he says. "That provides a lot of compression and less space needed for storage."

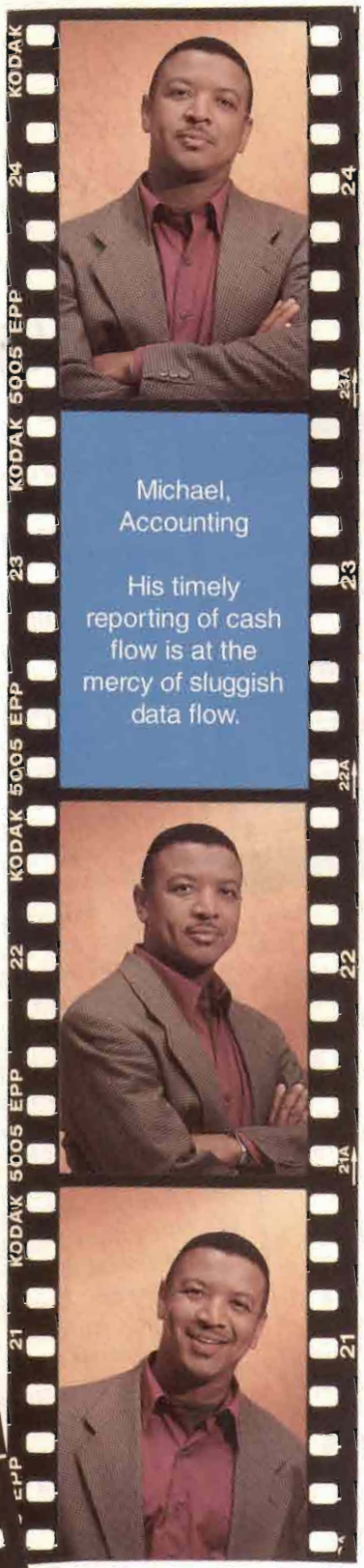
Other v2.0 enhancements include; the ability to perform math functions on data streams; synchronous processing of multiple jobs for increased processing and throughput rate; enhanced project design tools include program "tree" navigation and auto-save functions; importation of images developed in other packages with BMP functionalities; and enhanced fax capabilities.

"We want to be the output management tool applicable to people with legacy applications who want to move away from the printed form and distribute them electronically across the enterprise," says Eddie Riddell, AFP Technology's general manager. "We want to be perceived as an alternative to high-end forms handling applications from companies like IBM and Xerox."

One major difference, according to Riddell, is Formscape's operating platform, Windows NT. "The market is moving towards less expensive, open architecture, low price point NT servers," he says. "We can take data from a TCP/IP mainframe, control it and re-present it using the NT server as a print server."

Riddell adds that although pricing is generally determined on a case-by-case basis, typically a company can get started for $10,000 to $15,000 on a per server license basis.

-Ken Deats,
Associate Editor



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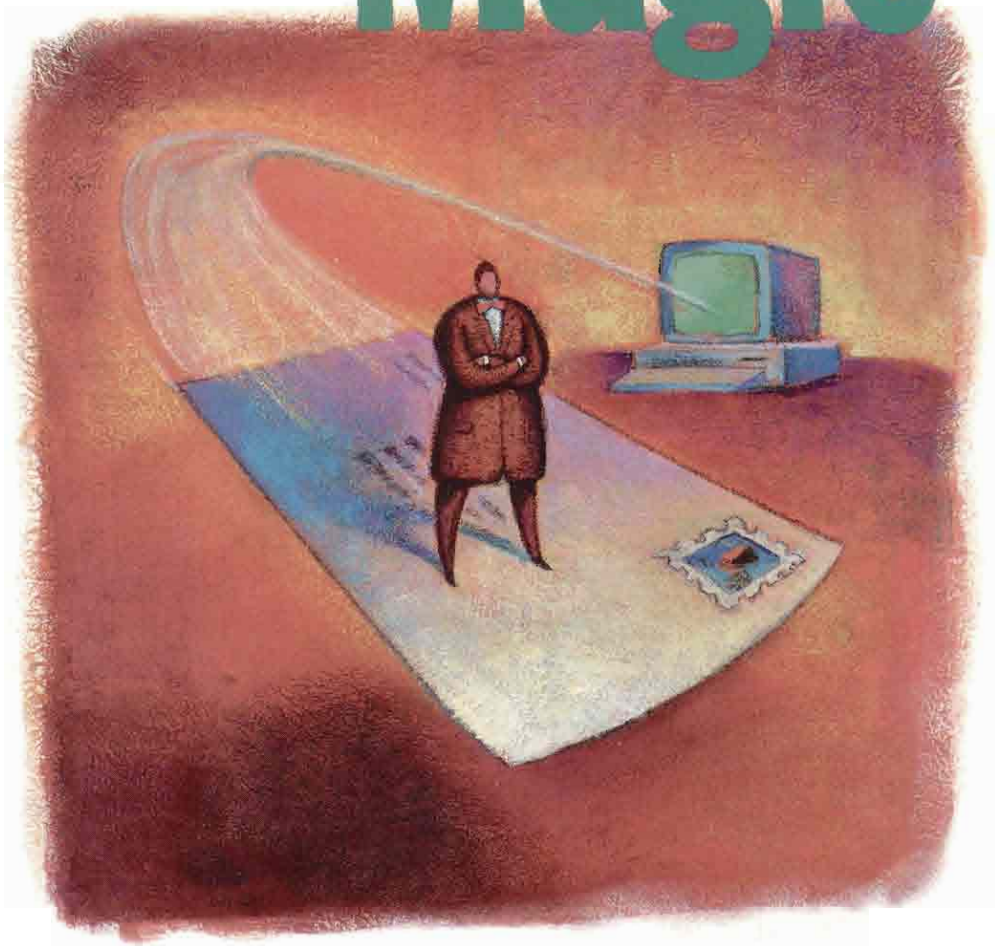


Nigel Upton

The IT manager migrating a large user base from several messaging applications to a single e-mail environment has two options: a backbone topology (Figure 1) or a switching topology (Figure 2). The switching approach connects several islands of communication to a central switch, which directs e-mail traffic between and among the groups. With the backbone topology, all clients on the e-mail system communicate with a common back end, without a switch in the middle. The backbone topology accom-

modates all the front ends in a heterogeneous messaging system. To the user, who could be using one of many different messaging clients, the communication from client to server is transparent. End users will then require no specialized training.

Although switching provides low up-front costs, in the long term it is more expensive to administer and less reliable than a backbone topology because it includes more potential points of failure. The backbone approach simplifies the messaging architecture by eliminating switches and the need to maintain multiple/disparate "islands of communication." The result is a more reliable, easier-to-maintain system.

Before moving to a unified messaging topology, some large companies run as many as 15 different e-mail applications. Among the most popular are Lotus cc:Mail and cc:Mail Mobile, Eudora, Siemen, Netscape Communicator, Microsoft Exchange, and QuickMail. Making the transition requires the use of gateways — or a translator that enables different e-mail applications to communicate with each other.

One of the services a gateway provides is a mechanism for directory synchronization/replication among the various systems, which is important as users on different systems seek to communicate with each other. A backbone topology also provides directory service, but it is less complex than that provided by gateways.

THE RELIABILITY QUESTION

E-mail reliability, as defined by 100 percent delivery of e-mail messages, is perhaps the most important feature of any enterprise-messaging system. Transmission delays and lost messages destroy productivity, damage morale in the part of the organization affected by the problem, and most importantly, lead to the loss of the credibility and acceptance of the IT solution.

System availability includes both scheduled and unscheduled maintenance. Although a global organization may require the system to be available 24x7, that does not mean, however, that *every server* handling e-mail needs 24x7 availability. Local servers only need to be up during the business group's operating hours.

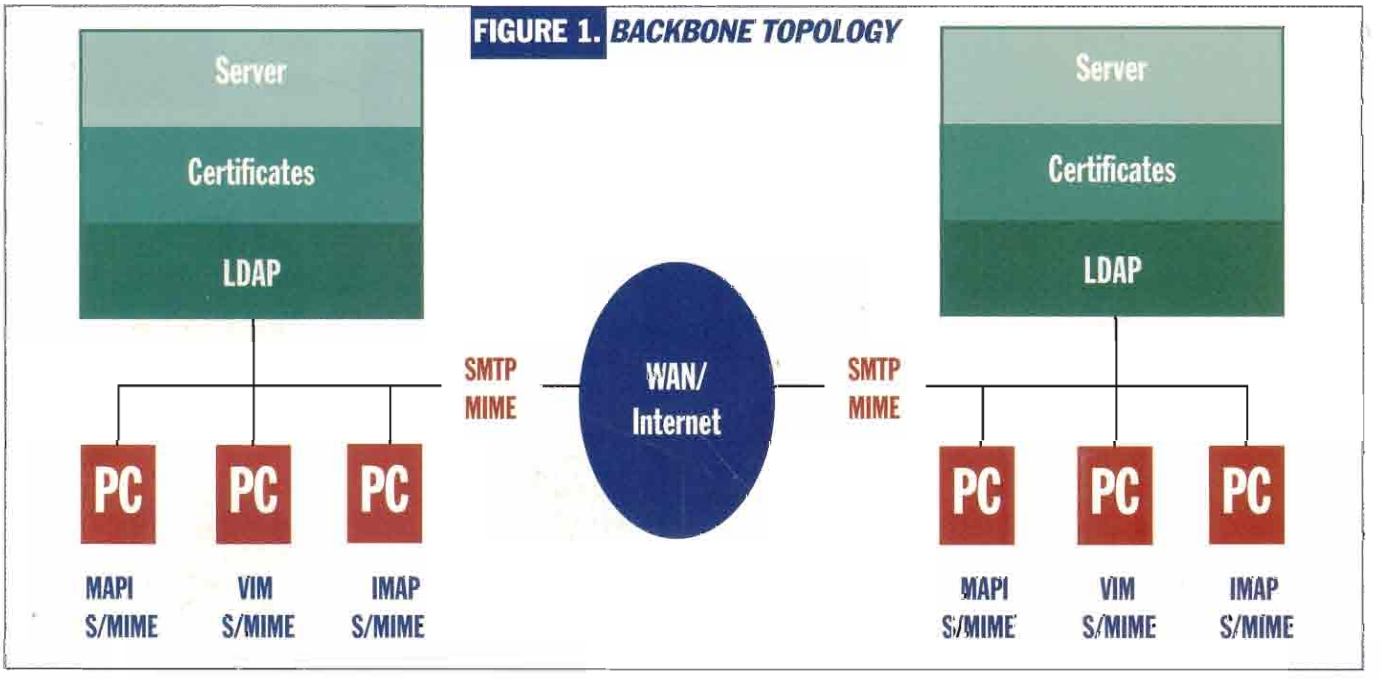
Typically, scheduled maintenance such as hardware or software upgrades can be conducted during non-business hours. If that is not possible, the organization may need a redundant server to which messaging can be swapped during maintenance. Redundant systems also assure continuous messaging service in case the primary server fails and must be removed from service.

AT YOUR SERVICE

Today's server technology makes it possible for a messaging application to swap over from a failed system to a backup system extremely quickly; within a few seconds, in the best case. The backup need not be a server that sits idle until downtime occurs; it can be a component in the regular operating environment. For example, a company with 10,000 e-mail users may run its e-mail system with two servers. Each of the servers is sized for 10,000 e-mail users, but during normal operation each serves only 5,000 users. However, the IT manager can temporarily put all 10,000 users on one server if the other server fails or is scheduled for maintenance.

Scalability also is important — for cost reasons. First, the number of users per server correlates inversely to the cost of managing the system. More users per server means fewer servers, and fewer servers means fewer points of failure. The result is reduced administrative time and attention. If the servers offer remote-management capabilities, they reduce costs further. Remote management

FIGURE 1. *BACKBONE TOPOLOGY*



enables the IT staff to manage a number of geographically dispersed servers from a single point.

Remote-management features should include the ability to: take predetermined corrective action automatically, before an event that could disrupt service levels occurs; monitor system activity; troubleshoot error conditions; remotely configure servers; and modify user information. Moving, adding and changing users become centrally managed activities requiring minimal time and only occasional forays into the field to perform administrative tasks at the desktop.

The ratio of users to IT administrators can range from as few as 400 to one (if IT staff members perform on-site maintenance) to as many as 4,000 to one (with remote management). By selecting servers that can each handle 5,000 or 10,000 e-mail users and that also offer remote management, the IT manager can ensure scalability while minimizing administration costs.

INSECURITY CONCERNS

Incorporating the external world into the messaging system, typically via the Internet, forces the issue of standards. Assuring seamless communication between internal users and external users accessing the system via a Web browser requires the use of encoding standards such as SMTP, MIME and UUEncode/decode.

Although a global organization may require the system to be available 24x7, that does not mean, however, that every server handling e-mail needs 24x7 availability.

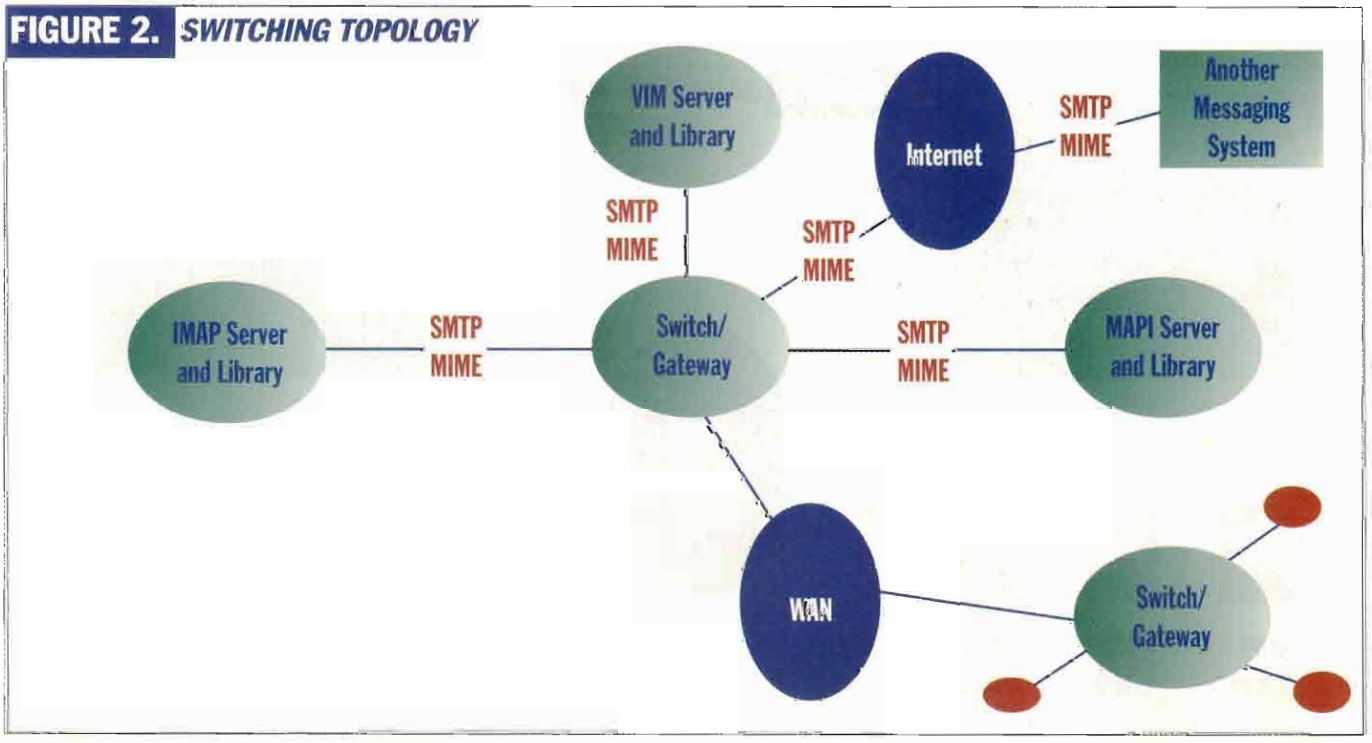
In addition, to keep confidential data secure when allowing outsiders access across the firewall, the e-mail topology must support security standards. The S/MIME standard, for example, adds security to e-mail messages in MIME format, with security services for authentication (using digital signatures) and privacy (using encryption). SSL is another popular security standard. An extension to HTTP, SSL encrypts all information sent and received between the browser and the server. These kinds of security standards can also be used to secure sensitive data, such as payroll information, as it flows between work groups within the organization.

In migrating to a unified e-mail system, a key goal typically is to minimize costs via streamlined system management and reduced downtime. But at the same time, the system must meet user needs and preferences and provide a high level of system reliability. The new e-mail system also needs to be open, yet secure enough to extend beyond the organization to customers and business partners. Finally, it must be able to accommodate emerging technologies such as desktop videoconferencing.

In performing this feat of technological ledgerdemain, IT managers are prying users from old, familiar e-mail systems; encountering incomprehensible technological incompatibilities; and discovering the need for Internet-proof security. Think of it as the "Unified Field Theory of IT."

Nigel Upton is a Software Product Marketing Manager in HP's Electronic Business Software Organization. You can reach him at nigel-upton@hp.com.

FIGURE 2. ***SWITCHING TOPOLOGY***



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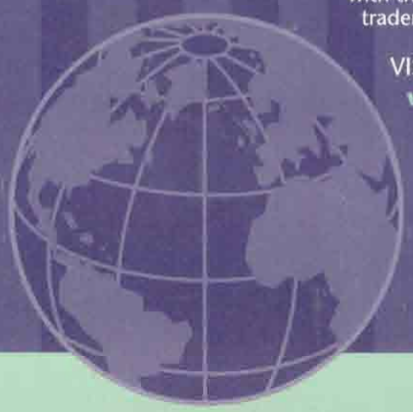

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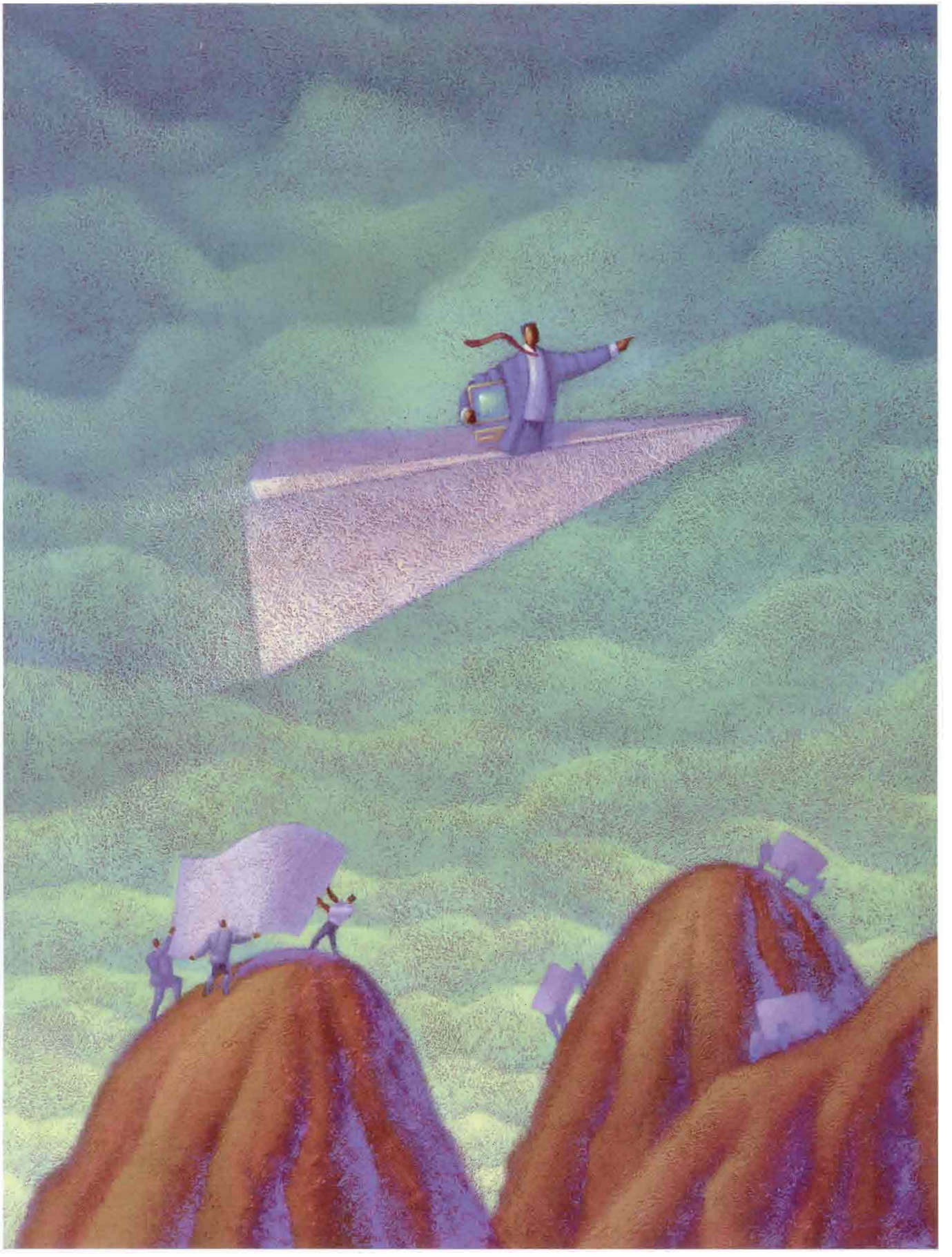

FLY-BY-WIRE

Mark McFadden

For decades a series of e-mail standards have allowed otherwise incompatible systems to exchange messages. But the rush to meet contemporary business requirements has altered the standards landscape. So much so, that a series of e-mail protocols have emerged that brings the Internet's messaging functionality and security to a level comparable with proprietary systems.

The Post Office Protocol (POP) and the Simple Mail Transport Protocol (SMTP), work at the transport and server level to insure that anyone can use the e-mail clients of their choice. SMTP provides the machinery for transporting messages to users on the Internet through intermediate mail servers. POP servers provide a vehicle for delivery: users identify themselves to a POP server and the mail is transferred from the server to the user's desktop.

The advantages of standards-based mail over proprietary messaging systems are clear: POP servers are lower in cost and can support more users per server. A recent study, conducted by Creative Networks, Inc. (Palo Alto, Calif.), found that mail systems built upon standard Internet protocols cost $1,370 per user per year while proprietary client-server systems were $3,355 per user per year.

Despite the difference in cost, most corporate electronic mail infrastructures have been built upon proprietary messaging services. These mail systems went far beyond their poorer Internet cousins by supporting the applications every corporation needs: security, support for mobile users, integration with scheduling, and the ability to support highly formatted documents.

Recently, a series of new protocols and standards have emerged that close the feature gap between standards-based software and proprietary solutions. Four key protocols have filled the message management, directory services, security and document formatting gaps.

POP GOES A NEW APPROACH

A new protocol, Internet Message Access Protocol (IMAP) Version 4, replaces the ancient and ubiquitous POP. IMAP4 is a fundamental redesign of Internet mail delivery services including the client-server messaging functionality that POP was missing. Clients using IMAP4 can reply, file, and man-

A recent study, conducted by Creative Networks, Inc. (Palo Alto, Calif.), found that mail systems built upon standard Internet protocols cost $1,370 per user per year while proprietary client-server systems were $3,355 per user per year.

age messages while they are on the server without ever having to download them. This is especially important for mobile users because IMAP4 supports independent client and server message stores that can be synchronized when the client is re-connected to the network.

IMAP4 provides three distinct methods of operation:

1. ONLINE operation allows users to read, send and file electronic mail while they remain connected to the server. Messages stay on the IMAP server until the user chooses to delete them and are typically flagged with status indicators (e.g., *read* or *forwarded*).

2. OFFLINE operation works nearly the same way as the older POP standard. Messages are transferred to the client, deleted from the server, and then the connection between the client and server is ended. The user works offline to read, reply, file and forward messages. Any operation involving a server requires that the client re-establish a connection.

3. DISCONNECTED operation melds the advantages of online operation with portability. Users work with a temporary copy of folders and messages when working offline. When the client is connected again, the server message store is synchronized with the copies of items changed since the last connection.

IMAP4 is likely to replace POP and become the main message server protocol for the Internet and enterprise intranets. All major messaging vendors are building IMAP4 support into their mail server solutions. Even so, most organizations will find that they need an enterprise directory service to help locate users and their new IMAP4 servers.

LDAP TO THE RESCUE

The directory service of the future is the Lightweight Directory Access Protocol or LDAP. Fortune 500 companies may find themselves managing more than 100 incompatible directories. LDAP addresses this by acting as a unifying front end to an organization's collection of directories.

LDAP was originally designed to be an access protocol for X.500 directories. But X.500 requires the upper layers of the OSI stack, a moribund standard hardly versatile enough to keep up with the pace of change on the Internet. Also, X.500's native access protocol requires enormous computing power to perform searches and organize results.

LDAP, on the other hand, allows an enterprise to maintain a variety of directories throughout its network while preserving a common mechanism to access them. A company can optimize the location of smaller, "workgroup" directories by putting them closer to the users who need them. Keeping the local, "workgroup" copies up-to-date requires a process, called "directory synchronization," that will transfer changes from a global directory. Just as browsers hide the differences in operating systems, LDAP can be used to hide variations in vendors' directory systems.

Initially intended as a front-end for X.500 directories, LDAP was a simplification that allowed any client following the protocol to easily implement access to the directory. LDAP is also a standard under the authority of the Internet Engineering Task Force (IETF) which can modify and extend the protocol as new requirements dictate change. Now, developers have created native directories for LDAP. With the deployment of LDAP directories and LDAP access to proprietary directories, widespread adoption of the protocol seems assured.

MAIL INSECURITY

IMAP4 provides more value at the mail server and LDAP makes it possible to find things over the Internet, yet electronic mail remains frighteningly insecure. All electronic mail messages are sent in plain text: anyone who has access to your message can read it. There's also no built-in safeguard preventing someone from changing the contents of messages as they pass from mail server to mail server. *In fact, it is possible to forge the identity of the sender of electronic mail.*

Just as IMAP4 has closed the feature gap between proprietary mail systems and standards-based ones, new protocols have emerged to make electronic mail more secure. Public key cryptography technology is the foundation on which mail privacy, integrity and authentication are being

built. In a public key system every user has a pair of keys: a secret one only known to themselves and a public one which is given to anyone who wants to correspond with them. Any message encoded by one of the keys requires the other key to make it readable again.

For electronic mail, the system works like this: using the recipient's public key, a sender encrypts a message and sends the result to the destination. Because only the recipient's private key can decode the message, no one else can ever read it. This scheme also insures that the contents are not changed during transmission.

The leading protocol for electronic mail security, S/MIME, was originally developed by RSA Data Security and uses RSA's proprietary public key cryptography algorithms. Microsoft and Netscape Communications implemented S/MIME Version 2 in the latest versions of their mail clients, making the technology available to millions of potential users.

The third version of the protocol is an advance because it allows administrators to choose from a variety of cryptography algorithms. More vendors may support S/MIME if the IETF approves the protocol, especially since an approved version will not rely on proprietary technology.

GETTING THE FORMAT RIGHT

While S/MIME has emerged as a standard for insuring the security of mail, no standard has yet emerged that insures that messages will arrive formatted the way they were sent. This is changing with MHTML, a standard for including HTML-style formatting instructions in an e-mail message. Many mail clients allow a user to format font sizes, colors and faces in a message, but few know how to read a message formatted by another company's mail package.

MHTML is set to become the industry standard for including HTML formatting in an electronic mail message. Because it will be some time before all of us have software that supports richly formatted messages, mail software will also have the ability to turn off the added formatting for mail that is sent to users who do not have MHTML compliant software.

So, with new e-mail protocols for delivery, security and formatting, enterprise IT managers can take advantage of the cost savings of standard, interoperable software without sacrificing the advanced capabilities of proprietary solutions.

Mark McFadden is an Internet consultant for 21st Century Texts. You can reach him at McFadden@21st-century-texts.com.

GLOBAL DIRECTORIES OF THE FUTURE

HP and LDAP Make The Standard Connections

LDAP's flexibility has won the support of many vendors. For example, Novell's Directory Services (NDS) is bundled with every copy of HP-UX. The key benefit is that NDS, still the most widely used network directory service, is LDAP-compliant. This means that HP-UX users are able to view large, multi-server networks as a single resource.

HP isn't alone in promoting LDAP. Microsoft has implemented LDAP-enabled clients for its Internet Mail. Netscape also chose LDAP to integrate directories from multiple vendors. And IBM has announced a comprehensive plan to incorporate LDAP in every one of its hundreds of directory systems. More than forty other vendors are moving to add LDAP compliance to their products.

But HP is moving a step further. OpenMail has been extended to provide access to an organization's directory through a Web browser. Internet Collaboration Services allow any OpenMail user with a Web browser to examine and search any network accessible, LDAP-compliant directory. The OpenMail infrastructure also allows network administrators to synchronize multiple directories for better local performance and overall network fault tolerance.

Directories come in many guises: from the simple file lists under HP-UX to OpenMail's global address list. HP is using LDAP as the core technology for its next generation of directory services. LDAP will allow any compliant client, from any vendor, to access and manage the many directories that are at the heart of HP-UX and multiplatform networks. That will come as a relief to many enterprises now using several often incompatible directories for storing day-to-day activities: names and addresses of users, addresses of resources like shared disks and names and locations of applications.

Okay, but what about the typical network that supports a combination of HP-UX, Windows NT or Netware servers. Long before Microsoft finally delivers an integrated directory service, Novell's LDAP-enabled directory service Windows NT will be available. This means HP network administrators will be able to deliver a single, consistent view of their network services no matter which platform they are using.

— M.M.

The Unexamined Year 2000 Is Not Worth .... Supporting

You Decide

The requirement for management information in the Year 2000 will not decrease; if anything it will increase. However, many IT managers seem to have ignored management information as part of the Year 2000 issue. This is naturally understandable - clearly being able to run the business at an operational level is critical, but by January 2, 2000 management's attention will be focused on running the business better.

When asked whether senior management would accept reductions in the amount of available management information, 63 percent of IT managers believed that management would not tolerate, or be reluctant to accept any reduction in service. Only 18 percent believed that senior management would sacrifice all management information in order to keep the business running.

Addressing the management information requirement accounts for up to 33 percent of the Year 2000 problem on average, although some organizations rated it up to 80 percent and even as high as 100 percent in a few cases. Though no specific evidence exists, this would suggest that some organizations have completed work on their operational systems as their first priority, and are now increasingly turning their attention to informational systems.

Overall, these figures do illustrate just how badly underestimated this aspect of the Year 2000 problem is. This research confirms a study published by market research firm Spikes Cavell, which indicated that Management Information Systems were the second most important kind of system after accounting systems to be affected by the Year 2000.

MINING YOUR OWN BUSINESS

Compared with only 2 percent of organizations that have not started any Year 2000 assessment, 48 percent of organizations have not carried out any assessment of the impact on decision support systems. Data mining the survey data shows a clear correlation between this assessment and the proportion of the overall 1998 budget to be spent on Year 2000.

If a decision support assessment has been carried out, then organizations plan to spend on average 24 percent more on Year 2000 than those who have not. Clearly, for those companies who have not carried out an assessment, this is of considerable concern, and reinforces the fact that this aspect of Year 2000 is still underestimated, and in many cases has not even been discussed. It is alarming that 47 percent of IT managers consider that the decision support element of the Year 2000 issue is underestimated, not discussed, isn't understood or hadn't even occurred to them.

Of those organizations that have carried out an assessment, 39 percent will rely on suppliers to address the problem by purchasing packaged decision support applications (17 percent), or by relying on upgrades (22 percent). Some 16

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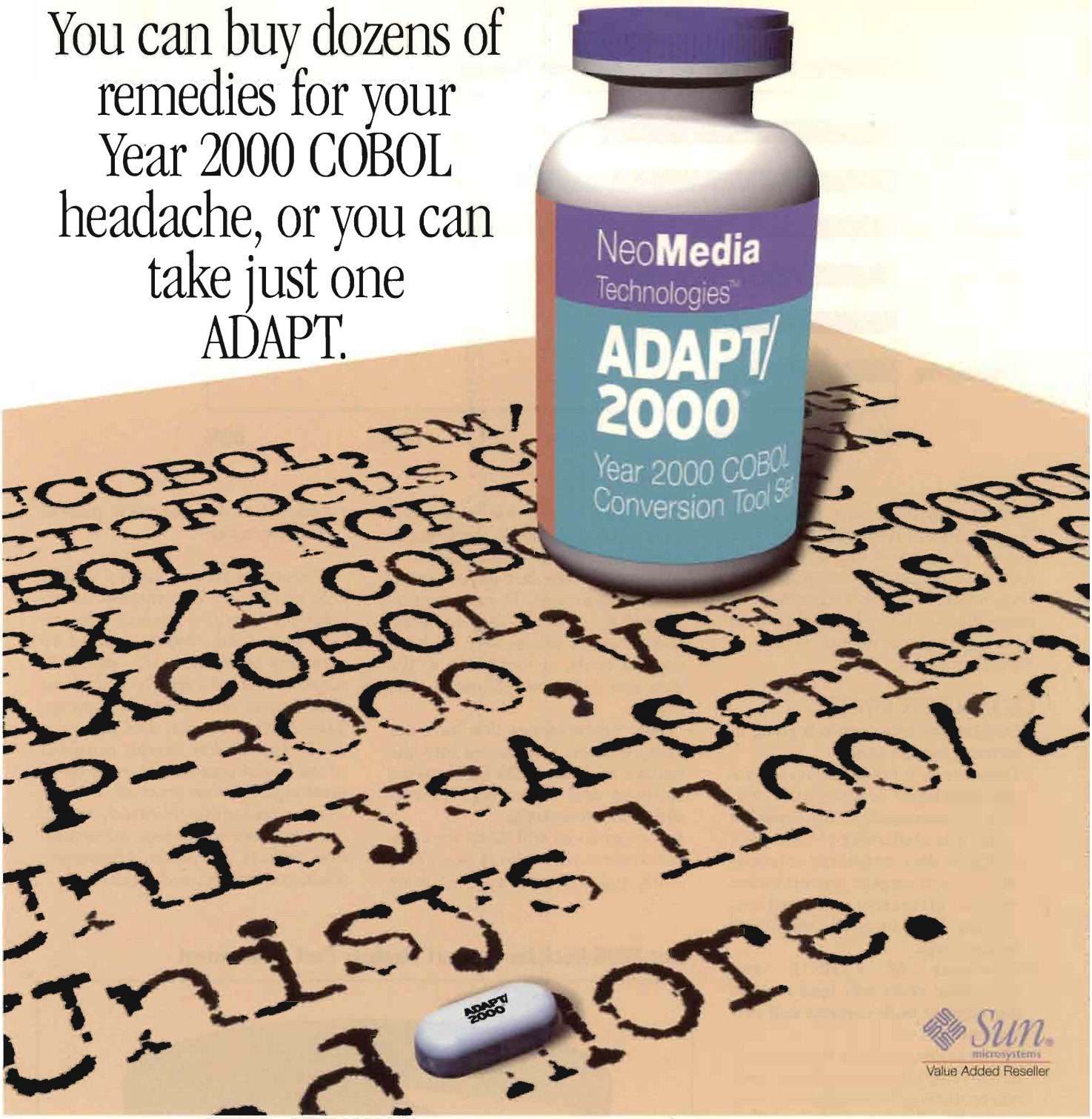

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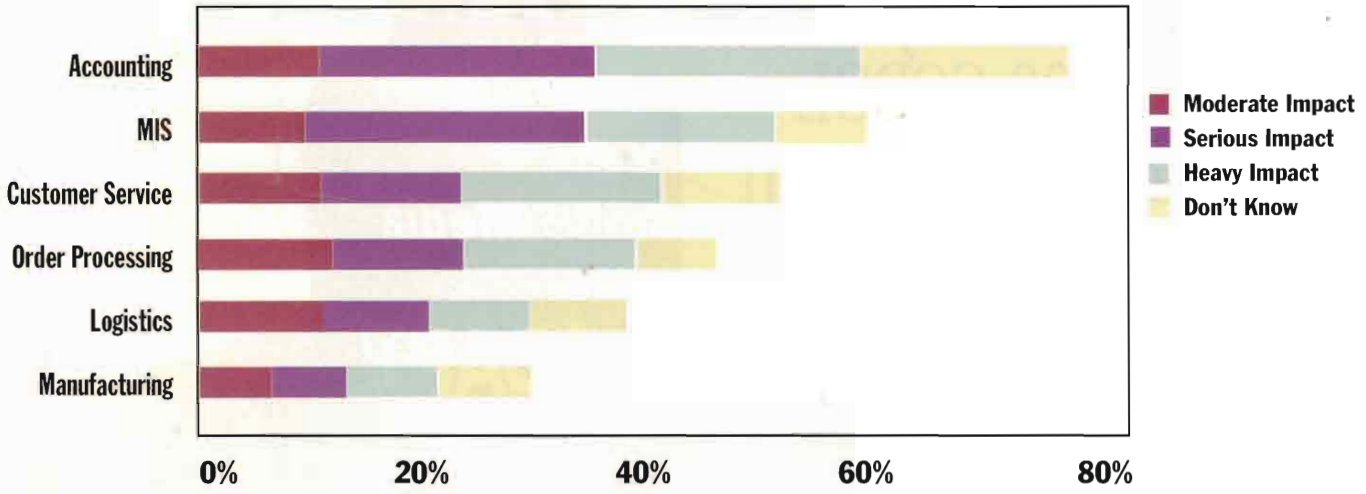
Impact of Year 2000 on Key Business Processes



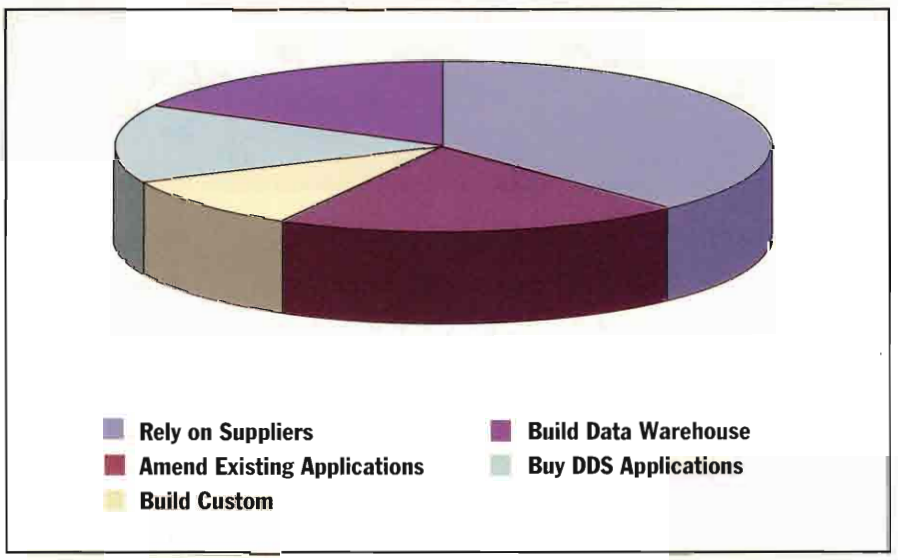
percent plan to build a data warehouse as part of the solution reinforcing research carried out by the Meta Group, a leading industry analyst firm, which found that 12 percent of companies are accelerating their data warehousing investments as part of the Y2K solution.

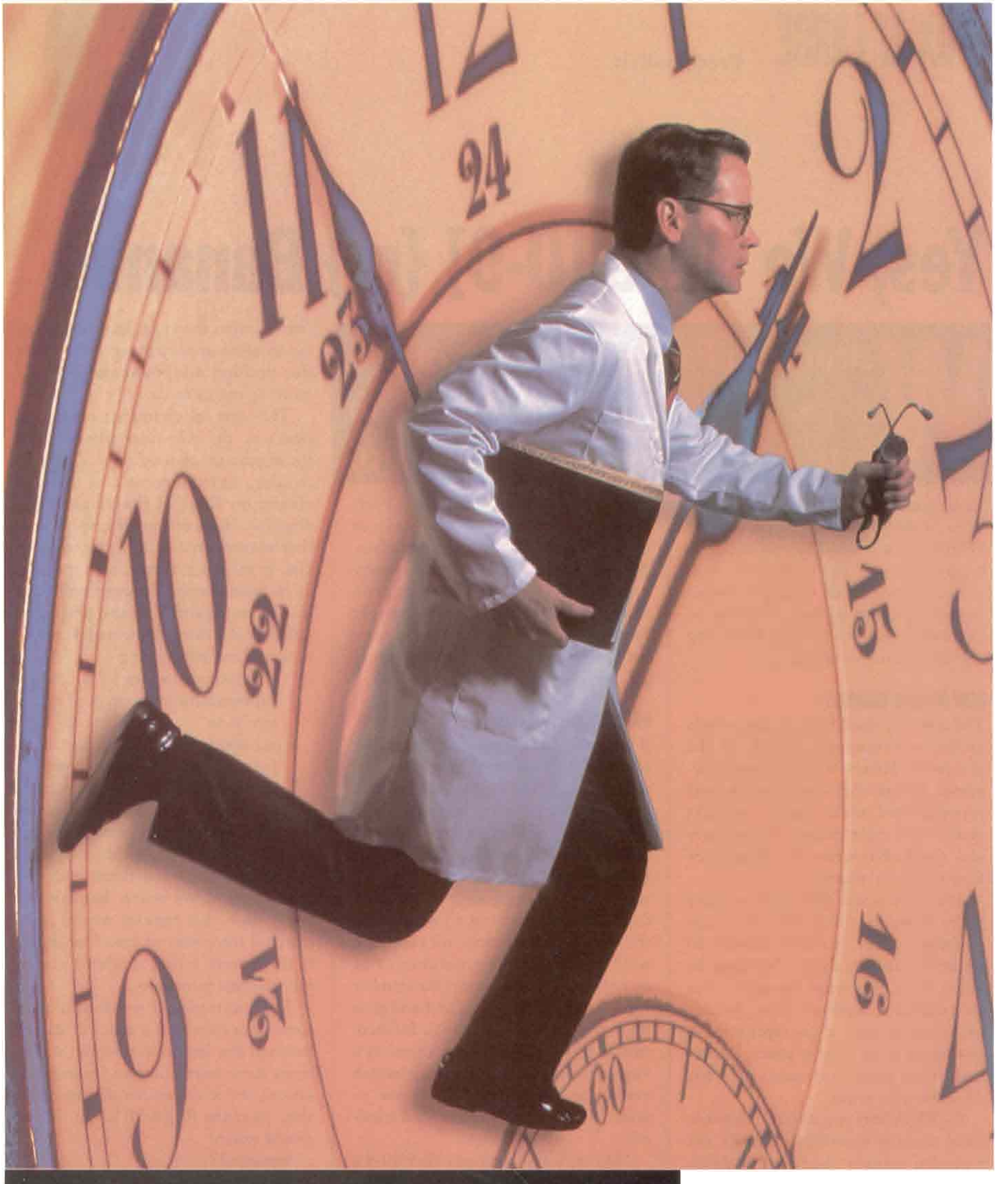
GET DOWN ON IT

- **Demand for information is going to increase, not decrease.**
  Therefore, it is logical to consider a data warehouse as a potential solution to management information needs. The availability of fixed price packaged data warehouse solutions and decision support systems makes this an attractive proposition, enabling IT to focus on operational requirements.
- **Shortages of COBOL and Assembler skills will lead to staff shortages of both contract and permanent staff.**
  IT managers will be forced into deploying these resources only where alternative solutions cannot be found. Testing and amending reports written in procedural code does not make sense when the reports could easily be recreated in a fraction of the time by utilizing modern report writing tools, for which skills are readily available.
- **Simply replacing non-compliant operational systems with compliant packaged applications will solve the operational requirements but will not address decision support requirements.**
  Experience shows that invariably, packaged application reporting is weak and requires upgrading, even though it is often not obvious prior to implementation. This can be preempted by utilizing 'plug-and-play' templates for third-party decision support tools, or extraction of the data into a data warehouse or data mart.
- **Those organizations that have not completed an assessment into the impact of Year 2000 on decision support and reporting systems should do so urgently.**
  Failure to do so will affect the competitiveness of business post Year 2000, and lead potentially to more costly solutions being put in place at the last minute.

Excerpted from a survey of 222 U.S. and 135 U.K. companies undertaken on behalf of Business Objects (San Jose, Calif.) which included IT managers from major U.S. and U.K. corporations who were asked about their current technology investments, Year 2000 strategies, and plans for 1998. The random sample consisted of the largest commercial and government organizations from all industry sectors including financial, retail, insurance, manufacturing, transportation, utilities, petroleum, pharmaceuticals, government, and education.

Year 2000 Decision Support Strategy Post Assessment





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Fred Mallett

Yes, We Have [0-9] {n,} Bananas

Welcome to Part 3 on the use of regexps. If you are just joining in here, hold on. You need to catch up.

I introduced regexps or regular expressions in my January 1998 column. In February, I covered kinds of matches, usage of regexps, and the basic metacharacters, such as single character matches, and position matches (or anchors). This month I'm discussing regexp quantity modifiers.

HOW MUCH IS ENOUGH?

The quantity modifiers, or quantifiers as they are commonly called, are the real power houses of regexp metacharacters. At least they can be, when used properly, and when used in the right places. The right places, because you see, these characters by themselves have no special meaning.

It's only when they appear after other characters that they have any meaning, as they provide a quantity to whatever precedes them. The things to know then, are what quantity does each character represent, what preceding entity do they allow repetition of, and which tools support which quantifiers. That pretty well sums up what this column is about.

POSIX defines two classes of regexps: Basic (usually shortened to BRE) and Extended (usually shortened to ERE). The BRE definition covers two metacharacter quantifiers:

- Interval as symbolized by **{n,m}**
- Zero or more as symbolized by *

Let's start with the Interval quantifier. Suppose you had a file with a rather haphazard format, but whenever an item shows up in the file, it's followed by an integer of how many of those items you have in a location. Your mission is to add up how many of this particular item is in stock in all locations. The task is pretty straight forward once you can grab that number following the item. To keep it simple, we'll just count bananas.

ONE BANANA, TWO BANANA

If we wrote the expression bananas we could find all occurrences of that text easily enough, but we need the number that follows. Let's try **bananas [0-9]**. That would work when there were less than 10; what if there were 30? Well, if we were just using **grep**, it would match the first digit, so it would print the entire line, so that is all we need. In the more powerful tools, we can work with the exact text matched. For example, we would extract the number from the matched string, and add it to the running total for bananas. In these tools, like **perl, awk, python**, it's important to *make the regexp match exactly*, and *entirely what we want*, so more work on the expression is needed.

Ok, let's try **bananas [0-9][0-9]**. Fine, we got the 30, but now it doesn't match the cases when there are less than 10, and would only match the first two digits if we had 10,900 bananas. The banana exercise demonstrates the need for the quantifiers. In many cases, you can use many quantifiers to mean the same thing. But using the interval quantifier we could solve this problem with **bananas [0-9]{1,}**, meaning one or more.

The interval quantifier takes two numbers: the minimum allowed, and the maximum allowed. If a number is missing, but the comma is there, it means no limit in that magnitude direction. If the first number is missing, that means zero of the preceding is OK. If the second number is missing, as in the example, it means unlimited maximum quantity of the preceding (digits in this case). Some useful combinations using interval are:

{n} which means exactly n
{,n} which means up to n, zero is ok
{n,} which means n or more
{n,m} which means n is the minimum number, m is the maximum

You can also specify an exact quantity with the interval metacharacter (actually, interval is a metacharacter sequence, because it takes multiple characters). If we wrote: **bananas [0-9]{4}** then this regexp would only match if there were at least four digits. If there were more, it would match only the first four digits.

For example, if we found that sometimes there was a space character between the item and number, sometimes there were none, and sometimes several, we could modify the regexp to this: **bananas {0,}[0-9]{1,}** so that it would match:

bananas27,
bananas 27,
and **bananas** 27.

Reading that expression in English would come out as:

bananas followed by optional space characters, and one or more digits.

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umn that many implementations of regexps allow character class abbreviations, so we could have written the banana example as:

bananas\s{0,}\d{1,}.

This would have a slightly different meaning, because the \s character class abbreviation will match any white space character instead of just the literal space as in the previous examples. The \d is the class abbreviation for digits.

The * metacharacter always means the same thing: Zero or more of the preceding. Note that it is the same as writing {0,}. So, if that is true, why ever use *? Mostly because it has been around longer, and everyone is used to it. Also, many tools do not support (even though POSIX says they should) the interval metacharacter. Most versions of **grep** and **vi** do not support interval. Note that **egrep**, **awk**, **sed**, and **perl** *do support it.*

The pitfall to using both * and {0,n} is that they have a minimum match of zero characters. This means that the expression [0-9]* will always match, because you are saying that you don't care if there are any digits or not. This makes sense in an expression looking for a floating point number, where it might not have any characters after the decimal place, but if used in our banana example: **bananas** [0-9]*, it would match even when there were no digits.

ERE DEFINITION

The ERE definition covers two more metacharacter quantifiers:

- zero or one as symbolized by ?
- one or more as symbolized by +

Note that if we wanted one or more digits, we could write it in any of these ways:

[0-9]+
[0-9]{1,}
[0-9][0-9]*

Which one you use depends upon which characters are available in the tool you are using, and personal preference. The ? is really handy when saying you don't care if something is there or not. For example, if some clerk occasionally wrote **qty 4**, but sometimes wrote **qty: 4**, you could match both of these with **qty:?** [0-9]+. For readability, people often use a character class when quantifying a single character: **qty[:]?** [0-9]+. The + and ? characters are found in most programming languages that accept regexps, and **egrep**, but not **vi**, **sed** or **grep**.

HOW MUCH OF WHAT?

In the expression **qty:** [0-9]{2,5} we are saying to match qty, colon, space, then 2,3,4 or 5 digits. Note that the qantifier metacharacter acted on the previous item in the regexp. In fact, if we wrote **test**{2} it would match only the string testt; (remember that testttt contains testt). Note that the quantifier added quantity only to the single character before it (the t).

We can use parentheses as grouping characters to make the quantifiers act on more of the preceding expression. If we wrote **(test)**{2} it would match testtest. For a better example, let's revisit the floating point number mentioned above. If we tried to use [0-9]+[.][0-9]* it would require a period (decimal place). That expression reads **one or more digits, a period, and zero or more digits**, so it would not match **10**, but it would match **10.** and **10.2**. If we wanted to match both **10** and **10.2**, we can use grouping. Here is a better expression: [0-9]+([.][0-9]+)?. Note we used the grouping to say: **one or more digits, that might be followed by a period and more digits.**

If we wanted to also be able to match **10.**, then this would work: [0-9]+([.][0-9]*)?, because now we say that there might be (zero or more) digits after the optional period (decimal place). That expression would match: **10**, **10.** and **10.2**.

Next month, we'll take a look at alternation, and the power available when you start combining all these characters.

If you're counting on Fred, let him know at frederm@fame.com. *In the meantime, if your counting on all of Fred's 1998 regexp columns, string them together at our Web site at* www.hppro.com.

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Ryan Maley

SNMP on Windows NT

If you are trying to integrate NT into UNIX environments or just interested in managing your Windows NT network, you'll be happy that there's Simple Network Management Protocol (SNMP) support in NT and for BackOffice applications.

SNMP has three main components: management information bases, agents and managers. The *management information base* (MIB) is a data file residing on an SNMP host containing the description of all managed objects which will be monitored on the SNMP managed network. Managed objects are individual software and hardware resources that can be monitored and managed. Examples of objects include disk partitions and software programs, such as Microsoft Exchange. Each host managed by SNMP must have a MIB that describes the object on the host, which may be monitored and managed.

An *agent* is an SNMP program installed on host computers to be managed on the network. Windows NT provides an SNMP service that includes an SNMP agent. The agent provides an interface to the MIB and the individual managed objects on the host. SNMP management computers query agents on the network. The agent receives the request and processes the queries with the information in the MIB. The agent then returns the requested information to the management program that initiated the request.

Managers are programs that perform SNMP management functions. Managers do the work of querying agents, waiting for replies from agents, then saving the information to a file or displaying the information to system administrators. Windows NT does not have a built-in SNMP manager. One is provided in the Windows NT Server Resource Kit available from Microsoft Press (mspress.microsoft.com).

SO HOW DOES IT WORK?

For instance, if a systems administrator requires information about the status of some managed object on a remote system, he uses an SNMP manager to request the information about an object. He does this with the *object identifier* (OID). The OID is a unique label in the MIB, which refers to each defined object. The agent receiving the information then searches the MIB with the OID and returns the requested information to the manager.

Often, the trick is determining the OIDs for a particular object. OIDs follow a hierarchical naming scheme governed by the Internet Engineering Task Force (IETF). The IETF grants portions of the name space to individual vendors so the vendors can define their own OIDs. The portion of the OID hierarchy granted to Microsoft begins at 1.3.6.1.4.1.311. The NT resource kit includes SNMPUtil, a program to browse MIBs. It may help you find the OID you need.

AGENTS IN THE ARCHITECTURE

Installing the SNMP agent is relatively simple. The agent is included with the SNMP service provided in the base operating system. Installation is done from the Network icon in the Control Panel. On the Services tab, select Add, then select SNMP service. You can then configure the service.

Configuration is the key to SNMP working correctly. The agent uses a *community name* which is basically a shared password passed between managers and agents to determine if the message is valid. All SNMP manager requests contain a community name. If the agent receives a community name that it recognizes, it processes the request. If the community name is not recognized, the agent rejects the message and may even send a trap message to an SNMP manager.

The trap message alerts the manager

"To The BatMail, Robin"

BatMail is a command line mail program for NT that works with MIME attachments. Many people are familiar with Blat (see my November 1997 column), another command line mail program. However, Blat does not handle MIME attachments.

With BatMail, a script can send binary files via e-mail with no special encoding required. Nearly every e-mail software package now handles MIME attachments, so the benefits become apparent. For instance, you can create a set of nightly statistics for your salesman located throughout the country. Write a script which compresses the statistics files with Pkzip and emails the zip file as an attachment. The salesmen can retrieve their files and decompress them at their machines, saving connection times and bandwidth.

BatMail should be part of your scripting toolbox. It's available from On3 at www.on3.com/tools/nt/mailexe/.

Microsoft Certification News

For those with a focus on the Internet, Microsoft has introduced the MCSE+Internet, a course designed for Microsoft Certified Systems Engineer's to show they are qualified to handle Internet related technologies. There are nine required exams for the MCSE+Internet certification, three more than for a regular MCSE.

The seven core requirements test knowledge in: Networking Essentials; Windows NT Server 4.0; Windows NT Server 4.0 in the Enterprise; Internetworking with TCP/IP on Windows NT 4.0; Microsoft Windows 95 *or* Windows NT Workstation 4.0; Internet Information Server 3.0 *or* Internet Information Server 4.0; Implementing and Supporting Microsoft Internet Explorer 4.0 by Using the Internet Explorer Administration Kit.

Additionally, two elective exams are required. You can pick from the following topics: System Administration for SQL Server 6.5; Database Design on SQL Server 6.5; Exchange Server 5 *or* Exchange Server 5.5; Proxy Server 1.0 *or* Proxy Server 2.0.

Any exams taken towards your MCSE will also apply to the MCSE+Internet. Exams are $100 each and are administered by Sylvan Prometric (www.sylvanprometric.com).

When you complete your MCSE+Internet, you'll receive a certificate and the rights to use the MCSE+Internet logo. Additionally, you get a one year subscription to the Microsoft Beta Evaluation program and Technet, which contain CDs with technical information and software updates. More information is at the Microsoft certification web site, www.microsoft.com/train_cert.

We'll be discussing Microsoft certification topics on the Windows NT forum at the HP Professional Web site at www.hppro.com during the week of April 27.

— R.M.

that authentication has failed. By default, the community name installed in NT is "public." Additional names can be defined when configuring the SNMP service. For the configuration, you'll also need a contact person and location for the administrator of the local computer and an IP address, computer name or IPX address of the SNMP management console which will receive trap messages. This is only required if trap messages are to be generated. Not all management consoles need to receive all trap messages.

Cautionary note: There is a problem with the SNMP service and Service Pack 3. The SNMP service may not start correctly after installation on a computer where Service Pack 3 has been installed. If you experience problems starting the SNMP service, reinstall Service Pack 3. This should solve most problems.

Once the agent is installed, you can monitor your operating system. Additional MIBs are provided with BackOffice applications such as Exchange and SQL server to allow you to monitor those objects as well. You can use a MIB from any Performance Monitor counter with two utilities provided in the Resource Kit. The Performance Monitor MIB Builder (perf2mib) creates a description file from the Performance Monitor object you specify and the MIB Compiler (mibcc) converts these files into a format usable by the SNMP service.

There is no SNMP manager software in the base Windows NT operating system, but the Resource Kit provides the SNMP Monitor (snmpmon). It's a graphical program that performs SNMP queries based on a script and records the data to a file. Simple program control is available in the scripting. It's fairly primitive. For instance, the SNMP Monitor only supports the "public" community name. Third party tools will provide more control and better ease of use.

If you are a UNIX systems manager, you're probably already using SNMP to help manage your systems. If not, you should research this valuable tool to help ease your administrative burden. The industry standard MIB is known as MIB-II and is defined by Request for Comment (RFC) 1213. RFC1213 is available at ds.internic.net/rfc/rfc1213.txt. Search for RFCs which define other MIBS at www.internic.net/ds/dspg1intdoc.html.

— Ryan Maley is a Microsoft Certified Systems Engineer and the information systems manager for a midwest based manufacturer. He can be reached at ryan@maley.org *or the new HP Pro forums at* www.hppro.com.

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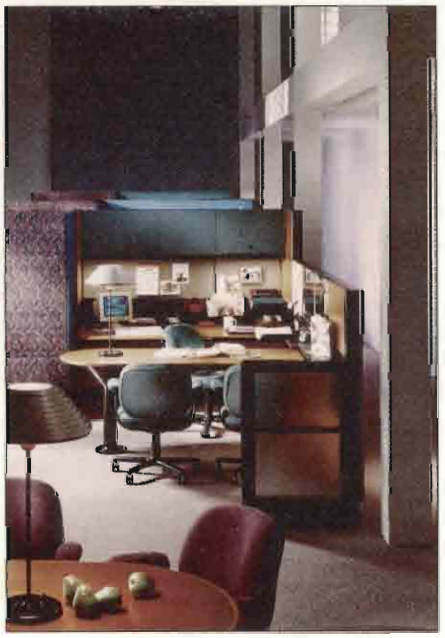
Kelly Stone

Herman Miller, Inc. (Zeeland, Mich.) is the second largest office systems manufacturer in the United States. The company processes more than 3,000 orders for office furniture and accessories each week.

Because Herman Miller produces all office needs — from panel and office wall systems to desks, chairs and paper clip holders — its strength is in providing customers with complete office systems. As a result, 80 percent of the company's business is project-based.



Herman Miller is the second largest office systems manufacturer in the U.S.

Fulfilling these orders requires coordination of the company's diverse operating units. For example, walls and partitions are produced in the systems plant; desks and hanging components in the work surfaces plant; chairs in the seating plant; and metal file cabinets in the storage plant. Rarely does one plant produce a complete customer order.

In 1994, Herman Miller assembled a search team to examine the company's business processes and purchase a system that would streamline those processes and achieve the following goals: compress cycle times, increase direct shipping, maintain customer identity through production, reduce inventory, cut costs and move from a weekly to a daily production schedule.

TWO LEFT FEET

Traditionally, customer orders arrived at a central order entry area and accumulated in the mainframe. They were then grouped by operating unit, batched together, and sent to the individual plants. This system was time consuming and added no value to the customer.

Because orders were being stripped of customer identity, the plants were unable to distinguish between them and there was limited ability to tailor production based on importance and/or promised ship date. The company wanted to eliminate the batching process.

After production, each plant sent completed items to distribution centers for shipment. This system proved inefficient. Sometimes, late production of a small component of a larger order could cause hundreds of thousands of dollars worth of inventory to sit in the distribution centers until the entire order was completed. The costs in terms of wasted time, storage, misused manufacturing resources and customer satisfaction were enormous.

As a result, Herman Miller's search team began looking for a solution that could compress cycle times and reduce inventory and costs by maintaining customer identity throughout the production process and synchronize activity at all five plants so that components of an order would be produced and shipped in the customers' preferred sequence.

DANCING TO A NEW RHYTHM

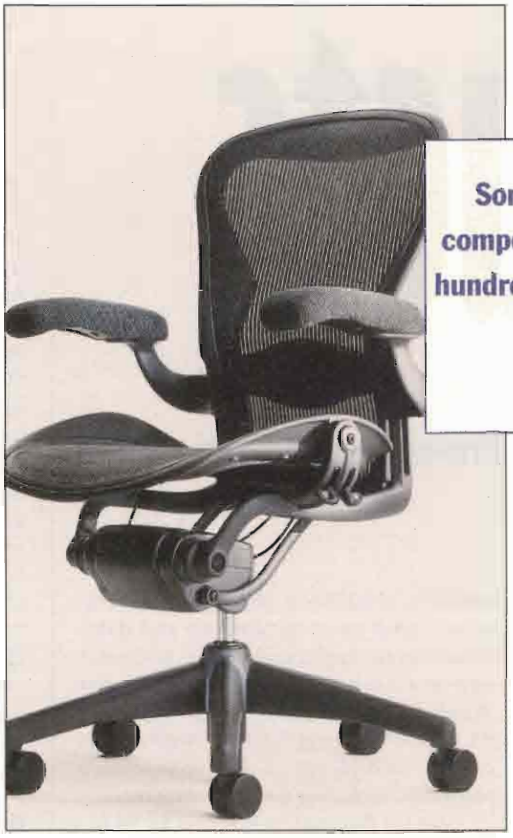
After consulting with analysts and a variety of vendors, Herman Miller chose the RHYTHM family of products from i2 Technologies, Inc.

IN sites

(Irving, Tex.)

i2's implementation methodology is based on a concept called Business Releases. In Herman Miller's case, these consisted of 30 to 60 day periods during which time a specific business result had to be accomplished. For example, Business Release 1 might be called "Reduce Work-In-Progress (WIP) Inventory." In that case, the implementation team would have a fixed period of time in which to re-engineer business processes and deploy software features which would replace the old weekly protocols with daily scheduling, thereby decreasing WIP inventory.

The software was implemented without any base code modifications and the initial installation was up and running in three months. RHYTHM is able to extract information from Herman Miller's proprietary order entry, accounting and inventory mainframe modules and perform up-to-the-minute planning and scheduling functions.



The company processes more than 3,000 orders for office furniture and accessories each week.

BACK IN STEP

Herman Miller's RHYTHM implementation has helped the company to meet or exceed industry delivery standards. Ten years ago, the office systems industry worked against an 18 week lead time. Today, customers expect product within four weeks.

Since implementing RHYTHM, and making several policy and process changes, their average lead time is four weeks — with some product lines shipping in as little as one week — and 95 percent on time. Prior to installation, lead times averaged five to six weeks, with 80 percent shipped on time.

Current and future implementation phases of RHYTHM also help Herman Miller to reduce its reliance on costly distribution centers that add little value. Because the entire process can now be planned simultaneously, the components of an order may be shipped to the customer directly from the plant, in the order that they are needed. For example, a customer will receive panel systems and partitions, then furniture, then accessories, according to their specifications. The Company plans to be direct shipping up to 70 percent of orders within two years.

Sometimes, late production of a small component of a larger order could cause hundreds of thousands of dollars worth of inventory to sit in the distribution centers.

Switching to RHYTHM has also driven change in other areas of the company. Previously, Herman Miller accepted order cancellations up until the ship date — a policy which often left them with unclaimed product and wasted manufacturing resources. Because the process is much quicker, cancellations must now be received before production. Changing this policy has resulted in multi-million dollar savings.

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APPLICATIONS DEVELOPMENT

Actuate Reporting System Now Available With Vantive Enterprise 7

The Actuate Software Corp. has made the Actuate Reporting System available for Vantive Enterprise 7. The Vantive Corporation will resell the Actuate Reporting System to provide Vantive users with enterprise reporting capabilities, such as interactive and dynamic reports that disseminate customer information corporate-wide. Companies using Vantive's Customer Asset Management software will be provided with a strategic, unified view of detailed customer and prospect information courtesy of the Actuate Reporting System. Actuate allows Vantive users to compile information from multiple applications into a single report that can be distributed across the enterprise or to external partners over the Internet. Vantive users will receive interactive reports on-line, with search capabilities within reports and hyperlinks to related information.

➤Contact the Vantive Corporation, Santa Clara, CA at (800)VANTIVE

➤Contact Actuate Software Corp., San Mateo, CA at (800)914-2259

Passport Corporation Releases Passport IntRprise

Passport Corporation has released Passport IntRprise, a development environment for enterprise-grade client/server application development. With Passport IntRprise, developers can create applications that can be deployed on UNIX, Windows and Java by relinking the application to the target environment. Passport IntRprise combines a heterogenous architecture with open middleware and database access, application fault tolerance and scalability. It is available for Windows 3.1, Windows NT, Windows 95, Open/VMS and UNIX. Applications can also be deployed on all Java-supported platforms, including network computers.

Cost for Passport IntRprise is $8,995.

➤Contact Passport Corporation, Paramus, NJ at (800)926-OPEN

DATA WAREHOUSING

ISL Decision Systems Launches Clementine Version 4.0

ISL Decision Systems, Inc. launched Clementine version 4.0, a data mining system. Version 4.0 offers more user options than the previous versions of Clementine. Users can still treat any table or graph as a separate object and can save reload or adjust that object as they chose. These objects can be used to filter selected data, allowing different data mining techniques to be combined easily. Two new Association Rule algorithms were added to Clementine 4.0, including Ross Quinlan's C5.0 Rule Induction algorithm, supplementing the Neural Network, Regression and clustering tools included with Clementine 3.0.

➤Contact ISL Decision Systems, Inc., King of Prussia at (610)768-7725

E-COMMERCE

nCipher And iCat Deliver E-Commerce Solution To Internet Shoppers

nCipher, Inc. and iCat Corporation have signed a technology agreement that supports Secure Electronic Transaction (SET) 1.0. The agreement gives on-line vendors to opportunity to enhance their security solution and increase server performance with nCipher's nFast line of cryptographic accelerators. NFast cryptographic accelerators speed up electronic transactions by offloading the cryptographic burden onto a dedicated peripheral, thus giving online vendors the highest levels of cryptographic security without endangering their server's processing power.

The announcement of the partnership between nCipher and iCat is part of iCat's SET strategy, which provides secure transaction solutions for both merchants and hosting companies. By partnering with SET front runners, IBM, VeriFone and Outreach Communications, merchants can adopt SET technology on a wide range of server platforms, including NT, Sun Solaris and AIX. Merchants can also choose from three different set-enabled "cash registers": IBM's eTil, Verifone's vPOS and Outreach's STOMP.

➤Contact nCipher, Inc., Andover, MA at (978)691-6487

➤Contact iCat Corporation, Seattle, WA at (888)BUY-ICAT

DataThinK Offering Intelligent Storage Solutions Through E-Commerce

DataThinK, Inc. has put all the information necessary for MIS directors to choose and buy a storage solution on the World Wide Web. By accessing the DataThinK Web page, users can find the technical analysis, support and product procurement of intelligent storage solutions. All DataThinK solutions are based on a managed storage architecture model that recognizes the different types of data activity that are stored on network-attached data libraries and the different access and availability requirements of each type of data activity.

➤Contact DataThinK, Inc., Boulder, CO at (303)448-0420

MESSAGING AND E-MAIL

Panasonic Launches New Internet Fax Machine

Panasonic launched a new Internet fax machine, the Panafax UF-770I, which is designed to reduce phone charges for organizations that send frequent global and/or long distance faxes. The Panafax UF-770I sends and receives documents, pictures, photos, hand-written messages and e-mail over the Internet by pressing a "one-touch" key and dialing an e-mail address on the keypad. The UF-770I also automatically prints e-mail messages sent

to it.

The Panafax UF-770I is also a standard G3-compatible fax machine with Full Dual Access operation and a 3-Second Quick Scan feature. Other features include: a 50 page document feeder, an all-in-one, high yield print cartridge, up to 24 departmental codes, Check & Call function, Panasonic's Super Smoothing print technology, the ability to send and receive documents simultaneously and Sending Collation. Panasonic offers free software utilities to send and receive Internet faxes to ensure that the UF-770I works seamlessly with PCs on and off the network. A TIFF viewer and Internet fax converter are available for download from Panasonic's Web sites.

The Panafax 770I is available for an MSRP of $4,695. The Panafax UF-770 can be upgraded to include all the UF-770I functions by installing a UE-404063 Internet Fax upgrade kit, which is available for $1,795.

➤Contact Panasonic Communications & Systems Company, Secaucus, NJ at (800)742-8086

NETWORK INTEGRATION

eSoft IPAD 1200 Connects LANs To Internet For Less

eSoft's Internet Protocol Adapter (IPAD) 1200 LAN-Internet Gateway can connect as many as 150 workstations to the Internet. The VCR-sized fully integrated, plug-and-play device uses a single IP address to power the entire LAN with complete security. It comes supplied with an Internet interface for a 56K dial-up, 128K ISDN or DS0 leased line connection. With an external CSU/DSU it handles leased line speeds up to T1.

The IPAD 1200 is designed for companies that have a single LAN. Through a Web browser interface, functionality is provided for: full email capabilities; Web browsing and publishing; Firewall; FTP; Remote Access; and DNS.

The IPAD 1200 starts at $3,995 with a 56K modem, $4,195 with ISDN and $4,995 with a leased line interface.

➤Contact eSoft Inc., Boulder, CO at (303) 444-1600

SYSTEM AND NETWORK MANAGEMENT

SES's Strategizer 2.0 Offers Network Model Generation

SES Inc. introduced SES/Strategizer version 2.0, which offers automatic network model generation when combined with HP's Network Node Manager. Data collected by any network discovery tool can be used to automatically created enterprise level models of distributed systems in Strategizer. Strategizer can also incorporate system, network, database and other system management data from tools such as HP OpenView MeasureWare. Strategizer allows companies to analyze the performance of new applications on their networks before they are deployed. Users can also run "what if" scenarios to determine optimal configurations, predict network utilization, end-to-end response times and system capacity. A beta-test version of SES/Strategizer 2.0 will be available during the first quarter of 1998.

➤SES, Inc., Austin, TX at (800)759-6333

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Stanford Telecom Announces NetCoach For ATM Networks

Stanford Telecommunications, Inc. announced the NetCoach network management system for multi-vendor asynchronous transfer mode (ATM) networks. NetCoach addresses the operational issues of ATM network management by supporting multiple vendor switches via a common console, solving the problem of managing across disparate hardware resources. NetCoach supports access to performance and fault information from common Web browsers.

Four key components of NetCoach are available individually or together as an integrated solution. The components are: NetCoach Performance Manager, NetCoach Fault Manager, NetCoach Distribution Manager and NetCoach Simulation Manager. Consultation, on-site surveys, training, installation and implementation, and custom-integration support are also available with NetCoach.

Pricing begins at $10,000.

➤Contact Stanford Telecommunication, Inc., Sunnyvale, CA at (408)745-0818

Intraware and Netscape Announce Comprehensive Software Management Program

Intraware, Inc. and Netscape Communications Corporation announced a comprehensive software management program that will make licensing Netscape software from Intraware easier for corporations. Intraware's "Come Clean" Campaign is included and is designed to educate IT professionals about the correct way to license Netscape software. Those customers who participate will be given a set of online tools that will simplify keeping Netscape software licenses up to date using SubscribNet, Intraware's electronic upgrade notification and delivery service.

➤Contact Intraware, Inc., Orinda, CA at (888)4-INTRAWARE

WORKFLOW/DOCUMENT MANAGEMENT

IGC Releases Myriad/Documentation Integration Version 2.0

Informative Graphics Corp. (IGC) has released Myriad/Documentation Integration version 2.0. In addition to retaining the features provided by the original integration, version 2.0 provides new enhancements to the integrations between Myriad viewing software and Documentum's WorkSpace and SmartSpace enterprise document management systems. With the Open dialog box, users can now type the name of the document in the Document Name field in Myriad instead of browsing the directory trees to find a known document. Users can also conduct single-condition or multiple condition queries from inside Myriad and can have Myriad display basic document attributes.

➤Contact Informative Graphics Corp., Phoenix, AZ at (602)971-6061

ONEstone Announces New Version Of ProZessware

ONEstone Information Technologies, Inc. has released version 1.5 of ProZessware, software for workflow design and management. ProZessware 1.5 combines Designer, a graphical tool for workflow design, with a runtime environment based on Domino. It provides full participation for Web clients in workflow processes. New features include: improved handling of large organizations, support for multiple languages in the runtime environment, expanded report facilities and support for smart icons. ProZessware 1.5 also has new advanced graphics and display features, including simultaneous display of large diagrams and their active work areas, easy navigation in large diagrams using drag and drop techniques, cut and paste among diagrams for any object and attribute displays on the drawing pad for work process steps. Added background templates, more arrow and line options and additional style sheets for activity icons are also new to release 1.5. ProZessware 1.5 runs on all platforms that support Lotus Notes 4.5.1 and above.

➤ONEstone Information Technologies, Inc., Boston, MA at (617)261-1405

Bentley Launches ModelServer TeamMate

Bentley Systems, Inc. launched ModelServer TeamMate, a server product for the management of MicroStation-based engineering files and projects. ModelServer TeamMate provides project-based file check-in/check-out, revision and workflow coordination. ModelServer TeamMate works in tandem with ModelServer Publisher, with publishes engineering files to a browser on demand. ModelServer TeamMate also serves as an extension to MicroStation TeamMate, Bentley's desktop management system.

➤Contact Bentley Systems, Inc., Exton, PA at (800)BENTLEY

DESKTOPS AND SERVERS

Compaq Announces Four New ProLiant Servers

Compaq Computer Corporation announced four new ProLiant servers, three of which feature Highly Parallel System Architecture. ProLiant 5500, ProLiant 3000 and ProLiant 1600 feature the architecture design, co-developed with Reliance Computer Corporation, that addresses the need for greater bandwidth in the key subsystems including memory, I/O and processors. The system design uses dual memory controllers and dual-peer PCI buses that transfer data between each CPU and critical subsystems in parallel. All four ProLiant servers include features designed to eliminate planned and unplanned downtime, including Hot Plug drives that can be replaced without powering down the server, Hot Plug Redundant Power Supplies that can be changed without interrupting service, redundant NICs and a three-year pre-failure warranty on processors, memory and hard drives. Compaq Integrated Remote Console and Automatic Server Recovery are also featured in the new ProLiant servers.

Compaq also announced the availability of enhanced versions of Compaq SmartStart and Compaq Insight Manager, the Compaq Rack 4000 series of computer hardware cabinets and a new Compaq Hot Plug Redundant Power Supply for its mainstream server line.

Prices are as follows: ProLiant 5500 starts at $8,470, ProLiant 3000 starts at $4,775, ProLiant 1600 starts at $3,780, ProLiant 1200 starts at $2,780. Compaq SmartStart 3.50 and Compaq Insight Manager 3.50 ship standard with the servers. Compaq Rack 4136 prices start at $1,460 and the Redundant Power Supply prices start at $675.

➤Contact Compaq Computer Corporation, Houston, TX at (800)OK-COMPAQ

Hitachi Launches VisionDesk LCD Desktop Computers

Hitachi PC Corporation has launched the VisionDesk LCD desktop computer. The VisionDesk features a 13.3" Super TFT LCD panel, Intel's 233MHz Pentium processor with MMX technology, a 20X CD-ROM, integrated audio and speakers, high performance video, and complete integrated communications. It is DMI 2.0 compliant and optionally supports Intel's LANDesk (Intel LDCM3.1) system management software for remote manageability. The VisionDesk has comes with a three-year warranty and an optional two-

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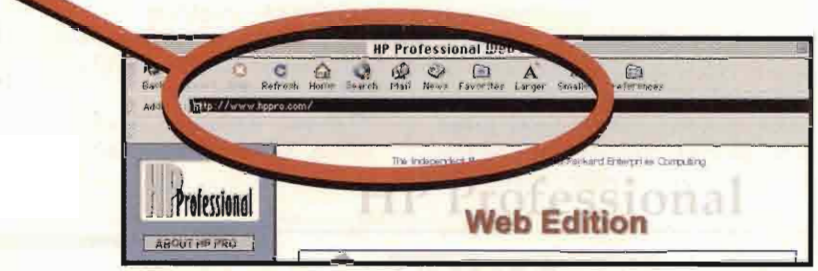

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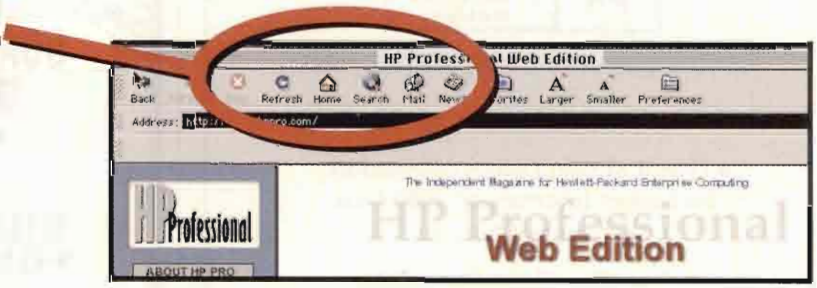

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year extension is available. Hitachi PC provides toll-free, twenty-four by seven, state of the art customer support and offers pick-up, delivery and repair with a 24-hour turn-around service.

The VisionDesk will be available in the first quarter of 1998 for an estimated street price range of $3,299 to $3,599.

➤Contact Hitachi PC Corporation, San Jose, CA at (408)321-5000

MULTIMEDIA

Research Systems Releases ENVI Version 3.0

Research Systems, Inc. (RSI) released ENVI Version 3.0, adding geographic information systems (GIS) functionality to create an integrated remote sensing solution. New routines for orthorectification of airphotos and satellite images are included. With ENVI 3.0 comes support for the Spatial Data Transfer Standard (SDTS), support for United States and world location maps, spectrum identification tools, vector to raster and raster to vector conversion capabilities, the addition of a new spectral library form Johns Hopkins University and true type scaleable fonts. ENVI 3.0 is written in IDL 5.0 (Interactive Data Language). All of ENVI's functionality is provided in one package. ENVI 3.0 is available for Windows 3.1, Windows 95, Windows NT, Macintosh, native Power Macintosh, UNIX and Linus.

Personal computer pricing starts at $3,350; workstation pricing starts at $5,750.

➤Contact Research Systems, Inc., Boulder, CO at (303)786-9900

NetFactory Introduces ChartBlaster

NetFactory, Inc. introduced ChartBlaster, a cross-platform, graphically-based, chart editing application. ChartBlaster allows users to create, modify and publish a wide variety of scientific and business oriented charts. ChartBlaster is 100 percent Java, and can be used on platforms such as Windows 95, Windows NT, MacOS, most UNIX platforms and on all Java-compliant Network Computers.

A fully functional evaluation copy of ChartBlaster can be downloaded from NetFactory's Web site.

➤Contact NetFactory, Inc., Silver Spring, MD at (301)625-5600

IDC Announces CONFERENCE PRO Multimedia Projector

Innovative Data Communications (IDC) announced CONFERENCE PRO, its new multimedia projector. Features of CONFERENCE PRO include a high resolution CCD camera, no transparency overhead arm, compatibility for presentation directly from a PC with the reproduction of SVGA, ability to project images from VCR or Laser Disk, zooming up to two times, clear images in a well-lit room, screen size adjustable from 40 inches to 200 inches, one-touch operation on the projector main unit or through remote control units, built-in stereo speakers and a jack for microphone input.

➤Contact Innovative Data Communications, Cincinnati, OH at (513)688-1352

Bausch & Lomb Debuts PC Magni-Viewer

Bausch & Lomb Incorporated debuted its PC Magni-Viewer, a screen magnification system that magnifies on-screen information 175%. PC Magni-Viewer offers multiple adjustments for customized monitor viewing and allows PC users to automati-

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cally position themselves in an ergonomically correct work posture. The two-piece magnification system features a 19.5" x 15" 360-degree rotating base that sits under any 13", 15" or 17" PC monitor; an adjustable swivel-arm that extends over the top of the monitor and an adjustable 6" x 8" acrylic optical lens. The PC Magni-Viewer will be available in February 1998.

Cost for the PC Magni-Viewer is about $250.

➤Contact Bausch & Lomb Incorporated, Rochester, NY at (800)771-1168

DISASTER RECOVERY/SECURITY

Cybernetics Announces Data Encryption Option That Encrypts Data During Backup

Cybernetics announced a Data Encryption option with its full line of tape backup subsystems and libraries. Now, using data encryption and access card keys, Cybernetics subsystems can provide protection for "normal" data loss through backup and can also provide protection for a company's sensitive information from theft and unauthorized access by insiders.

➤Contact Cybernetics, Yorktown, VA at (757)833-9990

Rainbow Technologies Releases SentinelSuperPro 5.0 Software Protection

Rainbow Technologies, Inc. released version 5.0 of its SentinelSuperPro software protection. Version 5.0 features the SentinelWizard version 2.1 GUI (graphical user interface) implementation tool. Other new features include the InstallShield Installer, the Top50 and Supplemental interface options and a single installation program for the Sentinel System Drivers that auto-detects the platform and installs the appropriate system driver. SentinelSuperPro version 5.0 and documentation are distributed on a CD-ROM and localized to French German, Spanish and simplified Chinese. The CD-ROM also includes a multimedia presentation on Rainbow, Sentinel products and the global effects of piracy.

SentinelSAFE is available as a complementary add-on product for Rainbow's customers. SentinelSAFE allows for encrypted updating of the SentinelSuperPro key.

➤Contact Rainbow Technologies, Inc., Irvine, CA at (800)852-8569

SERVICES AND SUPPORT

Breece Hill Speeds Customer Service With QwikFix

Breece Hill Technologies, announced the latest extension to its comprehensive customer support services with a new program that provides 24-hour-a-day, seven-day-a-week access to Breece Hill technical resources and creates a single contact point for all service-related customer inquiries.

The company's new QwikFix program is operational for U.S. and Canadian Breece Hill customers, providing toll-free 24/7 access to Breece Hill technical service representatives. The QwikFix customer center will process all support and service calls, making it easier for customers to receive the technical information or service they need to solve any problem relating to a Breece Hill product. Currently, if a customer has a technical or service related

problem they are sometimes unsure of whether to call Breece Hill, the reseller who sold the unit or the company with which they have a service contract. QwikFix eliminates that confusion by creating a centralized call processing and problem resolution center.

Breece Hill Technologies, Boulder, CO; tel. 303-449-2673

YEAR 2000

NeoMedia ADAPTS Midranges to Y2K

NeoMedia Technologies has released ADAPT/2000 release 3.0, an integrated, repository-based mass change conversion tool set for COBOL applications. For Year 2000 projects, it provides an all-encompassing approach by offering tools for impact analysis, source code correction and data conversion. ADAPT/2000 is targeted for the so-called "orphaned" midrange markets: HP3000, IBM DOS/VSE, Wang, Data General, Unisys and others.

ADAPT/2000 main features include; rules based, data dictionary driven; detailed impact analysis; automated data file, source code and copybook conversion; expansion, windowing (fixed/sliding), or contraction; complete date routine library with source; audit trail and in-line documentation; file browsing, fixing and testing utilities.

It is part of a family of legacy COBOL extension tools that enable re-hosting and modernization of proprietary COBOL applications to open systems with graphical front-ends.

➤Contact NeoMedia Technologies, Fort Myers, FL, at (941) 337-3434

OTHER

American Software Offers FLOW Manufacturing

American Software offers FLOW Manufacturing, an application that fully automates the implementation of just-in-time or continuous flow manufacturing techniques. The software is compatible with UNIX and IBM AS/400 platforms and is integrated with leading Enterprise Resource Planning (ERP) systems. FLOW Manufacturing is a client/server application that enables manufacturers to easily change their production mix and volume based on actual demand. It helps to point out inefficiencies and includes quality checkpoints for earlier problem detection and correction. FLOW Manufacturing incorporates mixed model line design and planning, demand smoothing, flow-based costing and full Kanban support. It can be used to design plant floor layouts, synchronize production lines, smooth demand between upper and lower production limits and automatically calculate process cycle efficiencies.

➤Contact American Software, Atlanta, GA at (404)261-4381

STORAGE

Cybernetics Offers Automated Tape Libraries For AIT Drives

Cybernetics now offers a complete family of automated tape libraries to support AIT drives. The models feature 12 to 126 tapes and up to six CY-8000 drives for storage capacity ranging from 300GB to 15.75TB. A single CY-8000 AIT subsystem stores 25GB at 3MB/s. With Cybernetic's 5:1 data compression, the AIT subsystem can store up to 125GB per tape and transfer data at speed of up to 9MB/s second. An index of stored information and file access time of less than 27 seconds is provided by a16Kbit EEPROM chip, known as Memory-In-Cassette, mounted into the data cartridge.

➤Contact Cybernetics, Yorktown, VA at (757)833-9990

HighGround Announces Storage Resource Manager 1.0 And Media Mirror 1.0 For Windows NT

HighGround Systems announced its first storage management applications for Windows NT: Storage Resource Manager 1.0 and Media Mirror 1.0. Storage Resource Manager (SRM) is part of a family of Web-based applications that allows systems administrators to proactively manage storage of Windows NT-based networks through their preferred browser. Its Web-based interface offers consolidated views of storage resource properties that impact data availability, such as disk defects, free and used capacity, largest files, largest directories, un-backed up files, partition configuration and user consumption.

Media Mirror 1.0 provides fault tolerance and disaster recovery to Windows NT backup and restore operations by providing RAID Level 1 capabilities for tape drives. It can mirror two or more tape drives and works with most standards-based backup and recovery applications to simultaneously write to or read from all drives in a mirror during standard backup

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and recovery operations.

Storage Resource Manager is $3,995 for the server, $99 for each Windows NT Workstation agent, and $399 for each Windows NT Server agent. Media Mirror is $995. Volume discounts are available for both products. Systems administrators can download free 15-day evaluation copies of both products from HighGround's Web site.

➤Contact HighGround Systems, Boxborough, MA at (800)395-9385

Overland Data Announces VR2 Technology For Linear Tape Devices

Overland Data Inc. announced its new Variable Rate Randomizer (VR2) encoding technology. VR2 technology produces up to two times the native capacity and native data transfer rate performance of existing linear tape technologies without requiring any changes in tape path design, recording heads or media. It includes a new variable rate encoding technique with a non-deterministic randomizer that was specifically designed for the requirements of linear tape recording. Overland Data sees a potential for VR2 technology to be applied to existing linear tape devices, including IBM Magstar and IBM Magstar MP; Quantum DLT, Travan, MLR and SLR. VR2 technology operates independently of any additional techniques used to increase capacity and performance of linear tape drives.

➤Contact Overland Data Inc., San Diego, CA at (800)729-8725

Open Microsystems' AdvanTAPE Software Now Supports DLT 7000 And IBM Magstar Tape Drives Under HP-UX

Open Microsystems, Inc. has released a version of its AdvanTAPE software that supports the Quantum DLT 7000 and IBM Magstar 3590 and 3570 tape drives under HP 800 series computer systems running the HP-UX 10.0 operating system. AdvanTAPE allows attachment of an unlimited number of devices by supporting devices attached to the HP Precision Bus. Major application software compatibility includes IBM's ADSM, Legato Networker, SCH's Reel Backup and SpectraLogic's Alexandria. Other tape drives supported by AdvanTAPE include StorageTek's Timberline, Redwood and 4890 models.

Demonstration copies of AdvanTAPE software can be downloaded from Open Microsystems' Web site.

➤Contact Open Microsystems, Inc., Austin, TX at (512)450-0900

Compaq's Fibre Channel Storage Products To Ship During First Quarter 1998

Compaq Computer Corporation announced that their Fibre Channel Storage Products are set to ship during the first quarter of 1998. With Compaq's Fibre Channel Storage System, customers can build a scalable and modular storage architecture using Compaq's Fibre Channel Host Controllers, Fiber Channel Arrays and Fibre Channel Loop Expansion Modules. The Fibre Channel Host Controller is the Fibre Channel Arbitrated Loop (FC-AL) host interface which enables users to attach multiple storage devices to a single PCI or EISA host slot. The RAID functionality and disk drives are contained in the Fibre Channel Arrays. The Fibre Channel Loop Expansion Module can connect multiple devices to the FC-AL.

Compaq has also announced other new storage products, including:

* The Digital Linear Tape (DLT) Library Model 3570. Price is $18,182 for

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a single drive model; $28,409 for a dual drive model.

* The Compaq CD Storage System. Price is $3,406 for a tower model and $4,499 for a rack-mountable model.

* The 4/8 GB SLR Tape Drive. Price is $505.

* The 12/24 GB DAT Tape Drive. Price is $1,193.

* The Dual Channel Wide-Ultra SCSI-3 Controller. Price is $453.

CA's ARCserve 6.5 for Windows NT. Price is $1,395 for the Enterprise Edition and $795 for the Single Server Edition.

➤Contact Compaq Computer Corporation, Houston, TX at (800)OK-COMPAQ; (800)345-1518

EZQuest Introduces AnaBoa 2GB Jaz/Re-Writable CD-ROM Drive

EZQuest, Inc. introduces the AnaBoa, a 2GB Jaz drive and 2x4x6 Re-writable CD Recorder drive. The AnaBoa combines the storage capacity necessary to create image files with a flexible CD authoring solution. The Jaz drive features transfer rates to 20MB/second and gives users the dual functionality of a hard drive and back-up device. With the 2GB capacity, users have a mass storage platform on which to create and store their image files while maintaining a complete backup file. The image file is transferred to the CD-R/RW drive once the user is ready to record a CD. The functions of three CD drives are performed: a 4x CD-Recordable drive with packet writing capabilities; a 2x CD-Re-writable drive that allows data to be erased and written again; and a 6x CD-ROM drive that reads back pressed CDs, written CD-R and CD-RW medium. Includes are an 80 watt universal auto-switching power supply, SCSI cabling, one 2GB Jaz media, one CD media, the FWB CD-ROM toolkit Adaptec CD Creator and CD Toast.

Cost for the AnaBoa is $1,199. The AnaBoa is available for PC and Mac.

Contact EZQuest, Inc., Anaheim, CA at (714)779-9040

EMASS Develops AML/S Library

EMASS, Inc. has developed a new mid-range automated media library called the AML/S. Customers can now start with a single module library containing 12 DLT7000 drives and then expand up to four modules containing 48 DLT drives with a concurrent throughput of up to 864 gigabytes per hour. A single module AML/S can support up to 158 DLT cartridges and has the capability to scale up to a four module library with 788 cartridges and a native capacity of 27.6 terabytes. The AML/S can accommodate the Quantum DLT7000, DLT 4000, Philips 3490E compatible and IBM Magstar3590 drives. Up to four Philips or IBM drives can be installed in each module. IBM and DLT drives and cartridges can be intermixed in the library. The AML/S is supported by a wide range of storage management software applications, including AMASS software. Third-party software support includes Legato NetWorker, Spectralogic Alexandria, Hewlett-Packard OmniBack and IBM ADSM.

➤Contact EMASS, Inc., Englewood, CO at (800)OK-EMASS; (303)792-9700

Hitachi Data Systems Expands Storage Management Solutions

Hitachi Data Systems Corporation has expanded storage management capabilities for the 7700 Scalable Array and announced the new Hitachi Remote Copy Semi-Synchronous Option (HRCSSO) for maintaining duplicate copies of data at remote locations. Also available are new capabilities for the synchronous Hitachi Remote Copy (HRC) feature enabling it to transfer data between System/370 and System/390 processors running version of the MVS, VM/ESA or VSE/ESA operating systems; and making HRC easier for users to access read-only data at the secondary location during suspension of data transfer options. Hitachi Data Systems also announced the general availability of the asynchronous Hitachi Extended Remote Copy)HXRC) feature, the addition of Storage Technology Corporation's Iceberg to the list of systems supported by the Hitachi On-line Data Migration (HODM) feature and the introduction of the HS-DataPlex storage management solution testing applications such as Year 2000 compliance and Euro-currency conversion.

➤Contact Hitachi Data Systems Corporation, Santa Clara, CA at (408)970-1000

Tracer Technologies Certifies New Software Support For Cygnet's Infinidisc CD Jukebox

Cygnet Storage Solutions, Inc. announced that Tracer Technologies, Inc. has certified its CD-jukebox management software for Cygnet's Infinidisc CD-jukebox. Tracer's products are HyperROM for read only applications, HyperGear for read and record applications, and TracerNT for CD-ROM or CD-R applications in the Windows NT environment. The software enables fast data transfers, simultaneous access to all drives and a flexible caching scheme that maximizes the accessibility of most frequently accessed discs. HyperROM and HyperGear support most UNIX operating systems, including IBM AIX, DEC OSF/1, DEC UNIX, HP-UX, SGI IRIX, SunOS, Solaris 1, Solaris 2 and Solarisx86.

Cygnet's Infinidisc CD-jukebox is an upgradeable and expandable platform for resellers and integrators. It has standard trayload drives and a modular design and can be configured with up to four separate CD drive modules that accommodate two drives each in a jukebox with a 250 disc media module. For a 500 disc system, up to four drives can be installed in Infinidisc jukeboxes configured with two media modules.

➤Contact Cygnet Storage Solutions, Inc., San Jose, CA at (800)7CYGNET; (408)954-1800

Storage Computer Releases OmniRAID Xtramirroring For Mission-Critical Data Protection

Storage Computer Corporation has released OmniRAID Xtramirroring, enabling users to select information which warrants replication at the data-set level instead of mirroring an entire array. With Xtramirroring, Storage Computer's OmniRAID SuperServers now offer RAID levels 0,1,3,5,7 data protection at the data-set level rather than at the level of the array topology, and a company's mission-critical data will be able to withstand concurrent drive failures within a single array.

OmniRAID Xtramirroring is currently available. It will also be included with all Series:73 and Series:74 OmniRAID SuperServers.

➤Contact Storage Computer Corporation, Nashua, NH at (603)880-3005

CT Software Releases Safety Net Pro V6.4 For File Backup

CT Software released Safety Net Pro version 6.4, a Windows 95 and NT utility for backing up key data files. Safety Net Pro has one default setting, can backup key windows and systems files, and five user configurable options. It has the ability to use 32-bit zip compression and will span multiple disks if necessary. Safety Net Pro can print directory trees, format floppy disks, create a boot disk, restore backup and print file lists. An evaluation copy is available upon request.

Safety Net Pro for Windows costs $21.95 for a single-user license. Network and site licenses are also available.

➤Contact Ron Parker of CT Software, Phoenix, AZ at (800)617-7740.

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